

Jon Niermann, *Chairman*  
Emily Lindley, *Commissioner*  
Bobby Janecka, *Commissioner*  
Kelly Keel, *Interim Executive Director*



Garrett T. Arthur, *Public Interest Counsel*

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

December 11, 2023

The Honorable Meitra Farhadi  
The Honorable Rachelle Robles  
Administrative Law Judges  
State Office of Administrative Hearings  
P.O. Box 13025  
Austin, Texas 78711-3025

RE: **CITY OF LIBERTY HILL**  
**SOAH DOCKET NO. 582-22-1222**  
**TCEQ DOCKET NO. 2021-0999-MWD**

Dear Judge Farhadi and Judge Robles:

Enclosed for filing is the Office of Public Interest Counsel's Reply to Exceptions in the above-entitled matter.

Sincerely,

A handwritten signature in cursive script that reads "Pranjal".

Pranjal M. Mehta, Attorney  
Assistant Public Interest Counsel

cc: Mailing List

SOAH DOCKET NO. 582-22-1222  
TCEQ DOCKET NO. 2021-0999-MWD

APPLICATION BY THE CITY § BEFORE THE STATE OFFICE  
OF LIBERTY HILL FOR RENEWAL §  
OF TEXAS POLLUTANT DISCHARGE § OF  
ELIMINATION SYSTEM PERMIT §  
NO. WQ0014477001 § ADMINISTRATIVE HEARINGS

**OFFICE OF PUBLIC INTEREST COUNSEL'S REPLY TO EXCEPTIONS**

TO THE HONORABLE ADMINISTRATIVE LAW JUDGES:

The Office of Public Interest Counsel (OPIC) at the Texas Commission on Environmental Quality (TCEQ or Commission) files this Reply to Exceptions and respectfully submits the following.

**I. Introduction**

After reviewing the Supplemental Proposal for Decision on Remand (Supplemental PFD), Proposed Order, Exceptions to the Supplemental PFD submitted on behalf of the Executive Director and City of Liberty Hill in this matter, OPIC supports the Supplemental PFD. The issue during the remand hearing was to determine the Total Phosphorous (TP) effluent limit necessary to comply with the Texas Surface Water Quality Standards (TSWQS or Standards). Under the Standards, the TP effluent limit should prevent excessive algal growth that impairs an existing use of the receiving water and should prevent the degradation of water quality by more than a de minimis amount.<sup>1</sup>

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<sup>1</sup> Commission's Interim Order dated February 13, 2023.

## **II. TP effluent limit of 0.015 milligrams per liter (mg/L)**

OPIC agrees that with the ALJs' findings set forth in the Supplemental PFD at page 52 that the preponderance of the evidence demonstrates that the TP effluent limit necessary to prevent excessive algal growth that impairs high aquatic life use is 0.015 mg/L; the TP effluent limit necessary to prevent excessive algal growth that impairs primary contact recreation use is 0.015 mg/L; the TP effluent limit necessary to prevent the lowering of water quality by more than a *de minimis* amount is 0.015 mg/L; and therefore, the TP effluent limit necessary to comply with the TSWQS is 0.015 mg/L.


As explained in OPIC's Closing Brief (attached hereto as Exhibit A for the Commission's convenience and reference), OPIC recommended that based on the weight of the evidence and to strike a balance between a protective and an enforceable permit, the TP effluent limit necessary to comply with the Standards would be 0.02 milligrams per liter. However, OPIC agrees with the ALJs' conclusion in the Supplemental PFD at page 3 that the evidentiary record supports a TP effluent limit of 0.015 mg/L, and the stricter effluent limit should comply with the Standards, prevent excessive algal growth that would impair existing uses of the receiving water, and prevent the degradation of water quality by more than a *de minimis* amount.

## **III. Conclusion**

OPIC supports the Supplemental PFD and the ALJs' recommendation that the TP effluent limit necessary to comply with the Standards is 0.015 mg/L.


Respectfully submitted,

Garrett T. Arthur  
Public Interest Counsel

By   
Pranjal M. Mehta  
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**CERTIFICATE OF SERVICE**

I hereby certify that on December 11, 2023, the foregoing document was filed with SOAH, the TCEQ Chief Clerk, and copies were served to all parties on the attached mailing list via hand delivery, facsimile transmission, electronic mail, inter-agency mail, or by deposit in the U.S. Mail.

  
Pranjal M. Mehta

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SOAH DOCKET NO. 582-22-1222  
TCEQ DOCKET NO. 2021-0999-MWD**

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# EXHIBIT A

SOAH DOCKET NO. 582-22-1222  
TCEQ DOCKET NO. 2021-0999-MWD

APPLICATION BY THE CITY § BEFORE THE STATE OFFICE  
OF LIBERTY HILL FOR RENEWAL §  
OF TEXAS POLLUTANT DISCHARGE § OF  
ELIMINATION SYSTEM PERMIT §  
NO. WQ0014477001 § ADMINISTRATIVE HEARINGS

OFFICE OF PUBLIC INTEREST COUNSEL'S  
CLOSING ARGUMENT

TO THE HONORABLE ADMINISTRATIVE LAW JUDGES:

The Office of Public Interest Counsel (OPIC) at the Texas Commission on Environmental Quality (TCEQ or Commission) files this closing argument and would respectfully show as follows:

**I. Background & Burden of Proof**

On February 8, 2023, the Commission considered the application of the City of Liberty Hill (City or Applicant) for renewal of Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0014477001 in Williamson County.<sup>1</sup> After considering the Proposal for Decision (PFD) and Proposed Order issued on October 24, 2022, the Commission remanded this matter to the State Office of Administrative Hearings (SOAH) for the parties to present additional evidence to determine the Total Phosphorous effluent limit necessary to comply with the Texas Surface Water Quality Standards (Standards).

On March 29, 2023, the ALJs convened a preliminary hearing in this matter by Zoom videoconference. The following parties appeared through counsel:

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<sup>1</sup> Commission's Interim Order dated February 13, 2023.

Applicant; Executive Director (ED) of TCEQ; OPIC; Stephanie Morris (Protestant Morris); David and Louise Bunnell; Jon and Carolyn Ahrens; Terry, Sharon, and Jackson Cassidy; Carolyn and Donnie Dixon; Andrew and Elizabeth Engelke; Tom and Valerie Erickson; Joanne and John Swanson; Gerald and Susan Harkins; Pamela Sylvest; and LaWann and Frank Tull (the Bunnell Protestants). The hearing on the merits (remand hearing) was conducted via Zoom on July 26, 2023, through July 28, 2023.

### **Burden of Proof**

By rule, the burden of proof is on the moving party by a preponderance of the evidence.<sup>2</sup> In a permit hearing, the applicant is the moving party. Therefore, Applicant bears the burden of proof. Regarding the burden of proof in an SB 709 case, 30 Texas Administrative Code (TAC) § 80.117(b) states that an applicant's presentation of evidence to meet its burden of proof may consist solely of the filing with SOAH, and admittance by the ALJ, of the administrative record. However, Section 80.17(c)(2) provides that a party may rebut an applicant's prima facie demonstration by presenting evidence demonstrating that the draft permit violates a specifically applicable state or federal legal or technical requirement. If a rebuttal case is presented, section 80.17(c)(3) states that the applicant and the ED may present additional evidence to support the ED's draft permit.

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<sup>2</sup> 30 TAC § 80.17(a).



## II. Total Phosphorous Effluent Limit

The issue during the remand hearing was to determine the Total Phosphorous (TP) effluent limit necessary to comply with the Standards. Under the Standards, the TP effluent limit should prevent excessive algal growth that impairs an existing use of the receiving water and should prevent the degradation of water quality by more than a *de minimis* amount.<sup>3</sup>

### A. The limit should prevent excessive algal growth.

The water quality standard under 30 TAC § 307.4(e) provides that nutrients from permitted discharges or other controllable sources must not cause excessive growth of aquatic vegetation that impairs an existing, designated, presumed, or attainable use. Also, the rules regarding aesthetic parameters are listed under 30 TAC § 307.4(b). Under 30 TAC § 307.4(b)(4), surface waters must be maintained in an aesthetically attractive condition.

The TCEQ rules do not provide a definition of “excessive.” Under the Standards, the TP effluent limit should prevent excessive algal growth that impairs an existing use of the receiving water.<sup>4</sup> The designated uses for the South Fork San Gabriel River (the River) in Segment No. 1250 of the Brazos River Basin are high aquatic life, primary contact recreation, public water supply, and aquifer protection.<sup>5</sup>

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<sup>3</sup> Commission’s Interim Order dated February 13, 2023.

<sup>4</sup> *Id.* 30 TAC § 307.4(e).

<sup>5</sup> Admin. Record, Tab C, pg. 0063.

### QUAL2K Model

For this remand hearing, Dr. James Miertschin, an expert witness for the City, used the QUAL2K model to simulate algal growth in the receiving stream of the South Fork of the San Gabriel River.<sup>6</sup> Dr. Lauren Ross, an expert witness for Protestant Morris, stated during her testimony that Dr. Miertschin's QUAL2K modeling does not include significant, relevant, available, and local data regarding the River.<sup>7</sup> Dr. Ross testified that regarding the "excessive algae" concerns, in particular, the benthic algae concentrations predicated by the model are not reliable.<sup>8</sup> According to Dr. Ross' testimony, Dr. Miertschin's modeling results fail to answer the fundamental question of what TP effluent concentration limit would be necessary to prevent algae growth and more than *de minimis* water degradation.

### Scientific Studies

Dr. Ryan King, an expert witness for Protestant Morris, provided testimony that includes a summary of studies estimating the phosphorous concentration threshold linked to increased filamentous algae growth.<sup>9</sup> A predominant proportion of these studies identified threshold concentrations within the range of 0.02 to 0.03 milligrams per liter (mg/L).<sup>10</sup> Dr. King testified that the studies focused on areas with phosphorous background concentrations similar to those

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<sup>6</sup> Ex. APP-R-1 at 14:18-21, 25.

<sup>7</sup> Ex. SM-Ross-25-R at 11:4-6.

<sup>8</sup> Ex. SM-Ross-25-R at 11:21-23.

<sup>9</sup> Ex. SM-KING-16-R; Ex. SM-KING-9-R at 20:4-6.

<sup>10</sup> Ex. SM-KING-9-R at 20:8-9.

observed in the South Fork San Gabriel upstream of the outfall.<sup>11</sup> Dr. King also testified that any anticipated changes in filamentous green algal growth are contingent upon the stream's natural background concentrations, overall loading, sustained concentration levels, and the spatial distribution of other phosphorous sources.<sup>12</sup>

Dr. King's testimony further suggests that, by considering data from comparable systems like the River, a TP effluent level of 0.010 would trigger alterations in diatom communities within the River.<sup>13</sup> He testified that the proposed permit at any phase (1.2 million gallons a day (MGD), 2.0 MGD, 4.0 MGD) would need to contain an effluent limit of 0.010 TP in order to prevent harm to the native aquatic life.<sup>14</sup>

Dr. King further testified that concentrations at or above 0.02 mg/L TP will result in nuisance algal blooms, particularly filamentous green algal blooms that will affect the uses that are designated for the River.<sup>15</sup> According to Dr. King, based on the substantial weight of evidence, a level of 0.02 mg/L is the threshold for persistent algal growth and 0.015 mg/L is the level that's protective.<sup>16</sup> Dr. King also testified that the proposed permit at any phase (1.2 MGD, 2.0 MGD, 4.0 MGD) would need to contain an effluent limit of no more than 0.015 mg/L TP in

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<sup>11</sup> Ex. SM-KING-9-R at 20:6-8.

<sup>12</sup> Ex. SM-KING-9-R at 19:17-20.

<sup>13</sup> Tr. Vol. 2 at 53:17-24.

<sup>14</sup> Ex. SM-KING-9-R at 18:1-3.

<sup>15</sup> Ex. SM-KING-9-R at 19:20-22; Tr. Vol. 2 at 11:6-11.

<sup>16</sup> Tr. Vol. 2 at 53:14-17.

order to prevent algae growth that covered such a degree of the river that it would impair existing uses.<sup>17</sup>

*Public Perception Study*

Dr. Robert Stevenson, an expert witness for Protestant Morris, testified that when algal cover reaches around 20 percent, public perception of recreational uses begins to be impacted.<sup>18</sup> He further explained that algae cover of 15 to 20 percent on the stream's bottom results in about only 20 percent of people considering the system suitable for recreation.<sup>19</sup> His testimony drew upon a published study conducted in Montana that used well-established science methods to assess public perception.<sup>20</sup>

*TP Limit in Draft Permit*

ED's expert witness, Mr. Peter Schaefer, testified that the ED has determined a 0.15 mg/L TP limit is in compliance with the Standards.<sup>21</sup> However, Mr. Schaefer, an aquatic biologist, testified that a lower TP limit would be preferable,<sup>22</sup> and he further testified that the TP limit for the City's TPDES draft permit should fall within the range of 0.05 to 0.02 mg/L.<sup>23</sup> His opinion is based on his observations,<sup>24</sup> and information from the scientific literature, articles, and scientific studies conducted by Dr. King.<sup>25</sup> He agrees that the collective scientific

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<sup>17</sup> Ex. SM-KING-9-R at 19:25-27.

<sup>18</sup> Tr. Vol. 2 at 105:15-25, 106:1-8.

<sup>19</sup> Tr. Vol. 2 at 106:1-8.

<sup>20</sup> Ex. SM-Stevenson-4-R; Tr. Vol. 2 at 104:17-22, 106:12-14.

<sup>21</sup> Tr. Vol. 2 at 144:25, 145:1-2.

<sup>22</sup> Tr. Vol. 2 at 147:23-24.

<sup>23</sup> Tr. Vol. 2 at 148:12-19.

<sup>24</sup> Tr. Vol. 3 at 17:23.

<sup>25</sup> Tr. Vol. 2 at 152:25, 152:7, 151:8-10.

evidence indicates that approximately 0.02 mg/L, with a possible minor variation represents a critical threshold for algal growth.<sup>26</sup>

OPIC's Position

The record shows that the River is highly sensitive to nutrient inputs, and it has a propensity for algal growth.<sup>27</sup> There is no dispute that the City's wastewater effluent is the predominant cause of the algae growing at and downstream of the City's outfall. The record includes personal observations from Protestant Morris and Mr. David Bunnell that there has been substantial and continuous algal growth in the River, and it is adversely impacting their recreational use of the River.<sup>28</sup> Expert testimony indicates that despite the physical removal of algae from the waterbody, it would regenerate within a span of 7 to 14 days under ideal conditions.<sup>29</sup> The record includes photographic evidence<sup>30</sup> and firsthand observations<sup>31</sup> indicating the regrowth of algae within a few weeks after the City's scouring event, even when the concentrations remain below half of the 0.15 mg/L threshold.<sup>32</sup>

OPIC agrees that the TP effluent limit of 0.015 mg/L would be protective, however, the record shows that a TP effluent concentration of 0.015 mg/L could not be reliably measured and reported by the regulated community within the State, as the regulated community is required to utilize a TCEQ-certified

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<sup>26</sup> Tr. Vol. 2 at 155:19-21, 156:2-5.

<sup>27</sup> Tr. Vol. 2 at 189:16-20.

<sup>28</sup> Tr. Vol. 1 at 191:21-24, 192:3-6, 193:2-7, 210:6-12, 210:13-25, 211: 1, 214-215, 216:17-25, 228-233; Ex. SM-Morris-9-R at 9:4-12, 10:2-16.

<sup>29</sup> Tr. Vol. 2 at 70:15-23, 71:1-7.

<sup>30</sup> Ex. SM-King-12-R.

<sup>31</sup> Tr. Vol. 1 pg. 214, 215, 216:1.

<sup>32</sup> Tr. Vol. 2 at 201.

laboratory<sup>33</sup> and choosing a non-TCEQ-certified laboratory to demonstrate compliance with the 0.015 mg/L limit could potentially subject the City to challenges related to compliance.<sup>34</sup>

OPIC recommends a permit that not only ensures protection but is also enforceable. According to ED's expert Mr. Schaefer, the TP limit should be in the range of 0.02 to 0.05 mg/L. OPIC also notes that this limit range is based on the comprehensive scientific studies and research. Based on the weight of the evidence and to strike a balance between a protective and an enforceable permit, OPIC recommends the TP effluent limit be 0.02 mg/L to prevent the increase of excessive algal growth which could harm the River's current uses.

**B. The limit should prevent degradation of water quality.**

Under the Standards, the TP effluent limit should prevent the lowering of water quality by more than a *de minimis* amount.<sup>35</sup> The fundamental purpose of Tier 2 antidegradation analysis is to ensure that a permit doesn't degrade water quality to more than a *de minimis* extent. The rules do not define "de minimis," but it is commonly construed as trifling or negligible.<sup>36</sup>

Dr. King's prefiled testimony indicated that a TP limit of 0.015 mg/L would prevent the lowering of water quality by more than a *de minimis* amount.<sup>37</sup> He further testified that shifts in the behavior of sensitive diatoms initiate at

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<sup>33</sup> Ex. APP-R-6 at 14:4-6.

<sup>34</sup> Ex. APP-R-6 at 14:6-8.

<sup>35</sup> Commission's Interim Order dated February 13, 2023.

<sup>36</sup> *Robertson Cty: Our Land, Our Lives (RCOLOL) v. Tex. Comm'n on Envmt'l Quality*, Cause No. 03-12-00801-CV, 2014 WL 3562756 at \*8 (Tex. App.—Austin July 17, 2014, no pet.) (op. on reh'g) (quoting *De minimis*, Black's Law Dictionary 524 (10<sup>th</sup> ed. 2014)).

<sup>37</sup> Ex. SM-KING-9-R at 22:30-31.

concentrations ranging from 0.01 mg/L to 0.015 mg/L of TP, but when concentrations consistently reach 0.015 mg/L, substantial alterations in biological conditions occur,<sup>38</sup> and therefore, *de minimis* lowering of water quality is expected between 0.01 mg/L and 0.015 mg/L TP.<sup>39</sup> Furthermore, Dr. King's testimony emphasized the compelling evidence indicating that concentrations reaching 0.02 mg/L lead to excessive filamentous green algae growth, and it is recommended to set the permit limit at 0.015 mg/L.<sup>40</sup>

In his testimony, Mr. Schaefer testified that the issuance of the draft permit, with a TP limit of 0.15 mg/L, is not foreseen to result in any degradation of water quality<sup>41</sup> He further testified that his viewpoint is based on the antidegradation review conducted in 2013.<sup>42</sup> However, upon being presented with photographs depicting the state of the River - upstream, at or near the outfall, and downstream - during the periods when the facility's TP wastewater discharge remained well below 0.15 mg/L limit, Mr. Schaefer acknowledged that the images seem to indicate more than a trivial amount of lowering of water quality.<sup>43</sup>

The fundamental purpose of the Tier 2 antidegradation policy is to ensure that there is no degradation beyond a *de minimis* amount. OPIC is persuaded that the weight of the evidence indicates that the TP effluent limit of 0.15 mg/L in the draft permit would not prevent the lowering of water quality by more than a *de*

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<sup>38</sup> Ex. SM-KING-9-R at 22:31-32, 23:1-2.

<sup>39</sup> Ex. SM-KING-9-R at 22:32, 23:1-2.

<sup>40</sup> Ex. SM-KING-9-R at 23:3-5.

<sup>41</sup> Tr. Vol. 2 at 127:4-6.

<sup>42</sup> Tr. Vol. 2 at 127:8-11.

<sup>43</sup> Ex. SM-Morris-13-R at 21:Photo 77, Photo 78, 22:Photo 80, 28:Photo 86, 87, 29:Photo88, 30:Photo89; Tr. Vol. 3 at 42:18-25, 43-46, 47:1-22.

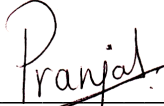
*minimis* amount, which is crucial to safeguarding the River from further degradation. As discussed earlier, based on the weight of the evidence and to strike a balance between a protective and an enforceable permit, OPIC recommends the TP effluent limit be 0.02 mg/L to prevent the lowering of water quality by more than a *de minimis* amount.

## V. Conclusion

Based on the weight of the evidence and for the reasons discussed above, OPIC recommends the TP effluent limit necessary to comply with the Standards would be 0.02 mg/L. OPIC finds that a TP effluent limit of 0.02 mg/L would prevent excessive algal growth that impairs an existing use of the receiving water and would prevent the degradation of water quality by more than a *de minimis* amount.

Respectfully submitted,

Garrett T. Arthur  
Public Interest Counsel

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## CERTIFICATE OF SERVICE

I hereby certify that on August 31, 2023, the foregoing document was filed with SOAH, the TCEQ Chief Clerk, and copies were served to all parties on the attached mailing list via hand delivery, facsimile transmission, electronic mail, inter-agency mail, or by deposit in the U.S. Mail.

A handwritten signature in cursive script that reads "Pranjal".

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Pranjal M. Mehta