



# Technical Package Cover Page

**This file contains the following documents:**

1. Summary of application (in plain language)
2. First notice (NORI-Notice of Receipt of Application and Intent to Obtain a Permit)
3. Second notice (NAPD-Notice of Preliminary Decision)
4. Application materials
5. Draft permit
6. Technical summary or fact sheet

# Texas Commission on Environmental Quality



## NOTICE OF APPLICATION AND PRELIMINARY DECISION FOR TPDES PERMIT FOR MUNICIPAL WASTEWATER

### MINOR AMENDMENT

### PERMIT NO. WQ0012716001

**APPLICATION AND PRELIMINARY DECISION.** The Texas Commission on Environmental Quality (TCEQ) has initiated a minor amendment of the Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0012716001 issued to Harris County Municipal Utility District No. 285, 3200 Southwest Freeway, Houston, Texas 77027, to correct the effluent parameter Total Cyanide to Free Cyanide. The existing permit authorizes the discharge of treated domestic wastewater at an annual average flow not to exceed 1,500,000 gallons per day.

The facility is located at 6436 East Sam Houston Parkway North, in Harris County, Texas 77049. The treated effluent is discharged to Carpenters Bayou, thence to the Carpenters Bayou Tidal portion of the Houston Ship Channel Tidal in Segment No. 1006 of the San Jacinto River Basin. The unclassified receiving water uses are limited aquatic life use for Carpenters Bayou (upstream of Wallisville Road) and intermediate aquatic life use for Carpenters Bayou (downstream of Wallisville Road). The designated uses for Segment No. 1006 are navigation and industrial water supply. This link to an electronic map of the site or facility's general location is provided as a public courtesy and is not part of the application or notice. For the exact location, refer to the application. <https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.1577,29.82341&level=18>

The TCEQ Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements.

**PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting about this application.** The purpose of a public meeting is to provide the opportunity to submit written or oral comment or to ask questions about the application. Generally, the TCEQ will hold a public meeting if the Executive Director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

**All written public comments and requests for a public meeting must be submitted to the Office of the Chief Clerk, MC 105, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, TX 78711-3087 or electronically at [www.tceq.texas.gov/goto/comment](http://www.tceq.texas.gov/goto/comment) within 30 days of the date of publication of this notice in the Texas Register.**

After the deadline for public comments, the Executive Director will consider the comments and prepare a response to all relevant and material, or significant public comments. **The response to comments will be mailed to everyone who submitted public comments or who requested to be on a mailing list for this application.**

**MAILING LIST.** If you submit public comments, you will be added to the mailing list for this specific application to receive future public notices mailed by the Office of the Chief Clerk. In addition, you may request to be placed on: (1) the permanent mailing list for a specific applicant name and permit number; and/or (2) the mailing list for a specific county. If you wish to be placed on the permanent and/or the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

**INFORMATION AVAILABLE ONLINE.** For details about the status of the application, visit the Commissioners' Integrated Database at [www.tceq.texas.gov/goto/cid](http://www.tceq.texas.gov/goto/cid). Search the database using the permit number for this application, which is provided at the top of this notice.

**AGENCY CONTACTS AND INFORMATION.** Public comments and requests must be submitted either electronically at [www.tceq.texas.gov/goto/comment](http://www.tceq.texas.gov/goto/comment), or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC 105, P.O. Box 13087, Austin, Texas 78711-3087. Any personal information you submit to the TCEQ will become part of the agency's record; this includes email addresses. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at [www.tceq.texas.gov/goto/pep](http://www.tceq.texas.gov/goto/pep). Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Harris County Municipal Utility District No. 285 at the address stated above or by calling Mr. Gregg Haan, P.E., Division Manager, LJA Engineering, at 713-953-5200.

Issuance Date: November 25, 2025



TPDES PERMIT NO. WQ0012716001  
[For TCEQ office use only - EPA I.D.  
No. TX0092991]

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

This minor amendment supersedes and replaces TPDES Permit No. WQ0012716001 issued on November 7, 2023, and is reissued pursuant to 30 TAC § 305.62 (c)(2).

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

Harris County Municipal Utility District No. 285

whose mailing address is

3200 Southwest Freeway  
Houston, Texas 77027

is authorized to treat and discharge wastes from the Harris County Municipal Utility District No. 285 Wastewater Treatment Facility, SIC Code 4952

located at 6436 East Sam Houston Parkway North, in Harris County, Texas 77049

to Carpenters Bayou, thence to the Carpenters Bayou Tidal portion of the Houston Ship Channel Tidal in Segment No. 1006 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, **November 7, 2028**.

ISSUED DATE:

---

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 001

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

The annual average flow of effluent shall not exceed 1.5 million gallons per day (MGD), nor shall the average discharge during any two-hour period (2-hour peak) exceed 4,167 gallons per minute.

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Daily Max. Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (125)	15	25	35	Two/week	Composite
Total Suspended Solids	15 (188)	25	40	60	Two/week	Composite
Ammonia Nitrogen	2 (25)	5	10	15	Two/week	Composite
Total Kjeldahl Nitrogen*	Report (Report)	N/A	Report	N/A	Two/week	Composite
Free Cyanide	0.01 (0.12)	N/A	0.02	0.3	One/week	Grab
<i>E. coli</i> , colony-forming units or most probable number per 100 ml	126	N/A	399	N/A	One/week	Grab

\*See Other Requirement No. 5.

2. The effluent shall contain a total 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 daily by grab sample at each chlorine contact chamber. The permittee shall dechlorinate the chlorinated effluent to less than 0.1 mg/l total chlorine residual and shall monitor total chlorine residual daily by grab sample after the dechlorination process. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per week by grab sample.
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(s): Following the final treatment unit.
6. The effluent shall contain a minimum dissolved oxygen of 6.0 mg/l and shall be monitored twice per week by grab sample.
7. The annual average flow and maximum 2-hour peak flow shall be reported monthly.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 001

	7-day Minimum	30-day Average	Measurement Frequency	Sample Type
Lethal Whole Effluent Toxicity (WET) limit (Parameter 51710) <sup>2</sup> <i>Ceriodaphnia dubia</i> (3-brood chronic NOEC <sup>1</sup> )	report	report	1/quarter	Composite
Sublethal Whole Effluent Toxicity (WET) limit (Parameter 51710) <sup>2</sup> <i>Ceriodaphnia dubia</i> (3-brood chronic NOEC <sup>1</sup> )	report	report	1/quarter	Composite
Lethal Whole Effluent Toxicity (WET) limit 96% (Parameter 51710) <sup>2</sup> <i>Ceriodaphnia dubia</i> (3-brood chronic NOEC <sup>1</sup> )	96%	96%	1/quarter	Composite
Sublethal Whole Effluent Toxicity (WET) limit 80% (Parameter 51710) <sup>2</sup> <i>Ceriodaphnia dubia</i> (3-brood chronic NOEC <sup>1</sup> )	80%	80%	1/quarter	Composite

<sup>1</sup> The Lethal and Sublethal WET limits become effective 34-months from the permit issuance date of November 7, 2023.  
<sup>2</sup> The NOEC is defined as the greatest effluent dilution at which no significant effect is demonstrated. A significant effect is defined as a statistically significant difference between a specified effluent dilution and the control for toxicity (lethal or sublethal effects, whichever is specified).

## 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 TWC § 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 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 (*E. coli* or Enterococci) - Colony Forming Units (CFU) or Most Probable Number (MPN) 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  $n$ th 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 substituted 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 x Concentration, mg/l x 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 (b).

- 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 and/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. The term "biosolids" is defined as sewage sludge that has been tested or processed to meet Class A, Class AB, or Class B pathogen standards in 30 TAC Chapter 312 for beneficial use.
7. 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 which 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 (CWA); TWC §§ 26, 27, and 28; and THSC § 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 § 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 or biosolids 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 and/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 which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, 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 December 21, 2025, 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 which 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 which 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) which 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 which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which 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 which 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 which 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 TWC §§ 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 § 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 and/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 which are not described in the permit application or which 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 which 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 TWC 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(14)) 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 or biosolids 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 Domestic Permits Team, Domestic Wastewater 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 Domestic Permits Team, Domestic Wastewater 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 and/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, and/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 and/or upgrading of the domestic wastewater treatment and/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 and/or collection facilities. In the case of a domestic wastewater treatment facility which 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 Registration 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 § 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 § 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC § 361.

TCEQ Revision 06/2020

## SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge or biosolids by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Biosolids. This provision does not authorize the permittee to land apply biosolids on property owned, leased or under the direct control of the permittee.**

### SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS LAND APPLICATION

#### A. General Requirements

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge or biosolids.
2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.
3. The land application of processed or unprocessed chemical toilet waste, grease trap waste, grit trap waste, milk solids, or similar non-hazardous municipal or industrial solid wastes, or any of the wastes listed in this provision combined with biosolids, WTP residuals or domestic septage is prohibited unless the grease trap waste is added at a fats, oil and grease (FOG) receiving facility as part of an anaerobic digestion process.

#### B. Testing Requirements

1. Sewage sludge or biosolids shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 12) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped, and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. The permittee shall submit the following information in an annual report to the TCEQ by September 30<sup>th</sup> of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ’s website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 12) and the Enforcement Division (MC 224).

2. Biosolids shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C. of this permit.

TABLE 1

<u>Pollutant</u>	<u>Ceiling Concentration</u> <u>(Milligrams per kilogram)*</u>
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

\* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B biosolids pathogen requirements.

- a. For sewage sludge to be classified as Class A biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge must be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(3)(A) for specific information;

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion; or

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

- b. For sewage sludge to be classified as Class AB biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%; or

Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information; or

Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

- c. Sewage sludge that meets the requirements of Class AB biosolids may be classified a Class A biosolids if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.
- d. Three alternatives are available to demonstrate compliance with Class B biosolids criteria.

Alternative 1

- i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.
- ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

- i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;
- ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;
- iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;
- iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and
- v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

- i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

- ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;
- iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;
- iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and
- v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition to the Alternatives 1 – 3, the following site restrictions must be met if Class B biosolids are land applied:

- i. Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.
- ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for 4 months or longer prior to incorporation into the soil.
- iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than 4 months prior to incorporation into the soil.
- iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.
- v. Domestic livestock shall not be allowed to graze on the land for 30 days after application of biosolids.
- vi. Turf grown on land where biosolids are applied shall not be harvested for 1 year after application of the biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn.
- vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of biosolids.

- viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of biosolids.
  - ix. Land application of biosolids shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.
4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

- Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.
- Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.
- Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.
- Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.
- Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.
- Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.
- Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

- Alternative 9 -
- i. Biosolids shall be injected below the surface of the land.
  - ii. No significant amount of the biosolids shall be present on the land surface within one hour after the biosolids are injected.
  - iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the biosolids shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

- Alternative 10-
- i. Biosolids applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.
  - ii. When biosolids that are incorporated into the soil is Class A or Class AB with respect to pathogens, the biosolids shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

**C. Monitoring Requirements**

Toxicity Characteristic Leaching Procedure (TCLP) Test - annually  
 PCBs - annually

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

<u>Amount of biosolids (*) metric tons per 365-day period</u>	<u>Monitoring Frequency</u>
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(\*) *The amount of bulk biosolids applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge or biosolids for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

**SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE OR BIOSOLIDS FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3**

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

**A. Pollutant Limits**

Table 2

<u>Pollutant</u>	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

<u>Pollutant</u>	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

\*Dry weight basis

**B. Pathogen Control**

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B biosolids pathogen reduction requirements as defined above in Section I.B.3.

### **C. Management Practices**

1. Bulk biosolids shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.
2. Bulk biosolids not meeting Class A requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.
3. Bulk biosolids shall be applied at or below the agronomic rate of the cover crop.
4. An information sheet shall be provided to the person who receives bulk Class A or AB biosolids sold or given away. The information sheet shall contain the following information:
  - a. The name and address of the person who prepared the Class A or AB biosolids that are sold or given away in a bag or other container for application to the land.
  - b. A statement that application of the biosolids to the land is prohibited except in accordance with the instruction on the label or information sheet.
  - c. The annual whole sludge application rate for the biosolids application rate for the biosolids that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

### **D. Notification Requirements**

1. If bulk biosolids are applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk biosolids are proposed to be applied. The notice shall include:
  - a. The location, by street address, and specific latitude and longitude, of each land application site.
  - b. The approximate time period bulk biosolids will be applied to the site.
  - c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk biosolids.

### **E. Record Keeping Requirements**

The documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a biosolids material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative for a period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.
2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B biosolids, if applicable).
3. A description of how the vector attraction reduction requirements are met.
4. A description of how the management practices listed above in Section II.C are being met.
5. The following certification statement:

“I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk biosolids are applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment.”
6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk biosolids shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:
  - a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee’s specific sludge treatment activities.
  - b. The location, by street address, and specific latitude and longitude, of each site on which biosolids are applied.
  - c. The number of acres in each site on which bulk biosolids are applied.
  - d. The date and time biosolids are applied to each site.
  - e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.
  - f. The total amount of biosolids applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

## F. Reporting Requirements

The permittee shall submit the following information in an annual report to the TCEQ by September 30<sup>th</sup> of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ's website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 12) and the Enforcement Division (MC 224).

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.
2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.
3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.
4. The frequency of monitoring listed in Section I.C. that applies to the permittee.
5. Toxicity Characteristic Leaching Procedure (TCLP) results.
6. PCB concentration in sludge or biosolids in mg/kg.
7. Identity of hauler(s) and TCEQ transporter number.
8. Date(s) of transport.
9. Texas Commission on Environmental Quality registration number, if applicable.
10. Amount of sludge or biosolids disposal dry weight (lbs/acre) at each disposal site.
11. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.
12. Level of pathogen reduction achieved (Class A, Class AB or Class B).
13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B biosolids, include information on how site restrictions were met.
14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.
15. Vector attraction reduction alternative used as listed in Section I.B.4.
16. Amount of sludge or biosolids transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge or biosolids treatment activities, shall be attached to the annual report.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual report.

- a. The location, by street address, and specific latitude and longitude.
- b. The number of acres in each site on which bulk biosolids are applied.
- c. The date and time bulk biosolids are applied to each site.
- d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk biosolids applied to each site.
- e. The amount of biosolids (i.e., dry tons) applied to each site.

The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

**SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL**

- A. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge or biosolids disposed in a municipal solid waste landfill.
- B. If the permittee generates sewage sludge and supplies that sewage sludge or biosolids to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.
- C. Sewage sludge or biosolids shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 12) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped, and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Enforcement Division (MC 224), by September 30 of each year.

- D. Sewage sludge or biosolids shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.
- E. Record Keeping Requirements

The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.
2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

#### F. Reporting Requirements

The permittee shall submit the following information in an annual report to the TCEQ by September 30<sup>th</sup> of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ's website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 12) and the Enforcement Division (MC 224).

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and dewatering), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.
2. Toxicity Characteristic Leaching Procedure (TCLP) results.
3. Annual sludge or biosolids production in dry tons/year.
4. Amount of sludge or biosolids disposed in a municipal solid waste landfill in dry tons/year.
5. Amount of sludge or biosolids transported interstate in dry tons/year.
6. A certification that the sewage sludge or biosolids meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.
7. Identity of hauler(s) and transporter registration number.
8. Owner of disposal site(s).
9. Location of disposal site(s).
10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

#### **SECTION IV. REQUIREMENTS APPLYING TO SLUDGE OR BIOSOLIDS TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING**

These provisions apply to sludge or biosolids that is transported to another wastewater treatment facility or facility that further processes sludge or biosolids. These provisions are intended to allow transport of sludge or biosolids to facilities that have been authorized to accept sludge or biosolids. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge or biosolids, nor do they limit the ability of the receiving facility to request additional testing or documentation.

##### **A. General Requirements**

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.
2. Sludge or biosolids may only be transported using a registered transporter or using an approved pipeline.

##### **B. Record Keeping Requirements**

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:
  - a. the amount of sludge or biosolids transported;
  - b. the date of transport;
  - c. the name and TCEQ permit number of the receiving facility or facilities;
  - d. the location of the receiving facility or facilities;
  - e. the name and TCEQ permit number of the facility that generated the waste; and
  - f. copy of the written agreement between the permittee and the receiving facility to accept sludge or biosolids.
2. For sludge or biosolids transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge or biosolids transported.
3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

### **C. Reporting Requirements**

The permittee shall submit the following information in an annual report to the TCEQ by September 30<sup>th</sup> of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ's website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 12) and the Enforcement Division (MC 224).

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.
2. the annual sludge or biosolids production;
3. the amount of sludge or biosolids transported;
4. the owner of each receiving facility;
5. the location of each receiving facility; and
6. the date(s) of disposal at each receiving facility.

TCEQ Revision 06/2020

**OTHER REQUIREMENTS**

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and in particular 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

This Category B facility must be operated by a chief operator or an operator holding a Class B license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift that does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.
3. Chronic toxic criteria apply at the edge of the mixing zone. The mixing zone is defined as 300 feet downstream and 100 feet upstream from the point of discharge.
4. The permittee shall make provisions in the design of these facilities for the addition of effluent filters if future studies of the Houston Ship Channel show filtration to be necessary as an additional waste treatment process.
5. Reporting and monitoring requirements pursuant to 30 TAC §§ 319.1-319.11 for Total Kjeldahl Nitrogen (TKN) are suspended from the effective date of this permit. The Executive Director may request resumption of reporting and monitoring requirements within forty-five (45) days of written notice to the permittee.
6. The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). In addition, by ownership of the required buffer zone area, the permittee shall comply with the requirements of 30 TAC § 309.13(e).

**Within 60 days of the permit issuance**, the permittee shall submit sufficient evidence of legal restrictions prohibiting residential structures within the part of the buffer zone not owned by the permittee according to 30 TAC § 309.13(e)(3). The evidence of legal restrictions shall be submitted to the Executive Director in care of the TCEQ Wastewater Permitting Section (MC 148). The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). **This provision is continued from the permit issued on August 28, 2018 which has not been complied with to date.** See Attachment A.

7. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.
8. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Domestic Wastewater Section (MC 148) for each phase that includes a different monitoring frequency. The request

must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, one/week may be reduced to two/month. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Domestic Wastewater Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

9. Plans and specifications have been approved for the 1.50 MGD wastewater treatment facility, in accordance with 30 TAC § 217, Design Criteria for Domestic Wastewater Systems. A summary transmittal approval letter was issued on November 17, 2015 (Log No. 1115/066). A copy of the summary transmittal letter shall be available at the plant site for inspection by authorized representatives of the TCEQ.
10. The permittee shall comply with the following schedule of activities for the attainment of the Whole Effluent Toxicity (WET) Limitation(s) on Page 2a for Outfall 001:
  - A. Within 90 days of permit issuance- The permittee shall develop a WET compliance schedule plan (Plan) to initiate a toxicity identification strategy based upon: knowledge of their treatment system, influent/effluent characterization, Significant Industrial Users (SIUs), source waters, housekeeping practices, etc. The permittee shall submit the Plan to the TCEQ Standards Implementation Team (MC 150).
  - B. Addition of Plan Milestones- The permittee shall submit an addendum to the Plan that includes milestones as pending studies dictate. The milestones below are provided as an example. Actual Plan milestones shall be based upon the previously prepared toxicity identification strategy.

Example

1. The permittee shall perform characterization studies to identify the possible cause of toxicity. Multiple studies may be necessary to correctly identify and confirm the cause.
2. The permittee shall select and evaluate corrective action(s).
3. The permittee shall implement the selected corrective action(s). Subsequent failures will require the permittee to re-evaluate the effectiveness of the correct action(s) or the possibility of an additional source of toxicity.

The Plan addendum shall be submitted to the TCEQ Standards Implementation Team (MC 150) with a quarterly progress report, which is described below.

- C. The permittee shall comply with the final WET limit(s) within 34 months from November 7, 2023 or one day before the permit expires, whichever comes first.
- D. If the toxicant or a best management practice is identified prior to the date of permit issuance, the permittee may submit a major amendment application requesting the addition of a chemical-specific limit or best management practice.

- E. The permittee shall submit quarterly progress reports in accordance with the compliance schedule below. The requirement to submit quarterly progress reports shall expire 34 months from the date of permit issuance.

PROGRESS REPORT DATES

- January 1
- April 1
- July 1
- October 1

The quarterly progress reports shall include a discussion of the milestones completed at the time of the report and shall address the progress towards attaining the final WET limit(s) at Outfall 001 no later than 34 months from November 7, 2023 or one day before the permit expires, whichever comes first.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each scheduled due date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled milestone identified within the submitted plan.

All progress reports shall be submitted to the TCEQ Standards Implementation Team (MC 150). Copies of all progress reports and related documents shall be submitted to the Whole Effluent Toxicity Coordinator (6WQ-P), U.S. Environmental Protection Agency, 1445 Ross Avenue, Dallas, TX 75202.

- 11. 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 the Enforcement Division (MC 224).

<u>POLLUTANT</u>	<u>MAL, µg/l</u>
Free Cyanide	0.10

Test methods utilized shall be sensitive enough to demonstrate compliance with the permit effluent limitations. Permit compliance/noncompliance determinations will be based on the effluent limitations contained in this permit with consideration given to the MAL for the parameters specified above.

When an analysis of an effluent sample for any of the parameters 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 (0) shall be used for that measurement when determining calculations and reporting requirements 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 (0) 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 (0) for [list parameter(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 parameter 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 parameter, the level of detection achieved shall be used for that measurement when determining calculations and reporting requirements for the self-reporting form. A zero (0) may not be used.

**CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS**

1. The following pollutants may not be introduced into the treatment facility:
  - a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste streams with a closed-cup flash point of less than 140° Fahrenheit (60° Celsius) using the test methods specified in 40 CFR § 261.21;
  - b. Pollutants which will cause corrosive structural damage to the POTW, but in no case shall there be discharges with a pH lower than 5.0 standard units, unless the works are specifically designed to accommodate such discharges;
  - c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference;
  - d. Any pollutant, including oxygen-demanding pollutants (e.g., biochemical oxygen demand), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;
  - e. Heat in amounts which will inhibit biological activity in the POTW, resulting in Interference, but in no case shall there be heat in such quantities that the temperature at the POTW treatment plant exceeds 104° Fahrenheit (40° Celsius) unless the Executive Director, upon request of the POTW, approves alternate temperature limits;
  - f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;
  - g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and
  - h. Any trucked or hauled pollutants except at discharge points designated by the POTW.
2. The permittee shall require any indirect discharger to the treatment works to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act, including any requirements established under 40 CFR Part 403 [*rev. Federal Register/ Vol. 70/ No. 198/ Friday, October 14, 2005/ Rules and Regulations, pages 60134-60798*].
3. The permittee shall provide adequate notification to the Executive Director, care of the Domestic Wastewater Section (MC 148) of the Water Quality Division, within 30 days subsequent to the permittee's knowledge of either of the following:
  - a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if it were directly discharging those pollutants; and
  - b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

Any notice shall include information on the quality and quantity of effluent to be introduced into the treatment works and any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

Revised July 2007

## **BIOMONITORING REQUIREMENTS**

### 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 30%, 40%, 54%, 80%, and 96% effluent. The critical dilution, defined as 96% 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 to the fathead minnow. 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 fathead minnow quarterly tests demonstrates significant toxicity, the permittee may submit this

information in writing and, upon approval, reduce the testing frequency to once per year.

- 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.
- f. The lethal No Observed Effect Concentration (NOEC) effluent limitations of not less than 96% and the sublethal NOEC of not less than 80% (see the EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS section) are effective 34-months from November 7, 2023 for the water flea.
- g. 34-months from the permit issue date, if a water flea test fails to pass the sublethal endpoint at the 80% effluent concentration or the lethal effluent limitation at 96% effluent limitation, the testing frequency will increase to monthly until such time compliance with the NOEC effluent limitation is demonstrated for a period of three consecutive months, at which time the quarterly testing frequency may be resumed.

## 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 (0% effluent).
- 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

- 1) Dilution water used in the toxicity tests must be the receiving water collected at a point upstream of the discharge point as close as possible to the discharge point but unaffected by the discharge. Where the toxicity tests are conducted on effluent discharges to receiving waters that are classified as intermittent streams, or where the toxicity tests are conducted on effluent discharges where no receiving water is available due to zero flow conditions, the permittee shall:
  - a) substitute a synthetic dilution water that has a pH, hardness, and alkalinity similar to that of the closest downstream perennial water unaffected by the discharge; or
  - b) use the closest downstream perennial water unaffected by the discharge.
- 2) Where the receiving water proves unsatisfactory as a result of pre-existing instream toxicity (i.e. fails to fulfill the test acceptance criteria of Part 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
  - a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of Part 2.a;
  - b) the test indicating receiving water toxicity was carried out to completion (i.e., 7 days); and
  - c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3.
- 3) The synthetic dilution water shall consist of standard, moderately hard, reconstituted water. Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving 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.
- 5) The effluent samples shall not be dechlorinated after sample collection.

### 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 20th for biomonitoring conducted during the previous 12-month period.
  - 2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6-month period.
  - 3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th for biomonitoring conducted during the previous calendar quarter.
  - 4) Monthly biomonitoring test results are due on or before the 20th 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 fathead minnow 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."
- e. The permittee shall report the lethal and sublethal WET values for the 30-day average and the 7-day minimum under Parameter No. 51710 for the appropriate reporting period for the water flea. If more than one valid test was performed during the reporting period, the NOECs will be averaged arithmetically and reported as the 30-day average. The 7-day minimum value submitted should reflect the lowest results during the reporting period.

#### 4. Persistent Toxicity

The requirements of this Part apply only to the fathead minnow and 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 test 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.

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 20th, July 20th, October 20th, and January 20th. 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.

Copies of the TRE activities report shall also be submitted to the U.S. EPA Region 6 office.

- 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. A copy of the TRE final report shall also be submitted to the U.S. EPA Region 6 office.

- 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.

TABLE 1 (SHEET 1 OF 4)  
BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

Dates and Times Composites Collected

No. 1 FROM: \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ TO: \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

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%	30%	40%	54%	80%	96%
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 (96%): \_\_\_\_\_ YES \_\_\_\_\_ NO

PERCENT SURVIVAL

Time of Reading	Percent effluent					
	0%	30%	40%	54%	80%	96%
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 (96%): \_\_\_\_\_ 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

Dates and Times Composites Collected

No. 1 FROM: \_\_\_\_\_ Date Time \_\_\_\_\_ TO: \_\_\_\_\_ Date Time \_\_\_\_\_

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%							
30%							
40%							
54%							
80%							
96%							
PMSD							

\* Coefficient of Variation = standard deviation x 100/mean

- 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 (96%): \_\_\_\_\_ 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%									
30%									
40%									
54%									
80%									
96%									

\* 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 (96%): \_\_\_\_\_ 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 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.

A valid test result must be submitted for each reporting period. The permittee must report, and then repeat, an invalid test during the same reporting period. The repeat test shall include the control and the 100% effluent dilution and use the appropriate number of organisms and replicates, as specified above. 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 (BMP), Chemical-Specific (CS) limits, or other appropriate actions to address toxicity. The permittee may be required to conduct a Toxicity Reduction Evaluation 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 item 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.
- 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.
- 5) The effluent sample shall not be dechlorinated after sample collection.

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.
- 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 20th and January 20th for biomonitoring conducted during the previous 6-month period.
  - 2) Quarterly biomonitoring test results are due on or before April 20th, July 20th, and October 20th, and January 20th 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 a "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 a "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 a "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 a "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 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 TRE activities reports are due on or before April 20th, July 20th, October 20th, and January 20th. 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.

Copies of the TRE activities report shall also be submitted to the U.S. EPA Region 6 office.

- 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. A copy of the TRE final report shall also be submitted to the U.S. EPA Region 6 office.

- 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 implementation of corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

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

## FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

For draft Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0012716001, EPA I.D. No. TX0092991, to discharge to water in the state.

Issuing Office: Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, Texas 78711-3087

Applicant: Harris County Municipal Utility District No. 285  
3200 Southwest Freeway  
Houston, Texas 77027

Prepared By: Sumitra Pokharel  
Domestic Permits Team  
Domestic Wastewater Section (MC 148)  
Water Quality Division  
(512) 239-4722

Date: November 17, 2025

Permit Action: Staff Initiated Minor Amendment

### 1. 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 includes an expiration date of **November 7, 2028**.

### 2. APPLICANT ACTIVITY

The Texas Commission on Environmental Quality (TCEQ) staff has initiated a minor amendment of the existing permit to correct the effluent parameter Total Cyanide to Free Cyanide.

### 3. FACILITY AND DISCHARGE LOCATION

The plant site is located at 6436 East Sam Houston Parkway North, in Harris County, Texas 77049.

#### Outfall Location:

<b>Outfall Number</b>	<b>Latitude</b>	<b>Longitude</b>
001	29.823248 N	95.156848 W

The treated effluent is discharged to Carpenters Bayou, thence to the Carpenters Bayou Tidal portion of the Houston Ship Channel Tidal in Segment No. 1006 of the San Jacinto River Basin. The unclassified receiving water uses are limited aquatic life use for Carpenters Bayou (upstream of Wallisville Road) and intermediate aquatic life use for Carpenters Bayou (downstream of Wallisville Road). The designated uses for Segment No. 1006 are navigation and industrial water supply.

**4. TREATMENT PROCESS DESCRIPTION AND SEWAGE SLUDGE DISPOSAL**

The Harris County Municipal Utility District No. 285 Wastewater Treatment Facility is an activated sludge process plant operated in the extended aeration mode. Treatment units include influent channel, two aeration basins, two final clarifiers, two sludge digesters, two chlorine contact chambers and a dechlorination chamber. The facility is in operation.

Sludge generated from the treatment facility is hauled by a registered transporter and disposed of at a TCEQ-authorized land application site, Waste Management Atascocita landfill, Permit No. 1307B. The draft permit also authorizes the disposal of sludge at a TCEQ-authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge.

**5. INDUSTRIAL WASTE CONTRIBUTION**

The draft permit includes pretreatment requirements that are appropriate for a facility of this size and complexity. The Harris County MUD No. 285 WWTP No. 2 does not appear to receive significant industrial wastewater contributions. Based on the information provided by the permittee in the most recent TPDES permit application, the TCEQ determined that there are no significant industrial wastewater contributions currently being discharged to the permittee's POTW.

**6. SUMMARY OF SELF-REPORTED EFFLUENT ANALYSES**

The following is a summary of the applicant's effluent monitoring data for the period August 2023 through August 2025. The average of Daily Average value is computed by the averaging of all 30-day average values for the reporting period for each parameter: flow, five-day carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>), total suspended solids (TSS), ammonia nitrogen (NH<sub>3</sub>-N), and total cyanide. The average of Daily Average value for *Escherichia coli* (*E. coli*) in colony-forming units (CFU) or most probable number (MPN) per 100 ml is calculated via geometric mean.

<u>Parameter</u>	<u>Average of Daily Avg</u>
Flow, MGD	0.54
CBOD <sub>5</sub> , mg/l	4.42
TSS, mg/l	8.6
NH <sub>3</sub> -N, mg/l	0.35
Total Cyanide, mg/l	0.0044
<i>E. coli</i> , CFU or MPN per 100 ml	8.0

**7. DRAFT PERMIT CONDITIONS AND MONITORING REQUIREMENTS**

The effluent limitations and monitoring requirements for those parameters that are limited in the draft permit are as follows:

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The annual average flow of effluent shall not exceed 1.50 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 4,167 gallons per minute (gpm).

Harris County Municipal Utility District No. 285 TPDES Permit No. WQ0012716001  
 Fact Sheet and Executive Director's Preliminary Decision

<u>Parameter</u>	<u>30-Day Average</u>		<u>7-Day</u>	<u>Daily</u>
	<u>mg/l</u>	<u>lbs/day</u>	<u>Average</u> <u>mg/l</u>	<u>Maximum</u> <u>mg/l</u>
CBOD <sub>5</sub>	10	125	15	25
TSS	15	188	25	40
NH <sub>3</sub> -N	2	25	5	10
Total Kjeldahl Nitrogen	Report	Report	N/A	Report
Free Cyanide	0.01	0.12	N/A	0.02
DO (minimum)	6.0	N/A	N/A	N/A
<i>E. coli</i> , CFU or MPN per 100 ml	126	N/A	N/A	399

Whole Effluent Toxicity (WET)

Lethal WET limit (Parameter 51714)<sup>2</sup>

<i>Ceriodaphnia dupia</i>	<u>7 days minimum</u>	<u>30-day Average</u>
(7-brood chronic NOEC <sup>1</sup> )	Report	Report

Sublethal WET limit (Parameter 51714)<sup>2</sup>

<i>Ceriodaphnia dupia</i>		
(3-brood chronic NOEC <sup>1</sup> )	Report	Report

<sup>1</sup> The Lethal and Sublethal WET limits become effect 34 months from the permit issuance date of November 7, 2023.

<sup>2</sup> The NOEC is defined as the greatest effluent dilution at which no significant Lethality is demonstrated. A significant effect is defined as a statistically significant difference between a specified effluent dilution and the control for toxicity (lethal or sublethal effects, whichever is specified).

Lethal WET limit 96% (Parameter 51714)<sup>2</sup>

<i>Ceriodaphnia dupia</i>		
(7-brood chronic NOEC <sup>1</sup> )	96%	96%

Sublethal WET limit 80% (Parameter 51714)<sup>2</sup>

<i>Ceriodaphnia dupia</i>		
(3-brood chronic NOEC <sup>1</sup> )	96%	96%

<sup>1</sup> The Lethal and Sublethal WET limits become effect 34-months from the permit issuance date of November 7, 2023.

<sup>2</sup> The NOEC is defined as the greatest effluent dilution at which no significant Lethality is demonstrated. A significant effect is defined as a statistically significant difference between a specified effluent dilution and the control for toxicity (lethal or sublethal effects, whichever is specified)

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per week by grab sample. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

The effluent shall contain a total 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 daily by grab sample at each chlorine contact chamber. The permittee shall dechlorinate the chlorinated effluent to less than 0.1 mg/l total chlorine

residual and shall monitor total chlorine residual daily by grab sample after the dechlorination process. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

<u>Parameter</u>	<u>Monitoring Requirement</u>
Flow, MGD	Continuous
CBOD <sub>5</sub>	Two/week
TSS	Two/week
NH <sub>3</sub> -N	Two/week
Total Kjeldahl Nitrogen	Two/week
Free Cyanide	One/week
DO	Two/week
<i>E. coli</i>	One/week
WET Limit	One/quarter

C. SEWAGE SLUDGE REQUIREMENTS

The draft permit includes Sludge Provisions according to the requirements of 30 TAC Chapter 312, Sludge Use, Disposal, and Transportation. Sludge generated from the treatment facility is hauled by a registered transporter and disposed of at a TCEQ-authorized land application site, Waste Management Atascocita landfill, Permit No. 1307B. The draft permit also authorizes the disposal of sludge at a TCEQ-authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge.

D. PRETREATMENT REQUIREMENTS

Permit requirements for pretreatment are based on TPDES regulations contained in 30 TAC Chapter 305, which references 40 Code of Federal Regulations (CFR) Part 403, "General Pretreatment Regulations for Existing and New Sources of Pollution" [*rev. Federal Register/ Vol. 70/ No. 198/ Friday, October 14, 2005/ Rules and Regulations, pages 60134-60798*]. The permit includes specific requirements that establish responsibilities of local government, industry, and the public to implement the standards to control pollutants which pass through or interfere with treatment processes in publicly owned treatment works or which may contaminate the sewage sludge. This permit has appropriate pretreatment language for a facility of this size and complexity.

E. WHOLE EFFLUENT TOXICITY (BIOMONITORING) REQUIREMENTS

- (1) The draft permit includes chronic freshwater biomonitoring requirements as follows. The permit requires five dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 30%, 40%, 54%, 80%, and 96%. The low-flow effluent concentration (critical dilution) is defined as 96% effluent. The critical dilution is in accordance with the "Aquatic Life Criteria" section of the "Water Quality Based Effluent Limitations/Conditions" section.

- (a) Chronic static renewal survival and reproduction test using the water flea (*Ceriodaphnia dubia*). The frequency of the testing is once per quarter for at least the first year of testing, after which the permittee may apply for a testing frequency reduction.
  - (b) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*). The frequency of the testing is once per quarter for at least the first year of testing, after which the permittee may apply for a testing frequency reduction.
- (2) The draft permit includes the following minimum 24-hour acute freshwater biomonitoring requirements at a frequency of once per six months:
- (a) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*).
  - (b) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*).

F. SUMMARY OF CHANGES FROM APPLICATION

None.

G. SUMMARY OF CHANGES FROM EXISTING PERMIT

The effluent parameter for Total Cyanide from the existing permit has been updated to Free Cyanide on page 2 of the Effluent Limitations and Monitoring Requirements in the draft permit.

**8. DRAFT PERMIT RATIONALE**

A. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

Regulations promulgated in Title 40 of the 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.

Effluent limitations for maximum and minimum pH are in accordance with 40 CFR § 133.102(c) and 30 TAC § 309.1(b).

B. WATER QUALITY SUMMARY AND COASTAL MANAGEMENT PLAN

(1) WATER QUALITY SUMMARY

The treated effluent is discharged to Carpenters Bayou, thence to the Carpenters Bayou Tidal portion of the Houston Ship Channel Tidal in Segment No. 1006 of the San Jacinto River Basin. The unclassified receiving water uses are limited aquatic life use for Carpenters Bayou (upstream of Wallisville Road) and intermediate aquatic life use for

Carpenters Bayou (downstream of Wallisville Road). The designated uses for Segment No. 1006 are navigation, industrial water supply. The effluent limitations in the draft permit will maintain and protect the existing instream uses. All determinations are preliminary and subject to additional review and/or revisions.

The discharge from this permit action 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) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (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 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.

Segment No. 1006 is currently listed on the State's inventory of impaired and threatened waters (the 2022 CWA Section 303(d) list). The listing is for elevated bacteria in Goodyear Creek from confluence with Greens Bayou Tidal to Granada St. in Harris County (Assessment Unit [AU] 1006\_05). The segment is also listed for dioxin and PCBs in edible tissue in Houston Ship Channel Tidal-From the Greens Bayou confluence to the Patrick Bayou confluence (AU 1006\_01); Houston Ship Channel Tidal-From the Patrick Bayou confluence to the Houston Ship Channel/San Jacinto River Tidal (1005) confluence (AU 1006\_02); Greens Bayou Tidal- From the Houston Ship Channel confluence to a point 0.7 km (0.4 mi) upstream of the Halls Bayou confluence (AU 1006\_03); Patrick Bayou Tidal - From the confluence with the Houston Ship Channel to 100 m (328 ft) upstream of the railroad bridge (AU 1006\_04); Goodyear Creek-From confluence with Greens Bayou Tidal to Granada St. in Harris County (AU 1006\_05); Tucker Bayou- From the Houston Ship Channel confluence to a point 2.7 km (1.7 mi) upstream (AU 1006\_06); Carpenters Bayou-From the Houston Ship Channel confluence to the lower boundary of 1006B (2.3 m/ 1.4 mi) upstream from the Houston Ship Channel confluence) (AU 1006\_07). In addition, the segment is also for toxicity in sediment in Patrick Bayou Tidal (AU1006\_04). This facility is designed to provide adequate disinfection and, when operated properly, should not add to the bacterial impairment of the segment. This is a public domestic wastewater treatment facility. The facility does not receive industrial wastewater contributions, therefore the effluent from this facility should not contribute to the dioxin and PCBs in edible tissue impairment of this segment.

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

Monitoring and reporting of total Kjeldahl nitrogen (TKN) was an original requirement of WLE-1 (*Waste Load Evaluation for the Houston Ship Channel System in the San Jacinto River Basin*, 1984). WLE-1 has since been superseded by WLE-1R, and with deterministic modeling now used to set effluent limits for all dischargers, reporting of TKN was suspended.

The effluent limitations and conditions in the draft permit comply with EPA-approved portions of the 2018 Texas Surface Water Quality Standards (TSWQS), 30 TAC §§ 307.1 - 307.10, effective March 1, 2018; 2014 TSWQS, effective March 6, 2014; 2010 TSWQS, effective July 22, 2010; and 2000 TSWQS, effective July 26, 2000.

(2) CONVENTIONAL PARAMETERS

Effluent limitations for the conventional effluent parameters (i.e., Five-Day Biochemical Oxygen Demand or Five-Day Carbonaceous Biochemical Oxygen Demand, Ammonia Nitrogen, etc.) are based on stream standards and waste load allocations for water quality-limited streams as established in the TSWQS and the State of Texas Water Quality Management Plan (WQMP).

The effluent limits recommended above have been reviewed for consistency with the State of Texas WQMP. The recommended limits are consistent with the approved WQMP.

The effluent limitations in the draft permit meet the requirements for secondary treatment and the requirements for disinfection according to 30 TAC Chapter 309, Subchapter A: Effluent Limitations.

(3) COASTAL MANAGEMENT PLAN

The facility is not located in the Coastal Management Program boundary.

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

(1) GENERAL COMMENTS

The Texas Surface Water Quality Standards (30 TAC Chapter 307) state that surface waters will not be toxic to man, or to terrestrial or aquatic life. The methodology outlined in the "Procedures to Implement the Texas Surface Water Quality Standards" 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.

(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).

Acute freshwater criteria are applied at the edge of the zone of initial dilution (ZID), and chronic freshwater criteria are applied at the edge of the aquatic life mixing zone. The ZID for this discharge is defined as 20 feet upstream and 60 feet downstream from the point where the discharge enters Carpenters Bayou (upstream of Wallisville Rd). The aquatic life mixing zone for this discharge is defined as 100 feet upstream and 300 feet downstream from the point where the discharge enters Carpenters Bayou (upstream of Wallisville Rd).

TCEQ uses the mass balance equation to estimate dilutions at the edges of the ZID and aquatic life mixing zone during critical conditions. The estimated dilution at the edge of the aquatic life mixing zone is calculated using the permitted flow of 0 MGD and the 7-day, 2-year (7Q2) flow of 0.1 cfs for Carpenters Bayou (upstream of Wallisville Rd). The estimated dilution at the edge of the ZID is calculated using the permitted flow of 1.5 MGD and 25% of the 7Q2 flow. The following critical effluent percentages are being used:

Acute Effluent %:	98.93%	Chronic Effluent %:	95.87%
-------------------	--------	---------------------	--------

Waste load 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, instream numerical criteria will not be exceeded. From the WLA, a long-term average (LTA) is calculated using a log normal probability distribution, a given coefficient of variation (0.6), and a 90<sup>th</sup> 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 99<sup>th</sup> percentile confidence level and a standard number of monthly effluent samples collected (12). Assumptions used in deriving the effluent limitations include segment values for hardness, chlorides, pH, and total suspended solids (TSS) according to the segment-specific values contained in the TCEQ guidance document "Procedures to Implement the Texas Surface Water Quality Standards." The segment values are 65 mg/l for hardness (as calcium carbonate), 81 mg/l chlorides, 7.5 standard units for pH, and 10 mg/l for TSS. For additional details on the calculation of water quality-based effluent limitations, refer to the TCEQ guidance document.

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 exceeds 85% of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required when analytical data reported in the application exceeds 70% of the calculated daily average water quality-based effluent limitation. See Attachment A of this Fact Sheet.

(b) PERMIT ACTION

No Analytical data was screened against calculated water quality-based effluent limitations for human health protection. This was because this is for a staff initiated minor amendment and does not require the submittal of analytical data.

(3) 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 freshwater fish tissue found in Table 2 of the Texas Surface Water Quality Standards (30 TAC Chapter 307). Freshwater fish tissue bioaccumulation criteria are applied at the edge of the human health mixing zone. The human health mixing zone for this discharge is identical to the aquatic life mixing zone. TCEQ uses the mass balance equation to estimate dilution at the edge of the human health mixing zone during average flow conditions. The estimated dilution at the edge of the human health mixing zone is calculated using the permitted flow of 1.50 MGD and the harmonic mean flow of 0.2 cfs **for Carpenters Bayou (upstream of Wallisville Rd)**. The following critical effluent percentage is being used:

Human Health Effluent %: 92.07%

Water quality-based effluent limitations for the protection of human health are calculated using criteria for the consumption of freshwater fish tissue found in Table 2 of the Texas Surface Water Quality Standards (30 TAC Chapter 307). Freshwater fish tissue bioaccumulation criteria are applied at the edge of the human health mixing zone. The human health mixing zone for this discharge is identical to the aquatic life mixing zone. TCEQ uses the mass balance equation to estimate dilution at the edge of the human health mixing zone during average flow conditions. The estimated dilution at the edge of the human health mixing zone is calculated using the permitted flow of 1.50 MGD and the harmonic mean flow of 0.2 cfs **for Carpenters Bayou (downstream of Wallisville Rd)**. The following critical effluent percentage is being used:

Human Health Effluent %: 92.07%

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 99<sup>th</sup> 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% and 85% of the calculated daily average water quality-based effluent limitation. See Attachment A of this Fact Sheet.

(b) PERMIT ACTION

No Analytical data was screened against calculated water quality-based effluent limitations for human health protection. This was because this is for a staff initiated minor amendment and does not require the submittal of analytical data.

(4) DRINKING WATER SUPPLY PROTECTION

(a) SCREENING

Water Quality Segment No. 1006, 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.

(5) WHOLE EFFLUENT TOXICITY (BIOMONITORING) CRITERIA

(a) SCREENING

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 biomonitoring is the most direct measure of potential toxicity that 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 existing permit includes chronic freshwater biomonitoring requirements. No screening done for this permit action.

(b) PERMIT ACTION

The 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, and/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.

(6) **WHOLE EFFLUENT TOXICITY CRITERIA (24-HOUR ACUTE)**

(a) **SCREENING**

The existing permit includes 24-hour acute freshwater biomonitoring language. No screening was done for this type of permit action.

(b) **PERMIT ACTION**

The draft permit includes 24-hour 100% acute biomonitoring tests for the life of the permit.

**9. WATER QUALITY VARIANCE REQUESTS**

No variance requests have been received.

**10. PROCEDURES FOR FINAL DECISION**

Once the draft permit is completed, it is sent to the Office of the Chief Clerk of the TCEQ. The Chief Clerk mails the Notice of Application and Preliminary Decision to any interested persons. This notice informs the public about the application, and provides that an interested person may file comments on the application or request a public meeting. The notice is also published in the Texas Register. This notice sets a deadline that is 30 days from the date this notice is mailed for making public comments or requesting a public meeting.

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. As this is a minor amendment, there is no right to a contested case hearing.

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 or requested to be on the mailing list. If the Executive Director calls a public meeting, the Commission will give notice of the date, time, and place of the meeting.

For additional information about this application, contact Sumitra Pokharel at (512) 239-4722.

**11. ADMINISTRATIVE RECORD**

The following items were considered in developing the draft permit:

A. PERMIT(S)

TPDES Permit No. WQ0012716001 issued on November 7, 2023.

B. APPLICATION

Staff initiated minor amendment started on September 19, 2025.

C. MEMORANDA

Interoffice Memoranda from the Water Quality Assessment Section of the TCEQ Water Quality Division. Interoffice Memorandum from the Pretreatment Team of the TCEQ Water Quality Division.

D. MISCELLANEOUS

Federal Clean Water Act § 402; Texas Water Code § 26.027; 30 TAC Chapters 30, 305, 309, 312, and 319; Commission policies; and U.S. Environmental Protection Agency guidelines.

Texas Surface Water Quality Standards, 30 TAC §§ 307.1 - 307.10.

*Procedures to Implement the Texas Surface Water Quality Standards (IP)*, Texas Commission on Environmental Quality, June 2010, as approved by the U.S. Environmental Protection Agency, and the IP, January 2003, for portions of the 2010 IP not approved by the U.S. Environmental Protection Agency.

Texas 2024 CWA § 303(d) List, Texas Commission on Environmental Quality, June 26, 2024; approved by the EPA on November 13, 2024.

Texas Natural Resource Conservation Commission, Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits, Document No. 98-001.000-OWR-WQ, May 1998.

## Attachment A: Calculated Water Quality Based Effluent Limitations

### TEXTOX MENU #3 - PERENNIAL STREAM OR 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

#### PERMIT INFORMATION

Permittee Name:	Harris County Municipal Utility District No. 285
TPDES Permit No.:	WQ0012716001
Outfall No.:	001
Prepared by:	Sumitra Pokharel
Date:	September 30, 2025

#### DISCHARGE INFORMATION

Receiving Waterbody:	Carpenters Bayou (upstream of Wallisville Rd)
Segment No.:	1016
TSS (mg/L):	10
pH (Standard Units):	7.5
Hardness (mg/L as CaCO <sub>3</sub> ):	65
Chloride (mg/L):	81
Effluent Flow for Aquatic Life (MGD):	1.5
Critical Low Flow [7Q2] (cfs):	0.1
% Effluent for Chronic Aquatic Life (Mixing Zone):	95.87
% Effluent for Acute Aquatic Life (ZID):	98.93
Effluent Flow for Human Health (MGD):	1.5
Harmonic Mean Flow (cfs):	0.2
% Effluent for Human Health:	92.07
Human Health Criterion (select: PWS, FISH, or INC)	<b>INC</b>

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

<i>Stream/River Metal</i>	<i>Intercept (b)</i>	<i>Slope (m)</i>	<i>Partition Coefficient t (Kp)</i>	<i>Dissolved Fraction (Cd/Ct)</i>	<i>Source</i>	<i>Water Effect Ratio (WER)</i>	<i>Source</i>
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
			295120.9				
Cadmium	6.60	-1.13	2	0.253		1.00	Assumed
			389045.1				
Chromium (total)	6.52	-0.93	4	0.204		1.00	Assumed
			389045.1				
Chromium (trivalent)	6.52	-0.93	4	0.204		1.00	Assumed
Chromium (hexavalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
			190546.0				
Copper	6.02	-0.74	7	0.344		1.00	Assumed
			446683.5				
Lead	6.45	-0.80	9	0.183		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
			131825.6				
Nickel	5.69	-0.57	7	0.431		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
			223872.1				
Silver	6.38	-1.03	1	0.309		1.00	Assumed

Harris County Municipal Utility District No. 285 TPDES Permit No. WQ0012716001  
 Fact Sheet and Executive Director's Preliminary Decision

Zinc	6.10	-0.70	251188.6 4	0.285	1.00	Assumed
------	------	-------	---------------	-------	------	---------

**AQUATIC LIFE**

**CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:**

<i>Parameter</i>	<i>FW Acute Criterion (µg/L)</i>	<i>FW Chronic Criterion (µg/L)</i>	<i>WLAa (µg/L)</i>	<i>WLAc (µg/L)</i>	<i>LTAa (µg/L)</i>	<i>LTAc (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Aldrin	3.0	N/A	3.03	N/A	1.74	N/A	2.55	5.40
Aluminum	991	N/A	1002	N/A	574	N/A	843	1785
Arsenic	340	150	650	296	372	228	334	708
Cadmium	5.6	0.182	22.5	0.751	12.9	0.579	0.850	1.79
Carbaryl	2.0	N/A	2.02	N/A	1.16	N/A	1.70	3.60
Chlordane	2.4	0.004	2.43	0.00417	1.39	0.00321	0.00472	0.00999
Chlorpyrifos	0.083	0.041	0.0839	0.0428	0.0481	0.0329	0.0484	0.102
Chromium (trivalent)	400	52	1979	266	1134	205	300	636
Chromium (hexavalent)	15.7	10.6	15.9	11.1	9.09	8.51	12.5	26.4
Copper	9.5	6.6	27.8	19.9	15.9	15.3	22.4	47.5
Cyanide (free)	45.8	10.7	46.3	11.2	26.5	8.59	12.6	26.7
4,4'-DDT	1.1	0.001	1.11	0.00104	0.637	0.000803	0.00118	0.00249
Demeton	N/A	0.1	N/A	0.104	N/A	0.0803	0.118	0.249
Diazinon	0.17	0.17	0.172	0.177	0.0985	0.137	0.144	0.306
Dicofol [Kelthane]	59.3	19.8	59.9	20.7	34.3	15.9	23.3	49.4
Dieldrin	0.24	0.002	0.243	0.00209	0.139	0.00161	0.00236	0.00499
Diuron	210	70	212	73.0	122	56.2	82.6	174
Endosulfan I ( <i>alpha</i> )	0.22	0.056	0.222	0.0584	0.127	0.0450	0.0661	0.139
Endosulfan II ( <i>beta</i> )	0.22	0.056	0.222	0.0584	0.127	0.0450	0.0661	0.139
Endosulfan sulfate	0.22	0.056	0.222	0.0584	0.127	0.0450	0.0661	0.139
Endrin	0.086	0.002	0.0869	0.00209	0.0498	0.00161	0.00236	0.00499
Guthion [Azinphos Methyl]	N/A	0.01	N/A	0.0104	N/A	0.00803	0.0118	0.0249
Heptachlor	0.52	0.004	0.526	0.00417	0.301	0.00321	0.00472	0.00999
Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane]	1.126	0.08	1.14	0.0834	0.652	0.0643	0.0944	0.199
Lead	40	1.57	223	8.95	128	6.89	10.1	21.4
Malathion	N/A	0.01	N/A	0.0104	N/A	0.00803	0.0118	0.0249
Mercury	2.4	1.3	2.43	1.36	1.39	1.04	1.53	3.24
Methoxychlor	N/A	0.03	N/A	0.0313	N/A	0.0241	0.0354	0.0749
Mirex	N/A	0.001	N/A	0.00104	N/A	0.000803	0.00118	0.00249
Nickel	325	36.1	762	87.4	437	67.3	98.8	209
Nonylphenol	28	6.6	28.3	6.88	16.2	5.30	7.79	16.4
Parathion (ethyl)	0.065	0.013	0.0657	0.0136	0.0376	0.0104	0.0153	0.0324
Pentachlorophenol	14.4	11.1	14.6	11.5	8.35	8.88	12.2	25.9
Phenanthrene	30	30	30.3	31.3	17.4	24.1	25.5	54.0
Polychlorinated Biphenyls [PCBs]	2.0	0.014	2.02	0.0146	1.16	0.0112	0.0165	0.0349
Selenium	20	5	20.2	5.22	11.6	4.02	5.90	12.4
Silver	0.8	N/A	17.9	N/A	10.2	N/A	15.0	31.8
Toxaphene	0.78	0.0002	0.788	0.000209	0.452	0.000161	0.000236	0.00049
Tributyltin [TBT]	0.13	0.024	0.131	0.0250	0.0753	0.0193	0.0283	0.0599
2,4,5 Trichlorophenol	136	64	137	66.8	78.8	51.4	75.5	159
Zinc	81	82	289	300	165	231	243	514

Harris County Municipal Utility District No. 285 TPDES Permit No. WQ0012716001  
 Fact Sheet and Executive Director's Preliminary Decision

**HUMAN HEALTH**

**CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:**

<i>Parameter</i>	<i>Water and Fish Criterion (µg/L)</i>	<i>Fish Only Criterion (µg/L)</i>	<i>Incidental Fish Criterion (µg/L)</i>	<i>WLAh (µg/L)</i>	<i>LTAh (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Acrylonitrile	1.0	115	1150	1249	1162	1707	3612
Aldrin	1.146E-05	1.147E-05	1.147E-04	0.000125	0.000116	0.000170	0.000360
Anthracene	1109	1317	13170	14305	13304	19556	41374
Antimony	6	1071	10710	11633	10819	15903	33645
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	6311	5869	8627	18252
Benidine	0.0015	0.107	1.07	1.16	1.08	1.58	3.36
Benzo(a)anthracene	0.024	0.025	0.25	0.272	0.253	0.371	0.785
Benzo(a)pyrene	0.0025	0.0025	0.025	0.0272	0.0253	0.0371	0.0785
Bis(chloromethyl)ether	0.0024	0.2745	2.745	2.98	2.77	4.07	8.62
Bis(2-chloroethyl)ether	0.60	42.83	428.3	465	433	635	1345
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	6	7.55	75.5	82.0	76.3	112	237
Bromodichloromethane [Dichlorobromomethane]	10.2	275	2750	2987	2778	4083	8639
Bromoform [Tribromomethane]	66.9	1060	10600	11513	10708	15740	33300
Cadmium	5	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	4.5	46	460	500	465	683	1445
Chlordane	0.0025	0.0025	0.025	0.0272	0.0253	0.0371	0.0785
Chlorobenzene	100	2737	27370	29729	27648	40642	85984
Chlorodibromomethane [Dibromochloromethane]	7.5	183	1830	1988	1849	2717	5749
Chloroform [Trichloromethane]	70	7697	76970	83603	77751	114293	241804
Chromium (hexavalent)	62	502	5020	5453	5071	7454	15770
Chrysene	2.45	2.52	25.2	27.4	25.5	37.4	79.1
Cresols [Methylphenols]	1041	9301	93010	101025	93953	138111	292195
Cyanide (free)	200	N/A	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.002	0.02	0.0217	0.0202	0.0296	0.0628
4,4'-DDE	0.00013	0.00013	0.0013	0.00141	0.00131	0.00193	0.00408
4,4'-DDT	0.0004	0.0004	0.004	0.00434	0.00404	0.00593	0.0125
2,4'-D	70	N/A	N/A	N/A	N/A	N/A	N/A
Danitrol [Fenpropathrin]	262	473	4730	5138	4778	7023	14859
1,2-Dibromoethane [Ethylene Dibromide]	0.17	4.24	42.4	46.1	42.8	62.9	133
m-Dichlorobenzene [1,3-Dichlorobenzene]	322	595	5950	6463	6010	8835	18692
o-Dichlorobenzene [1,2-Dichlorobenzene]	600	3299	32990	35833	33325	48987	103639
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	24.3	22.6	33.2	70.3
1,2-Dichloroethane	5	364	3640	3954	3677	5405	11435
1,1-Dichloroethylene [1,1-Dichloroethene]	7	55114	551140	598635	556731	818393	1731432
Dichloromethane [Methylene Chloride]	5	13333	133330	144820	134682	197983	418862
1,2-Dichloropropane	5	259	2590	2813	2616	3845	8136
1,3-Dichloropropene [1,3-Dichloropropylene]	2.8	119	1190	1293	1202	1767	3738
Dicofol [Kelthane]	0.30	0.30	3	3.26	3.03	4.45	9.42
Dieldrin	2.0E-05	2.0E-05	2.0E-04	0.000217	0.000202	0.000296	0.000628
2,4-Dimethylphenol	444	8436	84360	91630	85216	125267	265020
Di-n-Butyl Phthalate	88.9	92.4	924	1004	933	1372	2902
Dioxins/Furans [TCDD Equivalents]	7.80E-08	7.97E-08	7.97E-07	8.66E-07	8.05E-07	0.0000012	0.0000025
Endrin	0.02	0.02	0.2	0.217	0.202	0.296	0.628
Epichlorohydrin	53.5	2013	20130	21865	20334	29891	63239
Ethylbenzene	700	1867	18670	20279	18859	27723	58652

Harris County Municipal Utility District No. 285 TPDES Permit No. WQ0012716001  
 Fact Sheet and Executive Director's Preliminary Decision

				18247756	16970413	24946508	52777986
Ethylene Glycol	46744	1.68E+07	1.68E+08	8	8	3	9
Fluoride	4000	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	8.0E-05	0.0001	0.001	0.00109	0.00101	0.00148	0.00314
Heptachlor Epoxide	0.00029	0.00029	0.0029	0.00315	0.00293	0.00430	0.00911
Hexachlorobenzene	0.00068	0.00068	0.0068	0.00739	0.00687	0.0100	0.0213
Hexachlorobutadiene	0.21	0.22	2.2	2.39	2.22	3.26	6.91
Hexachlorocyclohexane ( <i>alpha</i> )	0.0078	0.0084	0.084	0.0912	0.0849	0.124	0.263
Hexachlorocyclohexane ( <i>beta</i> )	0.15	0.26	2.6	2.82	2.63	3.86	8.16
Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane]	0.2	0.341	3.41	3.70	3.44	5.06	10.7
Hexachlorocyclopentadiene	10.7	11.6	116	126	117	172	364
Hexachloroethane	1.84	2.33	23.3	25.3	23.5	34.5	73.1
Hexachlorophene	2.05	2.90	29	31.5	29.3	43.0	91.1
4,4'-Isopropylidenediphenol	1092	15982	159820	173593	161441	237318	502082
Lead	1.15	3.83	38.3	227	212	310	657
Mercury	0.0122	0.0122	0.122	0.133	0.123	0.181	0.383
Methoxychlor	2.92	3.0	30	32.6	30.3	44.5	94.2
Methyl Ethyl Ketone	13865	9.92E+05	9.92E+06	10774866	10020625	14730319	31164144
Methyl <i>tert</i> -butyl ether [MTBE]	15	10482	104820	113853	105883	155648	329296
Nickel	332	1140	11400	28706	26696	39243	83025
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	45.7	1873	18730	20344	18920	27812	58841
N-Nitrosodiethylamine	0.0037	2.1	21	22.8	21.2	31.1	65.9
N-Nitroso-di- <i>n</i> -Butylamine	0.119	4.2	42	45.6	42.4	62.3	131
Pentachlorobenzene	0.348	0.355	3.55	3.86	3.59	5.27	11.1
Pentachlorophenol	0.22	0.29	2.9	3.15	2.93	4.30	9.11
Polychlorinated Biphenyls [PCBs]	6.4E-04	6.4E-04	6.40E-03	0.00695	0.00646	0.00950	0.0201
Pyridine	23	947	9470	10286	9566	14062	29750
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	2.61	2.42	3.56	7.53
1,1,2,2-Tetrachloroethane	1.64	26.35	263.5	286	266	391	827
Tetrachloroethylene [Tetrachloroethylene]	5	280	2800	3041	2828	4157	8796
Thallium	0.12	0.23	2.3	2.50	2.32	3.41	7.22
Toluene	1000	N/A	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.011	0.011	0.11	0.119	0.111	0.163	0.345
2,4,5-TP [Silvex]	50	369	3690	4008	3727	5479	11592
1,1,1-Trichloroethane	200	784354	7843540	8519465	7923102	11646960	24640848
1,1,2-Trichloroethane	5	166	1660	1803	1677	2464	5214
Trichloroethylene [Trichloroethene]	5	71.9	719	781	726	1067	2258
2,4,5-Trichlorophenol	1039	1867	18670	20279	18859	27723	58652
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	179	167	245	518

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

<b>Aquatic Life</b>	<b>70% of Daily Avg.</b>	<b>85% of Daily Avg.</b>
<b>Parameter</b>	<b>(µg/L)</b>	<b>(µg/L)</b>
Aldrin	1.78	2.17
Aluminum	590	717
Arsenic	234	284
Cadmium	0.595	0.722
Carbaryl	1.19	1.44
Chlordane	0.00330	0.00401
Chlorpyrifos	0.0338	0.0411
Chromium (trivalent)	210	255

Harris County Municipal Utility District No. 285 TPDES Permit No. WQ0012716001  
 Fact Sheet and Executive Director's Preliminary Decision

Chromium (hexavalent)	8.76	10.6
Copper	15.7	19.1
Cyanide (free)	8.84	10.7
4,4'-DDT	0.000826	0.00100
Demeton	0.0826	0.100
Diazinon	0.101	0.123
Dicofol [Kelthane]	16.3	19.8
Dieldrin	0.00165	0.00200
Diuron	57.8	70.2
Endosulfan I ( <i>alpha</i> )	0.0462	0.0561
Endosulfan II ( <i>beta</i> )	0.0462	0.0561
Endosulfan sulfate	0.0462	0.0561
Endrin	0.00165	0.00200
Guthion [Azinphos Methyl]	0.00826	0.0100
Heptachlor	0.00330	0.00401
Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane]	0.0661	0.0802
Lead	7.09	8.61
Malathion	0.00826	0.0100
Mercury	1.07	1.30
Methoxychlor	0.0247	0.0301
Mirex	0.000826	0.00100
Nickel	69.2	84.0
Nonylphenol	5.45	6.62
Parathion (ethyl)	0.0107	0.0130
Pentachlorophenol	8.59	10.4
Phenanthrene	17.8	21.7
Polychlorinated Biphenyls [PCBs]	0.0115	0.0140
Selenium	4.13	5.01
Silver	10.5	12.7
Toxaphene	0.000165	0.000200
Tributyltin [TBT]	0.0198	0.0240
2,4,5 Trichlorophenol	52.8	64.2
Zinc	170	206

<b>Human Health</b>	<b>70% of Daily Avg.</b>	<b>85% of Daily Avg.</b>
<b>Parameter</b>	<b>(µg/L)</b>	<b>(µg/L)</b>
Acrylonitrile	1195	1451
Aldrin	0.000119	0.000144
Anthracene	13689	16622
Antimony	11132	13517
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	6039	7333
Benzidine	1.11	1.35
Benzo( <i>a</i> )anthracene	0.259	0.315
Benzo( <i>a</i> )pyrene	0.0259	0.0315
Bis(chloromethyl)ether	2.85	3.46
Bis(2-chloroethyl)ether	445	540
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	78.4	95.2
Bromodichloromethane [Dichlorobromomethane]	2858	3470
Bromoform [Tribromomethane]	11018	13379
Cadmium	N/A	N/A
Carbon Tetrachloride	478	580
Chlordane	0.0259	0.0315

Harris County Municipal Utility District No. 285 TPDES Permit No. WQ0012716001  
 Fact Sheet and Executive Director's Preliminary Decision

Chlorobenzene	28449	34545
Chlorodibromomethane [Dibromochloromethane]	1902	2309
Chloroform [Trichloromethane]	80005	97149
Chromium (hexavalent)	5217	6336
Chrysene	26.1	31.8
Cresols [Methylphenols]	96678	117394
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0207	0.0252
4,4'-DDE	0.00135	0.00164
4,4'-DDT	0.00415	0.00504
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	4916	5970
1,2-Dibromoethane [Ethylene Dibromide]	44.0	53.5
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	6184	7509
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	34291	41639
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A
3,3'-Dichlorobenzidine	23.2	28.2
1,2-Dichloroethane	3783	4594
1,1-Dichloroethylene [1,1-Dichloroethene]	572875	695634
Dichloromethane [Methylene Chloride]	138588	168285
1,2-Dichloropropane	2692	3269
1,3-Dichloropropene [1,3-Dichloropropylene]	1236	1501
Dicofol [Kelthane]	3.11	3.78
Dieldrin	0.000207	0.000252
2,4-Dimethylphenol	87686	106477
Di- <i>n</i> -Butyl Phthalate	960	1166
Dioxins/Furans [TCDD Equivalents]	8.28E-07	0.0000010
Endrin	0.207	0.252
Epichlorohydrin	20923	25407
Ethylbenzene	19406	23564
	17462555	21204532
Ethylene Glycol	8	0
Fluoride	N/A	N/A
Heptachlor	0.00103	0.00126
Heptachlor Epoxide	0.00301	0.00366
Hexachlorobenzene	0.00706	0.00858
Hexachlorobutadiene	2.28	2.77
Hexachlorocyclohexane ( <i>alpha</i> )	0.0873	0.106
Hexachlorocyclohexane ( <i>beta</i> )	2.70	3.28
Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane]	3.54	4.30
Hexachlorocyclopentadiene	120	146
Hexachloroethane	24.2	29.4
Hexachlorophene	30.1	36.6
4,4'-Isopropylidenediphenol	166122	201720
Lead	217	264
Mercury	0.126	0.153
Methoxychlor	31.1	37.8
Methyl Ethyl Ketone	10311223	12520771
Methyl <i>tert</i> -butyl ether [MTBE]	108953	132301
Nickel	27470	33356
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	19468	23640
N-Nitrosodiethylamine	21.8	26.5
N-Nitroso-di- <i>n</i> -Butylamine	43.6	53.0
Pentachlorobenzene	3.69	4.48
Pentachlorophenol	3.01	3.66

Harris County Municipal Utility District No. 285 TPDES Permit No. WQ0012716001  
 Fact Sheet and Executive Director's Preliminary Decision

Polychlorinated Biphenyls [PCBs]	0.00665	0.00807
Pyridine	9843	11952
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	2.49	3.02
1,1,2-Tetrachloroethane	273	332
Tetrachloroethylene [Tetrachloroethylene]	2910	3534
Thallium	2.39	2.90
Toluene	N/A	N/A
Toxaphene	0.114	0.138
2,4,5-TP [Silvex]	3835	4657
1,1,1-Trichloroethane	8152872	9899916
1,1,2-Trichloroethane	1725	2095
Trichloroethylene [Trichloroethene]	747	907
2,4,5-Trichlorophenol	19406	23564
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	171	208

**TEXTOX MENU #3 - PERENNIAL STREAM OR RIVER**  
**HUMAN HEALTH ONLY**

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

Table 2, 2018 Texas Surface Water Quality Standards for Human Health  
 "Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

**PERMIT INFORMATION**

Permittee Name:	Harris County Municipal Utility District No. 285
TPDES Permit No.:	WQ0012716001
Outfall No.:	001
Prepared by:	Sumitra Pokharel
Date:	September 30, 2025

**DISCHARGE INFORMATION**

Receiving Waterbody:	Carpenters Bayou (downstream of Wallisville Rd)
Segment No.:	1016
TSS (mg/L):	10
Effluent Flow for Human Health (MGD):	1.5
Harmonic Mean Flow (cfs):	0.2
% Effluent for Human Health:	92.07
Human Health Criterion (select: PWS or FISH)	<b>FISH</b>

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

<i>Stream/River Metal</i>	<i>Intercept (b)</i>	<i>Slope (m)</i>	<i>Partition Coefficient (Kp)</i>	<i>Dissolved Fraction (Cd/Ct)</i>	<i>Source</i>	<i>Water Effect Ratio (WER)</i>	<i>Source</i>
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

Harris County Municipal Utility District No. 285 TPDES Permit No. WQ0012716001  
 Fact Sheet and Executive Director's Preliminary Decision

Silver	6.38	-1.03	223872.11	0.309	1.00	Assumed
Zinc	6.10	-0.70	251188.64	0.285	1.00	Assumed

**HUMAN HEALTH**

**CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:**

<i>Parameter</i>	<i>Water and Fish Criterion (µg/L)</i>	<i>Fish Only Criterion (µg/L)</i>	<i>WLAh (µg/L)</i>	<i>LTAh (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Acrylonitrile	1.0	115	125	116	170	360
Aldrin	1.146E-05	1.147E-05	0.0000125	0.0000116	0.0000170	0.0000360
Anthracene	1109	1317	1430	1330	1955	4136
Antimony	6	1071	1163	1082	1590	3365
Arsenic	10	N/A	N/A	N/A	N/A	N/A
Barium	2000	N/A	N/A	N/A	N/A	N/A
Benzene	5	581	631	587	862	1825
Benzidine	0.0015	0.107	0.116	0.108	0.158	0.335
Benzo(a)anthracene	0.024	0.025	0.0272	0.0253	0.0371	0.0786
Benzo(a)pyrene	0.0025	0.0025	0.00272	0.00253	0.00371	0.00786
Bis(chloromethyl)ether	0.0024	0.2745	0.298	0.277	0.407	0.861
Bis(2-chloroethyl)ether	0.60	42.83	46.5	43.2	63.5	134
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	6	7.55	8.20	7.63	11.2	23.7
Bromodichloromethane [Dichlorobromomethane]	10.2	275	299	278	408	864
Bromoform [Tribromomethane]	66.9	1060	1151	1070	1572	3327
Cadmium	5	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	4.5	46	50.0	46.5	68.3	144
Chlordane	0.0025	0.0025	0.00272	0.00253	0.00371	0.00786
Chlorobenzene	100	2737	2973	2765	4064	8599
Chlorodibromomethane [Dibromochloromethane]	7.5	183	199	185	271	575
Chloroform [Trichloromethane]	70	7697	8360	7775	11429	24180
Chromium (hexavalent)	62	502	545	507	745	1576
Chrysene	2.45	2.52	2.74	2.55	3.74	7.93
Cresols [Methylphenols]	1041	9301	10103	9396	13812	29221
Cyanide (free)	200	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.002	0.00217	0.00202	0.00296	0.00628
4,4'-DDE	0.00013	0.00013	0.000141	0.000131	0.000192	0.000407
4,4'-DDT	0.0004	0.0004	0.000434	0.000404	0.000593	0.00125
2,4'-D	70	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	262	473	514	478	702	1486
1,2-Dibromoethane [Ethylene Dibromide]	0.17	4.24	4.61	4.29	6.30	13.3
m-Dichlorobenzene [1,3-Dichlorobenzene]	322	595	646	601	883	1869
o-Dichlorobenzene [1,2-Dichlorobenzene]	600	3299	3583	3332	4898	10362
p-Dichlorobenzene [1,4-Dichlorobenzene]	75	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	0.79	2.24	2.43	2.26	3.32	7.02
1,2-Dichloroethane	5	364	395	367	539	1141
1,1-Dichloroethylene [1,1-Dichloroethene]	7	55114	59864	55674	81840	173146
Dichloromethane [Methylene Chloride]	5	13333	14482	13468	19797	41885
1,2-Dichloropropane	5	259	281	261	383	811
1,3-Dichloropropene [1,3-Dichloropropylene]	2.8	119	129	120	176	373
Dicofol [Kelthane]	0.30	0.30	0.326	0.303	0.445	0.942
Dieldrin	2.0E-05	2.0E-05	0.0000217	0.0000202	0.0000296	0.0000628
2,4-Dimethylphenol	444	8436	9163	8522	12527	26503
Di-n-Butyl Phthalate	88.9	92.4	100	93.0	136	289
Dioxins/Furans [TCDD Equivalents]	7.80E-08	7.97E-08	8.66E-08	8.05E-08	1.18E-07	2.50E-07
Endrin	0.02	0.02	0.0217	0.0202	0.0296	0.0628
Epichlorohydrin	53.5	2013	2186	2033	2988	6322

Harris County Municipal Utility District No. 285 TPDES Permit No. WQ0012716001  
 Fact Sheet and Executive Director's Preliminary Decision

Ethylbenzene	700	1867	2028	1886	2772	5865
Ethyl Glycol	46744	1.68E+07	18247757	16970414	24946508	52777987
Fluoride	4000	N/A	N/A	N/A	N/A	N/A
Heptachlor	8.0E-05	0.0001	0.000109	0.000101	0.000148	0.000314
Heptachlor Epoxide	0.00029	0.00029	0.000315	0.000293	0.000430	0.000911
Hexachlorobenzene	0.00068	0.00068	0.000739	0.000687	0.00100	0.00213
Hexachlorobutadiene	0.21	0.22	0.239	0.222	0.326	0.690
Hexachlorocyclohexane ( <i>alpha</i> )	0.0078	0.0084	0.00912	0.00848	0.0124	0.0263
Hexachlorocyclohexane ( <i>beta</i> )	0.15	0.26	0.282	0.262	0.385	0.814
Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane]	0.2	0.341	0.370	0.344	0.505	1.06
Hexachlorocyclopentadiene	10.7	11.6	12.6	11.7	17.1	36.3
Hexachloroethane	1.84	2.33	2.53	2.35	3.45	7.30
Hexachlorophene	2.05	2.90	3.15	2.93	4.30	9.11
4,4'-Isopropylidenediphenol [Bisphenol A]	1092	15982	17359	16144	23731	50207
Lead	1.15	3.83	22.7	21.1	31.0	65.6
Mercury	0.0122	0.0122	0.0133	0.0124	0.0182	0.0385
Methoxychlor	2.92	3.0	3.26	3.03	4.45	9.42
Methyl Ethyl Ketone	13865	9.92E+05	1077487	1002063	1473032	3116415
Methyl <i>tert</i> -butyl ether [MTBE]	15	10482	11385	10588	15564	32928
Nickel	332	1140	2871	2670	3924	8303
Nitrate-Nitrogen (as Total Nitrogen)	10000	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	45.7	1873	2034	1892	2781	5884
N-Nitrosodiethylamine	0.0037	2.1	2.28	2.12	3.11	6.59
N-Nitroso-di- <i>n</i> -Butylamine	0.119	4.2	4.56	4.24	6.23	13.1
Pentachlorobenzene	0.348	0.355	0.386	0.359	0.527	1.11
Pentachlorophenol	0.22	0.29	0.315	0.293	0.430	0.911
Polychlorinated Biphenyls [PCBs]	6.4E-04	6.4E-04	0.000695	0.000646	0.000949	0.00200
Pyridine	23	947	1029	957	1406	2976
Selenium	50	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.23	0.24	0.261	0.243	0.357	0.755
1,1,2,2-Tetrachloroethane	1.64	26.35	28.6	26.6	39.1	82.7
Tetrachloroethylene [Tetrachloroethylene]	5	280	304	283	416	880
Thallium	0.12	0.23	0.250	0.233	0.342	0.724
Toluene	1000	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.011	0.011	0.0119	0.0111	0.0163	0.0345
2,4,5-TP [Silvex]	50	369	401	373	548	1160
1,1,1-Trichloroethane	200	784354	851946	792310	1164695	2464084
1,1,2-Trichloroethane	5	166	180	167	245	519
Trichloroethylene [Trichloroethene]	5	71.9	78.1	72.6	106	225
2,4,5-Trichlorophenol	1039	1867	2028	1886	2772	5865
TTHM [Sum of Total Trihalomethanes]	80	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	0.23	16.5	17.9	16.6	24.4	51.6

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

Human Health <i>Parameter</i>	70% of Daily Avg. (µg/L)	85% of Daily Avg. (µg/L)
Acrylonitrile	119	144
Aldrin	0.0000119	0.0000144
Anthracene	1368	1661
Antimony	1113	1351
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	603	732

Harris County Municipal Utility District No. 285 TPDES Permit No. WQ0012716001  
 Fact Sheet and Executive Director's Preliminary Decision

Benzidine	0.110	0.134
Benzo(a)anthracene	0.0259	0.0315
Benzo(a)pyrene	0.00259	0.00315
Bis(chloromethyl)ether	0.284	0.345
Bis(2-chloroethyl)ether	44.4	53.9
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	7.84	9.52
Bromodichloromethane [Dichlorobromomethane]	285	346
Bromoform [Tribromomethane]	1100	1336
Cadmium	N/A	N/A
Carbon Tetrachloride	47.8	58.0
Chlordane	0.00259	0.00315
Chlorobenzene	2844	3454
Chlorodibromomethane [Dibromochloromethane]	189	230
Chloroform [Trichloromethane]	8000	9714
Chromium (hexavalent)	521	633
Chrysene	2.61	3.17
Cresols [Methylphenols]	9668	11740
Cyanide (free)	N/A	N/A
4,4'-DDD	0.00207	0.00251
4,4'-DDE	0.000134	0.000163
4,4'-DDT	0.000415	0.000504
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	491	596
1,2-Dibromoethane [Ethylene Dibromide]	4.41	5.35
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	618	750
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	3428	4163
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A
3,3'-Dichlorobenzidine	2.32	2.82
1,2-Dichloroethane	377	458
1,1-Dichloroethylene [1,1-Dichloroethene]	57288	69564
Dichloromethane [Methylene Chloride]	13857	16827
1,2-Dichloropropane	268	325
1,3-Dichloropropene [1,3-Dichloropropylene]	123	149
Dicofol [Kelthane]	0.311	0.378
Dieldrin	0.0000207	0.0000251
2,4-Dimethylphenol	8768	10647
Di- <i>n</i> -Butyl Phthalate	95.2	115
Dioxins/Furans [TCDD Equivalents]	8.26E-08	1.00E-07
Endrin	0.0207	0.0251
Epichlorohydrin	2091	2539
Ethylbenzene	1940	2356
Ethyl Glycol	17462555	21204531
Fluoride	N/A	N/A
Heptachlor	0.000103	0.000125
Heptachlor Epoxide	0.000301	0.000365
Hexachlorobenzene	0.000700	0.000850
Hexachlorobutadiene	0.228	0.277
Hexachlorocyclohexane ( <i>alpha</i> )	0.00868	0.0105
Hexachlorocyclohexane ( <i>beta</i> )	0.269	0.327
Hexachlorocyclohexane ( <i>gamma</i> ) [Lindane]	0.353	0.429
Hexachlorocyclopentadiene	11.9	14.5
Hexachloroethane	2.41	2.93
Hexachlorophene	3.01	3.65
4,4'-Isopropylidenediphenol [Bisphenol A]	16611	20171
Lead	21.7	26.3

Harris County Municipal Utility District No. 285 TPDES Permit No. WQ0012716001  
 Fact Sheet and Executive Director's Preliminary Decision

Mercury	0.0127	0.0154
Methoxychlor	3.11	3.78
Methyl Ethyl Ketone	1031122	1252077
Methyl <i>tert</i> -butyl ether [MTBE]	10894	13229
Nickel	2746	3335
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	1946	2363
N-Nitrosodiethylamine	2.17	2.64
N-Nitroso-di- <i>n</i> -Butylamine	4.36	5.29
Pentachlorobenzene	0.368	0.447
Pentachlorophenol	0.301	0.365
Polychlorinated Biphenyls [PCBs]	0.000664	0.000806
Pyridine	984	1195
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.249	0.303
1,1,2,2-Tetrachloroethane	27.3	33.2
Tetrachloroethylene [Tetrachloroethylene]	291	353
Thallium	0.239	0.290
Toluene	N/A	N/A
Toxaphene	0.0114	0.0138
2,4,5-TP [Silvex]	383	465
1,1,1-Trichloroethane	815286	989990
1,1,2-Trichloroethane	171	208
Trichloroethylene [Trichloroethene]	74.2	90.1
2,4,5-Trichlorophenol	1940	2356
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	17.0	20.7