Comparison of Permit Restrictions on Direct Discharges in Edwards/Trinity Contributing Zone

For BS/EACD Board Discussion Purposes

	Belterra Draft TPDES Permit (before settlement)	Belterra Final TPDES Permit (with settlement terms)	Dripping Springs Pre-Draft TPDES Permit	Notes/Comments on D/S Pre-Draft Permit
1. TPDES Permittee	Hays County WCID No. 1	Hays County WCID No. 1	City of Dripping Springs	
2. Permit Term/Renewal	Standard 3-year term; upon notice/application, auto renewal if no changes/non-compliance	Standard 3-year term; upon notice/application, auto renewal if no changes/non-compliance	Term now ends 9/1/2019, which is close to start of new WWTP operation; auto renewal if no changes/non-compliance	D/S requesting delayed start of permit term
3. Receiving Stream	Bear Creek main stem, immediately below Belterra development	Bear Creek main stem, immediately below Belterra development; no direct discharge known to have yet occurred	Walnut Springs Creek, thence to Onion Creek main stem	About one-half mile of wastewater flow in Walnut Springs Creek, nearly all within Caliterra development
4. Outfall Location	Recharge zone of Upper Trinity and possibly Middle Trinity; contributing zone of Edwards, 8 miles upstream of its recharge zone	Recharge zone of Upper Trinity and possibly Middle Trinity; contributing zone of Edwards, 8 miles upstream of its recharge zone	Recharge zone of Middle and Upper Trinity; contributing zone of Edwards, about 19 miles upstream of its recharge zone	Direct Onion Creek recharge to Middle Trinity indicated, quantity and conditions for recharge not yet confirmed
5. Discharged Effluent Volume, Final Daily Average Flow	Up to 500,000 gpd	350,000 gpd permitted for direct discharge	995,000 gpd	Timing issue: Initial permit phase for399,000 gpd will be before new plant unit is complete to achieve the direct-

Comparison of Permit Restrictions on Direct Discharges in Edwards/Trinity Contributing Zone

For BS/EACD Board Discussion Purposes

	Belterra Draft TPDES Permit (before settlement)	Belterra Final TPDES Permit (with settlement terms)	Dripping Springs Pre-Draft TPDES Permit	Notes/Comments on D/S Pre-Draft Permit
				discharge effluent limits and therefore will require modification of existing TLAP. Second phase of 497,500 gpd will use new unit that will nominally be able to achieve limits
6. Effluent Limitations[1]	Initially, 5-5-2-1, no Total N limit. TCEQ later changed TP to 0.15 mg/L	5-5-2-0.15, <u>with</u> Total N of 6 mg/L. Total P of 0.3 mg/L (rather than 0.15 mg/L) when discharge 2 or fewer days/month. Nominally this would comply with Anti-degradation Policy, per SOAH finding	5-5-1.2-0.15, <u>without</u> Total N limit; no Sulfate limit. TCEQ says this complies with their Anti-degradation Policy	TCEQ says possibly elevated sulfate source in influent is not problematic; D/S originally requested a 5-5-2-0.5 and 5 mg/L DO. D/S requesting a conditional 0.3 mg/L Total P similar to Belterra.
7. Treatment Technology	Membrane Bioreactor	Membrane Bioreactor with Denitrification; specifies UV for disinfection unless better available; all wastewater to be	Four-stage Bardenpho, with external carbon and alum addition; uses less ecologically sound Chlorine for disinfection	D/S treatment train based on its requested limits, not as proposed. Bardenpho cannot achieve 0.15 mg/L P reliably

[1] For Carbonaceous Biochemical Oxygen Demand (5-day) – Total Suspended Solids – Ammonia-Nitrogen – Total Phosphorus, respectively, in mg/L on a 30-day average basis. All have same Coliform and DO limits. For D/S permit, only final-phase limits are shown; interim-phase limits for N are somewhat higher.

Comparison of Permit Restrictions on Direct Discharges in Edwards/Trinity Contributing Zone

For BS/EACD Board Discussion Purposes

	Belterra Draft TPDES Permit (before settlement)	Belterra Final TPDES Permit (with settlement terms)	Dripping Springs Pre-Draft TPDES Permit	Notes/Comments on D/S Pre-Draft Permit
		treated with MBR and denitrification regardless of intent to direct-discharge it		
8. WWTP Operator Licensing	Class C	Class A	Class C	Bardenpho with various proposed chemical additions needs both a SCADA and a Class A operator
9. Storage Requirement	Yes; on-site impoundment for hydraulic equalization	Yes; on-site 5.25MG (15 days) lined pond or tank plus additional 1.75 MG (5 days) if remedial action triggered by monitoring	None	
10. Restrictions/ Conditions for Discharge	None	No direct discharge unless 1) stream flow is > 14 cfs, 2) storage pond is full, or 3) spray fields are frozen/saturated	None	
11. Associated TLAP/Ch. 210 Authorization	Abandoning drip irrigation under TLAP even though it reduces volume subject to direct discharge; discretionary 210 reuse for spray irrigation within Belterra	Continuing 150,000 gpd of drip irrigation under TLAP reduces volume subject to direct discharge; mandatory 210 reuse for spray irrigation within Belterra.	210 reuse not required. Will abandon modified TLAP for on-site irrigation within 30 days of new plant startup	Discretionary 210 reuse planned for irrigating municipal parklands and other properties, including Caliterra, No details yet available

Comparison of Permit Restrictions on Direct Discharges in Edwards/Trinity Contributing Zone

For BS/EACD Board Discussion Purposes

	Belterra Draft TPDES Permit (before settlement)	Belterra Final TPDES Permit (with settlement terms)	Dripping Springs Pre-Draft TPDES Permit	Notes/Comments on D/S Pre-Draft Permit
		Mandatory installation of soil moisture monitors near creek buffer zones.		
12. Externally Generated Wastewater Included?	Yes, on a limited basis	Prohibited	Yes	More than half of D/S wastewater will come from outside City – designed to be regional WWTP
13. TPDES Permit Reporting Requirements	Monthly self-reporting, now via online system at TCEQ, of Average Daily and Max Grab results of all sampling;	Monthly self-reporting, now via online system at TCEQ, of Average Daily and Max Grab results of all sampling; Permit holder must share all monitoring reports with parties to settlement	Monthly self-reporting, now via online system at TCEQ, of Average Daily and Max Grab results of all sampling; Before startup, City must submit final engineering reports, plans, and specs to clearly show how treatment process will be able to meet applicable effluent limits	D/S wants to provide engineering reports only if/as requested by TCEQ, rather than as a mandatory permit provision/requirement
14. Mandated Monitoring Studies and Responses to Outcomes[2]	None.	Ongoing instream WQ monitoring, to be paid by Permit holder for first 18 months following first discharge and by other	None volunteered by D/S. TCEQ requiring effluent analysis of Nitrate-N within 90 days of startup, to assess	D/S requesting that effluent sampling and analysis for Nitrate be done only when the plant is treating effluent

[2] In addition to standard required effluent monitoring and reporting

Comparison of Permit Restrictions on Direct Discharges in Edwards/Trinity Contributing Zone

For BS/EACD Board Discussion Purposes

	Belterra Draft TPDES Permit (before settlement)	Belterra Final TPDES Permit (with settlement terms)	Dripping Springs Pre-Draft TPDES Permit	Notes/Comments on D/S Pre-Draft Permit
		parties thereafter, and statistical analysis that triggers specific defined remedial actions[3] by the Permit holder if agreed protections are not achieved	need for Nitrate-N effluent limits/monitoring	at quality required for direct discharge. D/S requesting that N and P effluent monitoring only be required during direct discharge
15. Supporting Water Quality Modeling Studies	Preliminary generic QUAL-TX modeling of DO under steady state conditions without nutrient cycling	Extensive DO and ecological modeling provided by multiple parties before and after permitting/settlement	None known in support of permit application. COA's dynamic WASP modeling demonstrates change in trophic status in Onion Creek and elevated Nitrate at Edwards recharge zone boundary	D/S appears to assume that asserting they will meet effluent limits is all that is required

[3] Remedial action is to 1) construct an additional 1.75 MG (5 days) storage or 2) reduce effluent by equivalent amount.