

March 11, 2015

Chief Clerk's Office (MC-105)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

**RE: Proposed Texas Pollutant Discharge Elimination System Permit No. WQ0013321001
Application for Direct Discharge of Treated Domestic Wastewater to Deer Creek and
thence into Upper Blanco River Segment No. 1813
Applicant's Name: City of Wimberley, Texas**

I am submitting this letter on behalf of the Blanco River Cypress Creek Water Association (BRCCWA). The interest of the BRCCWA is to protect and preserve water quality in Cypress Creek and the Blanco River for all current uses which include contact recreation, public parkland, exceptional aquatic life use, water supply, organic agriculture, spiritual/baptism and aquifer recharge. The BRCCWA also seeks to protect the economic interests and property rights of our members. The economic value of our property is based on having access to the river for all kinds of contact recreational uses. The discharge of treated effluent, the runoff of treated effluent and/or the seeping of treated effluent is a threat to our uses. Additionally odors from the facility will be a nuisance and impact use of properties adjacent to and downwind of the facility including protected parkland. Therefore we request this permit not be approved as drafted but that it either be revised to include provisions necessary to protect water quality, aquatic life and air quality or that it be denied. We formally request a contested case hearing.

BRCCWA is an affected "person" and has interests in the resulting water quality degradation in the adjacent receiving waters of Cypress Creek, Blanco River, and recharge water to the Edwards and Trinity aquifers. BRCCWA members are invested in property along and adjacent to Cypress Creek and the Blanco River because of the exceptional water quality. The proposed draft permit negatively impacts the economic interests of our members whose property values and businesses are dependent on exceptional water quality thus potential exists that their incomes will be impaired. Our group consists of one hundred and twenty three (123) individuals who will be adversely affected by the proposed wastewater facility permit to discharge 75,000 gallons per day into Deer Creek and then the Blanco River. Nine (9) individuals of our group are specified as "Affected Landowners" in Attachment C of the Applicant's TCEQ permit application. A copy of the affected landowner map from the permit application is provided as Exhibit A and highlighted to show these individual members. A description of how these members along with the other affected property owners who are members of the BRCCWA is included in the concerns outlined below and in the individual letters from these affected property owners. Exhibit B provides a list of all of our affected individual member's location and their approximate distance from the proposed facility.

Based on the information provided in the draft permit, we have serious concerns that the proposed permit application has the potential to degrade the current water quality conditions, impair the current uses as described above, impair the ability of these water bodies to assimilate current and future non-point source pollutant loads, and impair aquatic life. These concerns in addition to the following specific concerns should be addressed at the contested case hearing if they are not resolved through the combined public meeting process:

- 1) A discharge permit is not appropriate for this location. While the Applicant states that effluent will be used for on-site irrigation of Blue Hole Park and “possibly returned to Central Wimberley for reuse”, there is no limitation in the draft permit on discharging up to the permit limit of 75,000 gallons per day continuously. Applicant has stated it has to be a discharge permit for the maximum discharge in order for the TCEQ to allow offsite reuse. The Texas Water Development Board loan for the reuse system back to Central Wimberley has not been secured and is assigned lower priority for funding thus use of term “possibly” in all references to reuse back to Central Wimberley. Nothing prevents future City Councils from exploiting or expanding capacity and renegeing on their promises to reclaim and pipe the treated effluent to downtown. This could lead to greater flow volumes being discharge on an increasingly consistent basis. We are being asked to simply trust that this plant will not discharge and will not be expanded. If the Applicant intends on using the maximum amount of effluent for irrigation of the Blue Hole Park then all the Applicant needs to do is to provide sufficient storage, soil data, and water balance calculations to show they meet the requirements of a land application type permit. In fact the Applicant evaluated two feasible options (2&3) for land application type permits (TLAP) in their Engineering Feasibility Report dated 9/2/14). The total construction costs of the TLAP Option 2 spray irrigation at \$6.497 MD and Option 3 subsurface irrigation at \$6.643 are comparable to the total construction cost of the Discharge Option in the Draft Permit at \$6.194. The cost of the discharge option in the proposed permit has increased by 24.7% since the stakeholder’s recommendation increasing from \$4.967 MD to \$6.194. There are feasible viable alternatives to Discharge that the TCEQ should consider that could address the concerns of the BRCCWA. Reference for cited costs is Engineering Feasibility Report and Addendum dated 9/19/14 contained in the TWDB application.

- 2) Higher technological treatment options capable of producing higher quality effluent are an available and feasible alternative. Even though the antidegradation review of the receiving waters by TCEQ indicates that the numerical and narrative criteria to protect existing uses will be maintained, we assert that the receiving water criteria of 0.69 mg/l for total phosphorus and 1.95 mg/l for nitrate are not appropriate criteria for streams within the Central Texas Plateau Ecoregion. According to the USEPA, nutrient pollution resulting from excess nitrogen and phosphorus is a leading cause of degradation of U.S. water quality. The scientific literature provides many examples that illustrate the effects of both nitrogen and phosphorus on instream and downstream water quality in streams, lakes, estuaries, and coastal systems. Even though regionalized nutrient criteria have not been developed in Texas yet (EPA is presently encouraging states to do such), nothing prevents TCEQ from setting more protective criteria now, rather than falling back upon inadequate statewide standards. The TCEQ has already set a precedent of establishing more stringent limits for the Hays County WCID #1 (Belterra) Discharge Permit for discharge to a similar Hill Country water body. The proposed Wimberley discharge is located upstream of an even more sensitive area used for public and private recreation. The site specific circumstances of Bear Creek and Belterra permit are extremely similar to this situation and thus previous City of Austin and USGS studies and modeling results would be directly applicable. The discharge is just upstream of Rocky River Ranch Girl’s Camp, neighborhood river parks, numerous Bed and Breakfasts, Montesino Ranch/Organic Farm and Texas State University Camp all located on the Blanco River. The discharge is also in the Trinity Recharge Zone, the Edwards Aquifer Contributing Zone and just upstream of the Edwards Aquifer Recharge Zone. Recent dye testing at downstream springs has shown that the Blanco River is a direct link and recharge to both San Marcos Springs and Barton Springs pools. Page 26 of the City of Wimberley’s Comprehensive Master Plan states, “The City should develop a municipal wastewater treatment system designed to protect our waterways and aquifers and require treatment of all effluent using the highest and cleanest standards at the time.” The limits set in the draft permit are less stringent than those set for Belterra. If Applicant is issued a discharge type permit then the plant should utilize the highest technology available (MBR) and the limits should be at least as stringent as Belterra. Additionally all the other conditions incorporated into the Belterra Permit should apply if a Discharge Permit is allowed. Refer to Reference 1&2.

- 3) The proposed total phosphorus limit of 0.5 mg/l is not protective of ambient water quality conditions and will likely contribute to algal blooms, dissolved oxygen swings, fish kills and the degradation of swimming holes and ponded areas adjacent to the land application area and along the discharge route. Nutrient limitation studies performed by the City of Austin in cooperation with USGS staff indicate total phosphorus would have to be much closer to background concentrations to prevent an increase in the frequency, duration, and severity of algal blooms in the perennial pools used for primary contact recreation in the discharge route. The normal background concentration in Cypress Creek and the Blanco River based on water quality data collected over many years is 0.02 mg/l or less. This concentration is identical to the mean value calculated for central Texas streams identified by TCEQ and the Texas Parks and Wildlife Department as minimally disturbed reference streams in a study conducted in the 1980s. A total phosphorus limit should be set that is protective of the established exceptional aquatic life use designations in the Blanco River and Cypress Creek. The 2012 Integrated Report published by TCEQ reported concerns already exist in the lower segment of Cypress Creek for dissolved oxygen, habitat, benthic macroinvertebrates, and fish. This segment was on the 2000 303d list of impaired waters for dissolved oxygen. Significant effort and expense was recently applied to complete the Cypress Creek Watershed Protection Plan in hopes of preventing water quality from deteriorating to such levels again. Refer to Reference 1 & 2.
- 4) The swimming holes and ponded areas downstream along the discharge route will collect a nutrient rich sediment layer on the riverbed under the water on private property which along with algae production and dissolved oxygen degradation will impair and or eliminate our ability to use our property for all types of contact recreation as well as take away its visual aesthetic. While the State of Texas may own the water, the property under the water is privately owned. Neither the Blanco River nor Cypress Creek have been ruled to be navigable by a court with appropriate jurisdiction. This concern will adversely impact many on our list of affected property owners. *See Tex. Parks & Wildlife Dep't v. Sawyer Trust 354 S.W. 3d 384, 390 (Tex. 2011)*
- 5) The draft permit does not contain proposed limits on total nitrogen and as such there is a strong potential for nitrate toxicity and algae blooms from enrichment. Studies on Hill Country stream algae communities indicate that they are co-limited for nitrogen and phosphorus under certain conditions. A total nitrogen limit should be set that is protective of Blanco River/Cypress Creek conditions (Reference 1&2)
- 6) The draft permit does not take into account that the uptake of nutrients in the land application process is seasonal and not constant. Plants use nutrients based on growing seasons and other factors. Seasonal nutrient loading to adjacent surface water resources from land application has been previously demonstrated by COA studies. Excess nutrients will subsequently run-off and promote algal production and result in degradation of water quality in Cypress Creek (which is not even listed in the draft permit as a receiving body) and the Blanco River. (References 1&2)
- 7) The wastewater effluent chemistry is drastically different than the background water chemistry found in Cypress Creek and the Blanco River thus the effluent will degrade water quality and adversely impact the designated uses of these segments and violates TCEQ antidegradation policies as delineated in 30TAC307.5. See link to the historical data from the Clean Rivers Program managed by Guadalupe Blanco River Authority on the Cypress and Blanco. This link will direct you to the list of sites in both watersheds located in Hays County. <http://www.gbra.org/crp/sites/hays.aspx>
- 8) The draft permit does not protect against future degradation of water quality and violates TCEQ antidegradation policies as delineated in 30TAC307.5. Water quality monitoring and biological monitoring with triggers in case of degradation that require the Applicant to add storage, add more irrigable land or other mitigation have been incorporated into multiple permits including Hay

County WCID #1 Belterra and is a precedent set by the TCEQ that we would like included as a part of this permit (if the permit is approved).

- 9) Blue Hole Park is not an appropriate site for expansion of the plant. A seep flowing into Cypress Creek has been identified on the Byrne Property (Affected Landowner Map ID 4). This property is adjacent to Blue Hole Park and down gradient from the existing 15,000 gallon per day wastewater plant effluent irrigation field. Initial test results on this seep indicate that nitrate was elevated 1.99 mg/l compared to the background concentrations of Cypress Creek at Blue Hole 0.25 mg/l. The test results of the seep are consistent with the test results of the existing WWTP's effluent for nitrate/nitrogen listed in the permit application. This seep and the lack of existing soil cover at Blue Hole Park which is not addressed in the draft permit indicates that Blue Hole Park does not meet the TCEQ requirements outlined in 309.10 which condition issuance of a permit on selection of a site that minimizes possible contamination of ground and surface waters. Specifically 309.12 (3) states that, "Soil conditions such as stratigraphic profile and complexity, hydraulic conductivity of strata and separation distance from the facility to the aquifer and points of discharge to surface water must be considered in site selection. The draft permit indicates that the effluent from the expanded plant will be applied to the same area that is hydraulically connected via the strata of this seep. Cypress Creek will thus receive the runoff of wastewater effluent applied in Blue Hole Park. Cypress Creek is not listed in the draft permit as a receiving stream. Affected Landowner Map ID#s 5, 6, 8, 9,10, 12, 14 and 20 either own property adjacent to Blue Hole Park or downstream of the park on Cypress Creek and uses it for contact recreation, business directly related to water quality, baptisms and all other type of contact recreation and will be adversely impacted. A Seep and Springs Monitoring Plan should be written into the permit that requires the Applicant to monitor for emerging and existing seeps and springs both on-site and off-site within a designated distance from the irrigated areas and the discharge point. This monitoring requirement should be in place as long as there is a treatment plant in operation on the Blue Hole Site.
- 10) The existing soil at Blue Hole Park is thin and will not provide adequate soil cover to prevent runoff of effluent and accumulated nutrients into Cypress Creek (which is not listed in the permit application as a receiving water body but could potentially receive significant runoff from surface irrigation). As outlined above, Cypress Creek was identified in the 2012 Integrated Report as having water quality, habitat, and biological concerns and was at one time listed on the 303d list. Additional nutrient inputs could result in dissolved oxygen problems once again and a return to the 303d list and its consequent ramifications. Because the permit is a discharge type permit and not a land application type permit, the Applicant is being given a way around having to provide adequate soil cover to prevent runoff and the associated water quality degradation. Nitrogen isotopes have identified the negative impacts of wastewater land application to water bodies receiving effluent run-off even without any direct discharge. Furthermore the proposed permit reuses the existing fenced off irrigation area without improvement or any apparent analysis as to its remaining effective design life. This irrigation field was constructed in 1989. (Reference 6)
- 11) Effluent discharge from the proposed wastewater facility will enter Edwards Aquifer groundwater contributing and recharge features, which are critical source waters for drinking water consumers. Dye studies in the area have demonstrated porous streambeds that naturally allow quick transport of fluids to areas as far as Austin and San Marcos. USGS gauge station data clearly show this portion of the Blanco River is a "losing" stream and contributes water to aquifers. They are numerous springs, seeps and faults along the Blanco River from the confluence of Deer Creek all the way to the Edwards Aquifer Recharge Zone proper.
- 12) The draft permit does not make it clear where the treated wastewater effluent may be applied relative to the floodplain. Water quality studies have documented negative impacts to surface water from land application too close to creeks and rivers. The draft application also does not require

irrigation field moisture monitoring to ensure that appropriate application rates are used. See link to report on impacts of wastewater in the Edwards Plateau under Reference 2.

- 13) The water quality of the discharge will adversely alter aquatic ecology.
- 14) The treatment plant will not remove pharmaceuticals. Pharmaceuticals in treated effluent have negative effects on human and aquatic life. Given that one of the contributors to the effluent is a nursing home facility, the likelihood of the presence of pharmaceuticals is essentially guaranteed. See Reference 3.
- 15) The application does not require dechlorination or UV disinfection. Chlorine combined with in-stream organics will form chloramines which are potential carcinogens and are toxic to aquatic biota. The expected chlorine residual alone is also toxic to aquatic life. There are safety concerns related to storage of chlorine at this facility which is located inside parkland and populated areas. Hays County WCID #1 (Belterra) set a precedent for requiring UV disinfection with respect to environmental protection of Hill County streams. The Applicant has indicated in a public document posted on their website called "Wastewater Project Frequently Asked Questions" (Reference 5) states that "The City is not opposed to using UV." We are requesting that it be used.
- 16) The draft permit added an E.Coli effluent limit of 126 cfu/100ml. The 2014 update to the Plum Creek Watershed Protection Plan by Texas A&M and a TMDL Study for Gilleland Creek by the LCRA both acknowledge serious knowledge gaps remain with regard to regrowth of E.coli in the environment relative to the completeness of disinfection. They note that downstream concentrations of E.coli are often much higher even with no known inflows or significant concentrations of potential sources are nearby. Incomplete disinfection and regrowth of E.coli will impair water quality and uses.
- 17) Odors at this site will negatively impact the use of parkland and nearby private property. The draft permit does not address the compliance required to abate and control nuisance of odor prior to construction of a new wastewater treatment plant outlined in Chapter 309 for Domestic Wastewater Effluent Limitation and Plant Siting. A nuisance odor prevention request in the form of an engineering report prepared and sealed by a licensed professional engineer for approval was not attached to the application. It is important that this request be submitted with the permit application to ensure that adequate funding is allocated to prevent nuisance odors and taking of parkland. Affected Landowners Map ID's 4, 5, 6, 8, 9, 10, 12, 14 and 20 will be adversely impacted.
- 18) A Chapter 26 "Protection of Public Parks and Recreational Lands" hearing is required to use parkland for anything other than parkland. The existing plant creates nuisance odors in the park and along the hike and bike trail and the new plant uses the same technology. The plant site and its buffer zone must be owned by the City as a separate parcel not designated as parkland. A Chapter 26 hearing has not taken place.
- 19) The draft permit does not address whether SCADA systems will be put on the three proposed Lift Stations and at the Wastewater Treatment Facility to allow for remote monitoring so that operators are automatically called if there are problems. This would help ensure early detection and response to mechanical problems, wastewater collection system overflows and protect water quality. Figure A-9 in the Environmental Information Document (EID) shows that two of the proposed Lift Stations are inside the floodplain designated AE. What will prevent them from inundation in a flood event?
- 20) There are concerns about limited electrical capacity Pedernales Electric Cooperative (PEC) has for this service area. PEC made a recent statement at Wimberley Council Meeting regarding potential for rolling brownouts in the service area if planned upgrades cannot proceed on schedule. How will this risk for potential plant and collection system lift stations overflows be mitigated?

- 21) Approval of a direct discharge permit does not take into account protection of threatened/endangered species. In September 2014, Texas Parks and Wildlife biologists conducted a mussel survey downstream of the proposed discharge in the Blanco River and found Texas PimplebackMussel (*Quadrula petrina*). The Texas Pimpleback mussel is currently listed as a state threatened species and it is also a candidate species currently under review for federal listing as Endangered under the Endangered Species Act. Their habitat is threatened by decreased water quality. The EID document states that the species may be present downstream but are unlikely to occur in the study area. Mollusks in the Blanco at the confluence with Deer Creek may be impacted.
- 22) The applicant has publically stated that the flows will not exceed 50,000 gallons per day however based on the Projected Flows included in the Engineering Feasibility Study, the estimated flow for build out of the wastewater plant is 74,850 gallons of sewage per day for 168 connections and initial flow will be 64,500 gallons per day for 124 connections. Based on this information 75% of the permitted capacity would be reached with initial flows and planning design for expansion would be required by the TCEQ to Phase 2 at 100,000 gallons per day. The City has publicly stated that service will not be expanded outside of this service area even into the City's adjacent CCN. Please clarify TCEQ's position on CCN and obligation to serve. We request that service area to be formally limited based on the City's response on the FAQ sheet question # 38 which alludes to regionalization. TCEQ promotes regionalization and should review this option. (Reference 5& 8)

Thank you for your consideration of this request. Please contact me if you have any questions. I am the elected representative for this group and also the BRCCWA's representative for receiving future correspondence at the address below.

Sincerely,



Gail Hamrick Pigg

President

Blanco River Cypress Creek Water Association

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Exhibits:

Exhibit A: Copy of the Affected Landowner Map from the permit application showing BRCCWA members
Exhibit B: List of Affected BRCCWA Members including member's location and distance from the proposed facility.

References:

1. *Potential Impacts of Hays County WCID No. 1 Proposed Wastewater Discharge on the Algae Communities of Bear Creek and Barton Springs, Herrington and Scoggins August 2006*
<http://www.hillcountryalliance.org/uploads/HCA/beltalgaestudy.pdf>
2. *Nutrient and Biological Conditions of Selected Small Streams in the Edwards Plateau, Central Texas, 2005-06, and Implications for Development of Nutrient Criteria, Jeffrey A. Mabe*
<http://pubs.usgs.gov/sir/2007/5195/>

3. *Reproductive Disruption in Fish Downstream from an Estrogenic Wastewater Effluent, Vajda et al, 2008.*
<http://pubs.acs.org/doi/abs/10.1021/es0720661>
4. *Addendum to Plum Creek Watershed Protection Plan, State of the Watershed, TAMU.*
http://plumcreek.tamu.edu/media/4712/PCWPPdraft2_13_08_water%20qualitywatershed%20partnership.pdf
5. *City of Wimberley Answers to Frequently Asked Questions*
http://www.cityofwimberley.com/vertical/sites/%7B140989A8-309D-4E90-A37A-F257BF123B26%7D/uploads/Wastewater_Project_FAQ_Updated_12-03-14.pdf
6. *Recent (2008–10) Concentrations and Isotopic Compositions of Nitrate and Concentrations of Wastewater Compounds in the Barton Springs Zone, South-Central Texas, and Their Potential Relation to Urban Development in the Contributing Zone*
http://www.austintexas.gov/watershed_protection/publications/document.cfm?id=196471
7. *Revisiting the Hydrogeologic Divide Between the San Antonio and Barton Springs Segments fo the Edwards Aquifer: Insights from Recent Studies, Smith, Hunt and Johnson, Barton Springs/Edwards Aquifer Conservation District*
8. *City of Wimberley Stakeholders Recommendations Approved by Council*
http://www.cityofwimberley.com/vertical/sites/%7B140989A8-309D-4E90-A37A-F257BF123B26%7D/uploads/Wastewater_Stakeholder_Committee_Final_Recommendation.pdf

