FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

For draft Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0001039000, U.S. Environmental Protection Agency (EPA) ID No. TX0006408, to discharge to water in the state

Issuing Office:	Texas Commission on Environmental Quality (TCEQ) P.O. Box 13087 Austin, Texas 78711-3087
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Date:	August 5, 2021
Permit Action:	Renewal; TPDES Permit No. WQ0001039000

I. EXECUTIVE DIRECTOR RECOMMENDATION

The executive director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The draft permit will expire at midnight, five years from the date of permit issuance according to the requirements of 30 Texas Administrative Code (TAC) §305.127(1)(C)(i).

II. APPLICANT ACTIVITY

The applicant currently operates the T.H. Wharton Electric Generating Station, a steam electric generating facility.

III. DISCHARGE LOCATION

As described in the application, the facility is located at 16301 Tomball Parkway, in the City of Houston, Harris County, Texas 77064. Discharge is via Outfall 001 to an unnamed ditch, thence to Greens Bayou Above Tidal in Segment No. 1016 of the San Jacinto River Basin.

IV. RECEIVING STREAM USES

The unclassified receiving water use is minimal aquatic life use for the unnamed ditch. The designated uses for Segment No. 1016 are primary contact recreation and limited aquatic life use.

V. STREAM STANDARDS

The general criteria and numerical criteria that make up the stream standards are provided in 30 TAC §§ 307.1 - 307.10.

VI. DISCHARGE DESCRIPTION

The following is a quantitative description of the discharge described in the monthly effluent report data for the period April 2016 through June 2021. The "average of daily average" values presented in the following table are the average of all daily average values for the reporting period for each pollutant. The "maximum of daily maximum" values presented in the following table are the individual maximum values for the reporting period for each pollutant. Flows are expressed in million gallons per day (MGD). Temperature is expressed in degrees Fahrenheit (°F). Concentration values are expressed in milligrams per liter (mg/L). Mass-based values are expressed as pounds per day (lbs/day). All pH values are expressed in standard units (SU). Bacteria levels are expressed in colony-forming units (CFU) or most probable number (MPN) per 100 mL. Not required by the existing permit and is, therefore, not applicable (N/A).

A. Flow

Outfall	Frequency	Average of Daily Average, MGD	Maximum of Daily Maximum, MGD
001	Continuous	0.92	6.84
101	Intermittent	0.12	0.93
201	Intermittent	0.12	0.24
301	Intermittent	0.019	0.54
401	Intermittent	0.006	0.09

B. Temperature

Outfall	Average of Daily Average, °F	Maximum of Daily Maximum, °F
001	73.6	91

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		mg/L	lbs/day	mg/L	lbs/day
001	Free available Chlorine	0.035	0.026	0.1	0.37
	Total Chromium	0.00091	0.0018	0.02	0.04
	Total Zinc	0.032	0.329	0.059	2.82
	pH, in standard units (SU)	7.5 SU (min)		8.9 SU (max)	
101	Total Suspended Solids (TSS)	10.3	N/A	53	N/A
	Oil and Grease	3.43	N/A	5.9	N/A
	pH	6.3 SU (min)		8.7 SU (max)	
201	TSS	4.02	N/A	6.83	N/A
	Oil and Grease	3.3	N/A	5.1	N/A
	Total Iron	0.334	N/A	0.4	N/A
	Total Copper	0.005	N/A	0.02	N/A
	pH	6.7 SU (min)		8.9 SU (max)	
301	TSS	4.4	N/A	28	N/A
	Oil and Grease	3.3	N/A	8.4	N/A
	pH	6.3 SU (min)		8.8 SU (max)	
401	TSS	3.19	N/A	16.3	N/A
	Biochemical Oxygen Demand (5-day) (BOD_5)	2.64	N/A	30.2	N/A
	Residual Chlorine	1 (min)	N/A	N/A	N/A
	pH	6.1 SU (min)		8.6 SU (max)	

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily Average		Maximum of Daily Maximum	
		mg/L	lbs/day	mg/L	lbs/day
401	*E. coli*	1 [1]		1 [1]	

No effluent limit violations were documented in the monthly effluent reports.

VII. DRAFT EFFLUENT LIMITATIONS

Effluent limitations are established in the draft permit as follows:

Outfall	Pollutant	Daily Average		Daily Maximum	
		mg/L	lbs/day	mg/L	lbs/day
001	Flow	3.95 MGD		6.87 MGD	
	Temperature	95°F		100°F	
	Free available Chlorine	0.2	0.55	0.5	1.37
	Total Aluminum	Report	Report	Report	Report
	Total Chromium	0.2	6.59	0.2	6.59
	Total Zinc [2]	0.316	10.42	0.668	22.02
	Total Zinc [3]	0.24	7.9	0.509	16.8
	pH, in standard units (SU)	6.0 SU (min)		9.0 SU (max)	
101	Flow	Report, MGD		Report, MGD	
	TSS	30	N/A	100	N/A
	Oil and Grease	15	N/A	20	N/A
	pH	6.0 SU (min)		9.0 SU (max)	
201	Flow	Report, MGD		Report, MGD	
	TSS	30	N/A	100	N/A
	Oil and Grease	15	N/A	20	N/A
	Total Iron	1.0	N/A	1.0	N/A
	Total Copper	0.5	N/A	1.0	N/A
	pH	6.0 SU (min)		9.0 SU (max)	
301	Flow	Report, MGD		Report, MGD	
	TSS	30	N/A	100	N/A
	Oil and Grease	15	N/A	20	N/A
	pH	6.0 SU (min)		9.0 SU (max)	
401	Flow	Report, MGD		Report, MGD	
	TSS	30	N/A	45	N/A
	BOD_5	30	N/A	45	N/A
	Residual Chlorine	1.0 (min)	N/A	N/A	N/A
	pH	6.0 SU (min)		9.0 SU (max)	
	E. coli	63 [1]		126 [1]	

[1] Expressed in colony-forming units (CFU) or most probable number (MPN) per 100 mL.

[2] Beginning on the date of permit issuance and lasting for 364 days.

[3] Beginning 365 days from the date of permit issuance and lasting through the date of permit expiration.

OUTFALL LOCATIONS

Outfall	Latitude	Longitude
001	29.947682 N	95.536928 W

VIII. SUMMARY OF CHANGES FROM APPLICATION

No changes were made from the application.

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

The following additional changes have been made to the draft permit:

1. Pages 3-13 were updated (May 2021 version).
2. Monitoring and reporting requirements for total aluminum have been included at Outfall 001, and existing Other Requirement No. 1 has been revised to include the total aluminum minimum analytical level.
3. Effluent limits for total zinc at Outfall 001 were revised based on water quality-based effluent limitations.

   Based on the self-reported data for the period April 2016 through June 2021, a three-year compliance period will not be necessary for the permittee to attain the new calculated effluent limitations. A one-year compliance period has been provided to allow the permittee to make any necessary changes to attain the final effluent limitations for total zinc. The compliance period is in accordance with 30 TAC Chapter 307.2(f).
4. Former Other Requirement No. 11, pertaining to retention ponds, has been removed because language is included in Other Requirement No. 20.
5. New Other Requirement No. 11, pertaining to dry-weather flow, has been added to the permit.
6. Other Requirement No. 14, pertaining to the discharge of priority pollutants, has been updated.
7. Other Requirement No. 19, pertaining to sewage sludge disposal, has been updated.
8. Other Requirement No. 21, regarding pond requirements, has been updated.
9. Other Requirement No. 21, regarding the development and submittal of a Thermal Plume Characterization study for Outfall 001, has been updated to include the deadline date for the completion of the study and the submittal of the final report.
10. Other Requirement No. 23, regarding the development and submittal of a Bacteria Characterization Study for Outfall 001, has been updated to include the deadline date for the completion of the study and the submittal of the final report.
11. The draft permit contains revised biomonitoring requirements at Outfall 001, in accordance with the "Procedures to Implement the Texas Surface Water Quality Standards". The current effluent dilution series of 29%, 39%, 52%, 69%, and 92% has been revised to 24%, 32%, 43%, 57% and 76% in the draft permit.

X. DRAFT PERMIT RATIONALE

The following section sets forth the statutory and regulatory requirements considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guidelines and water quality standards.

A. REASON FOR PERMIT ISSUANCE

The applicant applied to the TCEQ for a renewal of Permit No. WQ0001039000, which authorizes the discharge of cooling tower blowdown, stormwater, flush water, and previously monitored effluents (low volume wastewater on an intermittent and flow-variable basis via Outfall 101, metal cleaning waste on an intermittent and flow-variable basis via Outfall 201, low volume wastewater, stormwater, and spill prevention and control countermeasures sources on an intermittent and flow-variable basis via Outfall 301, and treated domestic wastewater on a flow-variable basis via Outfall 401) at a daily average dry-weather flow not to exceed 3.95 MGD and a daily maximum dry-weather flow not to exceed 6.87 MGD via Outfall 001.

B. WATER QUALITY SUMMARY

Discharge Route
The discharge route is via Outfall 001 to an unnamed ditch, thence to the Greens Bayou Above Tidal in Segment No. 1016 of the San Jacinto River Basin. The unclassified receiving water use is minimal aquatic life use for the unnamed ditch. The designated uses for Segment No. 1016 are primary contact recreation and limited aquatic life use. Effluent limitations and conditions established in the draft permit comply with state water quality standards and the applicable water quality management plan. The effluent limits in the draft permit will maintain and protect the existing instream uses. Additional discussion of the water quality aspects of the draft permit can be found at Section X.D. of this fact sheet.

Endangered Species Review
The discharge from this permit is not expected to have an effect on any federal endangered or threatened aquatic or aquatic-dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS's) biological opinion on the State of Texas authorization of the TPDES (September 14, 1998; October 21, 1998 update). To make this determination for TPDES permits, TCEQ and EPA only considered aquatic or aquatic-dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS's biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. The permit does not require EPA review with respect to the presence of endangered or threatened species.

Impaired Water Bodies
Segment No. 1016 is not currently listed on the State's inventory of impaired and threatened waters (the 2020 Clean Water Act Section 303(d) list).

Completed Total Maximum Daily Loads (TMDLs)
Nickel

The TMDL project 1: *Fourteen Total Maximum Daily Loads for Nickel in the Houston Ship Channel System* has been withdrawn and is no longer applicable.

Bacteria

TMDL Project 72B: *Eight Total Maximum Daily Loads for Indicator Bacteria in Greens Bayou Above Tidal and Tributaries* has been approved for this segment.

On June 2, 2010, the TCEQ adopted *Eight Total Maximum Daily Loads for Indicator Bacteria in Greens Bayou Above Tidal and Tributaries*. The EPA approved the TMDL on August 12, 2010. The TMDL addresses elevated levels of bacteria in multiple segments and assessment units of these bayous and their tributaries. The waste load allocation (WLA) for wastewater treatment facilities was established as the permitted flow for each facility multiplied by one-half the geometric mean criterion for bacteria. Future growth from existing or new permitted sources is not limited by these TMDLs as long as the sources do not exceed the limits of one-half the bacteria geometric mean criterion for *E coli*.

The approved TMDL for bacteria for Segment No. 1016 does not require any bacteria limitations for this permit. Nevertheless, the draft permit includes effluent limitations for *E. coli* at internal Outfall 401 (daily average = 63 cfu/100 mL; daily maximum = 126 cfu/100 mL), because the outfall discharges treated domestic wastewater. Based on the data provided in the application, the facility is meeting the proposed limits. *E. coli* effluent limits have been continued in the draft permit.

C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

Regulations in Title 40 of the Code of Federal Regulations (40 CFR) require that technology-based limitations be placed in wastewater discharge permits based on effluent limitations guidelines, where applicable, or on best professional judgment (BPJ) in the absence of guidelines.

The draft permit authorizes the discharge of cooling tower blowdown, stormwater, flush water, and previously monitored effluents (low volume wastewater on an intermittent and flow-variable basis via Outfall 101; metal cleaning waste on an intermittent and flow-variable basis via Outfall 201; low volume wastewater, stormwater, and spill prevention and control countermeasures sources on an intermittent and flow-variable basis via Outfall 301; and treated domestic wastewater on a flow-variable basis via Outfall 401) via Outfall 001 at a daily average dry-weather flow not to exceed 3.95 MGD and a daily maximum dry-weather flow not to exceed 6.87 MGD.

The discharge of cooling tower blowdown and previously monitored effluents (low volume wastewater via Outfall 101, metal cleaning waste via Outfall 201, and low volume wastewater via Outfall 301) via Outfall 001 from this facility is subject to federal effluent limitation guidelines at 40 CFR Part 423.

Outfall 001 – Effluent limitations at Outfall 001 for free available chlorine are based upon 40 CFR §423.13(d)(1). Effluent limitations for total chromium and total zinc are based upon 40 CFR §423.13(d)(1) & (3) for the discharge of cooling tower blowdown. Sampling for total chromium and total zinc is to be representative of times when cooling tower maintenance chemicals are used. Effluent limits for pH are based upon 40 CFR

§423.12(b)(1). Effluent limitations for polychlorinated biphenyl compounds (PCBs) are based upon 40 CFR §423.12(b)(2).

Outfall 101 – Effluent limits for pH are based upon 40 CFR §423.12(b)(1). Effluent limitations for TSS and oil and grease at internal Outfall 101 are based upon 40 CFR §423.12(b)(3) for the discharge of low volume waste sources.

Outfall 201 – Effluent limits for pH are based upon 40 CFR §423.12(b)(1). Effluent limitations for TSS, oil and grease, and total iron at internal Outfall 201 are based upon 40 CFR §423.12(b)(5) for the discharge of metal cleaning waste. Effluent limits for total copper are based upon 40 CFR §423.12(b)(5), 40 CFR §423.13(e), and 30 TAC §319.22.

Outfall 301 – Effluent limits for pH are based upon 40 CFR §423.12(b)(1). Effluent limitations for TSS, and oil and grease at internal Outfall 301 are based upon 40 CFR §423.12(b)(3) for the discharge of low volume waste sources. Concentrations of TSS and oil and grease in the stormwater component of the discharge are estimated to be the same or greater than these limitations based on BPJ. The effluent sampling point for TSS occurs prior to comingling with SPCC wastewater. Although levels of oil and grease in SPCC wastewater are likely greater than the oil and grease limitations at Outfall 301, the effluent sampling point for oil and grease occurs after comingling with SPCC wastewater, ensuring that the ELGs must be met in the low volume waste sources.

Outfall 401 – Effluent limitations for BOD_5, pH, and TSS at internal Outfall 401 are based upon 40 CFR §133.102. Effluent limits for residual chlorine are based upon 30 TAC §309.3(g)(1) & (2) for the discharge of treated domestic wastewater. Due to the free available chlorine maximum effluent limitation at Outfall 001, the 4.0 mg/L maximum chlorine residual effluent limit is not required at Outfall 401.

A new source determination was performed, and the discharge of wastewater for this facility is not a new source as defined at 40 CFR §122.2

The water treatment system at this facility consists of cooling tower blowdown, stormwater, flush water, and previously monitored effluents. Cooling tower blowdown is discharged via Outfall 001 after flowing through Ponds 1, 2, 3, and 4 where the treatment consists of cooling, sedimentation, and equalization.

Low volume waste sources discharged via internal Outfall 101 are initially treated through the chemical waste treatment system which consists of equalization to the demineralizer wastewater basin and the Boiler Blowdown Pond (Pond 5); and may also include neutralization and mixing in the first mixing tank; coagulation and mixing in the coagulation tank; sedimentation in the settling tank; and neutralization and mixing in the second mixing tank.

Metal cleaning wastes discharged via internal Outfall 201 are initially treated through the chemical waste treatment system consisting of equalization to the Organic Retention Pond (Pond 6), inorganic retention basin and the Boiler Blowdown Pond (Pond 5); and may also include neutralization and mixing in the

first mixing tank; coagulation and mixing in the coagulation tank; sedimentation in the settling tank; and neutralization and mixing in the second mixing tank.

Low volume waste sources, stormwater, and spill prevention and control countermeasures (SPCC) sources discharged via internal Outfall 301 are treated through the floor drainage treatment system/oily waste treatment system which consists of mixing in the mixing tank; coagulation and mixing in the coagulation tank; sedimentation, flotation, and skimming in the settling tank; flotation, sedimentation, and skimming in the API separator; and dissolved air flotation, skimming, flocculation, and coagulation in the tricellerator.

Treated domestic wastewater discharged via internal Outfall 401 is treated through the domestic wastewater treatment system which consists of anaerobic treatment in the septic tank, slow sand filtration in the filter bed, and disinfection in the chlorine contact chamber.

All stormwater drainage from production areas is discharged through permitted outfalls. All stormwater from nonproduction areas is discharged via stormwater-only outfalls that are not currently required to be authorized under the Multi Sector General Permit (TXR050000) because the facility is a natural gas combined cycle only plant. Should coverage be required in the future, the permittee will obtain such coverage. For production areas, at least the first flush of stormwater runoff from SPCC sources and production equipment will be collected and treated by the Oily Waste Treatment System. Additional runoff and runoff from all other production areas will be discharged into the cooling ponds and through Outfall 001. In addition, stormwater from the Boiler Blowdown Pond (Pond 5) and the Organic Retention Pond (Pond 6) will be treated by the Chemical Waste Treatment System before being discharged. All internal Outfalls from the above processes discharge to the cooling ponds, which subsequently discharge via Outfall 001.

2. CALCULATIONS

See Appendix A of this fact sheet for calculations and further discussion of technology-based effluent limitations proposed in the draft permit.

Technology-based effluent limitations for TSS, oil and grease, and pH at Outfalls 101, 201, 301, and 401 are continued from the existing permit.

The following technology-based effluent limitations are proposed in the draft permit:

Outfall	Pollutant	Daily Average		Daily Maximum	
		mg/L	lbs/day	mg/L	lbs/day
001	Flow	3.95 MGD		6.87 MGD	
	Temperature	95°F		100°F	
	Free available Chlorine	0.2	0.55	0.5	1.37
	Total Chromium	0.2	6.59	0.2	6.59
	pH	6.0 SU (min)		9.0 SU (max)	
101	Flow	Report, MGD		Report, MGD	
	TSS	30	N/A	100	N/A
	Oil and Grease	15	N/A	20	N/A

Outfall	Pollutant	Daily Average		Daily Maximum	
		mg/L	lbs/day	mg/L	lbs/day
101	pH	6.0 SU (min)		9.0 SU (max)	
201	Flow	Report, MGD		Report, MGD	
	TSS	30	N/A	100	N/A
	Oil and Grease	15	N/A	20	N/A
	Total Iron	1.0	N/A	1.0	N/A
	pH	6.0 SU (min)		9.0 SU (max)	
301	Flow	Report, MGD		Report, MGD	
	TSS	30	N/A	30	N/A
	Oil and Grease	15	N/A	15	N/A
	pH	6.0 SU (min)		9.0 SU (max)	
401	Flow	Report, MGD		Report, MGD	
	TSS	30	N/A	45	N/A
	BOD_5	30	N/A	45	N/A
	Residual Chlorine	1.0 (min)	N/A	N/A	N/A
	pH	6.0 SU (min)		9.0 SU (max)	

3. 316(B) COOLING WATER INTAKE STRUCTURES

a. SCREENING

The facility obtains water from the T.H. Wharton Electric Generating Station, a public water system (PWS No. TX1011093), for cooling purposes. The use of water obtained from a public water system for cooling purposes does not constitute the use of a cooling water intake structure; therefore, the facility is not subject to Section 316(b) of the CWA or 40 CFR Part 125, Subpart J.

b. PERMIT ACTION

Other Requirement No. 22 has been continued in the draft permit to address cooling water intake structure requirements under CWA §316(b). Although CWA §316(b) does not currently apply to this facility, the applicant would be required to notify the TCEQ if there is a change in how the facility obtains cooling water.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

The *Texas Surface Water Quality Standards* found at 30 TAC Chapter 307 state that surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life. The methodology outlined in the TCEQ guidance document *Procedures to Implement the Texas Surface Water Quality Standards* (IPs) is designed to ensure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to ensure that no source will be allowed to discharge any wastewater that (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic

bioaccumulation that threatens human health. Calculated water quality-based effluent limits can be found in Appendix B of this fact sheet.

TPDES permits contain technology-based effluent limits reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations or conditions are included. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other toxicity databases to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls. A comparison of technology-based effluent limits and calculated water quality-based effluent limits can be found in Appendix D of this fact sheet.

2. AQUATIC LIFE CRITERIA

a. SCREENING

Water quality-based effluent limitations are calculated from freshwater aquatic life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

There is no mixing zone or zone of initial dilution for this discharge directly to the unnamed ditch, an intermittent stream; acute freshwater criteria apply at the end of pipe. Chronic freshwater criteria are applied in Greens Bayou Above Tidal, the perennial freshwater stream.

For the intermittent stream, the percent effluent for acute protection of aquatic life is 100% because the seven-day, two-year low-flow (7Q2) of the intermittent stream is 0.0 cubic feet per second (cfs). This effluent percentage also provides acute protection of aquatic life in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during critical conditions. The estimated dilution for chronic protection of aquatic life is calculated using the two-year maximum monthly average flow of 1.68 MGD and the 7Q2 of 0.82 cfs for Greens Bayou Above Tidal. The following critical effluent percentages are being used:

Acute Effluent %	100%	Chronic Effluent %	76.02%

General Screening Procedures

Wasteload allocations (WLAs) are calculated using the above estimated effluent percentages, criteria outlined in the *Texas Surface Water Quality Standards*, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentration that can be discharged when, after mixing in the receiving stream, the instream numerical criteria will not be exceeded.

From the WLA, a long-term average (LTA) is calculated using a lognormal probability distribution, a given coefficient of variation (0.6), and a 90th percentile confidence level. The LTA is the long-term average effluent concentration for which the WLA will never be exceeded using a selected percentile confidence level.

The lower of the two LTAs (acute and chronic) is used to calculate a daily average and daily maximum effluent limitation for the protection of aquatic life using the same statistical considerations with the 99th percentile confidence level and a standard number of monthly effluent samples collected (12).

Assumptions used in deriving the effluent limitations include segment-specific values for TSS, pH, hardness, and chloride according to the IPs. The segment values are 10 mg/L for TSS, 7.5 standard units for pH, 65 mg/L for hardness (as calcium carbonate, $CaCO_3$), and 81 mg/L for chloride. For additional details on the calculation of water quality-based effluent limitations, refer to the *IPs*.

TCEQ practice for determining significant potential is to compare the reported analytical data against percentages of the calculated daily average water quality-based effluent limitation. Permit limitations are required when analytical data reported in the application equals or exceeds 85 percent of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required when analytical data reported in the application equals or exceeds 70 percent of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

Analytical data reported in the application for total aluminum exceeds 70 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection but is less than 85 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection. Monitoring and reporting requirements for total aluminum have been included in the draft permit.

The technology-based effluent limits for total copper were compared to the calculated water quality-based effluent limits to determine which effluent limits are more protective of the segment. The existing water quality-based effluent limits for total copper have been continued in the draft permit.

The existing effluent limits for total zinc were compared to the calculated water quality-based effluent limits to determine which effluent limits are more protective of the segment. Water quality-based effluent limits for total zinc have been included in the draft permit with a one-year compliance period.

3. WHOLE EFFLUENT TOXICITY (BIOMONITORING) CRITERIA (7-DAY CHRONIC)

a. SCREENING AND REASONABLE POTENTIAL ANALYSIS

The existing permit includes chronic freshwater biomonitoring requirements at Outfall 001.

In the past three years, the permittee performed twenty chronic tests with no demonstrations of significant toxicity (i.e., no failures) by the water flea (*Ceriodaphnia dubia*).

A reasonable potential (RP) determination was performed in accordance with 40 CFR §122.44(d)(1)(ii) to determine whether the discharge will reasonably be expected to cause or contribute to an exceedance of a state water quality standard or criterion within that standard. Each test species is evaluated separately. The RP determination is based on representative data from the previous three years of chronic whole effluent toxicity (WET) testing. This determination was performed in accordance with the methodology outlined in the TCEQ letter to the EPA dated December 28, 2015 and approved by the EPA in a letter dated December 28, 2015.

In accordance with the TCEQ Interoffice Memorandum dated July 7, 2021, with zero failures by the either species, a determination of no RP was made. WET limits are not required, and these species are eligible for the testing frequency reduction.

b. PERMIT ACTION

The provisions of this section apply to Outfall 001.

Based on information contained in the permit application, the TCEQ has determined that there may be pollutants present in the effluent that may have the potential to cause toxic conditions in the receiving stream.

Whole effluent toxicity testing (biomonitoring) is the most direct measure of potential toxicity, which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit are as follows:

i) Chronic static renewal survival and reproduction test using the water flea (*Ceriodaphnia dubia*). The frequency of the testing shall be once per quarter.

ii) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*). The frequency of testing shall be once per quarter.

Toxicity tests shall be performed in accordance with protocols described in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,* Fourth Edition (EPA-821-R-02-013) or the latest revision. The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the state water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge.

This permit may be reopened to require effluent limits, additional testing, or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body.

If none of the first four consecutive quarterly tests demonstrates significant lethal or sublethal effects, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test species. If one or more of the first four consecutive quarterly tests demonstrates significant sublethal effects, the permittee is required by the permit to continue quarterly testing for that species until four consecutive quarterly tests demonstrate no significant sublethal effects. At that time, the permittee may apply for the appropriate testing frequency reduction for that species. If one or more of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee is required by the permit to continue quarterly testing for that species until the permit is reissued.

c. DILUTION SERIES

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 24%, 32%, 43%, 57% and 76%. The low-flow effluent concentration (critical dilution) is defined as 76% effluent.

The dilution series outlined above was calculated using a 0.75 factor applied to the critical dilution. The critical dilution is the estimated effluent dilution at the edge of the aquatic life mixing zone, which is discussed in Section X.D.2.a. of this fact sheet.

4. AQUATIC ORGANISM TOXICITY CRITERIA (24-HOUR ACUTE)

a. SCREENING

The existing permit includes 24-hour acute freshwater biomonitoring requirements for Outfall 001. In the past three years, the permittee has performed twelve 24-hour acute tests, with zero demonstrations of significant mortality (i.e., zero failures).

Minimum 24-hour acute freshwater biomonitoring requirements are proposed in the draft permit as outlined below.

b. PERMIT ACTION

Twenty-four-hour 100% acute biomonitoring tests are required at Outfall 001 at a frequency of once per six months for the life of the permit. This toxicity testing requirement is derived from the information submitted with the application.

The biomonitoring procedures stipulated as a condition of this permit are as follows:

i) Acute 24-hour static toxicity test using the water flea (*Ceriodaphnia dubia* or *Daphnia pulex*). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

ii) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

Toxicity tests shall be performed in accordance with protocols described in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition (EPA-821-R-02-012) or the latest revision.

5. AQUATIC ORGANISM BIOACCUMULATION CRITERIA

a. SCREENING

Water quality-based effluent limitations for the protection of human health are calculated using criteria for the consumption of fish tissue found in Table 2 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307).

Fish tissue bioaccumulation criteria are applied for human health protection in the perennial stream. TCEQ uses the mass balance equation to estimate dilution in the perennial stream during average flow conditions. The estimated dilution for human health protection is calculated using the two-year average monthly average flow of 0.76 MGD and the harmonic mean flow of 0.98 cfs for Greens Bayou Above Tidal. The following critical effluent percentage is being used:

Human Health Effluent %: 54.54%

Water quality-based effluent limitations for human health protection against the consumption of fish tissue are calculated using the same procedure as outlined for calculation of water quality-based effluent limitations for aquatic life protection. A 99th percentile confidence level in the long-term average calculation is used, with only one long-term average value being calculated.

Significant potential is again determined by comparing reported analytical data against 70 percent and 85 percent of the calculated daily average water quality-based effluent limitation.

b. PERMIT ACTION

Analytical data reported in the application was screened against calculated water quality-based effluent limitations for the protection of human health. Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for human health protection. No additional limits or monitoring and reporting requirements have been added to the draft permit for the protection of human health.

6. DRINKING WATER SUPPLY PROTECTION

a. SCREENING

Segment No. 1016, which receives the discharge from this facility, is not designated as a public water supply. Screening reported analytical data of the effluent against water quality-based effluent limitations calculated for the protection of a drinking water supply is not applicable.

b. PERMIT ACTION

None.

7. TOTAL DISSOLVED SOLIDS, CHLORIDE, AND SULFATE STANDARDS PROTECTION

a. SCREENING

The average concentration of sulfate in the effluent is greater than the segment criterion. Screening procedures and effluent limitations for TDS, chloride, and sulfate are calculated using the methodology in the IPs and criteria in the *Texas Surface Water Quality Standards* (30 TAC Chapter 307). Detailed calculations are presented in Appendix C.

b. PERMIT ACTION

Based on the screening, no effluent limitations are needed for TDS, chloride, or sulfate.

8. PROTECTION OF pH STANDARDS

a. SCREENING

The existing permit includes pH limits of 6.0 – 9.0 standard units at Outfall 001, which discharges into an unclassified water body. Consistent with the procedures for pH screening that were submitted to EPA with a letter dated May 28, 2014, and approved by EPA in a letter dated June 2, 2014, requiring a discharge to an unclassified water body to meet pH limits of 6.0 – 9.0 standard units reasonably ensures instream compliance with *Texas Surface Water Quality Standards* pH criteria.

b. PERMIT ACTION

The existing pH limits of 6.0 – 9.0 standard units are carried forward in the draft permit at Outfall 001.

9. DISSOLVED OXYGEN PROTECTION

a. SCREENING

In accordance with the interoffice memorandum dated June 23, 2021 (modeling), a dissolved oxygen modeling analysis was previously

performed for this permit on August 11, 2011, by the Water Quality Assessment Team. Applicable water body uses and criteria, proposed permitted flow conditions, and modeling analytical procedures pertaining to this discharge situation remain unchanged from the previous review. Therefore, the existing effluent set of 30 mg/L BOD_5 for Outfall 401 is applicable to this permit.

The existing effluent limits have been reviewed for consistency with the minimum treatment recommendations contained in the *Waste Load Evaluation WLE-1R for the Houston Ship Channel System* (September 2006). No additional modeling work was performed for the current permit action.

b. PERMIT ACTION

The following effluent limits have been continued from the existing permit based on recommendations in the DO modeling memo:

Parameter	Daily Average	Daily Maximum
BOD_5	30 mg/L	45 mg/L

10. BACTERIA STANDARDS PROTECTION

a. SCREENING

The existing permit includes effluent limitations for *Escherichia coli* bacteria at internal Outfall 401.

Effluent limitations for *E. coli* bacteria at Outfall 401 of the current issued TPDES permit are required based on the discharge of domestic wastewater (as a contributing wastewater) via Outfall 401, and the applicable requirements of TMDL Project 72B: *Eight Total Maximum Daily Loads for Indicator Bacteria in Greens Bayou Above Tidal and Tributaries*.

In addition to the monitoring requirements for *E. coli* bacteria, the existing permit included a provision (Other Requirement No. 23) that required the permittee to develop and submit a plan to the TCEQ to identify sources of *E. coli* at Outfall 001 and determine if they are or are not of human origin.

b. PERMIT ACTION

Effluent limitations and monitoring requirements for *E. coli* at Outfall 401 of the current issued TPDES permit have been continued in the draft permit.

Other Requirement No. 23 has been revised to acknowledge the approval of the submitted plan and to require submittal of the completed study within 15 months after the date of permit issuance.

11. THERMAL STANDARDS PROTECTION

a. SCREENING

The existing permit includes effluent limitations for temperature at Outfall 001.

In addition to the monitoring requirements for temperature, the existing permit included a provision (Other Requirement No. 21) that required the permittee to develop and submit a thermal plume characterization plan to the TCEQ.

b. PERMIT ACTION

Effluent limitations for temperature at Outfall 001 of the current issued TPDES permit are continued into the draft permit.

Other Requirement No. 21 has been revised to acknowledge the approval of the submitted plan and to require submittal of the completed study with the application for the next permit renewal action.

XI. PRETREATMENT REQUIREMENTS

This facility is not defined as a publicly owned treatment works. Pretreatment requirements are not proposed in the draft permit.

XII. VARIANCE REQUESTS

No variance requests have been received.

XIII. PROCEDURES FOR FINAL DECISION

When an application is declared administratively complete, the chief clerk sends a letter to the applicant advising the applicant to publish the Notice of Receipt of Application and Intent to Obtain Permit in the newspaper. In addition, the chief clerk instructs the applicant to place a copy of the application in a public place for reviewing and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The chief clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent, along with the executive director's preliminary decision, as contained in the technical summary or fact sheet, to the chief clerk. At that time, the Notice of Application and Preliminary Decision will be mailed to the same people and published in the same newspaper as the prior notice. This notice sets a deadline for making public comments. The applicant must place a copy of the executive director's preliminary decision and draft permit in the public place with the application.

Any interested person may request a public meeting on the application until the deadline for filing public comments. A public meeting is intended for the taking of public comment and is not a contested case proceeding.

After the public comment deadline, the executive director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The chief clerk then mails the executive director's response to comments and final decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that if a person is not satisfied with the executive director's response and decision, they can request a contested case hearing or file a request to reconsider the executive director's decision within 30 days after the notice is mailed.

The executive director will issue the permit unless a written hearing request or request for reconsideration is filed within 30 days after the executive director's response to comments and final decision is mailed. If a hearing request or request for reconsideration is filed, the executive director will not issue the permit and will forward the application and request to the TCEQ commissioners for their consideration at a scheduled commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

If the executive director calls a public meeting or the commission grants a contested case hearing as described above, the commission will give notice of the date, time, and place of the meeting or hearing. If a hearing request or request for reconsideration is made, the commission will consider all public comments in making its decision and shall either adopt the executive director's response to public comments or prepare its own response.

For additional information about this application, contact Lorena Ortiz-Duque at (512) 239-4549.

XIV. ADMINISTRATIVE RECORD

The following section is a list of the fact sheet citations to applicable statutory or regulatory provisions and appropriate supporting references.

A. PERMIT(S)

TPDES Permit No. WQ0001039000 issued on September 17, 2018.

B. APPLICATION

TPDES wastewater permit application received on April 9, 2021.

C. 40 CFR CITATION(S)

40 CFR Part 423 (BPT and BAT).

D. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION

Letter dated April 29, 2014, from L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ, to Bill Honker, Director, Water Quality Protection Division, EPA (TCEQ proposed development strategy for thermal evaluation procedures).

Letter dated May 12, 2014, from William K. Honker, P.E., Director, Water Quality Protection Division, EPA, to L'Oreal W. Stepney, P.E., Deputy Director, Office of Water,

TCEQ (Approval of TCEQ proposed development strategy for thermal evaluation procedures).

Letter dated May 28, 2014, from L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ, to Bill Honker, Director, Water Quality Protection Division, EPA (TCEQ proposed development strategy for pH evaluation procedures).

Letter dated June 2, 2014, from William K. Honker, P.E., Director, Water Quality Protection Division, EPA, to L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ (Approval of TCEQ proposed development strategy for pH evaluation procedures).

Letter dated December 28, 2015, from L'Oreal Stepney, P.E., Deputy Director, Office of Water, TCEQ, to Bill Honker, Director, Water Quality Protection Division, EPA (TCEQ proposed development strategy for procedures to determine reasonable potential for whole effluent toxicity limitations).

Letter dated December 28, 2015, from William K. Honker, P.E., Director, Water Quality Protection Division, EPA, to L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ (Approval of TCEQ proposed development strategy for procedures to determine reasonable potential for whole effluent toxicity limitations).

TCEQ Interoffice Memorandum dated June 16, 2021, from Michelle Labrie of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Standards Memo).

TCEQ Interoffice Memorandum dated July 2, 2021, from Katie Cunningham of the Water Quality Assessment Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Critical Conditions Memo).

TCEQ Interoffice Memorandum dated June 23, 2021, from Josi Robertson of the Water Quality Assessment Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Modeling Memo).

TCEQ Interoffice Memorandum dated September 9, 2021, from Jenna R. Lueg of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Biomonitoring Memo).

E. MISCELLANEOUS

The *State of Texas 2014 Integrated Report* – Texas 303(d) List (Category 5), TCEQ, November 19, 2015.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective March 1, 2018, as approved by EPA Region 6.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective March 6, 2014, as approved by EPA Region 6, for portions of the 2018 standards not approved by EPA Region 6.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective July 22, 2010, as approved by EPA Region 6, for portions of the 2014 standards not yet approved by EPA Region 6.

Texas Surface Water Quality Standards, 30 TAC §§307.1 - 307.10, TCEQ, effective August 17, 2000, and Appendix E, effective February 27, 2002, for portions of the 2010 standards not yet approved by EPA Region 6.

Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition (EPA-821-R-02-013).

Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition (EPA-821-R-02-012).

Procedures to Implement the Texas Surface Water Quality Standards, TCEQ, June 2010, as approved by EPA Region 6.

Procedures to Implement the Texas Surface Water Quality Standards, TCEQ, January 2003, for portions of the 2010 IPs not approved by EPA Region 6.

Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits, TCEQ Document No. 98-001.000-OWR-WQ, May 1998.

Appendix A
Calculated Technology-Based Effluent Limits

The applicant operates the T.H. Wharton Electric Generating Station, a steam electric station with a total generating capacity of 1,027 Megawatts. Electricity is produced from two combined cycle units consisting of eight (8) natural gas-fired combustion turbines and two (2) steam turbines with a total generating capacity of 672 Megawatts; six (6) natural gas-fired combustion turbines operated in simple cycle configuration with a total of 342 Megawatts; and a diesel-fueled simple cycle combustion turbine with a generating capacity of 13 Megawatts.

The draft permit authorizes the discharge of cooling tower blowdown, stormwater, flush water, and previously monitored effluents (low volume wastewater on an intermittent and flow-variable basis via Outfall 101; metal cleaning waste on an intermittent and flow-variable basis via Outfall 201; low volume wastewater, stormwater, and spill prevention and control countermeasures sources on an intermittent and flow-variable basis via Outfall 301; and treated domestic wastewater on a flow-variable basis via Outfall 401) at a daily average dry-weather flow not to exceed 3.95 MGD and a daily maximum dry-weather flow not to exceed 6.87 MGD via Outfall 001. The discharge of these wastestreams via Outfall 001 from a power generating facility is subject to federal Effluent Limitation Guidelines at 40 CFR Part 423 – Steam Electric Power Generating Point Source Category.

The following parts of the 40 Code of Federal Regulations apply to the discharges from the facility:

Best practicable control technology currently available (BPT).

§423.12(b)(1)- BPT effluent limitations all discharges		
Pollutant	Daily Average (mg/L)	Daily Maximum (mg/L)
pH	6.0-9.0 SU	

§423.12(b)(2)- There shall be no discharge of PCBs such as those commonly used for transformer fluid.

§423.12(b)(3)- BPT effluent limitations for Low Volume Wastes		
Pollutant	Daily Average (mg/L)	Daily Maximum (mg/L)
TSS	30	100
Oil and Grease	15	20

§423.12(b)(5)- BPT effluent limitations for Metal Cleaning Wastes		
Pollutant	Daily Average (mg/L)	Daily Maximum (mg/L)
TSS	30	100
Oil and Grease	15	20
Copper, total	1.0	1.0
Iron, total	1.0	1.0

§423.12(b)(7)- BPT effluent limitations For Cooling Tower Blowdown		
Pollutant	Daily Average (mg/L)	Daily Maximum (mg/L)
Free available chlorine	0.2	0.5

§423.12(b)(8)- Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or State, if the State has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level or chlorination.

Best Available Technology economically achievable (BAT).

§423.13(d)(1)- BAT effluent limitations for Cooling Tower Blowdown		
Pollutant	Daily Average (mg/L)	Daily Maximum (mg/L)
Free available chlorine	0.2	0.5
Chromium, total	0.2	0.2
Zinc, total	1.0	1.0
The 126 priority pollutants (Appendix A) contained in chemicals added for cooling tower maintenance.	Non Detectable Amount	Non Detectable Amount

§423.13(d)(3)- At the permitting authority's discretion, instead of the monitoring specified in 40 CFR 122.11(b) compliance with the limitations for the 126 priority pollutants in paragraph (d)(1) of this section may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.

§423.13(e)- BAT effluent limitations for Chemical Metal Cleaning Wastes		
Pollutant	Daily Average (mg/L)	Daily Maximum (mg/L)
Copper, total	1.0	1.0
Iron, total	1.0	1.0

The facility commenced construction on August 16, 1974. A new source determination was performed, and the discharge of wastewater for this facility is not a new source as defined at 40 CFR §122.2

Outfall 001

Cooling tower blowdown, stormwater, flush water, and previously monitored effluents at a daily average dry-weather flow not to exceed 3.95 MGD via Outfall 001.

Effluent limitations for free available chlorine (FAC) at Outfall 001 are based upon guidance from 40 CFR 423.15(j)(1). Mass limitations for FAC are calculated based upon the permitted daily average flow

and a two hour per day chlorination period as follows:

$$FAC\ \left(\frac{lbs}{day}\right) =$$
$$FAC\ \left(\frac{mg}{L}\right) \times Flow\ (MGD) \times 8.345\ (Conversion\ Factor) \times \frac{Actual\ Chlorination\ Time\ (hrs)}{24\ hr\ period} \times \#\ units$$

where:

FAC (mg/L) = concentration of FAC measured in the effluent during representative period of chlorination.

Flow (MGD) = total actual flow discharged via outfall during sampling day.

FAC Daily Average = (0.2 mg/L) × (3.95 MGD) × (2hr/24hr) × (8.345) = 0.55 lbs/day

FAC Daily Maximum = (0.5 mg/L) × (3.95 MGD) × (2hr/24hr) × (8.345) = 1.37 lbs/day

Allowable Mass (lbs/day) = [Allowable Concentration (mg/L)] × Flow (MGD) × 8.345

Daily Average $_{\textbf{total chromium}}$ = (0.2 mg/L) × (3.95 MGD) × (8.345) = 6.59 lbs/day
Daily Maximum $_{\textbf{total chromium}}$ = (0.2 mg/L) × (3.95 MGD) × (8.345) = 6.59 lbs/day

Daily Average $_{\textbf{total zinc}}$ = (1.0 mg/L) × (3.95 MGD) × (8.345) = 32.9 lbs/day
Daily Maximum $_{\textbf{total zinc}}$ = (1.0 mg/L) × (3.95 MGD) × (8.345) = 32.9 lbs/day

Outfall 401

Treated domestic wastewater – effluent limitations for BOD_5, TSS, *E. coli*, pH, and chlorine residual at internal Outfall 401 are based upon 30 TAC Chapter 309 for the discharge of treated domestic wastewater.

Summary of applicable Regulations per Outfall

Outfall	*Code*	*Subpart*	*Pollutant*
001	40 CFR	§423.12(b)(1)	pH
	40 CFR	§423.12(b)(2)	PCBs
	40 CFR	§423.12(b)(7)	Free available chlorine
	40 CFR	§423.12(b)(8)	Free available chlorine, residual chlorine
	40 CFR	§423.13(d)(1)	Free available chlorine, Chromium, Zinc, Priority Pollutants
	40 CFR	§423.13(d)(3)	Zinc
101	40 CFR	§423.12(b)(1)	pH
	40 CFR	§423.12(b)(3)	TSS, Oil & Grease
201	40 CFR	§423.12(b)(1)	pH
	40 CFR	§423.12(b)(5)	TSS, Oil & Grease, Copper, Iron
	40 CFR	§423.13(e)	Copper, Iron
	30 TAC	§319.22	Copper
301	40 CFR	§423.12(b)(1)	pH
	40 CFR	§423.12(b)(3)	TSS, Oil & Grease
401	40 CFR	§133.102	BOD5, TSS, pH
	30 TAC	§309.3(g)(1) & (2)	Residual chlorine

Technology-based effluent limitations:

Outfall	Parameter	Daily Average		Daily Maximum	
001	Flow	3.95 MGD		6.87 MGD	
	Temperature	95˚F		100˚F	
	Free Available Chlorine	0.2 mg/L	0.55 lb/day	0.5 mg/L	1.37 lb/day
	Chromium, Total	0.2 mg/L	6.59 lb/day	0.2 mg/L	6.59 lb/day
	Zinc, Total	1.0 mg/L	32.9 lb/day	1.0 mg/L	32.9 lb/day
	pH	6.0 SU minimum		9.0 SU maximum	
101	Flow	Report MGD		Report MGD	
	TSS	30 mg/L		100 mg/L	
	Oil and Grease	15 mg/L		20 mg/L	
	pH	6.0 SU minimum		9.0 SU maximum	
201	Flow	Report MGD		Report MGD	
	TSS	30 mg/L		100 mg/L	
	Oil and Grease	15 mg/L		20 mg/L	
	Copper, Total	1.0 mg/L		1.0 mg/L	
	Iron, Total	1.0 mg/L		1.0 mg/L	
	pH	6.0 SU minimum		9.0 SU maximum	
301	Flow	Report MGD		Report MGD	
	TSS	30 mg/L		100 mg/L	
	Oil and Grease	15 mg/L		20 mg/L	
	pH	6.0 SU minimum		9.0 SU maximum	
401	Flow	Report MGD		Report MGD	
	TSS	30 mg/L		45 mg/L	
	BOD_5	30 mg/L		45 mg/L	
	E. coli	63 cfu or MPN/100 mL		126 cfu or MPN/100 mL	
	Total Residual Chlorine	1.0 mg/L minimum		NA	
	pH	6.0 SU minimum		9.0 SU maximum	

Appendix B
Calculated Water Quality-Based Effluent Limits

TEXTOX MENU #2 - INTERMITTENT STREAM WITHIN 3 MILES OF A FRESHWATER PERENNIAL STREAM/RIVER

The water quality-based effluent limitations developed below are calculated using:

Table 1, 2014 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life
Table 2, 2018 Texas Surface Water Quality Standards for Human Health
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010
Revised Appendix D - Segment-Specific Values for TSS, pH, Total Hardness, TDS, Chloride, and Sulfate (Sept. 2021)

PERMIT INFORMATION

Permittee Name:	NRG Texas Power LLC
TPDES Permit No.:	WQ0001039000
Outfall No.:	001
Prepared by:	Lorena Ortiz-Duque
Date:	08/04/2021

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	Unnamed ditch
Perennial Stream/River within 3 Miles:	Greens Bayou Above Tidal
Segment No.:	1016
TSS (mg/L):	10
pH (Standard Units):	7.5
Hardness (mg/L as $CaCO_3$):	65
Chloride (mg/L):	81
Effluent Flow for Aquatic Life (MGD):	1.68
Critical Low Flow [7Q2] (cfs) for intermittent:	0
Critical Low Flow [7Q2] (cfs) for perennial:	0.82
% Effluent for Chronic Aquatic Life (Mixing Zone):	76.02
% Effluent for Acute Aquatic Life (ZID):	100
Effluent Flow for Human Health (MGD):	0.76
Harmonic Mean Flow (cfs) for perennial:	0.98
% Effluent for Human Health:	54.543
Human Health Criterion (select: PWS, FISH, or INC)	**FISH**

CALCULATE DISSOLVED FRACTION (AND ENTER WATER EFFECT RATIO IF APPLICABLE):

Stream/River Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	89125.09	0.529		1.00	Assumed
Cadmium	6.60	-1.13	295120.92	0.253		1.00	Assumed
Chromium (total)	6.52	-0.93	389045.14	0.204		1.00	Assumed
Chromium (trivalent)	6.52	-0.93	389045.14	0.204		1.00	Assumed
Chromium (hexavalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	190546.07	0.344		1.00	Assumed
Lead	6.45	-0.80	446683.59	0.183		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	131825.67	0.431		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	223872.11	0.309		1.00	Assumed
Zinc	6.10	-0.70	251188.64	0.285		1.00	Assumed

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*FW Chronic Criterion (µg/L)*	*WLAa (µg/L)*	*WLAc (µg/L)*	*LTAa (µg/L)*	*LTAc (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Aldrin	3.0	N/A	3.00	N/A	1.72	N/A	2.52	5.34
Aluminum	991	N/A	991	N/A	568	N/A	834	1765
Arsenic	340	150	643	373	368	287	422	893
Cadmium	5.6	0.182	22.3	0.948	12.8	0.730	1.07	2.26
Carbaryl	2.0	N/A	2.00	N/A	1.15	N/A	1.68	3.56
Chlordane	2.4	0.004	2.40	0.00526	1.38	0.00405	0.00595	0.0126
Chlorpyrifos	0.083	0.041	0.0830	0.0539	0.0476	0.0415	0.0610	0.129
Chromium (trivalent)	400	52	1958	335	1122	258	379	802
Chromium (hexavalent)	15.7	10.6	15.7	13.9	9.00	10.7	13.2	27.9
Copper	9.5	6.6	27.5	25.0	15.8	19.3	23.1	49.0
Cyanide (free)	45.8	10.7	45.8	14.1	26.2	10.8	15.9	33.7
4,4'-DDT	1.1	0.001	1.10	0.00132	0.630	0.00101	0.00148	0.00315
Demeton	N/A	0.1	N/A	0.132	N/A	0.101	0.148	0.315
Diazinon	0.17	0.17	0.170	0.224	0.0974	0.172	0.143	0.302
Dicofol [Kelthane]	59.3	19.8	59.3	26.0	34.0	20.1	29.4	62.3
Dieldrin	0.24	0.002	0.240	0.00263	0.138	0.00203	0.00297	0.00630
Diuron	210	70	210	92.1	120	70.9	104	220
Endosulfan I (*alpha*)	0.22	0.056	0.220	0.0737	0.126	0.0567	0.0833	0.176
Endosulfan II (*beta*)	0.22	0.056	0.220	0.0737	0.126	0.0567	0.0833	0.176
Endosulfan sulfate	0.22	0.056	0.220	0.0737	0.126	0.0567	0.0833	0.176
Endrin	0.086	0.002	0.0860	0.00263	0.0493	0.00203	0.00297	0.00630
Guthion [Azinphos Methyl]	N/A	0.01	N/A	0.0132	N/A	0.0101	0.0148	0.0315
Heptachlor	0.52	0.004	0.520	0.00526	0.298	0.00405	0.00595	0.0126
Hexachlorocyclohexane (*gamma*) [Lindane]	1.126	0.08	1.13	0.105	0.645	0.0810	0.119	0.252
Lead	40	1.57	220	11.3	126	8.69	12.7	27.0
Malathion	N/A	0.01	N/A	0.0132	N/A	0.0101	0.0148	0.0315
Mercury	2.4	1.3	2.40	1.71	1.38	1.32	1.93	4.09
Methoxychlor	N/A	0.03	N/A	0.0395	N/A	0.0304	0.0446	0.0945
Mirex	N/A	0.001	N/A	0.00132	N/A	0.00101	0.00148	0.00315
Nickel	325	36.1	754	110	432	84.8	124	263
Nonylphenol	28	6.6	28.0	8.68	16.0	6.69	9.82	20.7
Parathion (ethyl)	0.065	0.013	0.0650	0.0171	0.0372	0.0132	0.0193	0.0409
Pentachlorophenol	14.4	11.1	14.4	14.6	8.26	11.2	12.1	25.6
Phenanthrene	30	30	30.0	39.5	17.2	30.4	25.2	53.4
Polychlorinated Biphenyls [PCBs]	2.0	0.014	2.00	0.0184	1.15	0.0142	0.0208	0.0441
Selenium	20	5	20.0	6.58	11.5	5.06	7.44	15.7
Silver	0.8	N/A	17.7	N/A	10.1	N/A	14.8	31.4
Toxaphene	0.78	0.0002	0.780	0.000263	0.447	0.000203	0.000297	0.000630
Tributyltin [TBT]	0.13	0.024	0.130	0.0316	0.0745	0.0243	0.0357	0.0756
2,4,5 Trichlorophenol	136	64	136	84.2	77.9	64.8	95.2	201
Zinc	81	82	286	379	164	292	240	509

HUMAN HEALTH

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Water and Fish Criterion (µg/L)*	*Fish Only Criterion (µg/L)*	*Incidental Fish Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Acrylonitrile	1.0	115	1150	211	196	288	609

Parameter	*Water and Fish Criterion (µg/L)*	*Fish Only Criterion (µg/L)*	*Incidental Fish Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Aldrin	1.146E-05	1.147E-05	1.147E-04	0.0000210	0.0000196	0.0000287	0.0000608
Anthracene	1109	1317	13170	2415	2246	3301	6983
Antimony	6	1071	10710	1964	1826	2684	5679
Arsenic	10	N/A	N/A	N/A	N/A	N/A	N/A
Barium	2000	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	5	581	5810	1065	991	1456	3080
Benzidine	0.0015	0.107	1.07	0.196	0.182	0.268	0.567
Benzo(*a*)anthracene	0.024	0.025	0.25	0.0458	0.0426	0.0626	0.132
Benzo(*a*)pyrene	0.0025	0.0025	0.025	0.00458	0.00426	0.00626	0.0132
Bis(chloromethyl)ether	0.0024	0.2745	2.745	0.503	0.468	0.688	1.45
Bis(2-chloroethyl)ether	0.60	42.83	428.3	78.5	73.0	107	227
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	6	7.55	75.5	13.8	12.9	18.9	40.0
Bromodichloromethane [Dichlorobromomethane]	10.2	275	2750	504	469	689	1458
Bromoform [Tribromomethane]	66.9	1060	10600	1943	1807	2656	5620
Cadmium	5	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	4.5	46	460	84.3	78.4	115	243
Chlordane	0.0025	0.0025	0.025	0.00458	0.00426	0.00626	0.0132
Chlorobenzene	100	2737	27370	5018	4667	6860	14513
Chlorodibromomethane [Dibromochloromethane]	7.5	183	1830	336	312	458	970
Chloroform [Trichloromethane]	70	7697	76970	14112	13124	19292	40815
Chromium (hexavalent)	62	502	5020	920	856	1258	2661
Chrysene	2.45	2.52	25.2	4.62	4.30	6.31	13.3
Cresols [Methylphenols]	1041	9301	93010	17053	15859	23312	49321
Cyanide (free)	200	N/A	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.002	0.02	0.00367	0.00341	0.00501	0.0106
4,4'-DDE	0.00013	0.00013	0.0013	0.000238	0.000222	0.000325	0.000689
4,4'-DDT	0.0004	0.0004	0.004	0.000733	0.000682	0.00100	0.00212
2,4'-D	70	N/A	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	262	473	4730	867	806	1185	2508
1,2-Dibromoethane [Ethylene Dibromide]	0.17	4.24	42.4	7.77	7.23	10.6	22.4
m-Dichlorobenzene [1,3-Dichlorobenzene]	322	595	5950	1091	1015	1491	3155
o-Dichlorobenzene [1,2-Dichlorobenzene]	600	3299	32990	6048	5625	8268	17493
p-Dichlorobenzene [1,4-Dichlorobenzene]	75	N/A	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.79	2.24	22.4	4.11	3.82	5.61	11.8
1,2-Dichloroethane	5	364	3640	667	621	912	1930
1,1-Dichloroethylene [1,1-Dichloroethene]	7	55114	551140	101047	93973	138140	292257
Dichloromethane [Methylene Chloride]	5	13333	133330	24445	22734	33418	70701
1,2-Dichloropropane	5	259	2590	475	442	649	1373
1,3-Dichloropropene [1,3-Dichloropropylene]	2.8	119	1190	218	203	298	631
Dicofol [Kelthane]	0.30	0.30	3	0.550	0.512	0.751	1.59
Dieldrin	2.0E-05	2.0E-05	2.0E-04	0.0000367	0.0000341	0.0000501	0.000106
2,4-Dimethylphenol	444	8436	84360	15467	14384	21144	44734
Di-*n*-Butyl Phthalate	88.9	92.4	924	169	158	231	489
Dioxins/Furans [TCDD Equivalents]	7.80E-08	7.97E-08	7.97E-07	1.46E-07	1.36E-07	1.99E-07	4.22E-07
Endrin	0.02	0.02	0.2	0.0367	0.0341	0.0501	0.106
Epichlorohydrin	53.5	2013	20130	3691	3432	5045	10674
Ethylbenzene	700	1867	18670	3423	3183	4679	9900
Ethylene Glycol	46744	1.68E+07	1.68E+08	30801332	28645239	42108501	89086693
Fluoride	4000	N/A	N/A	N/A	N/A	N/A	N/A

Parameter	*Water and Fish Criterion (µg/L)*	*Fish Only Criterion (µg/L)*	*Incidental Fish Criterion (µg/L)*	*WLAh (µg/L)*	*LTAh (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Heptachlor	8.0E-05	0.0001	0.001	0.000183	0.000171	0.000250	0.000530
Heptachlor Epoxide	0.00029	0.00029	0.0029	0.000532	0.000494	0.000726	0.00153
Hexachlorobenzene	0.00068	0.00068	0.0068	0.00125	0.00116	0.00170	0.00360
Hexachlorobutadiene	0.21	0.22	2.2	0.403	0.375	0.551	1.16
Hexachlorocyclohexane (*alpha*)	0.0078	0.0084	0.084	0.0154	0.0143	0.0210	0.0445
Hexachlorocyclohexane (*beta*)	0.15	0.26	2.6	0.477	0.443	0.651	1.37
Hexachlorocyclohexane (*gamma*) [Lindane]	0.2	0.341	3.41	0.625	0.581	0.854	1.80
Hexachlorocyclopentadiene	10.7	11.6	116	21.3	19.8	29.0	61.5
Hexachloroethane	1.84	2.33	23.3	4.27	3.97	5.84	12.3
Hexachlorophene	2.05	2.90	29	5.32	4.94	7.26	15.3
4,4'-Isopropylidenediphenol [Bisphenol A]	1092	15982	159820	29302	27250	40058	84749
Lead	1.15	3.83	38.3	38.4	35.7	52.4	111
Mercury	0.0122	0.0122	0.122	0.0224	0.0208	0.0305	0.0646
Methoxychlor	2.92	3.0	30	5.50	5.12	7.51	15.9
Methyl Ethyl Ketone	13865	9.92E+05	9.92E+06	1818745	1691433	2486406	5260357
Methyl *tert*-butyl ether [MTBE]	15	10482	104820	19218	17873	26272	55583
Nickel	332	1140	11400	4845	4506	6624	14014
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	45.7	1873	18730	3434	3194	4694	9932
N-Nitrosodiethylamine	0.0037	2.1	21	3.85	3.58	5.26	11.1
N-Nitroso-di-*n*-Butylamine	0.119	4.2	42	7.70	7.16	10.5	22.2
Pentachlorobenzene	0.348	0.355	3.55	0.651	0.605	0.889	1.88
Pentachlorophenol	0.22	0.29	2.9	0.532	0.494	0.726	1.53
Polychlorinated Biphenyls [PCBs]	6.4E-04	6.4E-04	6.40E-03	0.00117	0.00109	0.00160	0.00339
Pyridine	23	947	9470	1736	1615	2373	5021
Selenium	50	N/A	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.23	0.24	2.4	0.440	0.409	0.601	1.27
1,1,2,2-Tetrachloroethane	1.64	26.35	263.5	48.3	44.9	66.0	139
Tetrachloroethylene [Tetrachloroethylene]	5	280	2800	513	477	701	1484
Thallium	0.12	0.23	2.3	0.422	0.392	0.576	1.21
Toluene	1000	N/A	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.011	0.011	0.11	0.0202	0.0188	0.0275	0.0583
2,4,5-TP [Silvex]	50	369	3690	677	629	924	1956
1,1,1-Trichloroethane	200	784354	7843540	1438045	1337381	1965950	4159256
1,1,2-Trichloroethane	5	166	1660	304	283	416	880
Trichloroethylene [Trichloroethene]	5	71.9	719	132	123	180	381
2,4,5-Trichlorophenol	1039	1867	18670	3423	3183	4679	9900
TTHM [Sum of Total Trihalomethanes]	80	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	0.23	16.5	165	30.3	28.1	41.3	87.4

CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS:

Aquatic Life	*70% of Daily Avg.*	*85% of Daily Avg.*
Parameter	***(µg/L)***	***(µg/L)***
Aldrin	1.76	2.14
Aluminum	584	709
Arsenic	295	359
Cadmium	0.750	0.911
Carbaryl	1.17	1.43
Chlordane	0.00416	0.00506

Parameter	***(µg/L)***	***(µg/L)***
Chlorpyrifos	0.0427	0.0518
Chromium (trivalent)	265	322
Chromium (hexavalent)	9.25	11.2
Copper	16.2	19.6
Cyanide (free)	11.1	13.5
4,4'-DDT	0.00104	0.00126
Demeton	0.104	0.126
Diazinon	0.100	0.121
Dicofol [Kelthane]	20.6	25.0
Dieldrin	0.00208	0.00253
Diuron	72.9	88.5
Endosulfan I (*alpha*)	0.0583	0.0708
Endosulfan II (*beta*)	0.0583	0.0708
Endosulfan sulfate	0.0583	0.0708
Endrin	0.00208	0.00253
Guthion [Azinphos Methyl]	0.0104	0.0126
Heptachlor	0.00416	0.00506
Hexachlorocyclohexane (*gamma*) [Lindane]	0.0833	0.101
Lead	8.94	10.8
Malathion	0.0104	0.0126
Mercury	1.35	1.64
Methoxychlor	0.0312	0.0379
Mirex	0.00104	0.00126
Nickel	87.2	105
Nonylphenol	6.87	8.35
Parathion (ethyl)	0.0135	0.0164
Pentachlorophenol	8.50	10.3
Phenanthrene	17.6	21.4
Polychlorinated Biphenyls [PCBs]	0.0145	0.0177
Selenium	5.21	6.32
Silver	10.4	12.6
Toxaphene	0.000208	0.000253
Tributyltin [TBT]	0.0250	0.0303
2,4,5 Trichlorophenol	66.7	81.0
Zinc	168	204

Human Health	***70% of Daily Avg.***	***85% of Daily Avg.***
Parameter	***(µg/L)***	***(µg/L)***
Acrylonitrile	201	245
Aldrin	0.0000201	0.0000244
Anthracene	2310	2805
Antimony	1879	2281
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	1019	1237
Benzidine	0.187	0.227
Benzo(*a*)anthracene	0.0438	0.0532
Benzo(*a*)pyrene	0.00438	0.00532
Bis(chloromethyl)ether	0.481	0.584
Bis(2-chloroethyl)ether	75.1	91.2
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	13.2	16.0
Bromodichloromethane [Dichlorobromomethane]	482	585
Bromoform [Tribromomethane]	1859	2258

Parameter	***(µg/L)***	***(µg/L)***
Cadmium	N/A	N/A
Carbon Tetrachloride	80.7	98.0
Chlordane	0.00438	0.00532
Chlorobenzene	4802	5831
Chlorodibromomethane [Dibromochloromethane]	321	389
Chloroform [Trichloromethane]	13504	16398
Chromium (hexavalent)	880	1069
Chrysene	4.42	5.36
Cresols [Methylphenols]	16318	19815
Cyanide (free)	N/A	N/A
4,4'-DDD	0.00350	0.00426
4,4'-DDE	0.000228	0.000276
4,4'-DDT	0.000701	0.000852
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	829	1007
1,2-Dibromoethane [Ethylene Dibromide]	7.43	9.03
m-Dichlorobenzene [1,3-Dichlorobenzene]	1043	1267
o-Dichlorobenzene [1,2-Dichlorobenzene]	5788	7028
p-Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A
3,3'-Dichlorobenzidine	3.93	4.77
1,2-Dichloroethane	638	775
1,1-Dichloroethylene [1,1-Dichloroethene]	96698	117419
Dichloromethane [Methylene Chloride]	23393	28405
1,2-Dichloropropane	454	551
1,3-Dichloropropene [1,3-Dichloropropylene]	208	253
Dicofol [Kelthane]	0.526	0.639
Dieldrin	0.0000350	0.0000426
2,4-Dimethylphenol	14801	17972
Di-*n*-Butyl Phthalate	162	196
Dioxins/Furans [TCDD Equivalents]	1.39E-07	1.69E-07
Endrin	0.0350	0.0426
Epichlorohydrin	3531	4288
Ethylbenzene	3275	3977
Ethylene Glycol	29475950	35792226
Fluoride	N/A	N/A
Heptachlor	0.000175	0.000213
Heptachlor Epoxide	0.000508	0.000617
Hexachlorobenzene	0.00119	0.00144
Hexachlorobutadiene	0.385	0.468
Hexachlorocyclohexane (*alpha*)	0.0147	0.0178
Hexachlorocyclohexane (*beta*)	0.456	0.553
Hexachlorocyclohexane (*gamma*) [Lindane]	0.598	0.726
Hexachlorocyclopentadiene	20.3	24.7
Hexachloroethane	4.08	4.96
Hexachlorophene	5.08	6.17
4,4'-Isopropylidenediphenol [Bisphenol A]	28040	34049
Lead	36.7	44.6
Mercury	0.0214	0.0259
Methoxychlor	5.26	6.39
Methyl Ethyl Ketone	1740484	2113445
Methyl *tert*-butyl ether [MTBE]	18390	22331
Nickel	4636	5630
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	3286	3990
N-Nitrosodiethylamine	3.68	4.47
N-Nitroso-di-*n*-Butylamine	7.36	8.94

Parameter	*(µg/L)*	*(µg/L)*
Pentachlorobenzene	0.622	0.756
Pentachlorophenol	0.508	0.617
Polychlorinated Biphenyls [PCBs]	0.00112	0.00136
Pyridine	1661	2017
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.421	0.511
1,1,2,2-Tetrachloroethane	46.2	56.1
Tetrachloroethylene [Tetrachloroethylene]	491	596
Thallium	0.403	0.490
Toluene	N/A	N/A
Toxaphene	0.0192	0.0234
2,4,5-TP [Silvex]	647	786
1,1,1-Trichloroethane	1376165	1671058
1,1,2-Trichloroethane	291	353
Trichloroethylene [Trichloroethene]	126	153
2,4,5-Trichlorophenol	3275	3977
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	28.9	35.1

In order to calculate water quality-based effluent limits at an internal outfall to compare with existing limits and determine which effluent limits are more protective of the segment, a mass-balance calculation is required.

General Mass Balance Equation:

$$(A\ X\ B) + (C\ X\ D) = (E\ X\ F)$$

Where:

A = Pollutant containing flow[Outfall 201 flow (5-year avg flow)]	0.12 MGD
B = Internal Outfall 201 pollutant's Adjusted WQ-Based Effluent Limitation	Unknown
C = Non-'pollutant' containing flow = [(External Outfall 001 flow – Internal Outfall 201 flow]	0.92 - 0.12 = 0.8 MGD
D = Non-pollutant (copper) flow effluent concentration (assume 0 mg/L)	0 mg/L
E = Total External Outfall 001 flow	3.95 MGD
F = External Outfall 001 WQ-Based Effluent Limitation of the pollutant (copper)	0.0231 mg/L

Example calculation of adjusted WQ-Based Effluent Limitation for total copper at internal Outfall 201:

$$B = \frac{[(E\ X\ F) - (C\ X\ D)]}{(A\ )}$$

$$B = \frac{[\left(3.95\ MGD\ X\ 0.0231\ \frac{mg}{L}\right) - \left(0.8\ MGD\ X\ 0\ \frac{mg}{L}\right)]}{(0.12\ MGD)}$$

$$Outfall\ 201\ WQB\ daily\ average\ effluent\ Limit \frac{mg}{L} = \frac{\left(0.0912\ MGD, \frac{mg}{L}\right)}{(0.12\ MGD)} = 0.7604\ \frac{mg}{L} \approx 0.8\ \frac{mg}{L}$$

Existing effluent limits for total copper at Outfall 201 are more stringent than the recalculated effluent limits.

Appendix C
TDS, Chloride, and Sulfate Screening Calculations

Screening Calculations for Total Dissolved Solids, Chloride, and Sulfate

Menu 2 - Discharge to an Intermittent Stream within 3 Miles of a Perennial Stream

Screen the Intermittent Stream

Applicant Name:	**NRG Texas Power LLC**
Permit Number, Outfall:	**WQ0001039000, 001**
Segment Number:	**1016**

Enter values needed for screening:			**Data Source (edit if different)**
TDS CC - segment criterion - TDS	**1000**	mg/L	2014 TSWQS, Appendix A
Cl CC - segment criterion - chloride	**150**	mg/L	2014 TSWQS, Appendix A
SO4 CC - segment criterion - sulfate	**150**	mg/L	2014 TSWQS, Appendix A
TDS CE - average effluent concentration - TDS	**782.5**	mg/L	Permit application
Cl CE - average effluent concentration - chloride	**117.7**	mg/L	Permit application
SO4 CE - average effluent concentration - sulfate	**261.6**	mg/L	Permit application

TDS Screening

The TDS screening value is determined by first calculating an initial TDS concentration, C_{TDS}, as follows:

C_{TDS} = (TDS CC / 500 mg/L) * 2,500 mg/L

Where:	C_{TDS} = TDS concentration used to determine Csv screening value TDS CC = TDS criterion at the first downstream segment 500 mg/L = the median TDS concentration in Texas streams 2,500 mg/L = the minimum TDS screening value

C_{TDS} = 5000 mg/L

The next step is to use the initial C_{TDS} to set the actual TDS screening value, TDS Csv, using the following table:

If C_{TDS}		**Then TDS Csv**
≤ 2,500 mg/L	=	2,500 mg/L
> 2,500 mg/L but ≤ 6,000 mg/L	=	C_{TDS}
> 6,000 mg/L	=	6,000 mg/L

Some specific types of intermittent streams have alternative screening values (Csv):

Specific Type of Intermittent Stream	If C_{TDS} is	Default Csv =
Dry except for short-term flow in immediate response to rainfall.	< 4,000 mg/L	4,000 mg/L
	≥ 4,000 mg/L	C_{TDS}
Constructed ditch conveying stormwater and wastewater, considered water in the state.	< 4,000 mg/L	4,000 mg/L
	≥ 4,000 mg/L	C_{TDS}
Within 3 miles of tidal waters.	—	6,000 mg/L

Once TDS Csv is established, the next step is to compare the effluent TDS concentration, TDS CE, to the screening value. Control measures, which may include effluent limitations, are considered for TDS if the effluent TDS is greater than the screening value.

Values needed for Screening			Data Source
TDS CE - average effluent TDS concentration	782.5	mg/L	Permit application
TDS Csv - TDS screening value	**5000**	mg/L	Determined above

No control measures needed if:	782.5	≤	5000
Consider control measures if:	782.5	>	5000

No control measures needed for TDS

When effluent limitations are established in the permit, the daily average TDS limit is typically set equal to the TDS screening value. The daily maximum TDS limit is calculated as 2.12 times the daily average limit.

	Total Dissolved Solids		
Daily Average	=	N/A	mg/L
Daily Maximum	=	N/A	mg/L

Chloride Screening

If TDS limits are necessary or there are concerns about chloride, additional screening can be performed for chloride. First calculate the screening value for chloride, Cl Csv, as follows:

Cl Csv = (TDS Csv /TDS CC) * Cl CC

Where:	Cl Csv = chloride screening value TDS Csv = TDS screening value TDS CC = TDS criterion at the first downstream segment Cl CC - chloride criterion at the first downstream segment

Cl Csv = **750** mg/L

Once the Cl Csv is established, the next step is to compare the effluent chloride concentration, Cl CE, to the screening value. Control measures, which may include effluent limitations, are considered for chloride if the effluent chloride is greater than the screening value.

Values needed for Screening			Data Source
Cl CE - average effluent chloride concentration	117.7	mg/L	Permit application
Cl Csv - chloride screening value	750	mg/L	Determined above

No control measures needed if:	117.7	≤	750
Consider control measures if:	117.7	>	750

No control measures needed for chloride

When effluent limitations are established in the permit, the daily average chloride limit is typically set equal to the chloride screening value. The daily maximum chloride limit is calculated as 2.12 times the daily average limit.

	Chloride		
Daily Average	=	N/A	mg/L
Daily Maximum	=	N/A	mg/L

Sulfate Screening

If TDS limits are necessary or there are concerns about sulfate, additional screening can be performed for sulfate. First calculate the screening value for sulfate, SO4 Csv, as follows:

SO4 Csv = (TDS Csv /TDS CC) * SO4 CC

Where:	SO4 Csv = sulfate screening value
	TDS Csv = TDS screening value
	TDS CC = TDS criterion at the first downstream segment
	SO4 CC - sulfate criterion at the first downstream segment

SO4 Csv = **750** mg/L

Once the SO4 Csv is established, the next step is to compare the effluent sulfate concentration, SO4 CE, to the screening value. Control measures, which may include effluent limitations, are considered for sulfate if the effluent sulfate is greater than the screening value.

Values needed for Screening			Data Source
SO4 CE - average effluent sulfate concentration	261.6	mg/L	Permit application
SO4 Csv - sulfate screening value	750	mg/L	Determined above

No control measures needed if:	261.6	≤	750	
Consider control measures if:	261.6	>	750	

No control measures needed for sulfate

When effluent limitations are established in the permit, the daily average sulfate limit is typically set equal to the sulfate screening value. The daily maximum sulfate limit is calculated as 2.12 times the daily average limit.

		Sulfate	
Daily Average	=	N/A	mg/L
Daily Maximum	=	N/A	mg/L

Appendix D
Comparison of Technology-Based Effluent Limits and Water Quality-Based Effluent Limits

The following table is a summary of technology-based effluent limitations calculated/assessed in the draft permit (Technology-Based), calculated/ assessed water quality-based effluent limitations (Water Quality-Based), and effluent limitations in the existing permit (Existing Permit). Effluent limitations appearing in bold are the most stringent of the three and are included in the draft permit.

Outfall	*Pollutant*	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		mg/L	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*
001	Flow	3.95 MGD		6.87 MGD		--		--		**3.95 MGD**		**6.87 MGD**	
	Temperature	95°F		100°F		--		--		**95 °F**		**100 °F**	
	Free Available Chlorine	0.2	0.55	0.5	1.37	--	--	--	--	**0.2**	**0.55**	**0.5**	**1.37**
	Aluminum, Total	--	--	--	--	**Report**	**Report**	**Report**	**Report**	--	--	--	--
	Chromium, Total	0.2	6.59	0.2	6.59	--	--	--	--	**0.2**	**6.59**	**0.2**	**6.59**
	Zinc, Total	1.0	33	1.0	33	**0.24**	**7.9**	**0.509**	**16.8**	0.316	10.42	0.668	22.02
	pH	6.0 SU (min)		9.0 SU (max)		--		--		**6.0 SU (min)**		**9.0 SU (max)**	
101	Flow	Report, MGD		Report, MGD		--		--		**Report, MGD**		**Report, MGD**	
	TSS	30	--	100	--	--	--	--	--	**30**	**--**	**100**	**--**
	Oil and Grease	15	--	20	--	--	--	--	--	**15**	**--**	**20**	**--**
	pH	6.0 SU (min)		9.0 SU (max)						**6.0 SU (min)**		**9.0 SU (max)**	
201	Flow	Report, MGD		Report, MGD		--		--		**Report, MGD**		**Report, MGD**	
	TSS	30	--	100	--	--	--	--	--	**30**	**--**	**100**	**--**
	Oil and Grease	15	--	20	--	--	--	--	--	**15**	**--**	**20**	**--**
	Iron, Total	1.0	--	1.0	--	--	--	--	--	**1.0**	**--**	**1.0**	**--**
	Copper, Total	1.0	--	1.0	--	0.8	--	1.6	**--**	**0.5**	**--**	**1.0**	--
	pH	6.0 SU (min)		9.0 SU (max)		--		--		**6.0 SU (min)**		**9.0 SU (max)**	
301	Flow	Report, MGD		Report, MGD		--		--		**Report, MGD**		**Report, MGD**	
	TSS	30	--	100	--	--	--	--	--	**30**	**--**	**100**	**--**
	Oil and Grease	15	--	20	--	--	--	--	--	**15**	**--**	**20**	**--**
	pH	6.0 SU (min)		9.0 SU (max)		--		--		**6.0 SU (min)**		**9.0 SU (max)**	
401	Flow	Report, MGD		Report, MGD		--		--		**Report, MGD**		**Report, MGD**	
	Total Suspended Solids	30	--	45	--	--	--	--	--	**30**	**--**	**45**	**--**
	BOD_5	30	--	45	--	--	--	--	--	**30**	**--**	**45**	**--**

Outfall	*Pollutant*	*Technology-Based*				*Water Quality-Based*				*Existing Permit*			
		Daily Avg		*Daily Max*		*Daily Avg*		*Daily Max*		*Daily Avg*		*Daily Max*	
		mg/L	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*	*mg/L*	*lbs/day*
401	DO	1.0 (min)	--	--	--	--	--	--	--	**1.0 (min)**	**--**	**--**	**--**
	pH	6.0 SU (min)		9.0 SU (max)		--		--		**6.0 SU (min)**		**9.0 SU (max)**	
	E. coli [1]	--		--		63 [1]		126 [1]		**63** [1]		**126** [1]	

[1] Colony-forming units (CFU) or most probable number (MPN) per 100 mL.

TPDES PERMIT NO.
WQ0001039000
[For TCEQ office use only -
EPA I.D. No. TX0006408]

This renewal replaces TPDES Permit No. WQ0001039000, issued on September 17, 2018.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code
and 40 CFR Part 423

NRG Texas Power LLC

whose mailing address is

910 Louisiana Street
Houston, Texas 77002

is authorized to treat and discharge wastes from the T.H. Wharton Electric Generating Station, a steam electric generating facility (SIC 4911)

located at 16301 Tomball Parkway, in the City of Houston, Harris County, Texas 77064

via Outfall 001 to an unnamed ditch, thence to the Greens Bayou Above Tidal in Segment No. 1016 of the San Jacinto River Basin

only according to effluent limitations, monitoring requirements, and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, five years from the date of permit issuance.

ISSUED DATE:

_____
For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS — Outfall Number 001

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge cooling tower blowdown [1], stormwater [2], flush water [3], and previously monitored effluents [4] subject to the following effluent limitations:

   The daily average dry-weather flow [5] of effluent shall not exceed 3.95 million gallons per day (MGD). The daily maximum dry-weather flow shall not exceed 6.87 MGD.

Effluent Characteristics	Discharge Limitations					Minimum Self-Monitoring Requirements	
	Daily Average		Daily Maximum		Single Grab	Report Daily Average and Daily Maximum	
	mg/L	lbs/day	mg/L	lbs/day	mg/L	Measurement Frequency	Sample Type
Flow	3.95 MGD		6.87 MGD		N/A	Continuous	Record
Temperature [6]	95 °F		100 °F		100 °F	Continuous	Record
Free Available Chlorine [7]	0.2	0.55	0.5	1.37	0.5	1/week	Grab [8]
Aluminum, Total	Report	Report	Report	Report	N/A	1/month	Grab
Chromium, Total [9]	0.2	6.59	0.2	6.59	0.2	1/month	Grab [10]
Zinc, Total [9, 11]	0.316	10.42	0.668	22.02	0.668	1/month	Grab [10]
Zinc, Total [9, 12]	0.24	7.9	0.509	16.8	0.35	1/month	Grab [10]

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week by grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location: At Outfall 001, where the effluent is discharged from Pond No. 4 prior to mixing with any other waters.

[1] See Other Requirement No. 6.
[2] See Other Requirement No. 8.
[3] See Other Requirement No. 7.
[4] See Other Requirement No. 9.
[5] See Other Requirement No. 11.
[6] See Other Requirements No. 2 and No. 21.
[7] See Other Requirement No. 3.
[8] Samples must be representative of periods of chlorination.
[9] See Other Requirement No. 14.
[10] Samples must be representative of times when cooling tower maintenance chemicals are used.
[11] Beginning on the date of permit issuance and lasting for 364 days.
[12] Beginning 365 days from the date of permit issuance and lasting through the date of permit expiration.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge low volume waste sources [1] subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day [2]	Estimate
Total suspended solids	30	100	100	1/week [2]	Grab
Oil and grease	15	20	20	1/week [2]	Grab

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week [2] by grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location: At Outfall 101, where low volume waste sources are discharged from the chemical waste treatment facility prior to mixing with any other waters.

[1] See Other Requirements No. 5 and 6.

[2] When discharge occurs.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge metal cleaning waste [1] subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day [2]	Estimate
Total Suspended Solids	30	100	100	1/week [2]	Grab
Oil and Grease	15	20	20	1/week [2]	Grab
Iron, Total	1.0	1.0	1.0	1/week [2]	Grab
Copper, Total	0.5	1.0	1.0	1/week [2]	Grab

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week [2] by grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location: At Outfall 201, where metal cleaning waste is discharged from the chemical waste treatment facility prior to mixing with any other waters.

[1] See Other Requirement No. 4.
[2] When discharge occurs.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge low volume waste sources [1], stormwater [2], and spill prevention and control countermeasures (SPCC) [3] sources subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day [4]	Estimate
Total Suspended Solids	30	100	100	1/week [4]	Grab
Oil and Grease	15	20	20	1/week [4]	Grab

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week [4] by grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location: At Outfall 301, individual parameters shall be sampled at the following locations: flow shall be monitored prior to mixing, coagulation, and settling; total suspended solids and pH shall be monitored after mixing, coagulation, and settling; and oil and grease shall be monitored after the tricellerator.

[1] See Other Requirements No. 5 and 6.
[2] See Other Requirement No. 8.
[3] See Other Requirement No. 10.
[4] When discharge occurs.

1. During the period beginning upon the date of permit issuance and lasting through the date of permit expiration, the permittee is authorized to discharge treated domestic wastewater subject to the following effluent limitations:

   Volume: Flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow	Report, MGD	Report, MGD	N/A	1/day	Estimate
Total Suspended Solids	30	45	45	1/week	Grab
Biochemical Oxygen Demand (5-day)	30	45	45	1/week	Grab
E. coli [1]	63 [1]	126 [1]	126 [1]	2/month	Grab

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week by grab sample.

3. Prior to discharge of treated domestic wastewater, the domestic wastewater shall contain a chlorine residual of at least 1.0 mg/L after a detention time of at least 20 minutes (based on peak flow) and shall be monitored 1/week by grab sample. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location: At Outfall 401, where treated domestic wastewater is discharged after treatment and prior to mixing with any other waters.

[1] Expressed in colony-forming units (CFU) or most probable number (MPN) per 100 mL.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Texas Water Code §26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

   a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder, and limited to major domestic wastewater discharge facilities with a one million gallons per day or greater permitted flow.

   b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

   c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

   d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

   e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

   f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

   a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

      i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

      ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

   b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

   c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

   d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the “daily discharge” is calculated as the total

mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (Fecal coliform, *E. coli*, or Enterococci) – the number of colonies of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substitute value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD × Concentration, mg/L × 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

   a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9(a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9(c).

   b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

   Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act; TWC Chapters 26, 27, and 28; and THSC Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

   a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

   b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

   a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

   b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR §264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

   c. Records of monitoring activities shall include the following:

      i. date, time, and place of sample or measurement;
      ii. identity of individual who collected the sample or made the measurement;
      iii. date and time of analysis;
      iv. identity of the individual and laboratory who performed the analysis;
      v. the technique or method of analysis; and
      vi. the results of the analysis or measurement and quality assurance/quality control records.

      The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

   If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

   All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

   Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the regional office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC §305.125(9) any noncompliance that may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the regional office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the regional office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. unauthorized discharges as defined in Permit Condition 2(g).
      ii. any unanticipated bypass that exceeds any effluent limitation in the permit.
      iii. violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

   c. In addition to the above, any effluent violation that deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the regional office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

   d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the regional office, orally or by facsimile transmission within 24 hours, and both the regional office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

   a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) that is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:

      i. one hundred micrograms per liter (100 µg/L);
      ii. two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      iii. five (5) times the maximum concentration value reported for that pollutant in the permit application; or
      iv. the level established by the TCEQ.

b. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. five hundred micrograms per liter (500 μg/L);
ii. one milligram per liter (1 mg/L) for antimony;
iii. ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
iv. the level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

11. All POTWs must provide adequate notice to the Executive Director of the following:

a. any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;

b. any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

c. for the purpose of this paragraph, adequate notice shall include information on:

i. the quality and quantity of effluent introduced into the POTW; and
ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

i. violation of any terms or conditions of this permit;
ii. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment,

revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§305.62 and 305.66 and TWC §7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

h. In accordance with 30 TAC §305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility that does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA §402, or any requirement imposed in a pretreatment program approved under the CWA §§402(a)(3) or 402(b)(8).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC Chapter 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC §7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. the alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC §305.534 (relating to New Sources and New Dischargers); or

      ii. the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9; or

      iii. the alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes that are not described in the permit application or that would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the TWC §26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA §307(a) for a toxic pollutant that is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA §307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

   a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

   b. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

   This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

   Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Texas Water Code Chapter 11.

8. Property Rights

   A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

   The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

    The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy.

    a. Each permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

       i. the permittee;
       ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
       iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.

    b. This notification must indicate:

       i. the name of the permittee;
       ii. the permit number(s);
       iii. the bankruptcy court in which the petition for bankruptcy was filed; and
       iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

   a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

   b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words “confidential business information” on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion or upgrading of the domestic wastewater treatment or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 219) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC §335.1 shall comply with these provisions:

a. Any solid waste, as defined in 30 TAC §335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC §335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC §335.5.

e. The term “industrial solid waste management unit” means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:

i. volume of waste and date(s) generated from treatment process;
ii. volume of waste disposed of on-site or shipped off-site;
iii. date(s) of disposal;

iv. identity of hauler or transporter;
v. location of disposal site; and
vi. method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC Code Chapter 361.

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OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 12 within 24 hours from the time the permittee becomes aware of the violation, followed by a written report within five working days to TCEQ Region 12 and Enforcement Division (MC 224):

POLLUTANT	MAL [1] (mg/L)
Chromium (Total)	0.003
Copper (Total)	0.002
Iron (Total)	0.007
Zinc (Total)	0.005

Test methods used must be sensitive enough to demonstrate compliance with the permit effluent limitations. If an effluent limit for a pollutant is less than the MAL, then the test method for that pollutant must be sensitive enough to demonstrate compliance at the MAL. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit, with consideration given to the MAL for the pollutants specified above.

Pollutant	**MAL [1] (mg/L)**
Aluminum (Total)	0.0025

When an analysis of an effluent sample for a pollutant listed above indicates no detectable levels above the MAL and the test method detection level is as sensitive as the specified MAL, a value of zero shall be used for that measurement when making calculations for the self-reporting form. This applies to determinations of daily maximum concentration, calculations of loading and daily averages, and other reportable results.

When a reported value is zero based on this MAL provision, the permittee shall submit the following statement with the self-reporting form either as a separate attachment to the form or as a statement in the comments section of the form:

> "The reported value(s) of zero for [list pollutant(s)] on the self-reporting form for [monitoring period date range] is based on the following conditions: (1) the analytical method used had a method detection level as sensitive as the MAL specified in the permit, and (2) the analytical results contained no detectable levels above the specified MAL."

When an analysis of an effluent sample for a pollutant indicates no detectable levels and the test method detection level is not as sensitive as the MAL specified in the permit, or an MAL is not specified in the permit for that pollutant, the level of detection achieved shall be used for that measurement when making calculations for the self-reporting form. A zero may not be used.

2. The flow weighted average temperature (FWAT) must be computed and recorded on a daily basis. FWAT must be computed at equal time intervals not greater than two hours. The method of calculation FWAT is as follows:

$$\text{FWAT} = \frac{\sum (\text{INSTANTANEOUS FLOW} \times \text{INSTANTANEOUS TEMPERATURE})}{\sum (\text{INSTANTANEOUS FLOW})}$$

[1] Minimum analytical level

The "daily average temperature" must be calculated as the arithemetic average of all FWATs calculated during the calendar month.

The "daily maximum temperature" must be established as the highest FWAT calculated during the calendar month.

3. CHLORINE DEFINITIONS

A. The term "free available chlorine" means the value obtained using any of the "chlorine-free available" methods in Table IB in 40 CFR § 136.3(a) where the method has the capability of measuring free available chlorine, or other methods approved by the permitting authority.

B. The term "total residual chlorine" (or total residual oxidants for intake water with bromides) means the value obtained using any of the "chlorine-total residual" methods in Table IB in 40 CFR Part § 136.3(a), or other methods approved by the permitting authority.

C. Extended low dosage oxidant addition to the cooling towers is allowed. Therefore, free available chlorine and total residual chlorine may be discharged from any unit for more than two hours in any one day and from more than one unit at any given time. Simultaneous multi-unit chlorination is permitted.

D. Daily mass loading of free available chlorine (FAC) shall be calculated using the following equation:

$$FAC\ \left(\frac{mg}{L}\right) \times Flow\ (MGD) \times 8.345\ (Conversion\ Factor) \times \frac{Actual\ Chlorination\ Time\ (hrs)}{24\ hr\ period} \times \#\ units = FAC\ \left(\frac{lbs}{day}\right)$$

where: FAC (mg/L) = concentration of FAC measured in the effluent during representative period of chlorination.

Flow (MGD) = total actual flow of discharge via outfall during sampling day.

4. The term "metal cleaning waste" means any wastewater resulting from cleaning (with or without chemical cleaning compunds) any metal process equipment, including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning.

The term "chemical metal cleaning waste" means any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning. Chemical metal cleaning waste is not authorized for discharge in this permit.

5. The term "low volume waste sources" means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations or standards are otherwise established in 40 CFR Part 423. Low volume waste sources include, but are not limited to, the following: Wastewaters from ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, recirculating house service water systems, and wet scrubber air pollution control systems whose primary purpose is particulate removal. Sanitary wastes, air conditioning wastes, and wastewater from carbon capture or sequestration systems are not included in this definition.

6. The term “blowdown” means the minimum discharge of recirculating water for the purpose of discharging materials contained in the water, the further buildup of which would cause concentration in amounts exceeding limits established by best engineering practices.

7. The term “flush water” means well water flush water, which may include raw groundwater, treated surface water, untreated surface water, or any combination of these.

8. The term “stormwater” means storm drainage from production areas. All stormwater from nonproduction areas is discharged via stormwater-only outfalls. As of the date of issuance of this permit, the facility is not required to authorize these outfalls under the Multi Sector General Permit (TXR050000) because the facility is a natural gas combined cycle only plant. Should coverage be required in the future, the permittee will obtain such coverage.

9. The term “previously monitored effluents” means effluents monitored at Outfalls 101, 201, 301, and 401, which consist of low volume waste sources, metal cleaning waste, stormwater, spill prevention and control countermeasures, and treated domestic wastewater.

10. The term “spill prevention and control countermeasures” (SPCC) is a plan that is developed by the facility identifying all sources of oil and what to do in case the facility has an oil spill.

11. The permittee shall continuously record flow via a flow meter at Outfall 001. Compliance with the flow limitations established at Outfall 001 on page 2 of this permit will be based upon days in which there is dry-weather flow only. For the purpose of this permit, dry-weather flow is defined as days in which the total flow at Outfall 001 consists of any of the following sources: cooling tower blowdown, low volume wastes, demineralizer regenerate, and stormwater runoff resulting from rainfall less than 0.1 inches in a 24-hour period. The permittee shall maintain a permanent rain gage at the plant site and keep daily records of rainfall and the resulting flow at Outfall 001. Flow at Outfall 001 during days when the rainfall exceeds 0.1 inch during any 24-hour period must not be used in calculating the daily average or daily maximum flows to be submitted on the monthly effluent report forms

12. The permittee shall notify the Executive Director in writing, at least 90 days prior to discontinuing use of any surface impoundment, pit, or basin authorized by this permit. The permittee shall, at the request of the Executive Director, submit such information as is necessary to evaluate closure of the waste management unit(s) including, but not limited to, chemical analyses of bottom sediments, soils, and groundwater samples.

13. The permittee is hereby placed on notice that this permit may be reviewed by the TCEQ after the completion of any new intensive water quality survey on Segment No. 1016 of the San Jacinto River and any subsequent updating of the water quality model for Segment No. 1016, in order to determine if the limitations and conditions contained herein are consistent with any such revised model. The permit may be amended, pursuant to 30 TAC Sections 305.62, as a result of such review.

14. There shall be no discharge of cooling tower maintenance chemicals which contain the 126 priority pollutants (Appendix A of 40 CFR Part 423). The 126 priority pollutants (Appendix A of Part 423) contained in chemicals added for cooling tower maintenance, except chromium and zinc, must be limited in the discharge to “no detectable amount.” The permittee shall be responsible for determining the composition of maintenance chemicals. The permittee shall report the proposed usage of any chemical which contains any of the 126 priority pollutants and shall obtain approval from the permitting authority prior to usage of such chemicals.

15. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

16. There is no mixing zone established for this discharge to an intermittent stream. Acute toxic criteria apply at the point of discharge.

17. This provision supersedes and replaces Provision 1, Paragraph 1, of Monitoring and Reporting Requirements found on Page 4 of this permit.

    Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, effluent monitoring data shall be submitted each month, to the Enforcement Division (MC 224), by the 25th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be submitted online using the NetDMR reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. Monitoring results must be signed and certified as required by Monitoring and Reporting Requirements No. 10.

18. The permittee shall provide readily accessible sampling points for determining effluent quality.

19. This permit does not authorize on-site disposal of sewage sludge. The permittee shall ensure that all sewage sludge which is not a hazardous waste (as defined in 30 TAC Chapter 335) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 312. The permittee shall ensure that all sewage sludge which is a hazardous waste (as defined in 30 TAC Chapter 335) is handled, transported, and disposed of in compliance with the applicable provisions of 30 TAC Chapter 335. The permittee shall keep records of all sludges removed from the wastewater treatment plant site. Such records will include the following information:

    A. Volume (dry weight basis) of sludge disposed;

    B. Date of disposal;

    C. Identity and registration number of hauler;

    D. Location and registration or permit number of disposal site; and

    E. Method of final disposal.

    The above records must be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least five years.

20. <u>POND REQUIREMENTS</u>

    A wastewater pond must comply with the following requirements. A wastewater pond (or lagoon) is an earthen structure used to evaporate, hold, store, or treat water that contains a *waste* or *pollutant* or that would cause *pollution* upon *discharge* as those terms are defined in Texas Water Code § 26.001, but does not include a pond that contains only stormwater.

    A. A wastewater pond **subject to 40 CFR Part 257, Subpart D** (related to coal combustion residuals) must comply with those requirements in lieu of the requirements in B through G of POND REQUIREMENTS.

    B. An **existing** wastewater pond must be maintained to meet or exceed the original approved design and liner requirements; or, in the absence of original approved requirements, must be maintained to prevent unauthorized discharges of wastewater into or adjacent to water in the state. The permittee shall maintain copies of all liner construction and testing documents at the facility or in a reasonably accessible location and make the information available to the executive director upon request.

C. A **new** wastewater pond constructed after the issuance date of this permit must be lined in compliance with one of the following requirements if it will contain process wastewater as defined in 40 CFR § 122.2. The executive director will review ponds that will contain only non-process wastewater on a case-by-case basis to determine whether the pond must be lined. If a pond will contain only non-process wastewater, the owner shall notify the Industrial Permits Team (MC 148) to obtain a written determination at least 90 days before the pond is placed into service and copy the TCEQ Enforcement Division (MC 224) and regional office. The permittee must submit all information about the proposed pond contents that is reasonably necessary for the executive director to make a determination. If the executive director determines that a pond does not need to be lined, then the pond is exempt from C1) through C3) and D through G of POND REQUIREMENTS.

A wastewater pond that only contains domestic wastewater must comply with the design requirements in 30 TAC Chapter 217 and 30 TAC § 309.13(d) in lieu of items C1) through C3) of this subparagraph.

1) Soil liner: The soil liner must contain clay-rich soil material (at least 30% of the liner material passing through a #200 mesh sieve, liquid limit greater than or equal to 30, and plasticity index greater than or equal to 15) that completely covers the sides and bottom of the pond. The liner must be at least 3.0 feet thick. The liner material must be compacted in lifts of no more than 8 inches to 95% standard proctor density at the optimum moisture content in accordance with ASTM D698 to achieve a permeability less than or equal to 1×10^{-7} (≤ 0.0000001) cm/sec. For in-situ soil material that meets the permeability requirement, the material must be scarified at least 8 inches deep and then re-compacted to finished grade.

2) Synthetic membrane: The liner must be a synthetic membrane liner at least 40 mils in thickness that completely covers the sides and the bottom of the pond. The liner material used must be compatible with the wastewater and be resistant to degradation (e.g., from ultraviolet light, chemical reactions, wave action, erosion, etc.). The liner material must be installed and maintained in accordance with the manufacturer's guidelines. A wastewater pond with a synthetic membrane liner must include an underdrain with a leak detection and collection system.

3) Alternate liner: The permittee shall submit plans signed and sealed by a Texas-licensed professional engineer for any other equivalently protective pond lining method to the TCEQ Industrial Permits Team (MC 148) and copy the regional office.

D. For a pond that must be lined according to subparagraph C (including ponds with in-situ soil liners), the permittee shall provide certification, signed and sealed by a Texas-licensed professional engineer, stating that the completed pond lining and any required underdrain with leak detection and collection system for the pond meet the requirements in subparagraph c(1) – c(3) before using the pond. The certification shall include the following minimum details about the pond lining system: (1) pond liner type (in-situ soil, amended in-situ soil, imported soil, synthetic membrane, or alternative), (2) materials used, (3) thickness of materials, and (4) either permeability test results or a leak detection and collection system description, as applicable.

The certification must be provided to the TCEQ Water Quality Assessment Team (MC 150), Industrial Permits Team (MC 148), and regional office. A copy of the liner certification and construction details (i.e., as-built drawings, construction QA/QC documentation, and post construction testing) must be kept on-site or in a reasonably accessible location (in either hardcopy or digital format) until the pond is closed.

E. Protection and maintenance requirements for a pond subject to subparagraph B or C (including ponds with in-situ soil liners).

1) The permittee shall maintain a liner to prevent the unauthorized discharge of wastewater into or adjacent to water in the state.

2) A liner must be protected from damage caused by animals. Fences or other protective devices or measures may be used to satisfy this requirement.

3) The permittee shall maintain the structural integrity of the liner and shall keep the liner and embankment free of woody vegetation, animal burrows, and excessive erosion.

4) The permittee shall inspect each pond liner and each leak detection system at least once per month. Evidence of damage or unauthorized discharge must be evaluated by a Texas-licensed professional engineer or Texas-licensed professional geoscientist within 30 days. The permittee is not required to drain an operating pond or to inspect below the waterline during these routine inspections.

a) A Texas-licensed professional engineer or Texas-licensed professional geoscientist must evaluate damage to a pond liner, including evidence of an unauthorized discharge without visible damage.

b) Pond liner damage must be repaired at the recommendation of a Texas-licensed professional engineer or Texas-licensed professional geoscientist. If the damage is significant or could result in an unauthorized discharge, then the repair must be documented and certified by a Texas-licensed professional engineer. Within 60 days after a repair is completed, the liner certification must be provided to the TCEQ Water Quality Assessments Team (MC 150) and regional office. A copy of the liner certification must be maintained at the facility or in a reasonably accessible location and made available to the executive director upon request.

c) A release determination and subsequent corrective action will be based on 40 CFR Part 257 or the Texas Risk Reduction Program (30 TAC Chapter 350), as applicable. If evidence indicates that an unauthorized discharge occurred, including evidence that the actual permeability exceeds the design permeability, the matter may also be referred to the TCEQ Enforcement Division to ensure the protection of the public and the environment.

F. For a pond subject to subparagraph B or C (including ponds with in-situ soil liners), the permittee shall have a Texas-licensed professional engineer perform an evaluation of each pond that requires a liner at least once every five years. The evaluation must include: (1) a physical inspection of the pond liner to check for structural integrity, damage, and evidence of leaking; (2) a review of the liner documentation for the pond; and (3) a review of all documentation related to liner repair and maintenance performed since the last evaluation. For the purposes of this evaluation, evidence of leaking also includes evidence that the actual permeability exceeds the design permeability. The permittee is not required to drain an operating pond or to inspect below the waterline during the evaluation. A copy of the engineer's evaluation report must be maintained at the facility or in a reasonably accessible location and made available to the executive director upon request.

G. For a pond subject to subparagraph B or C (including ponds with in-situ soil liners), the permittee shall maintain at least 2.0 feet of freeboard in the pond except when:

1) the freeboard requirement temporarily cannot be maintained due to a large storm event that requires the additional retention capacity to be used for a limited period of time;

2) the freeboard requirement temporarily cannot be maintained due to upset plant conditions that require the additional retention capacity to be used for treatment for a limited period of time; or

3) the pond was not required to have at least 2.0 feet of freeboard according to the requirements at the time of construction.

21. The permittee submitted a thermal plume characterization plan on February 21, 2019 to the TCEQ. The study was approved on August 5, 2021 for implementation in accordance with the agreement reached by the TCEQ and the EPA in their letters dated April 29, 2014 and May 12, 2014, respectively. The permittee shall complete the Thermal Plume Characterization Study and must submit the results with the application for the next permit renewal action and to the TCEQ Water Quality Assessment Section (MC-150). The permittee is hereby placed on notice that the executive director of the TCEQ will be initiating changes to evaluation procedures and/or rulemaking that may affect thermal requirements for this facility. The TCEQ may reopen the permit to revise temperature effluent limitations upon review of the completed study.

22. The permittee shall provide written notification to the TCEQ Industrial Permits Team (MC 148) and Region 12 Office of any changes in the method by which the facility obtains water for cooling purposes. This notification must be submitted 30 days prior to any such change and must include a description of the planned changes. The TCEQ may, upon review of the notification, reopen the permit to include additional terms and conditions as necessary.

23. BACTERIA SOURCE STUDY

The permittee shall complete the Bacterial Characterization Study for Outfall 001 within one (1) year after the date of permit issuance. A copy of the completed study must be submitted to the TCEQ Industrial Permits Team (MC 148), within 15 months after the date of permit issuance. The TCEQ may reopen the permit to revise the effluent limitations for *E. coli* upon review of the completed study.

CHRONIC BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

A. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival, reproduction, or growth of the test organisms.

B. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this part of this permit and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," fourth edition (EPA-821-R-02-013) or its most recent update:

1) Chronic static renewal survival and reproduction test using the water flea (*Ceriodaphnia dubia*) (Method 1002.0). This test should be terminated when 60% of the surviving adults in the control produce three broods or at the end of eight days, whichever occurs first. This test shall be conducted once per quarter.

2) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*) (Method 1000.0). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

C. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These effluent dilution concentrations are 24%, 32%, 43%, 57%, and 76% effluent. The critical dilution, defined as 76% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.

D. This permit may be amended to require a WET limit, a chemical-specific effluent limit, a best management practice, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

E. Testing Frequency Reduction

1) If none of the first four consecutive quarterly tests demonstrates significant toxicity, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test species.

2) If one or more of the first four consecutive quarterly tests demonstrates significant toxicity, the permittee shall continue quarterly testing for that species until this permit is reissued. If a testing frequency reduction had been

previously granted and a subsequent test demonstrates significant toxicity, the permittee shall resume a quarterly testing frequency for that species until this permit is reissued.

2. Required Toxicity Testing Conditions

A. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fail to meet the following criteria:

1) a control mean survival of 80% or greater;

2) a control mean number of water flea neonates per surviving adult of 15 or greater;

3) a control mean dry weight of surviving fathead minnow larvae of 0.25 mg or greater;

4) a control coefficient of variation percent (CV%) of 40 or less in between replicates for the young of surviving females in the water flea test; and the growth and survival endpoints in the fathead minnow test;

5) a critical dilution CV% of 40 or less for the young of surviving females in the water flea test; and the growth and survival endpoints for the fathead minnow test. However, if statistically significant lethal or nonlethal effects are exhibited at the critical dilution, a CV% greater than 40 shall not invalidate the test;

6) a percent minimum significant difference of 47 or less for water flea reproduction; and

7) a percent minimum significant difference of 30 or less for fathead minnow growth.

B. Statistical Interpretation

1) For the water flea survival test, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be the Fisher's exact test as described in the manual referenced in in Part 1.b.

2) For the water flea reproduction test and the fathead minnow larval survival and growth tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the manual referenced in Part 1.b.

3) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test-results are interpreted and reported correctly. The document entitled "Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)" (EPA 821-B-00-004) provides guidance on determining the validity of test results.

4) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the survival in the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 80% in the critical dilution and all

dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements.

5) The NOEC is defined as the greatest effluent dilution at which no significant effect is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which a significant effect is demonstrated. A significant effect is defined as a statistically significant difference between the survival, reproduction, or growth of the test organism in a specified effluent dilution when compared to the survival, reproduction, or growth of the test organism in the control.

6) The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 3.

7) Pursuant to the responsibility assigned to the permittee in Part 2.b.3), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The guidance manual referenced in Item 3 will be used when making a determination of test acceptability.

8) TCEQ staff will review test results for consistency with rules, procedures, and permit requirements.

C. Dilution Water

Dilution water used in the toxicity tests shall consist of standard, synthetic, moderately hard, reconstituted water.

D. Samples and Composites

1) The permittee shall collect a minimum of three composite samples from Outfall 001. The second and third composite samples will be used for the renewal of the dilution concentrations for each toxicity test.

2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first composite sample. The holding time for any subsequent composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 001 ceases discharging during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions, and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with

renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

A. The permittee shall prepare a full report of the results of all tests conducted in accordance with the manual referenced in Part 1.b. for every valid and invalid toxicity test initiated whether carried to completion or not.

B. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit.

1) Annual biomonitoring test results are due on or before January 25th for biomonitoring conducted during the previous 12-month period.

2) Semiannual biomonitoring test results are due on or before July 25th and January 25th for biomonitoring conducted during the previous 6-month period.

3) Quarterly biomonitoring test results are due on or before April 25th, July 25th, October 25th, and January 25th for biomonitoring conducted during the previous calendar quarter.

4) Monthly biomonitoring test results are due on or before the 25th day of the month following sampling.

C. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TLP3B, enter a “1” if the NOEC for survival is less than the critical dilution; otherwise, enter a “0.”

2) For the water flea, Parameter TOP3B, report the NOEC for survival.

3) For the water flea, Parameter TXP3B, report the LOEC for survival.

4) For the water flea, Parameter TWP3B, enter a “1” if the NOEC for reproduction is less than the critical dilution; otherwise, enter a “0.”

5) For the water flea, Parameter TPP3B, report the NOEC for reproduction.

6) For the water flea, Parameter TYP3B, report the LOEC for reproduction.

7) For the fathead minnow, Parameter TLP6C, enter a “1” if the NOEC for survival is less than the critical dilution; otherwise, enter a “0.”

8) For the fathead minnow, Parameter TOP6C, report the NOEC for survival.

9) For the fathead minnow, Parameter TXP6C, report the LOEC for survival.

10) For the fathead minnow, Parameter TWP6C, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."

11) For the fathead minnow, Parameter TPP6C, report the NOEC for growth.

12) For the fathead minnow, Parameter TYP6C, report the LOEC for growth.

D. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

4. Persistent Toxicity

The requirements of this part apply only when a test demonstrates a significant effect at the critical dilution. Significant lethality and significant effect were defined in Part 2.b. Significant sublethality is defined as a statistically significant difference in growth/reproduction at the critical dilution when compared to the growth/reproduction in the control.

A. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates a significant effect (lethal or sublethal) at the critical dilution. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test.

B. If the retests are performed due to a demonstration of significant lethality, and one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5. The provisions of Part 4.a. are suspended upon completion of the two retests and submittal of the TRE action plan and schedule defined in Part 5.

If neither test demonstrates significant lethality and the permittee is testing under the reduced testing frequency provision of Part 1.e., the permittee shall return to a quarterly testing frequency for that species.

C. If the two retests are performed due to a demonstration of significant sublethality, and one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall again perform two retests as stipulated in Part 4.a.

D. If the two retests are performed due to a demonstration of significant sublethality, and neither test demonstrates significant lethality, the permittee shall continue testing at the quarterly frequency.

E. Regardless of whether retesting for lethal or sublethal effects, or a combination of the two, no more than one retest per month is required for a species.

5. Toxicity Reduction Evaluation

A. Within 45 days of the retest that demonstrates significant lethality, or within 45 days of being so instructed due to multiple toxic events, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

B. Within 90 days of the retest that demonstrates significant lethality, or within 90 days of being so instructed due to multiple toxic events, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analyses to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall describe an approach for the reduction or elimination of lethality for both test species defined in Part 1.b. At a minimum, the TRE action plan shall include the following:

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA/600/6-91/005F) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE action plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects a specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;

3) Quality Assurance Plan - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE action plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

C. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.

D. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly reports are due on or before April 25th, July 25th, October 25th, and January 25th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and substantiating documentation which identifies the pollutant(s) and source of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and

6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.

E. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

F. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

G. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE. The report shall provide information pertaining to the specific control mechanism selected that will, when implemented, result in the reduction of effluent toxicity to no significant lethality at the critical dilution. The report shall also provide a specific corrective action schedule for implementing the selected control mechanism.

H. Based on the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, require a compliance schedule for implementation of corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

I. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 1 (SHEET 1 OF 4)

BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

Dates and Times Composites Collected

Date Time Date Time

No. 1 FROM: _____ TO: _____

No. 2 FROM: _____ TO: _____

No. 3 FROM:_____ TO: _____

Test initiated: _____am/pm _____date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

NUMBER OF YOUNG PRODUCED PER ADULT AT END OF TEST

REP	Percent effluent					
	0%	24%	32%	43%	57%	76%
A						
B						
C						
D						
E						
F						
G						
H						
I						
J						
Survival Mean						
Total Mean						
CV%*						
PMSD						

*Coefficient of Variation = standard deviation x 100/mean (calculation based on young of the surviving adults)
Designate males (M), and dead females (D), along with number of neonates (x) released prior to death.

TABLE 1 (SHEET 2 OF 4)

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean number of young produced per adult significantly less than the number of young per adult in the control for the % effluent corresponding to significant nonlethal effects?

   CRITICAL DILUTION (76%): _____ YES _____ NO

PERCENT SURVIVAL

	Percent effluent					
Time of Reading	0%	24%	32%	43%	57%	76%
24h						
48h						
End of Test						

2. Fisher's Exact Test:

   Is the mean survival at test end significantly less than the control survival for the % effluent corresponding to lethality?

   CRITICAL DILUTION (76%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC\LOEC below:

   a.) NOEC survival = _____% effluent

   b.) LOEC survival = _____% effluent

   c.) NOEC reproduction = _____% effluent

   d.) LOEC reproduction = _____% effluent

TABLE 1 (SHEET 3 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL

		Date Time	Date Time
Dates and Times Composites Collected	No. 1 FROM:	_____	TO: _____
	No. 2 FROM:	_____	TO: _____
	No. 3 FROM:	_____	TO: _____

Test initiated: _____am/pm _____date

Dilution water used: _____ Receiving water _____ Synthetic dilution water

FATHEAD MINNOW GROWTH DATA

Effluent Concentration	Average Dry Weight in replicate chambers					Mean Dry Weight	CV%*
	A	B	C	D	E		
0%							
24%							
32%							
43%							
57%							
76%							
PMSD							

* Coefficient of Variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean dry weight (growth) at 7 days significantly less than the control's dry weight (growth) for the % effluent corresponding to significant nonlethal effects?

   CRITICAL DILUTION (76%): _____ YES _____ NO

TABLE 1 (SHEET 4 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW GROWTH AND SURVIVAL TEST

FATHEAD MINNOW SURVIVAL DATA

Effluent Concentration	Percent Survival in replicate chambers					Mean percent survival			CV%*
	A	B	C	D	E	24h	48h	7 day	
0%									
24%									
32%									
43%									
57%									
76%									

* Coefficient of Variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean survival at 7 days significantly less than the control survival for the % effluent corresponding to lethality?

   CRITICAL DILUTION (76%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC\LOEC below:

   a.) NOEC survival = _____% effluent

   b.) LOEC survival = _____% effluent

   c.) NOEC growth = _____% effluent

   d.) LOEC growth = _____% effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

A. The permittee shall test the effluent for lethality in accordance with the provisions in this section. Such testing will determine compliance with Texas Surface Water Quality Standard 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.

B. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," fifth edition (EPA-821-R-02-012) or its most recent update:

1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

C. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. The control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

D. This permit may be amended to require a WET limit, a best management practice, a chemical-specific limit, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

2. Required Toxicity Testing Conditions

A. Test Acceptance – The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.

B. Dilution Water - In accordance with Part 1.c., the control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

C. Samples and Composites

1) The permittee shall collect one composite sample from Outfall 001.

2) The permittee shall collect the composite sample such that the sample is representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the composite sample. The sample shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 001 ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

A. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the manual referenced in Part 1.b. for every valid and invalid toxicity test initiated.

B. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit.

1) Semiannual biomonitoring test results are due on or before July 25th and January 25th for biomonitoring conducted during the previous 6-month period.

2) Quarterly biomonitoring test results are due on or before April 25th, July 25th, and October 25th, and January 25th for biomonitoring conducted during the previous calendar quarter.

C. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TIE3D, enter a “0” if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter “1.”

2) For the fathead minnow, Parameter TIE6C, enter a “0” if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter “1.”

D. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a “0” if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter “1.”

2) For retest number 2, Parameter 22416, enter a “0” if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter “1.”

4. Persistent Mortality

The requirements of this part apply when a toxicity test demonstrates significant lethality, which is defined as a mean mortality of 50% or greater of organisms exposed to the 100% effluent concentration for 24 hours.

A. The permittee shall conduct 2 additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for 2 weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These effluent concentrations are 6%, 13%, 25%, 50%, and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour.

B. If one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5.

5. Toxicity Reduction Evaluation

A. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

B. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analyses to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall lead to the successful elimination of significant lethality for both test species defined in Part 1.b. At a minimum, the TRE action plan shall include the following:

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled “Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures” (EPA/600/6-91/003) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled “Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity” (EPA/600/R-92/080) and “Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity” (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE action plan should describe sampling locations,

methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects a specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;

3) Quality Assurance Plan - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE Action Plan should describe the project staff, manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

C. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.

D. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly TRE Activities Reports are due on or before April 25th, July 25th, October 25th, and January 25th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and substantiating documentation that identifies the pollutant and source of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and

6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.

E. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

F. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and

may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

G. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE. The report shall specify the control mechanism that will, when implemented, reduce effluent toxicity as specified in Part 5.h. The report shall also specify a corrective action schedule for implementing the selected control mechanism.

H. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE.

The permittee may be exempted from complying with 30 TAC § 307.6(e)(2)(B) upon proving that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g., metals) form a salt compound. Following the exemption, this permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

I. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, require a compliance schedule for implementing corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

J. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN*						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

TABLE 2 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent