SOAH Docket. 582-24-11454
TCEQ Docket No. 2023-1268-MWD

APPLICATION BY	§	**BEFORE THE STATE OFFICE**
CITY OF KYLE FOR	§	**OF**
TPDES PERMIT NO.	§	**ADMINISTRATIVE HEARINGS**
WQ0011041002	§	

PROTESTANT SAN MARCOS RIVER FOUNDATION'S EXCEPTIONS TO THE PROPOSAL FOR DECISION

TO THE HONORABLE ADMINISTRATIVE LAW JUDGES and to the COMMISSIONERS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY:

Protestant San Marcos River Foundation submits the following exceptions to the Proposal for Decision (PFD) filed by the Administrative Law Judges (ALJs) relating to the application by the City of Kyle for Renewal and Major Amendment to Texas Pollutant Discharge Elimination System (TPDES) Permit no. WQ0011041002 (draft permit).

I. INTRODUCTION

In consideration of the exceptions and arguments set forth herein, Protestants respectfully request that the ALJs amend the PFD to recommend denial of the application and draft permit. Should the ALJs not amend the PFD, Protestants request that the Commissioners of the Texas Commission on Environmental Quality not adopt the ALJs' Order as presently proposed and attached to the PFD and adopt a revised Order denying the application and the draft permit because the ALJs improperly applied the law and TCEQ rules and the findings of fact include technical factual errors that require correction.

II. STANDARD OF REVIEW

The PFD, amendments to the PFD, and the order accompanying the PFD must be solely based on the record before the ALJ and include an explanation of the basis for the decision or amendment. Tex. Gov't Code § 2003.047(m). An ALJ may amend her PFD in response to exceptions, replies or briefs filed by parties to a contested case hearing. 30 T.A.C. § 80.259. If the ALJ does not amend the PFD, the Commission may modify the ALJ's order or proposed findings of fact and conclusions of law if the Commission determines that: (1) the ALJ improperly applied or interpreted the law, agency rules or policies, or prior administrative decisions; (2) the ALJ based his decision on a prior administrative decision that is incorrect or should be changed; or (3) a finding of fact contains a technical error requiring correction. Tex. Gov't Code § 2001.058(e).

III. SUMMARY OF EXCEPTIONS TO THE PROPOSAL FOR DECISION

The Proposal for Decision (PFD) in this case rests on a misunderstanding of the Clean Water Act's mandate to protect existing water quality and prevent degradation, a misunderstanding of

the Texas Surface Water Quality Standards, a misunderstanding of relevant provisions of the Texas Administrative Code, and a misrepresentation of the evidence and record in this case.

When the law and facts are applied properly, here, it must be found that the draft permit will violate the Clean Water Act by failing to meet the Tier 1 and Tier 2 antidegradation rules, failing to comply with all applicable Texas Surface Water Quality Standards (TSWQS), and failing to protect wildlife. Further, the City of Kyle's compliance history raises questions about the City's ability to comply with the terms of the draft permit, and TCEQ's ED did not consider the correct compliance history for the application. The City failed to meet its burden.

Protestant briefly summarizes many of the issues with the analysis in the PFD below, though many of the misunderstandings relied upon in the PFD are already address in Protestant's closing arguments (Attachment A and Attachment B).

1. **The ALJs' Analysis of Issue A is Flawed and Not Based on the Record.**

The ALJs' begin their analysis of Issue A by mischaracterizing Protestant's arguments on the issue as it relates to DO and stating that Protestant's argument on this issue relies on the assertion that TCEQ's calibrated QUAL-TX model for Plum Creek should be abandoned. PFD at 36. In fact, Protestants argument centered on the fact that all of the QUAL-TX modeling for the draft permit and DO data show that the relevant DO standards will be violated by the draft permit. Attachment A at 38.

When arguing against wholesale and unwarranted reliance on the calibrated QUAL-TX model for the draft permit, Protestant points out that the calibrated QUAL-TX model was developed using data collected over 30 years ago, fails to take into account changes in the Plum Creek watershed since then, the data was collected 18 miles downstream of the proposed discharge, and that stream cross section and velocity data measurements from near the outfall presented by the City show that the values are different from those in the calibrated QUAL-TX model. PR-LR-1 at 18:5–17, 21–29; Tr. Vol. 2 at 30:17–25, 32:2–1; 37:19–39:11. And the City's comparison of the stream cross section and velocity measurements from measurements near the outfall to those in the calibrated QUAL-TX model were not analyzed to determine whether the measurements were significantly different, and there is no evidence in the record to show that the difference in the values would not significantly change the results of the model. Tr. Vol. 2 (Mr. Osting) at 146:22–147:1–2; Tr. Vol. 2 (Dr. Ross) at 37:19–39:11 ("I think that the comparison of the actual stream cross-section velocities with the QUAL-TX 4.5 velocity makes the point that that number doesn't do a good job of characterizing . . . the TCEQ QUAL-TX model isn't accurately capturing the actual stream depths and velocities downstream from the Kyle outfall"). It seems odd to rely on the unsupported assertions of witnesses who did not tell the truth elsewhere in their testimony to conclude that calibrated QUAL-TX model accurately reflects the conditions in Plum Creek. PFD at 36.

While the IPs allow for the use of a calibrated QUAL-TX model when a WLE is available, as Protestant will remind the ALJs and TCEQ many times throughout this document, it is the substance of the TSWQSs that must be complied with and compliance with the IPs is not a

substitute for compliance with the rules. Nor do the IPs change the evidentiary rule that an expert witness may rely on any data on which experts in their field would rely.

Dr. Ross ran an uncalibrated QUAL-TX model for the draft permit as described in "Methods for Analyzing Dissolved Oxygen in Freshwater Streams Using an Uncalibrated QUAL-TX Model" which yielded a prediction of instream dissolved oxygen concentrations of just above 4 mg/L for all phases of the draft permit. PR-LR-1 at 19:19–24, 20:12–27; Tr. Vol. 2 at 42:1–6. There is no evidence in the record to support the ALJs' conclusion that the uncalibrated QUAL-TX model is unreliable, PFD at 37, and any endorsement of that conclusion by TCEQ sets a dangerous precedent that the default model used to develop permit limits for many TPDES is unreliable.

The ALJs' also mischaracterized Dr. Ross's testimony on the merits of calibrated v. uncalibrated models, PFD at 36, Dr. Ross testified that "Calibrated models are better, but you have to understand the limits of the calibration, and I think it makes sense to update the calibrated model with site-specific state in the reach that's relevant for Plum Creek and the City of Kyle effluent discharge. And if you're not going to do that, I don't think it's accurate to take parameters that are generated based on water quality measurements in the bottom half of the stream and then pretend like the stream all the way up to the City of Kyle is the same stream. I don't think that's good science." Tr. Vol. 2 at 32:1–11.

The ALJs' conclusion that the limits in the draft permit will be protective of water quality are unsupported by the evidence in the record. For the Interim Phase 1 and Interim Phase 2 DO predictions from the calibrated QUAL-TX model, show that under the draft permit DO concentrations fall below the standard required under the TSWQS. PR-LR-1 at 25:21–25. This comports with the results of Dr. Ross' uncalibrated model, PR-LR-1 at 19:19–24, 20:12–27; Tr. Vol. 2 at 42:1–6, and with DO concentration measurements presented by the City. A-TO-12.

In considering whether the draft permit would comply with the TSWQS that requires surface waters to be maintained in an aesthetically attractive condition, 30 T.A.C. § 307.4(b)(4); ED-JP-3 (IPs) at 0073, the ALJs failed to address evidence that the City's current discharge and the draft permit causes a strong odor of effluent that will prevent people from using Plum Creek for recreation. PR-JB-1 at 7:17–20; 19:6–7, 20:6–7. And there is no evidence in the record to controvert testimony from Protestant's witness that the strong odor of effluent will fail to maintain Plum Creek in an aesthetically attractive condition.

On the issue of nuisance algae and the maintenance of aesthetically attractive conditions, the ALJ's analysis begins with the mistaken assumption that the City's continued pollution will improve water quality in Plum Creek. While the draft permit will lower the amount of TP entering Plum Creek at the outfall, the TP concentration in the effluent under the draft permit still represents a large increase in phosphorus when compared with conditions in Plum Creek when the City dumping treated sewage into the Creek. PR-JB-1 at 0015, Table 2. Naturally occurring phosphorus concentrations are around 6.38 µ/L, much lower than the 500 µ/L in the last two phases of the draft permit and 2901 µ/L currently discharged by the City, *Id*., and a reduction in pollution does not absolve the City of its obligations to adhere to the TSWQS nor does it make it less likely that Plum Creek will experience nuisance algae growth under critical conditions. PR-JB-1 at 0023:15–23, 0024:1–2, PR-JB-11, and PR-JB-12; Tr. Vol. 2 at 58:2–25;

Tr. Vol. 2 at 59:8–25, 60:1–10. None of the experts in the case testified that they observed whether Plum Creek had nuisance algae under critical low flow conditions. Under the ALJs' analysis, a party may pollute a Texas water body for years, slightly reduce the pollution, and then properly claim that they are improving water quality. PFD at 40. This is bad policy; such a view encourages degradation of Texas waters in violation of the Clean Water Act and encourages long time polluters to fail to clean up their act.

As set out in this document and Protestant's closing arguments, the ALJs' conclusion that the City met its burden of proof on this issue is unsupported by the record. Had the ALJs applied the facts in the record to the law, their conclusion on this issue could not stand.

2. The ALJs' Analysis of Issue B is Flawed, Unsupported by the Record, and Unsupported by Law.

The ALJs erred in deeming EPA guidance on the antidegradation rules irrelevant and misstate Protestant's argument on the issue and reasons for citing to federal law. PFD at 66. Protestant wants the ALJs and TCEQ to interpret and apply the Texas Water Code and Texas Administrative Code provisions relevant to TPDES permitting consistent with the controlling minimums set out in the Clean Water Act and EPA rules. 33 U.S.C. § 1342(b); 40 C.F.R. § 123.35; 40 C.F.R. § 131.12(a) ("The State shall develop and adopt a statewide anti-degradation policy, [which] shall, *at a minimum, be consistent with the following*") (emphasis added). To the extent that state regulations implement federal law, "the federal regulations serve as a guideline to and may control the scope of the state regulations," and the "'[T]he policy of the federal Act is the prevailing policy in every state.'" *Pub. Util. Com. v. Gulf States Utils. Co*., 809 S.W.2d 201, 204 n.3, 208 (Tex. 1991). Protestant wants the law followed, not rewritten like the ED and City who ask this Court and commissioners to write out key provisions of the antidegradation rules. If the ALJs and TCEQ apply the EPA approved TSWQS and antidegradation rules consistent with the controlling federal minimum, the draft permit could not be issued as is.

The ALJ's summary of the analysis conducted by the ED's standards reviewer is full of factual errors and is unsupported by the testimony in the record. PFD at 67. (1) the ED's standards reviewer for the draft permit testified that he did not compare baseline conditions with conditions after the proposed discharge. Tr. Vol. 2 at 88:20–22. (2) the ED's standards reviewer testified that he ended his antidegradation review of TP after setting the TP limit effluent flow based recommendation without determining if the limit was adequate. Tr. Vol. 2 at 88:23–89:3. (3) The ED's DO modeler for the draft permit did not analyze and gave no opinion on whether the draft permit would comply with the antidegradation standards. ED-JR-1 at 328:6–8; Tr. Vol. 2 at 120:14–17; see also Tr. Vol. 2 at 12:1–25. But the ED's standards reviewer testified that he depended on the recommendation and determination of the DO modeler to determine whether the Tier 2 rule would be met for DO, and that he did no analysis of his own for Tier 2 and DO. Tr. Vol. 2 at 71:24–25, 89:17–23. The standards reviewer cannot rely on a determination that was never made just as the ALJs cannot rely on facts not in the record.

The ALJs take issue with Protestants evidence on total phosphorus concentrations in Plum Creek and the application of basic scientific principles to the draft permit. PFD at 67–68. As an initial matter, the ALJs cite to no evidentiary rule that prevents an expert witness from relying on any

data on which experts in their field would rely during a contested case hearing; analysis of narrative criteria need not be untethered from quantitative evidence. The ALJs also note that TCEQ does not have any water quality criteria framed in trophic status, true, but the IPs that the ALJs and TCEQ ED are so fond of citing to reference and require analysis of eutrophication potential for nutrients. ED-JP-3 at 0063. And the IPs allow TCEQ's ED to consider additional information as well. Tr. Vol. 2 at 81:21–82:5.

The ALJs' rely on the testimony of Ms. Whitaker to determine that the high aquatic life use will be maintained in Plum Creek. PFD at 68. But Ms. Whitaker's testimony is biased and has all the hallmarks of unreliable evidence. Ms. Whitaker did not document the methods or results for her antidegradation review or fish species impact analysis, leaving everyone to guess at exactly how she came up with her comparisons. Tr. Vol. 1 at 68:18–25. Ms. Whitaker also jumped to the conclusion that because the fish present, based on her 'analysis' would not be impacted by lower DO concentrations or ammonia from the draft permit then the draft permit was protective of the biological communities and fish in Plum Creek, A-BW-1 at 27:4–6, instead of considering that the absence of more sensitive fish or lower relative abundance of sensitive fish might also be indicative that the discharge is already having an impact on Plum Creek.

Ms. Whitaker also lied about the protocols that she followed to conduct the analysis that she relied on in her testimony; she did not follow the SWQMs as she claimed. It seems poor practice to rely on the testimony of a liar. The inaccuracies in Ms. Whitaker's testimony are catalogued in Protestant's closing arguments, but the inconsistencies between Ms. Whitaker's testimony and the truth bear repeating:

"Ms. Whitaker testified that a "stream assessment is a biological and habitat assessment developed by the Surface Water Quality Monitoring Program (SWQM) of the TCEQ." A-BW-1 at 10:15–16, Tr. Vol. 1 at 65:15–23. And Ms. Whitaker testified that she conducted a "stream assessment per SWQM protocol." Tr. Vol. 1 at 67:19–20. But "stream assessment" is not a type or mode of analysis set out in the SWQM manual. See generally PR-CE-1 (SWQM Manual). The types of analysis that one could conduct based on the SWQMs are an (1) ALM, (2) aquatic life assessment, (3) receiving water assessment, (4) use attainability analyses, PR-CE-1 at 2-5–2-8, and Ms. Whitaker testified that she did not conduct any of these. Tr. Vol. 1 66:24–67:20. The receiving water assessment can be used to assess the impacts of an existing wastewater treatment plant but requires data be collected upstream of the existing discharge. PR-CE-1 at 2-7. And the data for Ms. Whitaker's "stream assessment" was collected downstream of the existing City of Kyle discharge. Tr. Vol. 1 at 65:6–9.

Ms. Whitaker still testified that she considers herself to be an expert in the SWQM manual, Tr. Vol. 1 at 79:4–7. Ms. Whitaker also testified that she followed the procedures in the SWQM manual, that there was no reason to deviate from the procedures set out in the manual, and that in order to get valid results the SWQM procedures must be followed. Tr. Vol. 1 at 79:17–80:7, A-BW-1 at 11:3. But Ms. Whitaker deviated from the procedures by failing to record required information in her log book and failing to take samples in the manner prescribed by the SWQM. Page 2-4 of the SWQM Manual (PR-CE-1) sets out "Other Monitoring Requirements" which includes a list of information that is to be recorded in a bound field data logbook. Ms. Whitaker did not record all of the information that the SWQM manual requires. Tr.

Vol. 1 at 82:4–83:2, PR-CE-2, PR-CE-3, PR-CE-4 (Ms. Whitaker's field notes and log book). Page 5-4 of the SWQM manual states that benthic macroinvertebrate samples should be taken from a single habitat type within a stream reach and that the overall objective is to collect the sample from optimal benthic macroinvertebrate habitat with riffles being the preferred habitat type. But Ms. Whitaker's samples were taken in different habitat types, with only one in a riffle. PR-CE-3. And for sampling benthic algae, the SWQM manual says to "establish four transects across the stream in riffle, run, or glide habitats, in order of preference, avoiding pools if possible." PR-CE-1 at 7-5 (emphasis added).6 However, Ms. Whitaker's samples, like her benthic macroinvertebrate samples, were taken in several habitat types, including a pool. PR-CE-3; Tr. Vol. 1 at 88:21–25. Ms. Whitaker's samples were also not taken during the critical period where one would expect minimum streamflow, maximum temperatures, and minimum dissolved oxygen to give a full picture of the degradation in Plum Creek. PR-CE-1 at 2-1; PR-CE-3. This includes Ms. Whitaker's dissolved oxygen sonde which was deployed when water temperatures were at just 82°F. A-TO-9."

On the other hand, macroinvertebrate sampling downstream of the outfall, conducted in a transparent and truthful manner and submitted to rebut the City's prima facie demonstration, found an intermediate Aquatic Life Use Designation based on the macroinvertebrate index of biotic integrity which, according to TCEQ guidance, shows that there are evident and moderate negative changes in the biological condition/aquatic life use designation of Plum Creek, an impairment of Plum Creek's aquatic life use. PR-JB-1 at 17:2–3; PR-CE-5 at 0015. It is error to disregard such evidence by claiming that its collection did not follow the SWQMs. The DO modelling and data from the City also show that the draft permit will lower DO concentrations below the criteria to protect Plum Creek's high aquatic life use designation. PR-LR-1 at 25:21–25; PR-LR-1 at 19:19–24, 20:12–27; Tr. Vol. 2 at 42:1–6; A-TO-12.

The ALJs, the City's witnesses, and the ED's witnesses never applied the Tier 2 standard to the draft permit, mistaking the requirements of the Tier 1 standard for Tier 2's more stringent protections. If it must be shown that an existing use is impaired or water quality criteria violated before a violation of Tier 2 can be found, the Tier 2 rule is meaningless and the ALJs, the City's witnesses, and the ED's witnesses have rewritten the rules to collapse the two rules.

As set out in this document and Protestant's closing arguments, the ALJs' conclusion that the City met its burden of proof on this issue is unsupported by the record. Had the ALJs applied the facts in the record to the law, their conclusion on this issue could not stand.

3. The ALJs' Analysis of Issue is C is Flawed and Disregards TCEQ' Regulations.

The ALJs begin their analysis of this issue by misapplying the plain language of the regulation that sets out the compliance period for assessing compliance histories for proposed TPDES permit. PFD at 80–81. Thirty T.A.C. § 60.1(b) states that "compliance history period includes the five years prior to the date the permit application is received by the executive director." While the ALJs correctly note that TCEQ generally generates compliance histories on a fiscal year basis, 30 T.A.C. § 60.2(a), the ALJs' interpretation of 30 T.A.C. § 60.1(b) and post hoc rationalization of the ED's mistake in the compliance history period relevant to assessing the draft permit, PFD at 80, fails to comport with TCEQ's interpretation of 30 T.A.C. § 60.1(b) and

the plain language of the regulation. In guidance on compliance history reports, TCEQ explains that it follows the plain language of "five years prior to the date the permit application is received" by writing that "we use the current classification-that is, the one developed September 1-along with the compliance history for the five years immediately preceding the event."[1] So, the correct compliance history period applicable to the application for the draft permit started on March 11, 2022. The ED failed to follow 30 T.A.C. § 60 for the application and draft permit.

In support of Protestant's argument that the draft permit should be altered or denied based on the City's compliance history, presented the long history of the City's violations that have continued to occur throughout the years, even after improvements to the facility. The City violated limits on nitrogen, *E. coli*, and CBOD, violations which contribute to violations of TSWQS. PR-LR-1 at 24:13–19. The City also discharged sludge into Plum Creek. A-TS-1 at 6:8–22. And the City of Kyle violated the City's current TPDES permit during the last expansion of the facility, a fact that is particularly concerning since the draft permit allows the City to expand the facility again. Tr. Vol. 1 at 20:6–22:1.

As set out in this document and Protestant's closing arguments, the ALJs' conclusion that the City met its burden of proof on this issue is unsupported by the record. Had the ALJs applied the facts in the record to the law, their conclusion on this issue could not stand.

IV. EXCEPTIONS TO SPECIFIC FINDINGS OF FACT AND CONCLUSIONS OF LAW

1. Findings of Fact

Issue A; The draft permit fails to protect water quality, wildlife, and the health of Protestant's members in accordance with applicable regulations, including the Texas Surface Water Quality Standards.

34. The TSWQS and TCEQ standard procedures for implementing the TSWQS (IPs) are used to set permit limits for wastewater discharges.

"The Texas Surface Water Quality Standards are the legal standards for the quality of surface water in Texas," and the IPs are "guidance and not…a replacement to the rules." ED-JP-3 (IPs) at 0028. TPDES permits issued by TCEQ must comply with the TSWQS; the TSWQS are the binding regulations that set the standards for such permits, and they must be interpreted and applied consistent with controlling federal statutes and regulations. 33 U.S.C. § 1342(b); 40 C.F.R. § 123.35. The issue here is whether the TSWQS were followed.

37. Under the IPs, TCEQ uses narrative criteria in its antidegradation review.

The IPs do no limit TCEQ's antidegradation review to narrative criteria, and as set out in the exceptions to finding of fact number 34, the IPs do not set out the binding regulations. The Tier 1

[1] TCEQ, Compliance History Basics (last visited Oct. 29, 2024) https://www.tceq.texas.gov/compliance/enforcement/compliance-history/about.html.

review includes the evaluation of parameters that use numeric criteria. ED-JP-3 (IPs) at 0072. The IPs also state that during Tier 2 reviews, parameters of concern for individual water bodies may include a long list of parameters that include dissolved oxygen, total dissolved solids, sulfate chloride, pH, etc., a list which includes parameters for which the IPs set out numeric evaluations and criteria. ED-JP-3 at 0077–78. And even though the antidegradation review for total phosphorus relates back to a TSWQS that is narrative in nature, neither the IPs nor binding regulations bar TCEQ from considering numeric data or additional sources of information. ED-JP-3 at 0068 (allowing for "additional site-specific data, more extensive models, and evaluations").

40. Under the TSWQS, the numerical criteria for Segment 1810 must have a minimum DO criteria of 5.0 mg/L.

30 TAC §307.7(b)(3)(A)(i) Table 3 sets out that for water bodies that are designated as having high aquatic life use, like Segment 1810, the 24-hour mean for dissolved oxygen concentrations must be maintained at least at 5.0 mg/L; the 24-hour mean dissolved oxygen criteria is 5.0 mg/L for Segment 1810.

41. DO is the best overall indicator of water quality and was modeled by the ED's staff to evaluate whether the proposed Draft Permit is protective of water quality, wildlife, and Protestant's members' and their families' health, in accordance with applicable regulations, including the TSWQS and IPs, for Segment 1810.

The ED's staff did not model DO to evaluate whether the proposed draft permit is protective of water quality, wildlife, and Protestant's member's and their families' health, in accordance with applicable regulations. The dissolved oxygen modelling performed by TCEQ was limited to evaluating whether instream dissolved oxygen concentrations would be maintained at 5.0 mg/L. Tr. Vol. 2 at 12:1–25. And while the record tends to show that DO is an important water quality parameter that must meet the TSWQS and antidegradation standards, there is no testimony or evidence in the record to establish that DO is the best overall indicator of water quality or that other water quality parameters or TSWQSs can be ignored, as these findings of fact and the PFD tend to do, if DO standards are met.

44. The ED used a proper model to assess the impacts of the proposed discharge on the receiving waters.

The ED's staff used a calibrated QUAL-TX model to evaluate whether instream DO concentrations would be maintained at 5.0 mg/L. ED-JR-01 at 0307:16–21; Tr. Vol. 2 at 12:1–25. According to the ED's DO modelling witness, the IPs direct the ED's staff to use a calibrated QUAL-TX model when a waste load evaluation is available for a given stream stretch. ED-JR-01 at 0312:19–21. But this Court is not constrained to only consider the calibrated QUAL-TX model used by the ED's staff, especially in light of the issues with the calibrated model in this instance. As set out fully in the testimony of Dr. Lauren Ross, the data used to calibrate the QUAL-TX model was collected for two or three days in 1983 and 1987 and has not been updated to reflect the significant changes in the Plum Creek watershed like increased urban development and climate change. PR-LR-1 at 18:5–17. And the stream cross section and velocity

data presented by the City's witness in A-TO-7 from Plum Creek near the outfall shows that important factors that predict re-aeration and transport of dissolved oxygen are different than the ones used in the waste load evaluation and calibrated model used by TCEQ, Tr. Vol. 2 at 37:19–39:11, and no analysis other than bald speculation was done by the City or TCEQ to show that these differences would not have a statistically significant impact on the outcome of the DO modelling. And there is no evidence in the record to support the ALJ's assertion that the City's witness ran the calibrated QUAL-TX model with his own site specific data, the record at most shows that the witness cursorily, without statistical analysis, compared his stream cross section and velocity data with the outputs of the ED's calibrated QUAL-TX model. PFD at 38; A-TO-1 at 10:20–11:13. There is also concern that the water temperatures in the calibrated model were set at 29.2°C instead of the default 30.5°C which better reflects the temperature during critical conditions under the changing climate rather than temperatures from a model calibrated in over 36 years. PR-LR-1 at 19:5–12.

No matter the unsupported musings of the City, TCEQ, and this Court on the accuracy of the calibrated v. uncalibrated QUAL-TX model, whether the calibrated QUAL-TX model fully captures the low DO concentrations caused by the draft permit is called into question by data presented by the City since the 25th percentile for DO concentrations is below 4 mg/L at the City of Kyle outfall with values dipping below 2 mg/L. A-TO-12 at 1.

The uncalibrated QUAL-TX model predicts instream dissolved oxygen concentrations of just above 4 mg/L for all phases of the draft permit, PR-LR-1 at 19:19–24, 20:12–27; Tr. Vol. 2 at 42:1–6, outputs which are supported by A-TO-12. Protestants question why TCEQ uses the uncalibrated QUAL-TX model to set permit limits in many of the TPDES permits that the agency issues, if the model is as unreliable as alleged by this Court. PFD at 37. Either way, as set out more fully in other sections of this document, the DO models in this case show that the draft permit will not maintain DO concentrations in accordance with TSWQS related to DO.

46. The ED's modeling shows that the effluent limitations in the Draft Permit will maintain water quality above the requirements of the TSWQS in all three phases.

The ED's staff performed modeling using a calibrated QUAL-TX model that incorporates the Waste Load Evaluation for Plum Creek in the Guadalupe River Basin to evaluate the impacts to instream dissolved oxygen concentrations. ED-JR-01 at 0307:16–23. So, the modeling performed by the ED's staff does not show that the effluent limitations in the draft permit will maintain water quality above the requirements of the TSWQS in all three phases for the simple reason that the modelling performed by TCEQ was limited to evaluating whether instream DO concentrations would be maintained at 5.0 mg/L and did not evaluate whether water quality as it relates to other TSWQS would be maintained. Tr. Vol. 2 at 12:1–25.

The modelling performed by the ED's staff does not even show that the effluent limitations in the draft permit will maintain the 5.0 mg/L DO criteria in Plum Creek. For the Interim Phase 1 and Interim Phase 2 DO predictions from the ED's modelling, the dissolved oxygen concentrations fall below the standard required to protect a high aquatic life use. PR-LR-1 at 25:21–25. While the minimum DO concentrations occurred above the outfall in the model, it is still appropriate to consider these values due to a phenomenon known as dispersion and the

manner in which the discharge impacts dissolved oxygen concentrations upstream of the discharge. Tr. Vol. 2 at 37:7–10. TCEQ guidance on DO and mixing zones also sets out that a mixing zone extends 100 feet upstream of the outfall to 300 feet downstream of the outfall and that the minimum DO outside (regardless of whether it is at the upstream or downstream limit) the mixing zone should be compared with applicable DO criteria. ED-JR-03 (Modeling Review of Wastewater Permit Applications General Guidance) at 0336, 0345. And the calibrated QUAL-TX modeling performed by the City's expert, Mr. Osting, did nothing more than demonstrate the obvious fact that a model's outputs change when the inputs are changed and that the draft permit would still violate the applicable DO criteria upstream of the discharge. A-TO-11; A-TO-1 at 17:19–18:2.

Moreover, real world measurements of DO concentrations in Plum Creek presented by the City show that the DO concentrations in Plum Creek near the outfall and at the station right after the outfall violate the 5.0 mg/L dissolved oxygen criteria. A-TO-12. The 25th percentile for dissolved oxygen concentrations is below 4 mg/L at the City of Kyle outfall with values dipping below 2 mg/L. A-TO-12 at 1. And the bottom whisker for the station right after the outfall is barely above 4 mg/L and has values around 2 mg/L as well. *Id*. And the plots of data on the next page that show dissolved oxygen concentrations for just the summer months have similarly low values for dissolved oxygen concentrations. *Id*. at 2. Accusations that the data in A-TO-12 needs to be cherry picked in order to support the analysis presented in this paragraph are laughable considering that the City's own expert chose which data to include in the graphs in A-TO-12 and how to present the data. While the sonde data collected for DO by both the City's witness and Protestant's expert witness showed DO concentrations above the 5.0mg/L criteria, the data was collected outside the time period when critical conditions are expected to occur in Plum Creek and do not provide a picture of the worst-case scenario DO concentrations. PR-CE-1 at 2-1; PR-CE-3; A-TO-9 (showing that the City's DO sonde data was collected when stream temperatures were lower than the critical conditions in the ED's calibrated QUAL-TX model).

To briefly conclude, the modelling performed by the ED's staff only evaluates whether instream DO concentrations would be maintained at 5.0 mg/L, and the modelling and real world DO concentration measurements show that the draft permit will not comply with TSWQS related to DO.

49. The nutrient screen and IPs indicated that it was up to the ED's staff's best professional judgment as to whether to include a TP limit for nutrient control.

TCEQ bases the agency's initial assessment for whether a nutrient effluent limit for TP is needed in a TPDES permit on a "weight-of-evidence" assessment of the nutrient screening factors listed in the IPs. ED-JP-3 (IPs) at 0068. Neither the IPs nor the nutrient screening worksheet mentions the application of best professional judgment (BPJ), which appears to be a shield against honest analysis or criticisms of a permit, in substitute of the site-specific screening factors for determining whether to include a TP limit. The drafters of the IPs knew how to leave aspects of a TPDES permit to the BPJ of the ED's staff as the IPs specifically mention BPJ in other sections. But in the case of whether to include a TP limit, the IPs firmly place this initial determination in the hands of the site-specific screening factors.

50. The IPs indicate that a TP limit of 0.5 mg/L is appropriate for the size of discharge in the Interim II and Final phases.

The IPs only state that "typical effluent limits for TP…generally fall into the following ranges," and make no claims about the "appropriateness" of specific limits, cautioning TCEQ to consider site specific factors when recommending a limit. ED-JP-3 at 0045. It is also important to note that the final phase of the draft permit has a flow four times higher than the largest permitted flow in the chart that this finding of fact seems to reference, further limiting the saliency of the chart in this case. ED-JP-3 at 0045. Moreover, TPDES permit must comply with the TSWQS, and shortcuts in the IPs do not substitute for compliance with the rules.

52. The Draft Permit will ensure protection of water quality for Segment 1810 in accordance with the TSWQS and will not affect the biological communities found in Plum Creek.

The draft permit will not protect water quality in Plum Creek and the biological communities in Plum Creek have already been and will continue to be impacted by the City of Kyle's discharge of municipal sewage into Plum Creek.

As set out more fully in other sections of this document, the draft permit will not comply with the applicable DO TSWQS.

The draft permit will not maintain Plum Creek in an aesthetically attractive condition because the draft permit will result in the strong smell of effluent, as the current City of Kyle discharge already does, in Plum Creek that will discourage recreation. PR-JB-1 at 7:17–20, 19:6–7, 20:6–7. And during critical low flow conditions, aesthetic conditions will be unattractive due to filamentous algae growth. PR-JB-1 at 15:15–16.

Macroinvertebrate sampling downstream of the outfall found an intermediate Aquatic Life Use Designation based on the macroinvertebrate index of biotic integrity which, according to TCEQ guidance, shows that there are evident and moderate negative changes in the biological condition/aquatic life use designation of Plum Creek. PR-JB-1 at 17:2–3; PR-CE-5 at 0015. And like many of the finding of facts in this section, there is no basis in the record to conclude that the draft permit will not affect the biological communities at all.

53. The Draft Permit will ensure protection of wildlife and Protestant's member's and their families' health.

The draft permit does not protect wildlife. Macroinvertebrate sampling downstream of the outfall found an intermediate Aquatic Life Use Designation based on the macroinvertebrate index of biotic integrity which, according to TCEQ guidance, shows that there are evident and moderate negative changes in the biological condition/aquatic life use designation of Plum Creek. PR-JB-1 at 17:2–3; PR-CE-5 at 0015.

Issue B: The draft permit fails to comply with applicable antidegradation requirements.

54. In general, a Tier 1 antidegradation review is conducted for all permits and applies to all water in the state. It ensures that, although a proposed discharge will result in increased pollutant loading, the numerical and narrative criteria of the receiving water will be maintained, and existing uses will be protected.

"All pollution that could cause an impairment of water quality is subject to Tier 1 reviews." 30 T.A.C. § 307.5(c)(2)(A). The Tier 1 antidegradation rule requires that "existing uses and water quality sufficient to protect those existing uses must be maintained." 30 T.A.C. § 307.5(b)(1).

55. Tier 2 antidegradation review generally applies to water bodies where water quality exceeds levels necessary to support propagation of fish, shellfish, terrestrial life, recreation in and on the water (fishable/swimmable quality), and intermediate, high, or exceptional aquatic life uses. The Tier 2 review also ensures that, although a proposed discharge may result in increased pollutant loading, the higher numerical and narrative criteria of fishable/swimmable quality water will be maintained, and existing uses will be protected.

"Tier 2 reviews apply to all pollution that could cause degradation of water quality where water quality exceeds levels necessary to support propagation of fish, shellfish, terrestrial life, and recreation in an on the water." 30 T.A.C. § 307.5(c)(2)(B). The Tier 2 antidegradation rule prohibits "activities subject to regulatory action that would cause degradation of waters that exceed fishable/swimmable quality," and defines degradation "as a lowering of water quality by more than a de minimis extent." 30 T.A.C. § 307.5(b)(2). The Tier 2 rule protects "the difference between the applicable water quality criterion for a pollutant parameter and the ambient water quality for the pollutant parameter where it is better than the criterion." U.S. ENVIRONMENTAL PROTECTION AGENCY, MEMORANDUM: TIER 2 ANTIDEGRADATION REVIEWS AND SIGNIFICANCE THRESHOLDS 1 (2005).

57. The ED performed a Tier 1 and Tier 2 antidegradation review of the receiving waters in accordance with the 30 Texas Administrative Code section 307.5.

The ED did not perform a Tier 1 and Tier 2 antidegradation review of the receiving waters in accordance with 30 T.A.C. § 307.5(b). If the ED has performed a Tier 1 and Tier 2 antidegradation review of the receiving waters in accordance with 30 T.A.C. § 307.5(b), the draft permit would not have been issued as is.

As discussed in exceptions to findings of fact 44 and 46, the modelling done by the ED's staff, modelling done by Protestant, and data presented by the City shows that the draft permit will violate the applicable DO criteria that was designed to protect Plum Creek's high aquatic life use in violation of Tier 1.

The ED did not apply the Tier 2 standard to review of the draft permit, only applying the Tier 1 standard for DO. To start, the ED did not apply the Tier 2 standard to the draft permit for instream DO concentrations. The ED's DO modeler for the draft permit did not analyze and gave

no opinion on whether the draft permit would comply with the antidegradation standards. ED-JR-1 at 328:6–8; Tr. Vol. 2 at 120:14–17; see also Tr. Vol. 2 at 12:1–25. But the ED's standards reviewer testified that he depended on the recommendation and determination of the DO modeler to determine whether the Tier 2 rule would be met for DO, and that he did no analysis of his own for Tier 2 and DO. Tr. Vol. 2 at 71:24–25, 89:17–23. Since the Tier 2 rule was never applied to the draft permit in the context of instream DO, it cannot be said that the ED performed an antidegradation review in accordance with 30 T.A.C. § 307.5(b). Additionally, for DO, the draft permit will lower instream DO concentrations below the relevant 5 mg/L criteria set out to protect high aquatic life uses and consume over 100% of the assimilative capacity for instream DO in Plum Creek, a violation of Tier 2. PR-LR-1 at 17:6–17; 30 TAC § 307.7(b)(3)(A)(i); 30 T.A.C. § 307.5(b)(2); U.S. ENVIRONMENTAL PROTECTION AGENCY, MEMORANDUM: TIER 2 ANTIDEGRADATION REVIEWS AND SIGNIFICANCE THRESHOLDS 1 (2005).

The ED made the same error of only applying the Tier 1 standard to the draft permit for TP as well. The standards reviewer for the draft permit testified that when analyzing whether a draft permit violates the Tier 2 rule, he looks to whether the draft permit would cause nuisance algal growth. Tr. Vol. 2 at 87:11–13. But such an inquiry that looks to see if a standard is violated applies the Tier 1 standard rather than Tier 2 standard. And there is no other evidence in the record to support a finding that the standards reviewer properly applied the Tier 2 rule for the draft permit. Additionally, the IPs provide guidance to the standards reviewer that for Tier 2 the "effect of a proposed discharge is compared to baseline water quality conditions in order to assess the potential for degradation of water quality." And the ED's standards reviewer for the draft permit testified that he did not compare baseline conditions with conditions after the proposed discharge. Tr. Vol. 2 at 88:20–22.

58. Numerical and narrative criteria to protect existing uses of Plum Creek will be maintained throughout the receiving waters. Existing uses of Plum Creek will not be impaired by discharges under the Draft Permit.

As set out elsewhere in this document, the instream DO concentrations sufficient to protect the existing high aquatic life use designation in Plum Creek will not be maintained under the draft permit, and the City's existing discharge is already harming the aquatic life use designation in Plum Creek.

59. Discharges under the Draft Permit will not cause a lowering of water quality in Plum Creek by more than a de minimis extent. Existing uses of Plum Creek will be maintained and protected with the TP limits.

The draft permit will lower water quality in Plum Creek by more than a de minimis extent for more water quality constituents than just TP. And the phrasing of this finding of fact further highlights the Court's, TCEQ's, and the City's misapplication of the antidegradation rules and conflation of the Tier 1 and Tier 2 rules.

The draft permit will not only lower instream DO concentrations below the relevant 5 mg/L criteria set out to protect high aquatic life uses, but the draft permit will also consume over 100% of the assimilative capacity for instream DO in Plum Creek, a violation of Tier 2 and more than a

de minimis amount of degradation. PR-LR-1 at 17:6–17; 30 TAC § 307.7(b)(3)(A)(i); 30 T.A.C. § 307.5(b)(2); U.S. ENVIRONMENTAL PROTECTION AGENCY, MEMORANDUM: TIER 2 ANTIDEGRADATION REVIEWS AND SIGNIFICANCE THRESHOLDS 1 (2005). The draft permit will also consume at least 100% of Plum Creek's assimilative capacity for TP, degrading water quality in violation of the Tier 2 rule.

60. The Draft Permit has been prepared in accordance with the IPs to be consistent with the TSWQS.

The draft permit was not prepared consistent with the IPs as the standards reviewer for the draft permit deviated from the IPs in several respects. Tr. Vol. 2 at 88:20–22 (failing to follow page 63 of the IPs); Tr. Vol. 2 at 83:18–21 (doing no analysis to determine whether the recommended TP limit was adequate). Even if the standards reviewer for the draft permit acted in compliance with the IPs, as set out in the exception to finding of fact 34, the IPs are "guidance and not…a replacement to the rules." ED-JP-3 (IPs) at 0028.

Issue C; The draft permit should be altered to address the City of Kyle's historical wastewater system failures.

63. The City submitted its application to the ED on March 11, 2022; therefore, the compliance history period applicable to this Application is from September 1, 2016, to August 31, 2021.

As set out in finding of fact 62, the "compliance history period includes the five years prior to the date the permit application is received by the executive director." 30 T.A.C. § 60.1(b). While TCEQ does generally generate compliance histories on a fiscal year basis, 30 T.A.C. § 60.2(a), the Court's interpretation of 30 T.A.C. § 60.1(b) and post hoc rationalization of TCEQ using the incorrect compliance history period for evaluation of this draft permit, PFD at 80, fails to comport with TCEQ's interpretation of 30 T.A.C. § 60.1(b) and the plain language of the regulation. In guidance on compliance history reports, TCEQ explains that it follows the plain language of "five years prior to the date the permit application is received" by writing that "we use the current classification-that is, the one developed September 1-along with the compliance history for the five years immediately preceding the event."[2] So, the correct compliance history period applicable to the application for the draft permit started on March 11, 2022. TCEQ failed to follow 30 T.A.C. § 60 for the application and draft permit.

72. The City's compliance history should not alter the Draft Permit or result in permit denial.

Even with facility upgrades, the City of Kyle has violated limits on nitrogen, *E. coli*, and CBOD, violations which contribute to violations of TSWQS. PR-LR-1 at 24:13–19. The City also discharged sludge into Plum Creek. A-TS-1 at 6:8–22. And the City of Kyle violated the City's current TPDES permit during the last expansion of the facility, a fact that is particularly

[2] TCEQ, Compliance History Basics (last visited Oct. 29, 2024) https://www.tceq.texas.gov/compliance/enforcement/compliance-history/about.html.

concerning since the draft permit allows the City to expand the facility again. Tr. Vol. 1 at 20:6–22:1. There is nothing in the record to demonstrate that the City's next violation is not just around the corner as the City seeks to increase its responsibility and impact in Plum Creek against a backdrop of permit violations. TCEQ should add additional requirements to the permit or deny the draft permit. At the very least, TCEQ must go back and properly complete its homework with the correct compliance history period for the application and draft permit.

2. Conclusions of Law

> 8. The Draft Permit is protective of water quality, wildlife, and Protestant's members' and their families' health, in accordance with applicable regulations, including the TSWQS.

As set out in this document and Protestant's closing arguments, the draft permit is not protective of water quality, wildlife, and Protestant's members' and their families' health, in accordance with applicable regulations, including the TSWQS.

> 9. The Draft Permit complies with applicable antidegradation requirements and adequately protects existing uses.

As set out in this document and Protestant's closing arguments, the draft permit does not comply with applicable antidegradation requirements and does not protect existing uses.

> 10. The Draft Permit should not be altered or denied based on the City's compliance history.

As set out in this document and Protestant's closing arguments, the draft permit should be altered or denied based on the City's compliance history, and TCEQ failed to consider the compliance history for the applicable compliance period for the application and draft permit.

V. CONCLUSION

As a matter of state and federal law and policy the application and draft permit must be denied as the draft permit fails to protect the existing uses of the receiving waters, lower water quality by more than a *de minimis* amount, violate the TSWQS, and violate other applicable rules. Protestant also maintains that it was error for the Commissioners to not refer the issue of whether the applicant showed that it needed the requested volume within the five year permit term in the application.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on October 31, 2024, a true and correct copy of the above document has been provided to all parties of record via electronic mail, in accordance with applicable rules and agreements.

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ATTACHMENT A

SOAH Docket. 582-24-11454
TCEQ Docket No. 2023-1268-MWD

APPLICATION BY	§	**BEFORE THE STATE OFFICE**
CITY OF KYLE FOR	§	**OF**
TPDES PERMIT NO.	§	**ADMINISTRATIVE HEARINGS**
WQ0011041002	§	

PROTESTANT SAN MARCOS RIVER FOUNDATION'S CLOSING ARGUMENT

TABLE OF CONTENTS

To the Honorable Administrative Law Judges

Protestant San Marcos River Foundation respectfully submits the following summation of the relevant law and evidence presented at the contested case hearing and demonstrates that the Applicant City of Kyle failed to meet its burden of proof and show by a preponderance of the evidence that the permit sought by the City of Kyle may be approved by the Texas Commission on Environmental Quality (TCEQ) without violating the Texas Surface Water Quality Standards, Antidegradation Rules, and other TCEQ rules that all applicants must follow.

I. INTRODUCTION

The evidence is clear. The permit sought by the City of Kyle will not protect the "chemical, physical, and biological integrity" of Plum Creek and will degrade water quality. The draft permit proposed by TCEQ fails to meet the Tier 1 and Tier 2 antidegradation rules, fails to comply with all Texas Surface Water Quality Standards (TSWQS), and fails to protect wildlife. Further, the City of Kyle's compliance history raises questions about the City's ability to comply with the terms of the draft permit. As it stands, the draft permit must be denied based on these failures.

II. FACTS

In 2022, the City of Kyle applied for a major renewal and amendment for TPDES Permit WQ0011041002 to seek authorization from TCEQ to increase its permitted discharge to 12 million gallons of treated municipal sewage a day into Plum Creek. AR TAB D at 00003, 00014. In response to the City of Kyle's request, TCEQ issued a draft permit with an Interim Phase I permitting the discharge of up to 4.5 million gallons per day with effluent limits of 10 mg/L Carbonaceous Biochemical Oxygen Demand (CBOD), 15 mg/L Total Suspended Solids (TSS), and 2 mg/L Ammonia Nitrogen; and Interim II Phase of permitting the discharge of up to 9

million gallons per day with effluent limits of 7 mg/L CBOD, 12 mg/L TSS, 2 mg/L Ammonia Nitrogen, and .5 mg/L Total Phosphorus (TP); and a Final Phase permitting the discharge of 12 million gallons per day with effluent limits of 5 mg/L CBOD, 5 mg/L TSS, 2 mg/L Ammonia Nitrogen, and .5 mg/L TP. AR TAB C at 0002–04.

The San Marcos River Foundation (SMRF) submitted comments and a contested case hearing request raising concerns about the draft permit and the impact that the discharge would have on Plum Creek. AR TAB A at 00001. TCEQ granted SMRF's contested case hearing request and referred three issues to the State Office of Administrative Hearings: (A) whether the draft permit is protective of water quality, wildlife, and the requester's members and their families' health, in accordance with applicable regulations, including the Texas Surface Water Quality Standards; (B) whether the draft permit complies with applicable antidegradation requirements and adequately protects existing uses; and whether the draft permit should be altered or denied based on the Applicant's compliance history. *Id*. at 00002.

The hearing on the merits for the contested case hearing was held on July 9th and 10th before the Honorable Administrative Law Judges Katerina DeAngelo and Susan Rodriguez. Order Memorializing Preliminary Hearing, Adopting Procedural Schedule, and Setting Hearing on the Merits at 3–4. At the hearing on the merits, Protestant SMRF presented testimony from Dr. Jeffrey A. Back, Ph.D. and Dr. Lauren Ross, Ph.D., P.E. The City of Kyle presented testimony from Bryan Langley, Tim Samford, Tim Osting, and Bianca Whitaker. TCEQ's Executive Director presented testimony from Jeff Paull, Josi Robertson, and Sonia Bhuiya. *See* Transcript (Tr.) Volume (Vol.) 1 and 2. Given the large volume of documents and testimony presented at the hearing on the merits, SMRF offers a brief summary of each witness's testimony below.

A. Testimony of Dr. Jeffrey A. Back, Ph.D.

Dr. Jeffrey A. Back, Ph.D. is a research professor at Baylor University with expertise in aquatic science and studying the impacts of nutrient pollution on streams. PR-JB-1 (Dr. Back's Prefiled Testimony) at 0004–05. Dr. Back testified on behalf of SMRF and provided testimony and evidence on the effects of the draft permit on water quality and aquatic life. *Id*. at 0004:7–10. Considering the draft permit, chemical and biological data collected by Dr. Back, and the documents listed in PR-JB-3, Dr. Back summarized his opinion testifying that "The City of Kyle's wastewater discharge into Plum Creek will cause nitrogen and phosphorus concentrations to remain far above background concentrations. Thus, negative impacts influenced by high nutrient concentrations will remain and potentially extend further downstream. Most notably, at worst, Plum Creek will experience depressed nighttime oxygen concentrations and excessive algal growth, and at best, a proliferation of tolerant macroinvertebrates." PR-JB-1 at 0006:9–11, 0007:9–14.

Dr. Back based his opinion in part on water quality data and field observations that he made on August 1, 2023 and January 11 and February 28-29, 2024 upstream and downstream of the City of Kyle's outfall, the point where the municipal sewage discharge enters into Plum Creek. PR-JB-1 at 0008:3, Figure 1. Dr. Back collected samples for dissolved phosphorus, ammonia and nitrate + nitrite, total nitrogen, total phosphorus, periphyton, ash-free dry mass, tissue phosphorus, carbon and nitrogen stable isotopes, algal taxonomy, macroinvertebrates, and dissolved oxygen. *Id*. at 0009:2–7. Dr. Back took his water quality samples during a time period that represented the best-case scenario conditions for Plum Creek, outside of the time period when critical low flow conditions would be expected. Tr. Vol. 2 at 61:15–20, 62:21– pg. 64:25.

The results of Dr. Back's water quality sampling showed that in Waterleaf Park, the study site above the outfall, dissolved phosphorus concentrations were 6.38 µ/L with ammonia concentrations of 19.4 µ/L and NOx concentrations of 971 µ/L. PR-JB-1 at 0015, Table 2. These concentrations represent the background or baseline levels of those constituents in Plum Creek. *Id*. at 0015:11–12. Water quality samples taken at the outfall showed dissolved phosphorus concentrations of 3445 µ/L, ammonia concentrations of 102 µ/L, and NOx concentrations of 8155 µ/L. *Id*. at 0015, Table 2. These concentrations were similarly elevated at the first study site downstream of the outfall and were 2901 µ/L for dissolved phosphorus, 89 µ/L for ammonia, and 6812 µ/L for NOx. *Id*. Dr. Back also found the dissolved oxygen concentrations were lower and experienced a more precipitous drop during the night at the first study site downstream of the outfall when compared with the dissolved oxygen concentrations upstream of the outfall in Waterleaf Park. *Id*. at 0017, Figure 2. Specific conductivity was also much higher downstream of the outfall compared to Waterleaf Park. *Id*. at 0017, Figure 3. Dr. Back's macroinvertebrate sampling showed an intermediate aquatic life use designation at the first study site downstream of the outfall.[1] *Id*. at 0020:2–3. The aquatic life use designation in Waterleaf Park upstream of the outfall was limited since that stretch of Plum Creek had recently been dry and macroinvertebrates had not yet had a chance to recolonize the stretch. *Id*. at 0020:4–6.

In addition to taking water quality samples, Dr. Back also made observations about the physical conditions of Plum Creek upstream and downstream of the City of Kyle's outfall. PR-JB-1 at 0010:15–22. Upstream of the outfall, Plum Creek had clear water with limited algae and aquatic plant growth. *Id*. at 0010:15–17 At the outfall, Dr. Back observed low-moderate amounts

[1] The Aquatic Life Use Designation or ALUD serves as a general stream health indicator. PR-JB-1 at 0020.

of algae and a strong odor of effluent *id*. at 0010:17–19, and at the first site downstream of the outfall, Dr. Back observed moderate algae cover and a moderate odor of effluent. *Id*. at 0010:19–20. Dr. Back expected that the conditions below the outfall would continue to decline and that odors and increased algae would discourage recreation. *Id*. at 0022:5–7, 0023:5–7.

Dr. Back also discussed past studies on nutrient pollution that provide insight into the deleterious effects of the draft permit and current discharge on Plum Creek and lend support to his conclusion that the total phosphorus effluent limit in the draft permit must be reduced in all phases. PR-JB-1 at 0023:15–23, 0024:1–2, PR-JB-11, and PR-JB-12. In research conducted by Dr. Back for the Oklahoma v. Arkansas Supreme Court case, researchers found in a comprehensive study of 35 streams in Oklahoma that instream phosphorus concentrations over 35 µ/L would cause nuisance algal growth. Tr. Vol. 2 at 58:2–25. And in a study in the Brazos River Basin conducted by Dr. Back, he found that instream phosphorus concentrations from 18 to 30 µ/L initiated changes in the stream's fish and macroinvertebrate community. Tr. Vol. 2 at 59:8–25, 60:1–6. Dr. Back testified that he would expect the same patterns revealed in the studies in PR-JB-12 and PR-JB-11 to be present in Plum Creek as well. *Id*. at 60:7–10.

Dr. Back also explained more generally how changes in nutrient concentrations, like phosphorus and nitrogen interplay with a stream's assimilative capacity. Tr. Vol. 2 at 54:9–25, 55:1–4. He explained that when a stream goes from an oligotrophic, or nutrient poor, state to a mesotrophic, or moderate nutrient state, one would expect the stream's ability to assimilate more nutrients to decrease. *Id*. at 56:13–22. And similarly, when a stream goes from oligotrophic to eutrophic, the stream cannot assimilate any more nutrients. *Id*. at 57:1–6. These changes in the stream and reduction in assimilative capacity are also associated with shifts in the aquatic species one would expect to see. *Id*. at 57:14–21. Tying this concept into wastewater, Dr. Back explained

that "Because WWTP effluents typically contain higher nutrient concentrations than their receiving steams, the effluents add inorganic nutrients that can be used to increase algal and bacterial biomass. The excessive amounts of nutrients entering Plum Creek from the WWTP remove any nutrient limitation the algal and bacteria communities may have been experiencing. Hence, algal and bacterial growth can be expected to increase, especially in the warmer parts of the year." PR-JB-1 at 0020:20–0021:2.

B. Testimony of Dr. Lauren Ross, Ph.D., P.E.

Dr. Lauren Ross, Ph.D., P.E. is a civil and environmental engineer with expertise in many of the issues related to this case. PR-LR-1 (Dr. Ross' Prefiled Testimony) at 2:1–6. Dr. Ross testified on behalf of SMRF and provided testimony and evidence on the draft permit's failure to protect water quality, comply with the Texas Surface Water Quality standards, and prevent degradation, and on the City of Kyle's historical wastewater system failures. PR-LR-1 at 6:18–28. After her review of the documents relevant this case, Dr. Ross concluded that the lowering in dissolved oxygen concentrations and increases in nutrients in Plum Creek downstream of the City of Kyle outfall would produce more than de minimis water quality changes in Plum Creek in violation of the Tier 2 antidegradation standard. *Id*. at 9:22–25. However, the City of Kyle could improve the effluent limits in the draft permit for total phosphorus, dissolved oxygen, TSS, and *E. coli* to address and alleviate many of the issues that Plum Creek is currently experiencing. *See* PR-LR-1 at 11:22–15:21.

Dr. Ross testified that the draft permit will not meet the dissolved oxygen standards. PR-LR-1 25:21–25. Dr. Ross discovered that the minimum dissolved oxygen values from the calibrated QUAL-TX model run by TCEQ to predict instream dissolved oxygen concentrations as a result of the draft permit were lower than the values reported in TCEQ's Dissolved Oxygen

Modeling Permit Review Checklist and would violate the dissolved oxygen standards. PR-LR-1 at 17:6–17. Dr. Ross also explained that while the minimum dissolved oxygen concentrations in the model occurred above the outfall, it is still appropriate to consider the low values due to a phenomenon known as dispersion and the manner in which the discharge impacts dissolved oxygen concentrations upstream of the discharge. Tr. Vol. 2 at 37:7–10. For the Interim Phase 1 and Interim Phase 2 dissolved oxygen predictions, the dissolved oxygen concentrations, as predicted by TCEQ's calibrated QUAL-TX model fall below the standard required to protect a high aquatic life use. PR-LR-1 at 25:21–25.

Dr. Ross also testified that the calibrated QUAL-TX model used by TCEQ to predict instream dissolved oxygen for the draft permit was inadequate and did not accurately reflect the conditions in Plum Creek for the stream stretch that was modeled.[2] PR-LR-1 at 18:5–17. The data used to calibrate the QUAL-TX model was collected for two or three days in 1983 and 1987 and has not been updated to reflect the significant changes in the Plum Creek watershed like increased urban development and climate change. *Id*. In fact the data used to calibrate the QUAL-TX model was collected nearly 18 miles downstream from the discharge, a distance in which important parameters could be significantly different. PR-LR-1 at 18:21–29; Tr. Vol. 2 at 30:17–25, 32:2–11. And the stream cross section and velocity data presented by Tim Osting in A-TO-7 from near the outfall shows that important factors that predict re-aeration and transport of dissolved oxygen are different than the ones used in the waste load evaluation and calibrated model used by TCEQ. Tr. Vol. 2 at 37:19–39:11. Additionally, there is no justification or

[2] The QUAL-TX model is a one-dimensional, steady state water quality model derived from computer code written for the EPA. PR-LR-1 at 15:24–28.

analysis to set water temperatures in the calibrated model to 29.2°C instead of the default 30.5°C set out in TCEQ's IPs. PR-LR-1 at 19:5–12.

Use of the uncalibrated QUAL-TX model as described in "Methods for Analyzing Dissolved Oxygen in Freshwater Streams Using an Uncalibrated QUAL-TX Model" yields a prediction of instream dissolved oxygen concentrations of just above 4 mg/L for all phases of the draft permit. PR-LR-1 at 19:19–24, 20:12–27; Tr. Vol. 2 at 42:1–6. And the dissolved oxygen values predicted by the uncalibrated model are consistent with the SWQM data set out in A-TO-12. But no matter how you slice it, the low dissolved oxygen levels caused by the draft permit under both the calibrated and uncalibrated QUAL-TX models threaten aquatic life. PR-LR-1 at 21:12–13.

Dr. Ross also discussed the phosphorus pollution from the current discharge and draft permit in her testimony, testifying that the streams in the Texas Blackland Prairie ecoregion typically have naturally occurring phosphorus concentrations of 45 µ/L while the City of Kyle wastewater effluent currently contains 3,780 µ/L phosphorus. PR-LR-1 at 7:13–27. This represents an 84 times increase from the reference conditions in the Blackland Prairie streams; Interim Phase 2 and the Final Phase represent an 11 times increase from the reference conditions. *Id*.[3] Underscoring the concern for the large increase in total phosphorus caused by the current discharge and draft permit, Dr. Ross further testified that the Draft 2024 Texas Integrated Report – Sources of Impairments and Concerns identified screening level concerns for several parameters included total phosphorus and concerns for fish kill reports and for the microbenthic community, PR-LR-1 at 12:10–14, and Dr. Ross also testified that these have been concerns in

[3] The City of Kyle's exhibit A-TO-12 showed a similar extreme jump in phosphorus concentrations at and below the City of Kyle outfall.

the Texas Integrated Reports for at least the past six years. *Id*. at 12:19–26. It is reasonably achievable for the City of Kyle and TCEQ to address these issues associated with nutrient pollution and degradation by setting the total phosphorus limit in the draft permit lower for all phases, PR-LR-1 at 14:18–19, especially in light of other TPDES permits that have been able to achieve much lower concentrations. *Id*. at 13:15–14:19.

Dr. Ross also provided testimony on the City of Kyle's compliance history and noted several discrepancies between the compliance history that was included in the administrative record and the compliance history included as a backup document for TCEQ's consideration of the hearing requests for the draft permit. PR-LR-1 at 23:4–22. The compliance history set out in Exhibit PR-LR-17, includes written notices of violations, including "8 reported unauthorized discharges from the WWTPs collection system in the last 18 months." PR-LR-1 at 24:5–12. Such unauthorized discharges likely contribute to water quality degradation. The compliance history page 88 of PR-LR-17 also classifies both the City of Kyle and the City of Kyle WWTP as unsatisfactory. PR-LR-1 at 23: 14–15.

C. Testimony of Bryan Langley

Bryan Langley is the city manager for the City of Kyle, and he provided testimony on the City of Kyle's behalf. A-BL-1 (Mr. Langley's Prefiled Testimony) at 1:2–5. Mr. Langley does not have any experience operating a wastewater treatment plant, *id*. at 1:10–2:12, but he claimed that the City of Kyle would be able to comply with the draft permit. A-BL-1 at 8:9–10. Mr. Langley did not provide any other testimony relevant to the referred issues. *See* A-BL-1.

D. Testimony of Tim Samford

Tim Samford is the assistant director of water utilities and division of wastewater operations for the City of Kyle. A-TS-1 (Mr. Samford's Prefiled Testimony) at 1:5–6. As such,

he is familiar with the City of Kyle's compliance history and operations. *Id*. at 2:21–3:2. Mr. Samford testified that for the most part, the City of Kyle is discharging effluent that contains pollutant levels below what is required in the City's current TPDES permit. Mr. Samford testified that in 2022 TCEQ investigated an incident associated with a previous expansion of the City of Kyle's wastewater treatment plant where 'sludge' was discharge into Plum Creek. A-TS-1 at 6:8–22. TCEQ notified the City of Kyle that the wastewater treatment plant had an ongoing unauthorized discharge, A-TS-6 (Email from Devon Thomas) at 012, and Mr. Samford estimated that 6,000 gallons of 'solids' were spilled into Plum Creek. *Id*. (Email from Tim Samford) at 013. TCEQ let the City of Kyle know that it should expect to receive a Notice of Enforcement letter due to the incident. *Id*. (Email from Christopher Bost) at 022. Despite his prefiled testimony and exhibit A-TS-6, Mr. Samford was unable to answer questions about the nature of the sludge and claimed that "there was no sludge." Tr. Vol. 1 at 18:17–19:7.

Mr. Samford also testified that the City of Kyle continued to receive written notices of violations from TCEQ throughout 2021 and 2022 for unauthorized discharges and exceeding effluent limits in instances not related to the expansion of the wastewater treatment plant. Tr. Vol. 1 at 20:6–22:1. In short, Mr. Samford testified that violations continued even after the improvements to the wastewater treatment plant listed on pages 8 through 10 of his prefiled testimony. And while Mr. Samford was able to explain why the regulated entity classification (the classification for the wastewater treatment plant) was unsatisfactory for the compliance history set out at PR-LR-17 page 88, he provided no explanation to excuse the owner/operator classification (the classification specific to the City of Kyle as an operator) which was also unsatisfactory. A-TS-1 at 8:1–10.

E. Testimony of Tim Osting

Mr. Osting is an engineer, and he testified on behalf of the City of Kyle. A-TO-1 at 1:5, 6:9–10. Mr. Osting provided testimony on the calibrated QUAL-TX model that TCEQ used to assess the draft permit and total phosphorus. The remainder of Mr. Osting's analysis was limited to comparing Plum Creek's condition below the outfall under the current discharge with the condition under the draft permit without comparison to the naturally occurring conditions in Plum Creek.

Mr. Osting testified that the calibrated QUAL-TX model run by TCEQ was sufficient to represent the impact to DO in Plum Creek of the proposed discharge. A-TO-1 at 26:20–22. But Mr. Osting did not do any analysis to see whether the temperatures measured at the water quality monitoring station used to calibrate the model were statistically significantly different from the temperatures measured closest to the outfall. Tr. Vol. 1 at 42:14–19. His analysis also did not look at the temperature during critical conditions. Tr. Vol. 1 at 43:19–44:8. Mr. Osting did not perform any statistical analysis to determine whether the measurements that he took of Plum Creek in A-TO-7 were statistically significantly different or similar. Tr. Vol. 2 at 146:22–147:1–2.[4] Mr. Osting testified that he ran the calibrated TCEQ QUAL-TX with 50 meter elements to demonstrate the impact that element size and resolution has on the results. A-TO-1 at 17:19–18:2. Even with the calibrated QUAL-TX model run with 50 meter elements at 12 million gallons per day, the model output still shows a precipitous drop in dissolved oxygen concentrations upstream of the outfall caused by the discharge, A-TO-11, and interestingly he

[4] Dr. Ross also testified about A-TO-7 saying that "I think that the comparison of the actual stream cross-section velocities with the QUAL-TX 4.5 velocity makes the point that that number doesn't do a good job of characterizing . . . the TCEQ QUAL-TX model isn't accurately capturing the actual stream depths and velocities downstream from the Kyle outfall." Tr. Vol. 2 at 37:19–39:11.

did not include the output for a flow of 4.5 million gallons per day or 9 million gallons per day. *See* A-TO-10.

Notwithstanding Mr. Osting's models and sonde data taken outside of low flow critical conditions and water temperatures that will be discussed below, the TCEQ Surface Water Quality Monitoring data that Mr. Osting presented in A-TO-12 shows that the dissolved oxygen concentrations in Plum Creek near the outfall and at the station right after the outfall violate the 5.0 mg/L dissolved oxygen criteria. The 25th percentile for dissolved oxygen concentrations is below 4 mg/L at the City of Kyle outfall with values dipping below 2 mg/L. A-TO-12 at 1. And the bottom whisker for the station right after the outfall is barely above 4 mg/L and has values around 2 mg/L as well. *Id*. And the plots of data on the next page that show dissolved oxygen concentrations for just the summer months have similarly low values for dissolved oxygen concentrations. *Id*. at 2.

When asked about exhibit PR-LR-4, EPA's Information Supporting the Development of State and Tribal Nutrient Criteria Rivers and Streams in Nutrient Ecoregion V, Mr. Osting appeared confused about the role that this document plays stating that "EPA does not make recommendations for water quality criteria." A-TO-1 at 29:17–18. However, page iii of that document reads "These criteria provide EPA's recommendations to States and authorized Tribes for use in establishing their water quality standards" and page iv recommends, as the second choice, that states adopt the EPA's water quality criteria for nutrients. He also stated that "Applying the reference concentrations as criteria concentrations is not what the EPA describes." A-TO-1 at 29:20–21. In contrast, Dr. Ross did not recommend this approach; instead, Dr. Ross cited to the reference conditions to demonstrate the extreme increase in phosphorus and nitrogen concentrations in Plum Creek caused by the City of Kyle's current discharge and the draft

permit. PR-LR-1 at 7:13–27. The IPs also do not prohibit TCEQ from considering documents like the one in PR-LR-4 either. A-TO-1 at 30:1–5, ED-JP-3 at 52.

Mr. Osting testified that he based his opinion about the antidegradation standards as they apply in this case on the decrease in phosphorus loading under the draft permit, Tr. Vol. 1 at 28:20–25,[5] although calculating pollutant loading is complex and Mr. Osting provided no information to demonstrate his calculations. Mr. Osting instead appeared to depend on percent changes in concentrations, explaining that total phosphorus concentrations would be reduced under the draft permit, by 77% for interim phase 1, 54% for interim phase 2, and 40% for the final phase. A-TO-1 at 21:3–15. To make these calculations, Mr. Osting relied on an equation from TCEQ's IPs, A-TO-13, that was created to assess main pool effects in reservoirs with nutrient criteria, ED-JP-3 at 0046–47, and Mr. Osting did not attempt to explain why he chose to use an equation inapplicable to the draft permit and based on a model for lakes. Tr. Vol. 1 at 29:12–20, 44:18–20; *see* A-TO-1. Mr. Osting's opinion was also confined to comparing the current City of Kyle's phosphorus pollution with the phosphorus pollution under the draft permit without regard to the naturally occurring, or baseline predischarge, phosphorus concentrations in Plum Creek. *See generally* A-TO-1. Perhaps the most alarming aspect of Mr. Osting's testimony on phosphorus concentrations, however, was his testimony and exhibit that phosphorus pollution would be reduced in all phases of the draft permit compared to the City of Kyle's current discharge and insistence that the draft permit contained a .5mg/L limit on total phosphorus for all phases when there is no total phosphorus limit in the first phase of the draft permit. Tr. Vol. 1 at 44:21–47:9, AR Tab C at 0002, Tr. Vol. 2 at 39:12–40:25.

[5] He also depended on observations that he made of Plum Creek outside of critical conditions and without demonstrating that he had expertise to assess algal conditions in Plum Creek. A-TO-1 at 29:3–4.

F. Testimony of Bianca Whitaker

Bianca Whitaker is a managing scientist at Arroyo Environmental Consultants, LLC, and Ms. Whitaker testified on behalf of the City of Kyle. A-BW-1 (Ms. Whitaker's Prefiled Testimony) at 1:3, 4:13. Ms. Whitaker testified that she conducted an antidegradation review and stream assessment to form the bases of her opinion that the draft permit will protect species and not result in degradation. *Id*. 7:1, 16, 30:16–19. Ms. Whitaker also relied on the information in Mr. Osting's A-TO-13 on total phosphorus, which contained inaccurate information and relied on an equation that does not apply. A-BW-1 at 28:3–6, 21–18, Tr. Vol. 1 at 57:2–7.

Ms. Whitaker testified that a "stream assessment is a biological and habitat assessment developed by the Surface Water Quality Monitoring Program (SWQM) of the TCEQ." A-BW-1 at 10:15–16, Tr. Vol. 1 at 65:15–23. And Ms. Whitaker testified that she conducted a "stream assessment per SWQM protocol." Tr. Vol. 1 at 67:19–20. But "stream assessment" is not a type or mode of analysis set out in the SWQM manual. *See generally* PR-CE-1 (SWQM Manual). The types of analysis that one could conduct based on the SWQMs are an (1) ALM, (2) aquatic life assessment, (3) receiving water assessment, (4) use attainability analyses, PR-CE-1 at 2-5–2-8, and Ms. Whitaker testified that she did not conduct any of these. Tr. Vol. 1 66:24–67:20. The receiving water assessment can be used to assess the impacts of an existing wastewater treatment plant but requires data be collected upstream of the existing discharge. PR-CE-1 at 2-7. And the data for Ms. Whitaker's "stream assessment" was collected downstream of the existing City of Kyle discharge. Tr. Vol. 1 at 65:6–9.

Ms. Whitaker still testified that she considers herself to be an expert in the SWQM manual, Tr. Vol. 1 at 79:4–7. Ms. Whitaker also testified that she followed the procedures in the SWQM manual, that there was no reason to deviate from the procedures set out in the manual,

and that in order to get valid results the SWQM procedures must be followed. Tr. Vol. 1 at 79:17–80:7, A-BW-1 at 11:3. But Ms. Whitaker deviated from the procedures by failing to record required information in her log book and failing to take samples in the manner prescribed by the SWQM.

Page 2-4 of the SWQM Manual (PR-CE-1) sets out "Other Monitoring Requirements" which includes a list of information that is to be recorded in a bound field data logbook. Ms. Whitaker did not record all of the information that the SWQM manual requires. Tr. Vol. 1 at 82:4–83:2, PR-CE-2, PR-CE-3, PR-CE-4 (Ms. Whitaker's field notes and log book). Page 5-4 of the SWQM manual states that benthic macroinvertebrate samples should be taken from a single habitat type within a stream reach and that the overall objective is to collect the sample from optimal benthic macroinvertebrate habitat with riffles being the preferred habitat type. But Ms. Whitaker's samples were taken in different habitat types, with only one in a riffle. PR-CE-3. And for sampling benthic algae, the SWQM manual says to "establish four transects across the stream in riffle, run, *or* glide habitats, in order of preference, avoiding pools if possible." PR-CE-1 at 7-5 (emphasis added).[6] However, Ms. Whitaker's samples, like her benthic macroinvertebrate samples, were taken in several habitat types, including a pool. PR-CE-3; Tr. Vol. 1 at 88:21–25. Ms. Whitaker's samples were also not taken during the critical period where one would expect minimum streamflow, maximum temperatures, and minimum dissolved oxygen to give a full picture of the degradation in Plum Creek. PR-CE-1 at 2-1; PR-CE-3. This includes Ms.

[6] While Ms. Whitaker herself failed to follow the SWQM manual when taking her samples and criticized Dr. Back for not following the procedures. Dr. Back followed the procedures that Ms. Whitaker claimed Dr. Back did not. Tr. Vol. 1 at 80:8–88:25.

Whitaker's dissolved oxygen sonde which was deployed when water temperatures were at just 82°F. A-TO-9.

Ms. Whitaker also testified that she conducted an antidegradation review. A-BW-1 at 22:22–23:9. To do this, Ms. Whitaker claimed that she collected scientific literature that would show the impact of dissolved oxygen or ammonia on the fish that she found in Plum Creek, and Ms. Whitaker found that the fish species found would not be impacted by the draft permit. Tr. Vol. 1 at 68:7–17. Ms. Whitaker did not document the methods or results for her antidegradation review or fish species impact analysis, leaving this Court and SMRF to guess at exactly how she came up with her comparisons. Tr. Vol. 1 at 68:18–25.[7] Ms. Whitaker's testimony also jumped immediately to the conclusion that because the fish present, based on her 'analysis' would not be impacted by lower dissolved oxygen concentrations or ammonia from the draft permit then the draft permit was protective of the biological communities and fish in Plum Creek, A-BW-1 at 27:4–6, and wholly failed to consider the absence of more sensitive fish or lower relative abundance of sensitive fish as being indicative that the discharge is already having an impact on Plum Creek.[8]

Ms. Whitaker also based her opinions on her knowledge of TCEQ's antidegradation policy, A-BW-1 at 23:15, and claimed to have an "encompassing familiarity" with the Texas

[7] This lack of documentation is a hallmark of unreliable expert testimony. *Zenith Elecs. Corp. v. WH-TV Broad. Corp.*, 395 F.3d 416, 419 (7th Cir. 2005) ("An expert must offer good reason to think that his approach produces an accurate estimate using professional methods, and this estimate must be testable. Someone else using the same data and methods must be able to replicate the result."); *United States v. Hebshie*, 754 F.Supp. 2d 89, 125 (D. Mass. 2010) ("Documentation is necessary to test a hypothesis; in fact, reproducibility is the sine qua non of 'science.'").

[8] An expert's opinion is not reliable when "there is simply too great an analytical gap between the data and the opinion proffered. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997).

Water Code and Texas Administrative Code. A-BW-1 at 3:21–22. But Ms. Whitaker's testimony consistently conflated the Tier 1 and Tier 2 antidegradation rules. *See e.g*. A-BW-1 at 24:22–23; Tr. Vol. 1 at 74:15–19, 75:18–22, 76:5–14 ("if these things are not impacted…then [the] de minimis limit would not have been reached"). For example, Ms. Whitaker testified that to meet the Tier 2 standard, the draft permit must not lower water quality to the point where biological organisms will be adversely affected. A-BW-1 at 24:10–16. That, however, is the Tier 1 standard. 30 T.A.C. § 307.5(b)(1). Ms. Whitaker also testified that de minimis is defined in TCEQ's rules. Tr. Vol. 1 at 76:5–7. It is not. 30 T.A.C. § 307.5(b)(2).

Ms. Whitaker also equated the term de minimis with assimilative capacity. A-BW-1 at 29:1–2. And while the concept of assimilative capacity is related to the Tier 2 analysis, her interpretation does not comport with the plain meaning of de minimis or EPA guidance. *Supra* Section III. In short, Ms. Whitaker's testimony is both illogical and inconsistent with the plain language of the rules. Under Whitaker's interpretation, water quality must be lowered to the point of degradation, or a noticeable extent, and the water body's assimilative capacity consumed in order to conclude that the Tier 2 rule was violated. *See* Tr. Vol. 2 at 70:25–2. An interpretation at odds with the plain language of the rules.

G. Testimony of Jeff Paull

Jeff Paull is an aquatic scientist at TCEQ. ED-JP-1 (Mr. Paull's Prefiled Testimony) at 0003:9. Mr. Paull conducted the standards implementation review for the draft permit. ED-JP-1 at 0004:8. Mr. Paull concluded that neither antidegradation rule would be violated by the draft permit, and that the Texas Surface Water Quality Standards would be met. *Id*. at 0005:23–31.

Mr. Paull testified that the total phosphorus limit he recommended for the draft permit was based on the size of the discharge and general recommendations of the IPs. Tr. Vol. 2 at

83:18–21. His analysis for the draft permit and phosphorus wholly consisted of his initial screening sheet and applying the effluent flow based total phosphorus recommendation from the IPs. Tr. Vol. 2 at 88:9–89:3.[9]

Mr. Paull failed to consider many important factors in his analysis and recommendations for the draft permit. Mr. Paull testified that he does not consider background concentrations or water quality constituents during his analysis to ensure consistency with the IPs. ED-JP-1 at 0010:20; Tr. Vol. 2 at 88:20–22. But the IPs direct Mr. Paull to compare the effect of a proposed discharge to baseline water quality conditions. ED-JP-3 at 0079. Mr. Paull also testified that he did not consider background levels of phosphorus in Plum Creek. Tr. Vol. 1 at 80:4–7. Mr. Paull did not consider other factors as well, including peer reviewed scientific literature or how nutrient conditions have changed as a result of the City's current discharge, Tr. Vol. 1 at 77:23–80:22, even though Mr. Paull is permitted to consider such sources of information under the IPs. ED-JP-3 at 0068; Tr. Vol. 2 81:21–82:15. Further the aerial imagery that Mr. Paull used for assessing water clarity during the initial screening that he conducted was outside of critical conditions, and Mr. Paull did not know when the imagery he used for determining shading was taken. The time of year might heavily influence his conclusions for each factor, and Mr. Paull should have considered this in his assessment. Mr. Paull also did not know which time of year he conducted his site visit. Tr. Vol. 2 at 111:16 at 112:23.

Mr. Paull also demonstrated that he considers the Tier 1 and Tier 2 antidegradation rule to be the same; in order for the Tier 2 rule for total phosphorus to be violated, a water quality

[9] An expert's opinion is not reliable when "there is simply too great an analytical gap between the data and the opinion proffered, *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997), and in this case Mr. Paull jumped from a recommendation for a total phosphorus limit in the IPs to the conclusion that the Texas Surface Water Quality Standards and antidegradation rules would be met with no analysis or thought to bridge the gap.

standard associated with nutrients would need to be violated. Tr. Vol.2 at 87:11–13. Mr. Paull also testified that he did not recommend a total phosphorus limit for interim phase 1 of the draft permit because he was only looking at new and expanding discharges, Tr. Vol. 2 at 109:17–23, but the IPs don't require an existing discharge to be expanding in order to receive an antidegradation analysis and there is nothing in the IPs exempting all phases of this draft permit from an antidegradation analysis. ED-JP-3 at 0079.

Mr. Paull testified that to determine whether the draft permit met the Tier 1 and Tier 2 antidegradation rule, he relied on the dissolved oxygen modeler to make the determination. Tr. Vol. 2 at 71:24–25. Mr. Paull did not do any analysis to determine if the dissolved oxygen criteria would be met or whether the Tier 1 or Tier 2 rule would be met for the draft permit. Tr. Vol. 2 at 89:17–23. Mr. Paull did not consider whether the draft permit would meet applicable aesthetic requirements. *Id*. at 90:11–91:4.

H. Testimony of Josi Robertson

Josie Robertson is a dissolved oxygen modeler for TCEQ. ED-JR-1 (Ms. Robertson's Prefiled Testimony) at 0304:10. Ms. Robertson testified that she does not have an opinion about whether the draft permit complies with the antidegradation requirements, ED-JR-1 at 328:6–8; Tr. Vol. 2 at 120:14–17, and Ms. Robertson's analysis, opinions, and conclusions were limited to whether instream dissolved oxygen concentrations would be maintained at 5.0 mg/L. Tr. Vol. 2 at 12:1–25. Ms. Robertson did not consider whether the site-specific parameters in the calibrated QUAL-TX model that she used to predict instream dissolved oxygen concentrations under the draft permit were consistent with the stream reach of Plum Creek that she modeled. Tr. Vol. 2 at 125:4–8. Ms. Robertson also determined that mixing zones, that extend upstream and downstream and where dissolved oxygen criteria apply at the edges, applied to the draft permit.

Tr. Vol. 2 at 118:9–21. Ms. Robertson concluded that the dissolved oxygen criteria of 5 mg/L would be met even though the values predicted by her model were below 5 mg/L by choosing to rely on only the downstream outputs from the QUAL-TX model that she used. ED-JR-1 at 0323:3–11.

I. Testimony of Sonia Bhuiya

Sonia Bhuiya is a permit coordinator for the Municipal Permits Team. ED-SB-1 (Ms. Bhuiya's Prefiled Testimony) at 0881:10–11. Ms. Bhuiya that she used a compliance history from September 1, 2016 to August 31, 2021 to reflect the five years of compliance history prior to the dated that TCEQ's executive director received the permit application. *Id*. at 0881:2–7. But the application was signed on March 9, 2022. AR Tab D at 00014, 00044, 00133. Ms. Bhuiya provided no explanation in her testimony of how the executive director could have received the permit application seven months before it was completed and signed. *See* ED-SB-1. Ms. Bhuiya also seemed confused about whether she made any recommendations based on the compliance history, answering "no" to the question "did you make recommendations based of the compliance history" before stating that "I just gave my recommendation." Tr. Vol. 2 at 129:9–12. She seemed equally confused about what factors she considered for the compliance history, responding that she "gave the information from the other team." *Id*. at 129:20. Even when asked questions to clarify what went into her analysis that the draft permit should not be altered or denied based on the City of Kyle's compliance history, ED-SB-1 at 0882:8–10, Ms. Bhuiya was unable to explain what she considered or if she had even made a recommendation. Tr. Vol. 2 at 129.

III. THE CLEAN WATER ACT AND ANTIDEGRADATION RULES

Congress enacted the federal Clean Water Act (CWA) to "restore and *maintain* the chemical, physical, and biological integrity of the Nation's waters" and set a goal to eliminate wastewater discharges by 1985. 33 U.S.C. § 1251(a) (emphasis added). To meeting this goal, the CWA requires a permit for "any discharge." 33 U.S.C. § 1341(a)(1). Accordingly, the CWA established a permitting system to regulate discharges of pollutants into waters of the United States through the National Pollution Discharge Elimination System (NPDES). *Id*. §1341. While EPA initially issued NPDES permits, EPA delegated the authority to administer and enforce the NPDES program in 1998 through the Texas Pollution Discharge Elimination System (TPDES) program to the State of Texas and TCEQ. 63 Fed. Reg. 51,164 (Sept. 24, 1998); *see also* Tex. Water Code § 26.027.

When administering the TPDES program, TCEQ must ensure compliance with the CWA, 33 U.S.C. § 1342(b), and must adopt standards that are at least as stringent as those established in the CWA and EPA's CWA regulations. 40 C.F.R. § 123.35; *Pub. Util. Com. v. Gulf States Utils. Co.*, 809 S.W.2d 201, 204 n.3, 208 (Tex. 1991). Among the required standards that TCEQ must adopt are "water-quality standards" for all waterbodies within Texas. *See* 33 U.S.C. § 1313. The water quality standards adopted by TCEQ are the mechanism by which TPDES permits will protect and maintain water uses and water quality, and they must include three components: (1) designated uses for each waterbody, such as recreation, aquatic life habitat, or public water supply; (2) specific criteria necessary to protect those designated uses; and (3) an anti-degradation policy designed to protect existing uses and preserve the present condition of the waters. *Id*. §§ 1313(a), (c)(2)(A), (d)(4)(B); 1342(o)(3); 40 C.F.R. § 131.12.

Under TCEQ's permitting authority, the agency codified the Texas Surface Water Quality Standards (TSWQS) at Chapter 307 of TCEQ's rules. 30 T.A.C. §§ 307.1-307.10. The standards divide Texas' major waterways into segments with assigned uses that include numeric and narrative criteria designed to protect those assigned uses. *Id*. §§ 307.10, 307.4, 307.7. For example, TCEQ established numerical standards for dissolved oxygen concentrations to support existing aquatic life uses and requires that instream dissolved oxygen mean concentrations be maintained at 5.0 mg/L to support high aquatic life use designation. *Id*. § 307.7(b)(3)(A)(i). The TSWQS also prohibit nutrient pollution from causing excessive growth of aquatic and impairing existing uses. *Id*. § 307.4(e).

The aforementioned water quality standards and TPDES permits are created and issued against the backdrop of EPA's Antidegradation Policy. 40 Fed. Reg. 55,334, 55,336 (Nov. 28, 1975); 48 Fed. Reg. 51,400 (Nov. 8, 1983); 40 C.F.R. § 131.12; 33 U.S.C. § 1313(d)(4)(B) (requiring compliance with EPA's antidegradation rule). Although sometimes referred to as a policy, this rule was promulgated to provide special protection for high quality waters and protects against the lowering of water quality in waters with quality exceeding (cleaner than) the standards necessary to protect aquatic life and contact recreation uses, also known as the fishable/swimmable standard, 48 Fed. Reg. at 51,403; the antidegradation policy contains substantive standards that must be met. EPA described the relationship between water quality standards and the antidegradation rules writing "designated uses establish water quality goals for the water body, water quality criteria define the minimum conditions necessary to achieve the goals and an antidegradation policy specifies the framework to be used in making decisions regarding changes in water quality." 63 Fed. Reg. 36741 at 36779–80 (July 7, 1998).

EPA's antidegradation rule provides in pertinent part:

(a) The State shall develop and adopt a statewide anti-degradation policy, [which] shall, at a minimum, be consistent with the following:

(1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected

(2) Where the quality of the waters exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, *that quality shall be maintained and protected* unless the state finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully.

40 C.F.R. § 131.12 (emphasis added).

TCEQ's antidegradation rule provides:

(b) Anti-degradation policy. In accordance with the Texas Water Code, § 26.003, the following provisions establish the anti-degradation policy of the TCEQ.

(1) *Tier 1. Existing uses and water quality sufficient to protect those existing uses must be maintained*. Categories of existing uses are the same as for designated uses, as defined in § 307.7 of this title (relating to Site-Specific Uses and Criteria).

(2) *Tier 2. No activities subject to regulatory action that would cause degradation of waters that exceed fishable/swimmable quality are allowed* unless it can be shown to the TCEQ's satisfaction that the lowering of water quality is necessary for important economic or social development. *Degradation is defined as a lowering of water quality by more than a de minimis extent*, but not to the extent that an existing use is impaired. Water quality sufficient to protect existing uses must be maintained. Fishable/swimmable waters are defined as waters that have quality sufficient to support propagation of indigenous fish, shellfish, terrestrial life, and recreation in and on the water.

30 T.A.C. § 307.5 (emphasis added).

Thus, "Tier 1" review refers to the first provision in the EPA and TCEQ rules and applies to all water bodies and prohibits impairment of designated water uses while "Tier 2" review applies only to waters that exceed water quality necessary to protect aquatic life and contact

recreation uses and prohibits the degradation of water quality. TCEQ's antidegradation rule mirrors that of the EPA for the most part with the notable difference in TCEQ's Tier 2 rule that water quality must not be lowered more than a *de minimis* amount. *Id*. Even with this difference in mind, TCEQ must still administer the TPDES program consistent with the CWA and EPA rules. 33 U.S.C. § 1342(b); 40 C.F.R. § 123.35.

While the antidegradation policy, as a whole, is designed to fulfill the CWA's purpose of maintaining the chemical, physical, and biological integrity of the Nation's waters, the Tier 2 rule is designed to fulfill this purpose by protecting the assimilative capacity of a waterbody. U.S. ENVIRONMENTAL PROTECTION AGENCY, MEMORANDUM: TIER 2 ANTIDEGRADATION REVIEWS AND SIGNIFICANCE THRESHOLDS 1 (2005) [hereinafter EPA Memo].[10] The Tier 2 rule protects "the difference between the applicable water quality criterion for a pollutant parameter and the ambient water quality for the pollutant parameter where it is better than the criterion." *Id*. While the EPA gives states discretion when implementing the Tier 2 rule, the agency has determined that new discharges should not consume more than 10% of a water body's assimilative capacity for a given water quality parameter to avoid significant degradation of water quality, *id*. at 2, and "such activities as new discharges or expansion of existing facilities would presumably lower water quality and would not be permissible." U.S. ENVIRONMENTAL PROTECTION AGENCY, WATER QUALITY STANDARDS HANDBOOK: CHAPTER 4: ANTIDEGRADATION 9 (2012) [hereinafter EPA Handbook].[11] Courts reviewing EPA approval of state antidegradation rules have accordingly held that in order to be consistent with the Tier 2

[10] A copy of this memo can be found at https://www.epa.gov/sites/default/files/2014-10/documents/tier2.pdf.

[11] A copy of this document can be found at https://www.epa.gov/sites/default/files/2014-10/documents/handbook-chapter4.pdf.

rule, discharges may not consume more than 10% of a water body's assimilative capacity and still be considered a de minimis lowering of water quality. *Ky. Waterways Alliance v. Johnson*, 540 F.3d 466, 486 (6th Cir. 2008).

Such a framework for understanding the requirements of Tier 2 and the mandate that water quality not be lowered by more than a de minimis extent, 30 T.A.C. § 307.5(b)(2), is consistent with the plain meaning of de minimis. The standard dictionary definition of de minimis is "trifling; too trivial or minor to merit consideration, especially in law." Oxford American Dictionary (3d ed. 2010). Similarly, Black's Law Dictionary defines de minimis as "of a trifling consequence and a matter that is so small that the court does not wish to even consider it." Black's Law Dictionary (2nd ed. 1910). Because there is no regulatory definition or interpretation, this common, ordinary meaning of de minimis applies. *Texas Workforce Comm'n v. Wichita Cnty.*, 548 S.W. 3d 489, 492 (Tex. 2018). And while there may be instances that where a discharge must consume less than 10% of a water body's assimilative capacity in order to be considered de minimis or of no consequence, the outer limit of what may be considered a de minimis or trifling lowering of water quality is certainly consumption of 10% of a water body's assimilative capacity for a given water quality parameter. *See Ky. Waterways Alliance*, 549 F.3d at 486.

The concept of assimilative capacity is also baked into TCEQ's IPs, the guidance document TCEQ uses when assessing a proposed TPDES permit. The IPs state that "the effect of a proposed discharge is compared to baseline water quality conditions," ED-JP-3 (TCEQ IPs) at 0079, which directly encompasses the definition of assimilative capacity for purposes of the Tier 2 rule set out by the EPA. EPA Memo at 1. The IPs also set out that for the Tier 2 analysis for new discharges, "discharges that use less than 10% of the assimilative capacity of the water body

at the edge of the mixing zone" are usually not considered to cause degradation, while those that "use 10% or greater of the assimilative capacity" will receive further evaluation, and the IPs provide a mathematical equation as a screening procedure to determine consumption of assimilative capacity for certain parameters. ED-JP-3 at 0080. And for existing discharges the IPs direct TCEQ to examine the percentage of pollution loading, a part of analyzing assimilative capacity. *Id.* at 0079. The examples set out in the IPs of when degradation is likely or unlikely to occur directly encompass the concept of assimilative capacity as well. *Id*. at 0081–82.

In addition to its function of maintaining water quality in the Nation's waters, the Tier 2 rule's focus on preserving assimilative capacity is important to avoid collapsing the Tier 1 and Tier 2 standards and rending the requirement that water quality not be lowered a nullity. As EPA has explained in the past, "it is important that the definition of degradation does not imply that uses must be adversely affected before a proposed change in water quality triggers an antidegradation review." *Greater Yellowstone Coal. v. United States EPA*, No. 4:12-CV-60-BLW, 2013 WL 1760286, at *3 (D. Idaho Apr. 24, 2013); *accord Columbus & Franklin Cnty. v. Shank*, 600 N.E. 2d 1042, 1055 (Ohio 1992) (finding that equating the term water quality with designated uses would render the Tier 2 rule redundant). And the Tenth Circuit has similarly set out the importance of maintaining the distinctions between the Tier 2 and other water quality standards:

> The "Anti-Degradation Policy [is] designed to provide additional protection beyond that conferred by the numeric limits of other water quality standards. Interpreting these regulations as merely prohibiting violations of otherwise applicable [water quality standards] would render them a nullity because, as we have seen, [water quality standards] may not be contravened in any waters, regardless of whether these additional regulations apply." *Oklahoma v. EPA*, 908 F.2d 595, 618–19 (10th Cir. 1990) rev'd on other grounds.

So, the Tier 2 rule is a more stringent standard than the Tier 1 rule which only requires the maintenance of existing designated uses, and the Tier 2 rule protects water quality from degradation and protects the assimilative capacity of a water body for a given water quality parameter.

IV. ARGUMENT

A. The draft permit fails to comply with applicable antidegradation requirements (Issue B).

1. The draft permit fails to meet the Tier 2 antidegradation rule.

The draft permit will lower water quality by more than a de minimis extent, particularly for the water quality parameters of total phosphorus and dissolved oxygen. To refresh, the Tier 2 antidegradation rule states that "no activities subject to regulatory action that would cause degradation of waters that exceed fishable/swimmable quality are allowed unless it can be shown to the TCEQ's satisfaction that the lowering of water quality is necessary for important economic or social development. Degradation is defined as a lowering of water quality by more than a de minimis extent, but not to the extent that an existing use is impaired. Water quality sufficient to protect existing uses must be maintained. Fishable/swimmable waters are defined as waters that have quality sufficient to support propagation of indigenous fish, shellfish, terrestrial life, and recreation in and on the water." 30 T.A.C. § 307.5(b)(2).

To comply with the Tier 2 rule, a discharge must not consume more than 10% of a water body's assimilative capacity for a give water quality parameter. EPA Memo at 2. Any analysis for the Tier 2 rule that is limited to inquiring whether an existing use will be impaired or other water quality standard will be violated impermissibly conflates the Tier 1 and Tier 2 standard and renders the Tier 2 rule meaningless, 30 T.A.C. § 307.5(b), and nothing in the TSWQS is to be construed as superseding the requirements of the antidegradation rules. 30 T.A.C. § 307.4(k). The Tier 2 rule's reference to "not to the extent that an existing use is impaired" only applies in extraordinary circumstances and when TCEQ and an applicant have gone through the process of

determining whether lowering water quality is necessary for important economic or social development. EPA Handbook at 9.

To apply the Tier 2 rule to the draft permit, there are four key starting points. First, there is no dispute that the Tier 2 standard applies to the draft permit. ED-JP-1 at 0012:15–17; A-BW-1 at 20:23; PR-LR-1 at 9:22–25. Second, neither the City of Kyle nor TCEQ presented any evidence to show that "the lowering of water quality is necessary for important economic or social development," nor did the draft permit go through a public input process around such a finding. PR-LR-1 at 11:10–14. Thus, the City of Kyle's case must rest on showing that the draft permit will not cause degradation of water quality in Plum Creek. Third, a violation of the Tier 2 standard occurs even when there is no impairment of an existing use. Fourth, there is no dispute that the draft permit allows for the discharge of municipal sewage containing pollutants that will consume 100% or more of the assimilative capacity for dissolved oxygen in Plum Creek, PR-JB-1 at 14 Figure 2; PR-LR-1 at 17:6–17, and that interim phase 1 increases phosphorus concentrations to levels 540 times greater than baseline concentrations and that the interim phase 2 and final phase increase phosphorus concentrations to 78 times greater than baseline conditions. PR-JB-1 at 12 Table 2. From these starting points, the analysis continues to the individual water quality parameters impacted by the draft permit.

a. The draft permit will lower water quality by more than a de minimis extent for total phosphorus.

The undisputed evidence in the record shows that phosphorus concentrations in Plum Creek, unimpacted by the draft permit are naturally around 6.38 µ/L, PR-JB-1 at 12, Table 2; A-TO-12. This is on the low side of what is consistent with streams in Ecoregion 5 and subecoregion 32. These naturally occurring low concentrations of phosphorus places Plum Creek in the category of being an oligotrophic stream. PR-LR-4 at 22, Table 4. On the other hand,

phosphorus concentrations under the current City of Kyle discharge and interim phase 1 of the draft permit are around 3445 µ/L to 3780 µ/L. PR-JB-1 at 12, Table 2; AR Tab D at 00035; A-TO-12. And under interim phase 2 and the final phase of the draft permit, phosphorus concentrations will still be elevated from background conditions to around 500 µ/L. AR Tab C at 0003–04.

The suggested boundary of the phosphorus concentrations that separates oligotrophic and mesotrophic streams is 25 µ/L and from mesotrophic to eutrophic is 75 µ/L. PR-LR-4 at 22. Such shifts in trophic states are associated with a reduction in assimilative capacity and shift in the types of aquatic species one would expect to see. Tr. Vol. 2 at 57:14–21. And to prevent the nuisance growth of algae or stream impairment, phosphorus concentrations should not be higher than 90 µ/L with other recommendations suggesting 75 µ/L or 20 µ/L. PR-LR-4 at 23. Such recommendations are consistent with Dr. Back's recommendation that the draft permit have a total phosphorus limit below 30-50 µ/L to avoid degradation. PR-JB-1 at 20:14–21:2.[12]

When translating between phosphorus concentrations and TCEQ's narrative standard for nutrients it becomes clear that the draft permit in all phases will consume all of the assimilative capacity and degrade water quality in Plum Creek, particularly in light of baseline phosphorus concentrations, post discharge phosphorus concentrations, and recommendations from EPA and Dr. Back. The baseline phosphorus concentration for Plum Creek is around 6.38 µ/L and, to be generous, the phosphorus concentration that is likely to cause stream impairment or excessive algae growth (TCEQ's narrative standard) that would harm the stream is 90 µ/L. That represents the assimilative capacity of Plum Creek for total phosphorus. On the other hand, the post

[12] There is no reason to think that the patterns observed in other studies conducted by Dr. Back would not apply to Plum Creek. Tr. Vol. 2 at 60:7–10.

discharge total phosphorus concentrations under the draft permit are 3445 µ/L to 3780 µ/L and 500 µ/L, both many times higher than the upper limit of what will noticeably degrade Plum Creek.

TCEQ's Tier 2 analysis of total phosphorus for the draft permit was flawed and failed to follow the IPs. The IPs set out screening factors for the standards reviewer of a permit to consider whether there is a potential need for a TP limit, ED-JP-3 at 0064, and the screening factors can help determine the total phosphorus limit. The IPs also state that for antidegradation analyses, "the effect of a proposed discharge is compared to baseline water quality conditions in order to assess the potential for degradation of water quality." ED-JP-3 at 0079. But Mr. Paull, the standards reviewer for the draft permit, testified that he did not compare predischarge baseline conditions with conditions after the proposed discharge, Tr. Vol. 2 at 88:20–22. Such an omission violates page 63 of the IPs. Mr. Paull also testified that his analysis for antidegradation and phosphorus was his initial screening sheet and applying the effluent flow based total phosphorus recommendation from the IPs. Tr. Vol. 2 at 88:9–89:3. So based on his testimony, Mr. Paull did no analysis to determine whether the total phosphorus limit recommended by the IPs was adequate nor did he go back to look at the screening factors to support his determination. Tr. Vol. 2 at 83:18–21. Mr. Paull also failed to apply the Tier 2 standard and demonstrated that he instead applied the Tier 1 standard when he testified that "we wouldn't want to see nuisance algal growth, that would be a lowering of water quality." Tr. Vol.2 at 87:11–13.

The evidence presented by the City of Kyle on total phosphorus depended in large part on the dubious calculations of Mr. Osting that included the wrong phosphorus limit for the draft permit and used an equation that does not apply to the draft permit and applies only to reservoirs. A-TO-13; ED-JP-3 at 0046–47; Tr. Vol. 1 at 29:12–20, 44:18–20; Tr. Vol. 1 at 44:21–47:9; AR

Tab C at 0002; Tr. Vol. 2 at 39:12–40:25; A-BW-1 at 28:3–6, 21–18; Tr. Vol. 1 at 57:2–7. Moreover, for all aspects of the antidegradation analysis, evidence comparing the current discharge with the draft permit is irrelevant since baseline water quality conditions for assessing degradation are established based on conditions in 1975. 40 C.F.R. Part 131; PR-JP-3 at 0079.

Any other evidence presented by the City of Kyle on this issue showed that Mr. Osting and Ms. Whitaker applied the Tier 1 rule instead of the Tier 2 rule. In describing his observations of Plum Creek, Mr. Osting revealed that he applied the Tier 1 standard instead of the Tier 2 standard during his assessment of whether the draft permit would violate the Tier 2 rule for phosphorus since he looked for the presence of nuisance algae and also relied on maintenance of the high aquatic life use designation of Plum Creek. A-TO-1 at 29:3–4, 31:1–2. Ms. Whitaker similarly looked at whether there was nuisance algae in Plum Creek and whether designated uses were impacted, the Tier 1 standard. A-BW-1 at 25:16–18; *see also* Tr. Vol. 2 75:18–22; A-BW-1 at 24:11–13; A-BW-1 at 24:14–17.

Considering the reliable evidence in the record, the draft permit must have a total phosphorus limit below 30-50 µ/L to avoid degradation. PR-JB-1 at 20:14–21:2. And the draft permit as it is now will violate the Tier 2 rule.

b. The draft permit will lower water quality by more than a de minimis extent for dissolved oxygen.

The undisputed evidence in the record shows that dissolved oxygen levels in Plum Creek, unimpacted by the draft permit, are naturally around 8 to 8.5 mg/L based on water quality sonde data, around 6 mg/L based on median SWQM data, or around 6.1 mg/L based on TCEQ's modeling assumptions. PR-JB-1 at 14, Figure 2; A-TO-12. The undisputed evidence in the record also shows that the calibrated and uncalibrated QUAL-TX models used to analyze the draft permit in this case predict that instream dissolved oxygen concentrations in Plum Creek

will be lowered below 5 mg/L, the relevant dissolved oxygen criteria. PR-LR-1 at 17:6–17; 30 TAC § 307.7(b)(3)(A)(i). Since Tier 2 protects a waterbody's assimilative capacity or "the difference between the applicable water quality criterion for a pollutant parameter and the ambient water quality for the pollutant parameter where it is better than the criterion," EPA Memo at 1, and the draft permit will consume 100%, or more, of Plum Creek's assimilative capacity for dissolved oxygen, the draft permit violates the Tier 2 rule. Such a reduction in water quality is far more than de minimis or unnoticeable.

TCEQ did not analyze whether the draft permit would lower instream dissolved oxygen concentrations in Plum Creek by more than a de minimis extent. TCEQ's dissolved oxygen modeler for the draft permit, Ms. Robertson, did not analyze and gave no opinion on whether the draft permit would comply with the antidegradation standards. ED-JR-1 at 328:6–8; Tr. Vol. 2 at 120:14–17; *see also* Tr. Vol. 2 at 12:1–25. But Mr. Paull testified that he depended on the recommendation and determination of the dissolved oxygen modeler to determine whether the Tier 2 rule would be met for dissolved oxygen; and Mr. Paull did no analysis on his own of dissolved oxygen. Tr. Vol. 2 at 71:24–25, 89:17–23. So, any conclusions made by Mr. Paull about dissolved oxygen and the Tier 2 rule are unsupported by any analysis, and TCEQ's position on this issue is wholly unsubstantiated.

Similarly, the City of Kyle's evidence and conclusions from Ms. Whitaker on this issue applied the standard from the Tier 1 rule rather than the Tier 2 rule. Ms. Whitaker testified that in her opinion 100% of a waterbody's assimilative capacity for a given water quality parameter would have to be consumed before there was a violation of the Tier 2 rule. Tr. Vol. 2 75:18–22. But that is the Tier 1 rule, not the more stringent Tier 2 rule. Ms. Whitaker made the same mistake in her pre-filed testimony stating that for Tier 2 to be violated, the draft permit must not

lower water quality to the point where organisms are adversely affected, A-BW-1 at 24:11–13, and all of her analysis was focused on whether organisms found in Plum Creek would be negatively affected. A-BW-1 at 24:14–17. And the City of Kyle's witness, Mr. Osting, did not consider dissolved oxygen in the context of the Tier 2 rule. A-TO-1 at 28:22–23.

So, neither the City of Kyle nor TCEQ presented any evidence to show that the Tier 2 rule would be met for instream dissolved oxygen concentrations under the draft permit. Rather, the undisputed evidence in the record demonstrates that the draft permit will consume 100% of the assimilative capacity for Plum Creek for dissolved oxygen, degrading water quality in Plum Creek and violating the Tier 2 rule.

2. The draft permit fails to meet the Tier 1 antidegradation rule.

The draft permit will violate the Tier 1 rule by failing to protect the designated high aquatic life use of Plum Creek, and the evidence shows that even the current discharge is impairing the high aquatic life use of Plum Creek. As set out previously, the Tier 1 antidegradation standard provides that "existing uses and water quality sufficient to protect those existing uses must be maintained. Categories of existing uses are the same as for designated uses, as defined in §307.7 of this title." 30 T.A.C. § 307.5(b)(1). The EPA provides additional guidance on how the Tier 1 rule operates, clarifying that avoiding the impairment of aquatic life uses requires protecting the species assemblages that are present.

> No activity is allowable under the [Tier 1] antidegradation policy which would partially or completely eliminate any existing use whether or not that use is designated in a State's water quality standards. The aquatic protection use is a broad category requiring further explanation. Non-aberrational resident species must be protected, even if not prevalent in number or importance. Water quality should be such that it results in no mortality and no significant growth or reproductive impairment of resident species. Any lowering of water quality below this full level of protection is not allowed.

EPA Handbook at 6; *see also* 30 T.A.C. § 307.7(b)(3)(A)(i) Table 3 (protecting species assemblages).

Part of determining whether uses will be maintained for a waterbody requires determining whether instream dissolved oxygen concentrations will be maintained at a high enough level, and TCEQ's calibrated QUAL-TX model, Dr. Ross's run of the uncalibrated QUAL-TX model, and the SWQM data presented by Mr. Osting show that the draft permit will lower instream dissolved oxygen concentrations below the 5.0 mg/L criteria set to protect the high aquatic life use in Plum Creek. 30 T.A.C. § 307.7(b)(3)(A)(i) Table 3.

Based on TCEQ's calibrated QUAL-TX model, for interim phase 1 dissolved oxygen concentrations will be lowered to 4.78 mg/L; for interim phase 2 dissolved oxygen concentrations will be lowered to 4.65 mg/L; and the final phase will lower dissolved oxygen to 4.82 mg/L. PR-LR-1 at 21:6–25. While these low dissolved oxygen concentrations occur upstream of the outfall in the model, these values are still appropriate to consider due to the real-world phenomena of dispersion that will cause the discharge to impact Plum Creek upstream of the outfall. Tr. Vol. 2 at 36: 25–37:10. Moreover, the mixing zone that applies to the draft permit extends upstream and downstream of the outfall, obligating TCEQ to ensure that applicable criteria are met at the edges of the mixing zone, Tr. Vol. 2 at 118:9–21, and obligating TCEQ to consider whether the draft permit is meeting the dissolved oxygen criteria upstream of the outfall.

The uncalibrated QUAL-TX model run by Dr. Ross also shows that the draft permit will violate the 5.0 mg/L dissolved oxygen criteria to protect Plum Creek's high aquatic life use. For interim phase 1, dissolved oxygen concentrations will be lowered to 4.01 mg/L; for interim phase 2, dissolved oxygen concentrations will be lowered to 4.11 mg/L; and the final phase will lower

dissolved oxygen to 4.24 mg/L. PR-LR-1 at 20:9–27; PR-LR-15a. The model also shows that the dissolved oxygen levels will remain below the 5.0 mg/L criteria for at least 10 kilometers. And since the Waste Load Evaluation used to create the calibrated QUAL-TX model does not accurately reflect the stretch of Plum Creek assessed for the draft permit, Dr. Ross's model is the most reliable indication of the impact that the discharge will have on dissolved oxygen. PR-LR-1 at 19:5–12; PR-LR-1 at 18:5–17; PR-LR-1 at 18:21–29; Tr. Vol. 2 at 30:17–25, 32:2–11Tr. Vol. 2 at 37:19–39:11; Tr. Vol. 1 at 42:14–19; Tr. Vol. 2 at 146:22–147:1–2.

In fact, the predictions from Dr. Ross's run of the uncalibrated QUAL-TX model yielded predictions of dissolved oxygen concentrations that comport with the SWQM data set out by Mr. Osting in A-TO-12. The graphs in that exhibit show dissolved oxygen concentration measurements at and below the outfall well below the 5.0 mg/L dissolved oxygen criteria. A-TO-12. And Mr. Osting's graphs show the impacts of the current City of Kyle discharge which contains pollutants at levels that are much lower than what is allowed under the draft permit. Tr. Vol. 1 at 22:14–16. And dissolved oxygen concentrations have been identified as a screening level in Plum Creek in the Texas Integrated Report. PR-LR-1 at 15:18–21. Conditions will surely be worse under the draft permit with the permitted increase in pollutants.

The results of Dr. Back's macroinvertebrate sampling show that Plum Creek's high aquatic life use is being impaired even under the current discharge. Dr. Back found that the first site below the outfall at Heidenreich Road had an intermediate Aquatic Life Use Designation based on the macroinvertebrate index of biotic integrity. PR-JB-1 at 17:2–3. And based on a powerpoint presentation made by a TCEQ employee and maintained on the TCEQ website tying the macroinvertebrate index of biotic integrity to regulatory aquatic life uses, an intermediate Aquatic Life Use Designation is associated with evident and moderate negative changes in the

biological condition, or aquatic life use designation, of a stream. PR-CE-5 at 0015. When the results of Dr. Back's study, namely the intermediate Aquatic Life Use Designation below the outfall, are compared with the guidance set out in the presentation, the only conclusion is that the current discharge is impairing the high aquatic life use of Plum Creek. Thus, confirming the rest of the evidence in the record that the draft permit will not maintain the high aquatic life use of Plum Creek, violating the Tier 1 rule.

B. The draft permit fails to comply with all Texas Surface Water Quality Standards and will harm wildlife (Issue A).

The TSWQS require that "dissolved oxygen concentrations must be sufficient to support . . . designated . . . aquatic life uses." 30 T.A.C. § 307.4(h)(1). It is important to maintain adequate dissolved oxygen concentrations because low oxygen levels are a threat to aquatic life. PR-LR-1 at 21:12. And the dissolved oxygen criteria to support a high aquatic life use is 5.0 mg/L. 30 T.A.C. § 307.7(b)(3)(A)(i). As set out in Section IV.A.2 of these closing arguments, the QUAL-TX modeling for the draft permit and dissolved oxygen data show that this standard will be violated; the draft permit will not maintain instream dissolved oxygen concentrations at the applicable 5.0 mg/L criteria, harming wildlife.

The TSWQS also require that surface waters be maintained in an aesthetically attractive condition. 30 T.A.C. § 307.4(b)(4). But the current City of Kyle discharge, and by extension the draft permit that is permitted to contain even more pollutants, is not maintaining Plum Creek in an aesthetically attractive condition for the parameter of odor. ED-JP-3 at 0073 (listing odor as an aesthetic parameter). Dr. Back testified that he would expect the aesthetics of Plum Creek below the outfall to continue to decline due to odors and that he expects people would not want to explore Plum Creek below the outfall due to odor as well. PR-JB-1 at 19:6–7, 20:6–7. And Dr. Back himself observed that at the outfall and downstream of the outfall that there was a smell of

effluent. *Id*. at 7:17–20. Dr. Back also testified that aesthetically attractive conditions would not be maintained due to filamentous algae growth. PR-JB-1 at 15:15–16. Such conditions are clearly not pleasing to the senses and violate 30 T.A.C. § 307.4(b)(4).

C. The draft permit should be altered or denied based on the Applicant's compliance history (Issue C).

TCEQ is required to consider compliance history when preparing a draft permit and when deciding whether to amend or renew or permit. 30 T.A.C. § 60.3(a)(1), (4)(B)(i). The compliance history considered by TCEQ during permitting actions includes the "five years prior to the date the permit application is received by the executive director." 30 T.A.C. § 60.1(b). Based on the testimony of Ms. Bhuiya, TCEQ did not consider the City of Kyle's compliance history from the applicable compliance period since the compliance period on the report Ms. Bhuiya compiled started seven months before the TCEQ ED could have received the permit application. ED-SB-1 at 0881:2–7; AR Tab D at 00014, 00044, 00133.

Based on the timeline of events, the only compliance history in the record with a compliance period that makes sense is the compliance history starting on page 88 of PR-LR-17 (showing a compliance history period starting after the application was signed and before any action was taken on the application) which classifies both the City of Kyle and the City of Kyle Wastewater Treatment Plant as unsatisfactory. PR-LR-1 at 23:1–22. This compliance history reflects several notices of violation where untreated sewage was discharged and contributed to water degradation. PR-LR-1 at 24:5–12. The City of Kyle has also had violations of ammonia nitrogen, *E. coli*, and CBOD limits which contribute to violations of the TSWQS. PR-LR-1 at 24:13–19. The compliance history also includes the time that sludge was discharged into Plum Creek. A-TS-1 at 6:8–22. And the compliance history contains continued notices of violation and violations associated with the City of Kyle's last expansion. Tr. Vol. 1 at 20:6–22:1.

Overall, the City of Kyle has demonstrated compliance history issues that call into question the City's ability to comply with the draft permit, even after facility upgrades and expansions, with failure to comply with the terms of the City's current TPDES permit. But the City of Kyle still seeks to increase its responsibility and impact on Plum Creek. Considering the consistent history of violations and issues, TCEQ should alter or deny the draft permit. At the very least, TCEQ must be directed to go back and do its homework to consider the compliance history within the mandated compliance period, five years prior to the date the application is received by the executive director.

V. PRAYER

For the forgoing reasons, the San Marcos River Foundation respectfully requests that the Honorable ALJs recommend denial of the application and draft permit.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on July 31, 2024, a true and correct copy of the above document has been provided to all parties of record via electronic mail, in accordance with applicable rules and agreements.

/s/ Victoria A. Rose
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ATTACHMENT B

SOAH Docket. 582-24-11454
TCEQ Docket No. 2023-1268-MWD

APPLICATION BY	**§**	**BEFORE THE STATE OFFICE**
CITY OF KYLE FOR	**§**	**OF**
TPDES PERMIT NO.	**§**	**ADMINISTRATIVE HEARINGS**
WQ0011041002	**§**	

PROTESTANT SAN MARCOS RIVER FOUNDATION'S RESPONSE TO CLOSING ARGUMENTS

To the Honorable Administrative Law Judges

Protestant San Marcos River Foundation (SMRF) submits this response to closing arguments and continues to urge denial of the City of Kyle's application for the major amendment and draft permit for TPDES Permit WQ0011041002. SMRF delivered paper copies of its admitted exhibits to the State Office of Administrative Hearings Chief Clerk on August 7, 2024 in accordance with the scheduling order in this case. SMRF respectfully shows the following in support:

I. Introduction

The Texas Commission on Environmental Quality's Executive Director (ED or TCEQ's ED) and the City of Kyle's (or the City) closing arguments failed to demonstrate that the terms of the draft permit may be approved by the Texas Commission on Environmental Quality (TCEQ) without violating the Texas Surface Water Quality Standards, Antidegradation Rules, and other TCEQ rules. The arguments made by the ED relied almost exclusively on the unsubstantiated opinion of her expert witnesses with no evidence to support the opinions or explain their bases. The City of Kyle's arguments similarly lack evidentiary support, relying on the conclusions of witnesses that misrepresented the analyses that they conducted and misunderstood the rules they were tasked with applying while relying on distorted and false accounts of the evidence presented by SMRF. Both closing arguments were light on substantive

analysis. And both asked this Court to ignore the applicable law and the facts in the case to allow the City of Kyle to continue to pollute and degrade Plum Creek.

II. Burden of Proof

As mentioned in Protestant San Marcos River Foundation's Closing Argument [hereinafter SMRF's Closing], the City of Kyle must show by a preponderance of the evidence that the permit sought may be approved by the Texas Commission on Environmental Quality (TCEQ) without violating the Texas Surface Water Quality Standards, Antidegradation Rules, and other TCEQ rules. 30 Tex. Admin. Code § 80.17(a). And while this is an SB 709 case and the filing of the administrative record is a *prima facie* demonstration that the draft permit meets all requirements, SB 709 "does not change the underlying burden of proof. The burden of proof remains with the Applicant to establish by a preponderance of the evidence that the Application would not violate applicable requirements and that a permit, if issued consistent with the draft permit, would protect human health and safety, the environment, and physical property." *Application by Regal, LLC, for New TPDES Permit No. WQ0015817001, SOAH Docket No. 582-21-0576; TCEQ Docket No. 2020-0973-MWD*.

On each issue addressed in SMRF's Closing and in this response, SMRF produced reliable and controverting evidence that raised genuine issues of fact on whether the issuance of the draft permit would comply with the applicable regulatory requirements. The question now is whether the City of Kyle was able to demonstrate by a preponderance of the evidence that all applicable requirements were met. The City of Kyle failed to meet this burden.

III. Protestant SMRF Rebutted the Applicant's Prima Facie Demonstration

SMRF presented evidence showing that the draft permit will lower water quality by more than a de minimis extent, particularly for the water quality parameters of total phosphorus and

dissolved oxygen, despite the Tier 2 rules prohibition on degrading water quality. SMRF Closing at 29. This because the draft permit allows for the discharge of municipal sewage that contains pollutants that will consume more than 100% of Plum Creek's assimilative capacity for dissolved oxygen and will consume more than 100% of Plum Creek's assimilative capacity for total phosphorus. SMRF's Closing 30–35. To avoid degradation, a discharge must not consume more than 10% of a waterbody's assimilative capacity for a given water quality parameter. SMRF's Closing at 27–28.

SMRF also presented evidence showing that the draft permit will violate the Tier 1 antidegradation rule by failing to protect the high aquatic life use in Plum Creek. SMRF's Closing at 35. This is because the draft permit will decrease instream dissolved oxygen concentrations below the applicable criteria for protecting high aquatic life use. SMRF's Closing 36–37. And macroinvertebrate sampling demonstrates that the high aquatic life use is already being impaired under the City of Kyle's discharge, even though City of Kyle is currently discharging pollutants at concentrations much lower than what is allowed under the draft permit. SMRF's Closing at 37–38.

SMRF further presented evidence showing that the draft permit will violate the applicable Texas Surface Water Quality Standards (TSWQS). The draft permit will violate the TSWQS that requires instream dissolved oxygen concentrations in Plum Creek to be maintained at or above 5.0 mg/L. SMRF's Closing at 38. And the draft permit will violate the TSWQS that requires the surface waters be kept in an aesthetically attractive condition by causing unpleasant odors and excessive filamentous algae. SMRF's Closing at 38–39.

SMRF also presented evidence that the *prima facie* case contains fatal flaws and that it is unsupported by any substantive analysis or evidence from TCEQ staff other than general

unsubstantiated conclusions. SMRF's Closing at 30–39. SMRF also presented evidence that the evidence presented by the City of Kyle is unreliable. *Id*.

IV. Response to Closing Arguments for the Referred Issues

SMRF responds below to the arguments set out in the Executive Director's Closing Argument [hereinafter ED's Closing] and Closing Arguments of the City of Kyle (Applicant) [hereinafter City's Closing]. SMRF does not provide specific responses to the Office of Public Interest's Closing Brief because the brief was duplicative of the ED's Closing, providing no additional arguments or analysis.

Issue A. The draft permit is not protective of water quality, wildlife, and the requestor's members and their families' health, in accordance with applicable regulations, including the Texas Surface Water Quality Standards.

TCEQ ED:

TCEQ's Executive Director, without providing an analysis of the facts or law, parroted the conclusions of Ms. Whitaker, Mr. Osting, and Mr. Paull to conclude that the draft permit will be protective of water quality. ED's Closing at 4–5. But, as fully set out in, SMRF's Closing, the testimony and analysis of Ms. Whitaker is unreliable and the facts underpinning Mr. Osting's testimony are either unreliable or support SMRF's position. SMRF' Closing at 13–19, 38–39. Mr. Paull did not follow TCEQ's Implementation Procedures (IPs), as the ED claims and relies on, to apply a total phosphorus limit of the draft permit that complies with the Texas Surface Water Quality Standards. ED Closing at 5; SMRF's Closing at 32; Tr. Vol. 2 at 88:9–89:3. Moreover, even if Mr. Paull had followed the IPs, mere compliance with the IPs is not a replacement to compliance with the applicable rules, as it is the substance and meaning of the rules themselves, not the IPs that govern this case. ED-JP-3 (TCEQ IPs) at 0028. There is no testimony from Mr. Paull connecting the total phosphorus limit that he selected to the real-world

conditions in Plum Creek and whether the limit will comply with the TSWQS; the record only contains Mr. Paull's unsupported conclusions that the draft permit will comply. Thus, the ED's position on this issue is unsupported.

City of Kyle:

The City of Kyle gets several things wrong in relying on testimony from TCEQ staff on whether the total phosphorus limit the draft permit will comply with the TSWQS. First, while the City of Kyle is correct in asserting that the Texas Surface Water Quality Standards do not contain a specific numeric criteria for nutrients in streams and rivers, the City's implication that this bars the Court or TCEQ from considering evidence or SMRF from presenting evidence related to numerical concentrations of phosphorus and whether certain concentrations will violate applicable TSWQS is unsupported by the IPs, ED-JP-3 at 0043–44, or the Texas Administrative Code, or Tex. R. Evid. 703. City's Closing at 13; *see also* 30 T.A.C. § 307.4(k). Second, the City of Kyle relies on Mr. Paull's testimony that whether or not to include a total phosphorus limit was up to the best professional judgment of TCEQ staff, but while the IPs direct TCEQ staff to rely on best professional judgment for some aspects of analyzing a proposed TPDES permit the IPs direct TCEQ staff to apply a total phosphorus limit when a substantial number of screening factors are rated moderate or high. ED-JP-3 at 0068; City's Closing at 13. Third, the City of Kyle errs in stating that the IPs state that a total phosphorus limit of 0.5 mg/L is appropriate for a discharge of the size of the one proposed in the draft permit, instead, the IPs only give examples of typical total phosphorus limits based on discharge size and direct TCEQ staff to further consider site-specific factors and reasonably achievable technology, ED-JP-3 at 0045; City's Closing at 13, analysis that Mr. Paull did not do. Tr. Vol. 2 at 83:18–21, 88:9–89:3; SMRF's Closing at 20.

The City of Kyle relied on the calibrated QUAL-TX model based on the Plum Creek WLE that was run by TCEQ staff member, Josie Robertson, and the similar model run by witness for the City, Mr. Osting, to conclude that the applicable TSWQS for dissolved oxygen would be met. City Closing at 14, 16. And while the City of Kyle is correct in pointing out that the IPs direct TCEQ staff to use a calibrated QUAL-TX model when there is a WLE available, ED-JP-3 at 099, that does not hinder this Court from considering evidence from an uncalibrated QUAL-TX model, especially when the calibrated QUAL-TX model does not accurately reflect the in stream conditions. City's Closing at 15. As previously discussed, the WLE data used to calibrate the QUAL-TX model for this permit was collected 18 miles downstream on two occasions nearly forty years ago, the cross section and velocity data that Mr. Osting presented shows that important factors that predict re-aeration and transport of dissolved oxygen are different than what is set in the calibrated model, and no inferential statistical analysis was conducted to examine the difference between the measurements and the calibrated model. SMRF's Closing at 9–10, 13.

The City of Kyle also claimed that the calibrated model outputs show that instream dissolved oxygen concentrations will meet the applicable TSWQS. City's Closing at 18. This statement, however, is inconsistent with the model outputs. SMRF Closing at 8–9, 36. For interim phase 1 and interim phase 2, TCEQ's calibrated model shows that dissolved oxygen concentrations will drop below the 5.0 mg/L criteria, even below the 4.8 mg/L level that allows for a margin of error. *Id*.

Issue B. The draft permit does not comply with applicable antidegradation requirements and does not adequately protect existing uses.

TCEQ ED:

In the meager legal analysis provided by the ED for this issue, the ED demonstrated that she and her staff conflated and collapsed the Tier 1 and Tier 2 antidegradation standards in violation of the plain language of the rules. ED's Closing at 5–6. To show that the antidegradation rules would be met, the ED relied on testimony that the TSWQS would be met, organisms would not be impacted and designated uses would be maintained. ED's Closing at 6; SMRF's Closing at 28–29. But this is the Tier 1 standard and simply reciting the language of the Tier 2 rule without actually applying the Tier 2 standard does not save the ED's analysis from the fatal mistake of conflating the two standards.

The ED largely relied on Mr. Paull's testimony that he followed TCEQ's IPs so the antidegradation standards would be met for referred issue B. ED's Closing at 6–7. But Mr. Paull did not follow the IPs, confused and conflated the antidegradation rules when applying them, and failed to provide more than unsupported conclusions that the draft permit would meet the applicable standards. SMRF's Closing at 31, 34. Also, even if Mr. Paull had followed the IPs "following the procedures is not sufficient on its own to ensure that the proposed discharge complies with the substantive antidegradation standards. The Commission's referred issue requires a determination of whether the antidegradation review was "accurate," not simply whether it followed TCEQ's procedures." *Application of Port of Corpus Christi Auth. of Nueces Cnty. for TPDES Permit No. WQ0005253000*, SOAH Docket No. 582-20-1895 at 43 (Feb. 5, 2021). Mr. Paull's and the ED's arguments and evidence on this issue suffer from the same and similar deficiencies as Issue A, and the ED provided no argument in her closing to show that either antidegradation rule would met be for the water quality parameter of dissolved oxygen.

City of Kyle:

In the City of Kyle's closing arguments, the City lumped its analysis for the Tier 1 and Tier 2 rule together and lumped together the analysis of each water quality constituent to muddle the evidence and misdirect the Court all while making errors of fact and law. SMRF does its best below to tease out the City's reasoning and respond to the City's arguments.

To conclude that existing uses would be maintained under the draft permit, the City of Kyle relied on the assertion that "Jeff Paull strictly followed the guidelines found in the TCEQ's IPs," and relied on Mr. Paull's conclusion that the Tier 1 and Tier 2 standards will be met. City Closing at 21–22. But complying with the procedures set out in the IPs is not a replacement for ensuring compliance with the applicable regulations, ED-JP-3 at 0028 ("this document should be interpreted as a guidance and not as a replacement to the rules"), and Mr. Paull did not even follow all procedures set out in the IPs. SMRF Closing at 20–21, 32, 34. In fact, no analysis was conducted by TCEQ on the issue of whether the draft permit complied with the Tier 1 and Tier 2 rules for dissolved oxygen. *Id*. at 34.

The City of Kyle claimed that interim phase two and the final phase of the draft permit will improve the total phosphorus concentrations in Plum Creek, City's Closing at 27, 29, by relying on testimony from someone who did not know the effluent limits in the draft permit and who applied an equation not pertinent to this draft permit. SMRF's Closing at 15. But even in making this claim, the City attempts to assert a fact that is not legally relevant. Lessened or decreased degradation is not the legal standard. The standard is no degradation, or a de minimis lowering of water quality. Focusing only on total phosphorus concentrations downstream of the discharge where Plum Creek is already impacted by the City's discharge is not relevant to the inquiry of whether the draft permit will degrade water quality in Plum Creek; and SMRF's

experts did not address the City's assertion because it is irrelevant and makes no sense in light of the law. City's Closing at 28; *see also* PR-CE-1 at 2-7 (directing studies that assess the impact of an existing discharge to take water quality samples upstream of the existing discharge). Under the final phase and interim phase two of the draft permit, phosphorus concentrations will be increased from a naturally occurring concentration of 6.38 µ/L, PR-JB-1 at 12, Table 2; A-TO-12, in Plum Creek at around 500 µ/L, a 78X increase. SMRF's Closing at 30. And the interim phase 1 of the draft permit represents a 540X increase from naturally occurring phosphorus concentrations. *Id*.

The City of Kyle also asserted that none of the expert witnesses in the case witnessed excessive algal growth during their site visits. City Closing at 27. While this is true, it is also true that none of the experts conducted any sampling or made observations during the critical low flow conditions where conditions in Plum Creek would be expected to be at their worst. PR-CE-1 at 2-1; A-BW-1 at 9:9–20; PR-JB-1 at 5:7–9. And, this inquiry is largely irrelevant to whether the Tier 2 antidegradation rule is met under the draft permit, SMRF's Closing at 28–29, and fails to show that excessive aquatic growth would not occur during critical conditions. The City also erroneously claimed that Dr. Back testified that there currently was no excessive algal growth in Plum Creek when Dr. Back only testified that he himself did not observe any excessive algal growth and did not provide any testimony speculating about the current conditions of Plum Creek. City's Closing at 28–29; Tr. Vol. 2 at 48:3–25, 49:1–7. The City makes the same mistake in claiming that Dr. Back's dissolved oxygen data shows that the dissolved oxygen criteria are being met in Plum Creek but neither Dr. Back's nor Ms. Whitaker's dissolved oxygen data was gathered during low flow critical conditions. City's Closing at 32; *see also* Tr. Vol. 2 at 61:11–62:18.

The City of Kyle also claimed that because dissolved oxygen concentrations meet the criteria under the current discharge, the concentrations will surely meet the applicable criteria under the draft permit. City's Closing at 32. But the conditions allowed under the draft permit are worse, allow for the discharge of more pollutants, than what the City of Kyle is currently discharging. Tr. Vol. 1 at 22:6–16; AR Tab C at 0002–4. So contrary to the City of Kyle's assertion and based on comparing the limits in the draft permit and the current discharge, modelling for the draft permit, and the dissolved oxygen concentrations in A-TO-12, the City's current discharge is already violating the applicable dissolved oxygen criteria and the draft permit will cause dissolved oxygen concentrations to worsen. SMRF's Closing at 36–37.

The City of Kyle also relied on the dissolved oxygen modelling of Mr. Osting to claim that existing uses would be maintained under the draft permit and that dissolved oxygen concentrations would surpass the requirements in the TSWQS. City's Closing at 22. But as set out in this response and in SMRF's closing, even the calibrated QUAL-TX model shows that dissolved oxygen criteria will be violated. SMRF Closing at 8–9, 36. Mr. Osting also did not testify to whether the draft permit would meet the Tier 2 rule for dissolved oxygen. A-TO-1 at 28:20–23. In addition to relying on the testimony of a witness who is unfamiliar with the effluent limits in the draft permit,[1] the City of Kyle also seems confused about which version of Mr. Osting's testimony it wishes to rely on. City's Closing at 23. The City cites to a version of Mr. Osting's testimony that states that the Tier 2 analysis is based on attaining dissolved oxygen

[1] This is in contrast to the modelling error made by Dr. Lauren Ross who promptly admitted her mistake and amended her testimony so that the Court would have accurate and truthful information to rely on in making its decision. Tr. Vol. 2 at 3:25–5:4. Mr. Osting did not admit that he did not include the correct total phosphorus limit for the draft permit, despite its obviousness, or amend his testimony even though he had the opportunity to do so on recross or during the City of Kyle's rebuttal.

standards, a clear admission of collapsing the Tier 1 and Tier 2 standards, while page 5 of A-TO-20 (Tim Osting Prefiled Testimony Errata) was changed to read that the Tier 1 standard is based on achieving the dissolved oxygen standard. City's Closing at 23.

The City of Kyle also relied on the testimony of Bianca Whitaker to support its conclusion that the Tier 2 rule will be met under the draft permit. City's Closing at 23. To support its position, the City, much like its expert, reveals that it is unfamiliar with the SWQM manual, writing that Ms. Whitaker collected her samples during critical low flow conditions. City's Closing at 23. But the Index Period is broken into the Non-Critical Period and the Critical Period. PR-CE-1 at 2-1. The Critical Period is when there are "minimum streamflows, maximum temperatures, and minimum dissolved oxygen concentrations." *Id*. And Ms. Whitaker took her samples in the Non-Critical Period. A-BW-1 at 9:9–20. Further, the temperature data from the water quality sonde deployed by Ms. Whitaker shows that critical conditions did not occur during her sampling period. A-TO-9 (showing a maximum temperature of 82.5°F). Thus, the City continued to compound the inconsistencies and misrepresentations made by Ms. Whitaker about the requirements of the SWQM Manual and the analysis that she conducted, SMRF's Closing at 16–18; and based on Ms. Whitaker's own testimony, her analysis is unreliable. Tr. Vol. 1 at 79:10–80:7.

Such inconsistencies also include the City's and Ms. Whitaker's claims that Ms. Whitaker's analysis used site specific data to find thresholds of pollutants that would affect aquatic life in Plum Creek. City's Closing at 25. The studies that Ms. Whitaker claims to have relied on for her fish species impact analysis, although its somewhat difficult to tell based on Ms. Whitaker's lack of documentation, SMRF's Closing at 18, are not site specific at all. A-BW-3. A non-exhaustive list of examples includes *Roseboom, D.P., & D.L. Richey (1977) Acute Toxicity*

of Residual Chlorine and Ammonia to Some Native Illinois Fishes. Illinois State Water Survey, Urbana, Report of Investigation 85, 1977 which is based on a study from Illinois and *Knights, B.C., B.L. Johnson & M.B. Sandheinrich (1995) Responses of Bluegills and Black Crappies to Dissolved Oxygen, Temperature, and Current in Backwater Lakes of the Upper Mississippi River during Winter, North American Journal of Fisheries Management* which is based on a study from Mississippi. A-BW-3. In light of this, it is interesting that the City criticized Dr. Back for relying on a study conducted in Oklahoma and in a different watershed, City's Closing at 26–27, when the City's own expert ostensibly relied on a study from a different continent*, Landman, M.J., M.R. Van Den Heuvel & N. Ling (2005) Relative sensitivities of common freshwater fish and invertebrates to acute hypoxia, New Zealand Journal of Marine and Freshwater Research*. A-BW-3. Perhaps the City's criticism of Dr. Back's reliance on the studies in PR-JB-11 and PR-JB-12 would hold some water if the City could offer a reason showing why the studies do not apply, it cannot and did not, and if its own expert had not relied on data from the other side of the world.[2]

The City went on to claim that SMRF did not rebut the *prima facie* demonstration made by the City by taking issue with the evidence presented by SMRF. City's Closing at 26. But as set out above and below, the City's claims about the evidence presented by SMRF do not comport with the record. To start, the City of Kyle claimed that Dr. Back's conclusions that the requirements of neither antidegradation rule would be met are based on studies outside of the Plum Creek watershed. City's Closing at 26. But Dr. Back based his opinion on water quality

[2] This is in contrast to SMRF's argument that the Plum Creek WLE does not contain site specific data that reflects the modeled stretch of Plum Creek because SMRF offered concrete examples of how the Plum Creek WLE and the modeled stretch of Plum Creek differ. SMRF's Closing at 9–10.

data and field observations made in Plum Creek upstream and downstream of the current discharge, samples that included dissolved phosphorus, ammonia and nitrate + nitrite, total nitrogen, total phosphorus, periphyton, ash-free dry mass, tissue phosphorus, carbon and nitrogen stable isotopes, algal taxonomy, macroinvertebrates, and dissolved oxygen. PR-JB-1 at 0009:2–7; SMRF's Closing at 5. The studies cited by Dr. Back to add additional support his conclusion and expert opinion that a 30 to 50 μ/L total phosphorus limit is needed in the permit to avoid degradation showed that limiting total phosphorus is important across ecoregions. SMRF Closing at 7. But Dr. Back did not rely on these studies in a vacuum, his conclusions were also supported by site specific data collected in Plum Creek. *See id*. at 5–8, 31.

The City of Kyle also claimed that Dr. Back failed to follow the methods outlined in the TSWQS, although based on the citation provided, it appears the City meant the SWQM manual. City's Closing at 27. But the City of Kyle's own witness, Ms. Whitaker, failed to follow the SWQM manual and misrepresented the contents of the SWQM manual in criticizing Dr. Back, SMRF Closing at 16–17, and set out in a preceding paragraph of this response, the City still does not understand the requirements of the SWQM manual.[3] On the other hand, Dr. Back took his samples in a manner that comported with the SWQM manual requirements. Tr. Vol. 1 at 80:8–88:25; Tr. Vol. 2 at 66:2–8. The City also took issue with the fact that Dr. Back followed the standard operating procedures used by his laboratory for processing water quality samples but failed to identify any specific operating procedure to show that it was unreliable or point to a rule contrary to Tex. R. Evid. 703 which states that an expert witness may rely on any data on which an expert in their field would rely. City's Closing at 27.

[3] "She [, Ms. Whitaker,] kept referring back to the [SWQM] manual, but apparently didn't read it." Tr. Vol. 2 at 66:2–3.

Further, Dr. Back never testified that Plum Creek's aquatic life designation improves from conditions upstream of the current discharge. *See* City's Closing at 32. Instead, the limited aquatic life use designation above the outfall was due to dry stream conditions, and Dr. Back expected the aquatic life use designation to increase above the outfall once Plum Creek had flow for long enough to facilitate aerial recolonization. Tr. Vol. 2 at 62:19–64:19.

In addition to the factual errors riddling the City's Closing, the City of Kyle and its experts also erred in applying the Tier 1 and Tier 2 antidegradation rules by collapsing the two standards. City's Closing at 25. The City wrote that because the dissolved oxygen concentrations will meet the criteria set out in the TSWQS, uses will be maintained and water quality will not be lowered by more than a de minimis extent. *Id*. And Ms. Whitaker's Tier 2 analysis focused on whether species in Plum Creek would be impacted. *Id*. at 25. The same mistake is repeated when the City of Kyle frames the dissolved oxygen issue for both antidegradation rules in the context of whether the Plum Creek's high aquatic life use will be maintained. *Id*. at 32. Such statements equate Tier 1's protection of uses with Tier 2's protection of water quality and prohibition against degradation and renders the Tier 2 rule a nullity. SMRF's Closing at 28–29. The City's and its witness' inappropriate application of the antidegradation rules is set out more fully in SMRF's Closing.

Issue C. The draft permit should be altered or denied based on the applicant's compliance history.

TCEQ did not consider the City of Kyle's compliance history with the correct compliance period. ED-SB-1 at 0881:2–7; AR Tab D at 00014, 00044, 00133. And there is nothing in the record to show that the City of Kyle participated in an innovative program that would allow for the extension of the compliance period. 30 T.A.C. § 60.1(b). Both the City of Kyle and the City of Kyle Wastewater Treatment Plant are classified as unsatisfactory, PR-LR-1

at 23:1–22, and both have a long history of permit violations that call into question the City of Kyle's ability to comply with the draft permit and expand the facility in a manner the protects Plum Creek. SMRF's Closing at 39–40.

V. Allocation of Transcript Costs

The City of Kyle argued that the parties should evenly split the reporting and transcript costs for this matter. Protestant San Marcos River Foundation requests that any reporting and transcript costs assessed in this matter be entirely borne by the Applicant, the City of Kyle. Thirty T.A.C. § 80.23(d)(1)(A)-(G) set out the criteria to determine the allocation of reporting and transcription costs:

> (A) the party who requested the transcript;
> (B) the financial ability of the party to pay the costs;
> (C) the extent to which the party participated in the hearing;
> (D) the relative benefits to the various parties of having a transcript;
> (E) the budgetary constraints of a state or federal administrative agency participating in the proceeding;
> (F) in rate proceedings, the extent to which the expense of the rate proceeding is included in the utility's allowable expenses; and
> (G) any other factor which is relevant to a just and reasonable assessment of costs.

The rules also provides that costs will not be assessed against the Executive Director or the Office of Public Interest Counsel. 30 T.A.C. § 80.23(d)(2).

The San Marcos River Foundation is a 501(c)(3) nonprofit organization with limited resources dedicated to preserving the San Marcos River and its watershed, and SMRF is represented in this matter by attorneys from a nonprofit organization at a greatly reduced rate. SMRF does not have the same financial ability as the City of Kyle to pay for the reporting and transcription costs in this case, especially since the City of Kyle is 'growing and dynamic.' City's Closing at 1. Moreover, obtaining the draft permit and relatedly obtaining the transcript is more valuable to the City of Kyle to implement its 'urgent need for expanded wastewater

treatment capacity,' City's Closing at 1, and the parties would not be here were it not for the City of Kyle seeking to further pollute Plum Creek. Additionally, the City of Kyle made the choice to order an expedited transcript to be produced on a two-day turnaround schedule, which undoubtedly and unnecessarily increased the preparation costs. Even though SMRF attempted to order its copy of the transcript on a more delayed schedule to prepare its closing in a more cost effective manor, SMRF was still charged for a copy of the transcript based on the City of Kyle's expedited schedule.

Lastly, if it were not for the City of Kyle's history of poor compliance with current and previous TPDES permits and degradation of Plum Creek and the San Marcos River watershed, this contested case hearing would not have been necessary. Ultimately, the cost of holding permitted entities accountable for their pollution and requiring them to comply with the law should not be shifted to the public or the organizations that work tirelessly to protect the waterways on which all Texans depend.

VI. Prayer

Nothing presented in the City's or ED's Closings undermine the evidence presented by SMRF or the relief sought by SMRF. The City of Kyle did not meet its burden of proof and did not show by a preponderance of the evidence that the draft permit will comply with all relevant requirements. For the forgoing reasons, and the reasons set out in San Marcos River Foundation's Closing Argument, the San Marcos River Foundation respectfully requests that the Honorable ALJs recommend denial of the application and draft permit.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that on August 7, 2024, a true and correct copy of the above document has been provided to all parties of record via electronic mail, in accordance with applicable rules and agreements.

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