TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 21, 2023

VIA ELECTRONIC FILING

Ms. Laurie Gharis
Office of the Chief Clerk
Texas Commission on Environmental Quality
Post Office Box 13087, MC-105
Austin, Texas 78711-3087

Re: Executive Director's Backup Documents Filed for Consideration of Hearing Requests at Agenda for Application by Lyondell Chemical Company for TPDES Permit No. WQ0002927000; TCEQ Docket No. 2023-0574-IWD

Dear Ms. Gharis:

Enclosed please find a copy of the following documents for inclusion in the background material for this permit application If you have any questions or comments, please call me at 512-239-1439 or email me at Harrison.malley@tceq.texas.gov.

- Fact Sheet and ED's Preliminary Decision
- Draft Permit
- Compliance History Report

Thank you for your attention to this matter.

Sincerely,

Harrison Cole Malley, *Staff Attorney*
Environmental Law Division

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

For draft Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0002927000, U.S. Environmental Protection Agency (EPA) ID No. TX0069493, to discharge to water in the state

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

Applicant: Lyondell Chemical Company
P.O. Box 777
Channelview, Texas 77530

Prepared By: Melinda Luxemburg, P.E. (revised by Mónica Vallin-Báez)
Wastewater Permitting Section
Water Quality Division
(512) 239-4541

Date: June 22, 2021 (revised November 23, 2021)

Permit Action: Major amendment with renewal to TPDES Permit No. WQ0002927000 to use a site-specific hardness for calculating water quality-based effluent limits; to authorize increased copper limits at Outfall 001; to remove limits and monitoring requirements for total aluminum, total zinc, and total xylenes at Outfall 001; to add wastestreams to Outfalls 001, 002, and 008; to modify various wastewater descriptions; to increase the daily maximum pH limit at Outfall 002; to reduce the monitoring frequency at Outfalls 002 and 003 for total organic carbon and oil and grease; to use site-specific partitioning coefficients for aluminum at Outfalls 003, 004, and 005 for calculating water quality-based effluent limits; to update the discharge and monitoring locations for Outfalls 008, 009, and 010; to revise the discharge route description for Outfall 009; to remove Other Requirements Nos. 5, 12, and 14; and to update Other Requirement No. 4.

I. EXECUTIVE DIRECTOR RECOMMENDATION

The executive director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The draft permit will expire at midnight, five years from the date of permit issuance.

II. APPLICANT ACTIVITY

The applicant currently operates the Lyondell Chemical Channelview facility that manufactures synthetic organic chemicals.

III. DISCHARGE LOCATION

As described in the application, the facility is located at 2502 Sheldon Road in the City of Channelview, Harris County, Texas 77530. Discharge is via Outfalls 001-006, and 008 to Harris County Flood Control District (HCFCD) ditch G103-02-03; via Outfall 009 to an unnamed ditch, thence to Bear Lake, which is considered to be part of the San Jacinto River Tidal; via Outfall 010 to a Wallisville roadside ditch; thence all to San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin.

IV. RECEIVING STREAM USES

The unclassified receiving waters have minimal aquatic life use for HCFCD ditch G103-02-03, the unnamed ditch, and the Wallisville roadside ditch. The designated uses for Segment No. 1001 are primary contact recreation and high aquatic life use.

V. STREAM STANDARDS

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

VI. DISCHARGE DESCRIPTION

The following is a quantitative description of the discharge described in the monthly effluent report data for the period January 2016 through May 2021. The "average of daily average" values presented in the following table are the average of all daily average values for the reporting period for each pollutant. The "maximum of daily maximum" values presented in the following table are the individual maximum values for the reporting period for each pollutant. Flows are expressed in million gallons per day (MGD). All pH values are expressed in standard units (SU). Concentration values are expressed in milligrams per liter (mg/L). Mass-based values are expressed as pounds per day (lbs/day). Not required by the existing permit and is, therefore, not applicable (N/A). No discharge is indicated by ND.

A. Flow

Outfall	Frequency	Average of Daily Averages, MGD	Maximum of Daily Maximums, MGD
001	Continuous	2.0266	5.60
002	Intermittent	400	103,869
003	Intermittent	126	31,151
004	Intermittent	0.15534	1.70
005	Intermittent	0.43114	4.00
006	Intermittent	0.35241	2.930
007	Intermittent	ND	ND
008	Continuous	ND	ND
009	Intermittent	ND	ND
010	Intermittent	ND	ND

B. Effluent Characteristics

Outfall	Parameter	Average of Daily Averages, lbs/day	Maximum of Daily Maximums, lbs/day
001 (Interim Phase)	Carbonaceous Biochemical Oxygen Demand, 5-day ($CBOD_5$)	41.6	491
	Ammonia Nitrogen (NH_3-N)	4.51	39
	Total Suspended Solids (TSS)	123	713
	Oil and Grease	93.8	145
	Total Organic Carbon (TOC)	559 [1]	1,498

[1] The daily average effluent limitation was required prior to January 11, 2017.

Outfall	Parameter	Average of Daily Averages, lbs/day	Maximum of Daily Maximums, lbs/day
001 (Interim Phase)	Dissolved Oxygen (DO)	5.30 mg/L minimum	N/A
	Aluminum, Total	0.90	1.18
	Chromium, Total	0.045	0.115
	Copper, Total	0.276	0.740
	Zinc, Total	0.194	0.40
	Acenaphthene	0	0
	Acenaphthylene	0	0
	Acrylonitrile	0	0
	Anthracene	0	0
	Benzene	0	0
	Benzo(a)anthracene	0	0
	3,4-Benzofluoranthene	0	0
	Benzo(k)fluoranthene	0	0
	Benzo(a)pyrene	0	0
	Bis(2-ethylhexyl)phthalate	0	0
	Carbon Tetrachloride	0	0
	Chlorobenzene	0	0
	Chloroethane	0	0
	Chloroform	0.161	0.230
	2-Chlorophenol	0	0
	Chrysene	0	0
	Di-n-butyl phthalate	0	0
	1,2-Dichlorobenzene	0	0
	1,3-Dichlorobenzene	0	0
	1,4-Dichlorobenzene	0	0
	1,1-Dichloroethane	0	0
	1,2-Dichloroethane	0	0
	1,1-Dichloroethylene	0	0
	1,2-trans Dichloroethylene	0	0
	2,4-Dichlorophenol	0	0
	1,2-Dichloropropane	0	0
	1,3-Dichloropropylene	0	0
	Diethyl phthalate	0	0
	2,4-Dimethylphenol	0	0
	Dimethyl phthalate	0	0
	4,6-Dinitro-o-cresol	0	0
	2,4-Dinitrophenol	0	0
	2,4-Dinitrotoluene	0	0
	2,6-Dinitrotoluene	0	0
	Ethylbenzene	0	0
	Fluoranthene	0	0
	Fluorene	0	0
	Hexachlorobenzene	0	0
	Hexachlorobutadiene	0	0
	Hexachloroethane	0	0
	Methyl Chloride	0	0

Outfall	Parameter	Average of Daily Averages, lbs/day	Maximum of Daily Maximums, lbs/day
001 (Interim Phase)	Methylene Chloride	0	0
	Naphthalene	0	0
	Nitrobenzene	0	0
	2-Nitrophenol	0	0
	4-Nitrophenol	0	0
	Phenanthrene	0	0
	Phenol	0	0
	Pyrene	0	0
	Tetrachloroethylene	0	0
	Toluene	0	0
	1,2,4-Trichlorobenzene	0	0
	1,1,1-Trichloroethane	0	0
	1,1,2-Trichloroethane	0	0
	Trichloroethylene	0	0
	Vinyl Chloride	0	0
	Xylenes, Total	0	0
	pH	6.1 SU minimum	10.1 [2] SU

Outfall	Parameter	Average of Daily Averages, mg/L	Maximum of Daily Maximums, mg/L
002	TOC	N/A	108
	Oil and Grease	N/A	5.0
	pH	6.9 SU minimum	9.1 SU
003	TOC	N/A	110
	Oil and Grease	N/A	6.0
	Aluminum, Total [3]	1.36	4.63
	pH	6.7 SU minimum	9.1 SU
004	TOC	N/A	16
	Oil and Grease	N/A	5.0
	Aluminum, Total [3]	0.451	2.14
	pH	6.9 SU minimum	9.4 SU
005	TOC	N/A	372
	Oil and Grease	N/A	5.0
005	Aluminum, Total [3]	1.99	13.3
	pH	7.1 SU minimum	8.9 SU
006	TOC	N/A	112
	Oil and Grease	N/A	5.0

[2] The exceedances of the daily maximum pH effluent limitation of 9.0 SU during the reporting period at Outfall 001 of 10.0 SU during October 2016 and 10.1 SU during December 2017 are in compliance with continuous pH monitoring requirements in the permit which allow for exceedance outside the pH range of 6.0 SU – 9.0 SU provided the exceedance does not exceed the range of 5-11 standard pH units, the individual exceedance does not exceed 60 minutes, and the sum of all excursions does not exceed 7 hours and 26 minutes in any calendar month. Therefore, the exceedances of the daily maximum pH effluent limitations at Outfall 001 are not effluent limitation violations.

[3] The daily average and daily maximum total aluminum reporting requirement expired on April 30, 2018.

Outfall	Parameter	Average of Daily Averages, mg/L	Maximum of Daily Maximums, mg/L
006	pH	7.1 SU minimum	8.9 SU
007	TSS	ND	ND
	Oil and Grease	ND	ND
	pH	ND	ND
008, 009, & 010	TOC	ND	ND
	Oil and Grease	ND	ND
	pH	ND	ND

Effluent limit violations documented in the monthly effluent reports are summarized in the following table.

C. Effluent Limitation Violations

Outfall	Pollutant (units)	Month/ Year	Daily Average		Daily Maximum	
			Limit	Reported	Limit	Reported
002	TOC (mg/L)	2/2018	-	-	75	108
	pH (SU)	7/2016	-	-	9.0	9.1
	pH (SU)	6/2018	-	-	9.0	9.1
003	TOC (mg/L)	10/2020	-	-	75	110
	pH (SU)	12/2020	-	-	9.0	9.1
004	pH (SU)	12/2020	-	-	9.0	9.4
005	TOC (mg/L)	5/2016	-	-	75	372
006	TOC (mg/L)	8/2016	-	-	75	112

These limited number of exceedances are intermittent and isolated and do not represent a recurring pattern of non-compliance. Review of the compliance period of September 01, 2015 through August 31, 2020 also indicates that the permittee has a satisfactory customer rating of 3.85 and a satisfactory site rating of 3.46. Therefore, no changes are being made to the draft permit in response to these limited number of exceedances.

VII. DRAFT EFFLUENT LIMITATIONS

See Appendix D of this Fact Sheet and Executive Director's Preliminary Decision (fact sheet) for a comparison of technology-based effluent limitations, water quality-based effluent limitations, existing effluent limitations, and the effluent limitations established in the draft permit.

OUTFALL LOCATIONS

The following outfall locations are in accordance with the interoffice memorandum dated May 5, 2021 (critical conditions).

Outfall	**Latitude**	**Longitude**
001	29.812209 N	95.10018 W
002	29.812209 N	95.10018 W
003	29.811602 N	95.115608 W
004	29.81603 N	95.116603 W
005	29.81597 N	95.117561 W

Outfall	Latitude	Longitude
006	29.81589 N	95.125481 W
007 [4]	N/A	N/A
008	29.816029 N	95.116604 W
009	29.820842 N	95.106945 W
010 [5]	29.824186 N	95.109371 W

VIII. SUMMARY OF CHANGES FROM APPLICATION

A. The applicant requested the following provision that the executive director did not grant:

1. The request to reduce the monitoring frequency at Outfalls 002 and 003 for total organic carbon from once per week to once per two weeks is denied based on agency guidance.[6] The minimum monitoring frequency recommended is once per week for flow and pH; and once per two weeks for TOC and oil and grease. There have been effluent violations for TOC at Outfalls 002 and 003 during the period of review. Therefore, the request to reduce the monitoring frequency for TOC at Outfalls 002 and 003 is denied.

B. The following changes have been made from the application that make the draft permit more stringent:

1. Water quality-based daily maximum effluent limitations for the protection of aquatic life have been added for total aluminum at Outfalls 002, 003, 004, 005, and 006 based on effluent screening. See Section X.D of this fact sheet. An interim three-year compliance period is included in the draft permit for total aluminum at Outfalls 002, 003, 004, 005, and 006 in accordance with 30 TAC § 307.2(f). The interim compliance period will give the applicant time to identify sources of the aforementioned pollutant, develop mitigation strategies and treatment options, and attain the water quality-based limits.

2. Added more protective calculated water quality-based effluent limitations at Outfall 001 for benzo(a)anthracene, benzo(a)pyrene, hexachlorobenzene, and hexachlorobutadiene (daily maximum only) in the Interim Phase and benzo(a)anthracene, benzo(a)pyrene, hexachlorobenzene, hexachlorobutadiene, and phenanthrene (daily maximum) in the Final Phase. An interim three-year compliance period is not included in the draft permit for these pollutants because the permittee's discharge monitoring reports indicate the pollutants are not present in detectable concentrations.

3. Added a self-expiring daily maximum total zinc monitoring and reporting requirement at Outfall 005, based on effluent screening.

4. Added Other Requirement No. 12 to address cooling water intake structure notifications, as follows:

[4] Outfall 007 is for stormwater from a concrete batch plant associated with construction activities, which is not currently active, and its location will vary by construction project.
[5] Outfall 010 has yet to be constructed and the coordinates are an approximation.
[6] *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits*, TCEQ Document No. 98-001.000-OWR-WQ, May 1998.

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

IX. SUMMARY OF CHANGES FROM EXISTING PERMIT

A. The permittee requested the following amendments that the executive director recommends granting:

1. Application of a site-specific hardness for calculating water quality-based effluent limits. The approved site-specific hardness value of 147 mg/L (as calcium carbonate, $CaCO_3$) applies to the freshwater portions of the receiving water bodies and has been used to calculate the applicable water quality-based effluent limitations.

2. Increased copper limits at Outfall 001. The calculated total copper effluent limitations have increased due to the application of the site-specific hardness value. The approved site-specific hardness value is new information. The total copper calculated water quality-based mass loadings are still more protective then the calculated technology-based mass loadings.

   Backsliding for water quality-based effluent limitations (WQBELs) is allowed where the water quality standard is being attained in the receiving water and the increase is compliant with antidegradation requirements of the Clean Water Act (CWA §303(d)(4)(B) and §402(o)(3)). The San Jacinto River Tidal is currently attaining water quality standards for total copper, which satisfies the requirements of the CWA §§402(o)(1) and 303(d)(4). According to the memorandum from the Standards Implementation Team dated March 30, 2021, a Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action and that numerical and narrative criteria to protect existing uses will be maintained. This change meets the anti-backsliding exemption in 40 CFR §122.44(l)(2)(i)(B)(1), which allows backsliding in cases where "*Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.*"

3. Remove limits and monitoring requirements for total aluminum, total zinc, and total xylenes at Outfall 001. Effluent data show levels below WQBELs for total aluminum and total zinc. The average reported effluent concentration for total aluminum and total zinc is 0.0716 mg/L and 0.0165 mg/L, respectively. All effluent data for total xylenes are non-detect. There are no effluent guidelines for total aluminum, total zinc, or total xylenes applicable to the process wastewaters discharge via Outfall 001 and the effluent data is new information.

   Backsliding for water quality-based effluent limitations (WQBELs) is allowed where the water quality standard is being attained in the receiving water and the increase is compliant with antidegradation requirements of the Clean Water Act (CWA §303(d)(4)(B) and §402(o)(3)). The San Jacinto River Tidal is currently attaining water

quality standards for aluminum, total zinc, and total xylenes, which satisfies the requirements of the CWA §§402(o)(1) and 303(d)(4). Again, according to the memorandum from the Standards Implementation Team dated March 30, 2021, a Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action and that numerical and narrative criteria to protect existing uses will be maintained. This change meets the anti-backsliding exemption in 40 CFR §122.44(l)(2)(i)(B)(1), which allows backsliding in cases where "*Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.*" Therefore, the effluent limits and monitoring requirements for total aluminum, total zinc, and total xylenes at Outfall 001 have been removed.

4. Add wastestreams to Outfalls 001, 002, and 008 and modify various wastewater descriptions. The additional wastewaters (**in bold**) authorized for discharge via Outfall 001 are cooling tower and boiler blowdown (**including maintenance wastewaters**), **water treatment wastes**, **utility wastewaters, construction stormwater, and landfarm runoff and supernate (from wastewater treatment solids).** The additional wastewaters authorized for discharge via Outfall 002 are landfarm runoff and supernate (from wastewater treatment solids). The additional wastewaters (**in bold**) authorized for discharge via Outfall 008 are cooling tower **and boiler blowdown (including maintenance wastewaters)**. Existing Other Requirement No. 13, which addresses utility wastewaters has been revised as follows:

   "Utility wastewater includes, but is not limited to: potable water, vehicle rinse water, firewater (which has not come in direct contact with raw material, intermediate product, finished product, by-product, or waste product), hydrotest water, clarified water, demineralized water, steam condensate and blowdown, non-contact once-through cooling water, de minimis amounts of cooling tower water, raw and well water, groundwater seepage, condensate, analyzer instrumentation drain wastewaters, and allowable non-stormwaters. Allowable non-stormwaters are based on the *Multi-Sector General Permit for Industrial Stormwater* (MSGP; TXR050000, Part II, Section A, Item 6) and include the following:

   (a) discharges from emergency fire-fighting activities;
   (b) uncontaminated fire hydrant flushings (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated, and discharges are not expected to adversely affect aquatic life);
   (c) potable water sources (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated, and discharges are not expected to adversely affect aquatic life);
   (d) lawn watering and similar irrigation drainage, provided that all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
   (e) water from the routine external washing of buildings, conducted without the use of detergents or other chemicals;
   (f) water from the routine washing of pavement conducted without the use of detergents or other chemicals and where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed);

(g) uncontaminated air conditioner condensate, compressor condensate, and steam condensate, and condensate from the outside storage of refrigerated gases or liquids;
(h) water from foundation or footing drains where flows are not contaminated with pollutants (e.g., process materials, solvents, or other pollutants);
(i) uncontaminated water used for dust suppression;
(j) springs and other uncontaminated groundwater; and
(k) incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility but excluding intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown or drains)."

5. Increase the daily maximum pH limit at Outfall 002 from 9.0 SU to 9.5 SU. Outfall 002 discharges primarily stormwater, but is also authorized to discharge construction stormwater, utility wastewater, hydrostatic test water, service water, water from maintenance activities, and de minimis quantities from spill cleanup.

The permittee asserts the elevated pH levels at Outfall 002 are believed to be caused by algae growth in the open ditch system prior to Outfall 002. Algal photosynthetic activity can temporarily increase the pH over 9.0 SU during daylight hours, particularly during warmer periods that promote algal growth. Algae use carbon dioxide as a carbon source for growth during photosynthesis. Carbon dioxide in water produces carbonic acid. When carbon dioxide is reduced, carbonic acid is also reduced and the pH increases. Outfall 002 discharges when there is a high enough rainfall event. Between discharges there will be some residual water in the ditches and also, the ditch gates may be closed at times to temporarily retain waters; consequently, algae can grow in the water that remains in the ditches between outfall discharges.

Furthermore, the existing permit requires Outfall 002 pH effluent sampling occur within the first hour of discharge. Although rainwater typically has a pH below 7 SU, it can be expected that the pH measurements collected within the first hour of discharge would be higher if stormwater is pushing through residual ditch water with a higher pH, and that eventually the pH would decrease in the outfall discharge.

Moreover, Outfall 002 discharges into an on-site ditch that also receives the discharge from Outfall 001. Outfall 002 is approximately 35 feet upstream of where the Outfall 001 discharge pipe enters the ditch and mixing of the two flows is almost immediate. On average, the Outfall 001 daily maximum pH is lower than the Outfall 002 daily maximum pH, which helps moderate any higher pH flows from Outfall 002. Based on monitoring data from July 2017 to July 2020, the median of the Outfall 001 daily maximum pH values is 7.9 SU compared to 8.2 SU for Outfall 002. The ditch carrying the flows from Outfalls 001 and 002 drains into HCFCD ditch G103-02-03, approximately 0.23 of a mile upstream of the San Jacinto River Tidal.

Backsliding for water quality-based effluent limitations (WQBELs) is allowed where the water quality standard is being attained in the receiving water and the increase is compliant with antidegradation requirements of the Clean Water Act (CWA §303(d)(4)(B) and §402(o)(3)). Based on the above reasons and per the interoffice memorandum dated March 30, 2021 (standards), the requested pH effluent limits of 6.0 – 9.5 SU are included at Outfall 002 and are not expected to cause a violation of the 6.5-

9.0 SU pH criteria for the San Jacinto River Tidal (Segment No. 1001). This change meets the anti-backsliding exemption in 40 CFR §122.44(l)(2)(i)(B)(1), which allows backsliding in cases where "*Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.*

6. Reduce the monitoring frequency at Outfalls 002 and 003 for total organic carbon and oil and grease from once per week to once per two weeks. The minimum monitoring frequency recommended in the *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits* (TCEQ Document No. 98-001.000-OWR-WQ, May 1998) for industrial facilities is once per week for flow and pH; and once per two weeks for TOC and oil and grease.

   The permittee has a satisfactory compliance history rating for both the customer and facility site. There have been no effluent violations for oil and grease at Outfalls 002 and 003 during the period of review. There have been effluent violations for TOC at Outfalls 002 and 003 during the period of review. Therefore, only the monitoring frequency at Outfalls 002 and 003 for oil and grease have been reduced from once per week to once per two weeks.

7. Use site-specific partitioning coefficients for aluminum at Outfalls 003, 004, and 005 for calculating water quality-based effluent limits. Per the interoffice memorandum dated March 30, 2021 (standards) the site-specific aluminum partitioning coefficients (dissolved fraction) have been approved at Outfalls 003, 004, and 005. The dissolved fraction applicable to the freshwater portions of the discharge route for Outfall 003 is 0.755, for Outfall 004 is 0.797, and for Outfall 005 is 0.484.

8. Update the discharge route description for Outfall 009 and the discharge and monitoring locations for Outfalls 008, 009, and 010. The discharge route description for Outfall 009 and the location coordinates and monitoring point descriptions for Outfalls 008, 009, and 010 have been updated to more accurately depict current conditions.

9. Remove Other Requirements Nos. 5, 12, and 14. Existing Other Requirement No. 5, which addressed a compliance schedule for total copper, existing Other Requirement No. 12, which required resampling at Outfall 005, and existing Other Requirement No. 14, which required an aluminum partitioning coefficient study for Outfalls 003, 004, and 005 have been complete and are removed from the draft permit.

10. Update Other Requirement No. 4. Existing Other Requirement No. 4 addressing pond conditions has been updated to current pond liner requirements.

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

1. Pages 3-13 were updated (May 2021 version).

2. The single grab limitations were revised for several pollutants at Outfall 001. Single grab limits were calculated as discussed in Appendix E of this fact sheet, except for benzo(a)anthracene, benzo(a)pyrene, and hexachlorobenzene. The single grab limits for benzo(a)anthracene, benzo(a)pyrene, and hexachlorobenzene are equal to the minimum analytical level (MAL) of 0.005 mg/L based on application of the MALs as

the single grab limit in other similar permits and as a means to simplify the permit requirements for inspection purposes.

3. Added Other Requirement No. 5 to address the compliance schedule required for attainment of water quality-based effluent limitations for total aluminum at Outfalls 003 and 005.

4. Added Other Requirement No. 14 to address the definition of water treatment wastes.

5. Updated existing Other Requirement Nos. 2 (minimum analytical levels), 7 (pH excursions), and 11 (reporting requirements).

X. DRAFT PERMIT RATIONALE

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

A. REASON FOR PERMIT ISSUANCE

The applicant applied to the TCEQ for a major amendment to use a site-specific hardness for calculating water quality-based effluent limits; to authorize increased copper limits at Outfall 001; to remove limits and monitoring for total aluminum, total zinc, and total xylenes at Outfall 001; to add wastestreams to Outfalls 001, 002, and 008; to modify various wastewater descriptions; to increase the daily maximum pH limit at Outfall 002; to reduce the monitoring frequency at Outfalls 002 and 003 for total organic carbon and oil and grease; to use site-specific partitioning coefficients for aluminum at Outfalls 003, 004, and 005 for calculating water quality-based effluent limits; to update the discharge and monitoring locations for Outfalls 008, 009, and 010; to revise the discharge route description for Outfall 009; to remove Other Requirements Nos. 5, 12, and 14; and to update Other Requirement No. 4.

The existing permit authorizes the discharge of process wastewater, Barge Dock wastewater (Tanks 6901 and 6902), hydrostatic test water, laboratory wastewater, cooling tower and boiler blowdown, loading area and process area washdown, tank farm wastewater, heat exchanger blasting slab wastewater, demineralization regeneration blowdown, maintenance wastewater, steam condensate and blowdown, groundwater from monitoring and recovery wells (onsite and offsite), and stormwater (including, but not limited to, runoff from production units, landfarm runoff, and stormwater from the adjacent cogeneration facility) at a daily average flow not to exceed 3.2 MGD (interim phase), 3.8 MGD (final phase) via Outfall 001; stormwater, utility wastewater, hydrostatic test water, service water, water from maintenance activities, construction stormwater, and de minimis quantities from spill cleanup on an intermittent and flow-variable basis via Outfalls 002, 003, 004, 005, 006, 009, and 010; stormwater associated with construction activities from a concrete batch plant on an intermittent and flow-variable basis via Outfall 007; and cooling tower blowdown, stormwater, utility wastewater, hydrostatic test water, service water, water from maintenance activities, construction stormwater, and de minimis quantities from spill cleanup on a continuous and flow-variable basis via Outfall 008.

The executive director has reviewed this action for consistency with the goals and policies of the Texas Coastal Management Program (CMP) in accordance with the regulations of the General Land Office and has determined that the action is consistent with the applicable CMP goals and policies.

B. WATER QUALITY SUMMARY

Discharge Routes

The discharge route is via Outfalls 001-006, and 008 to Harris County Flood Control District (HCFCD) ditch G103-02-03; via Outfall 009 to an unnamed ditch, thence to Bear Lake, which is considered to be part of the San Jacinto River Tidal; via Outfall 010 to a Wallisville roadside ditch; thence all to San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin. The unclassified receiving waters have minimal aquatic life use for HCFCD ditch G103-02-03, the unnamed ditch, and the Wallisville roadside ditch. The designated uses for Segment No. 1001 are primary contact recreation and high aquatic life use. Effluent limitations and conditions established in the draft permit comply with state water quality standards and the applicable water quality management plan. The effluent limits in the draft permit will maintain and protect the existing instream uses. Additional discussion of the water quality aspects of the draft permit can be found at Section X.D. of this fact sheet.

Antidegradation Review

In accordance with Title 30 Texas Administrative Code Section 307.5 and TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect existing uses will be maintained. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in San Jacinto River Tidal, which has been identified as having high aquatic life use. Existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received.

Endangered Species Review

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

Impaired Water Bodies

Segment No. 1001 is currently listed on the State's inventory of impaired and threatened waters, the 2020 Clean Water Act Section 303(d) list. The listing is for dioxin and polychlorinated biphenyls (PCBs) in edible tissue from the Lake Houston Dam to Interstate Highway 10 (AUs 1001_1 and 1001_02). The permittee indicated that dioxin and PCBs, which were banned by the EPA in 1979 are not expected to be present in the

effluent. Furthermore, the application[7] reported non-detectable levels of PCBs at the minimal analytical level (MAL) of 0.2 micrograms per liter (µg/L) at Outfalls 001. through 004. Effluent data for primarily stormwater driven Outfalls 005, 006, and 008-010 was not included with the application. The discharge is not expected to contribute to the impairments for dioxin and PCBs in edible tissue.

Completed Total Maximum Daily Loads (TMDLs)

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.

C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

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

The draft permit authorizes the discharge of process wastewater, Barge Dock wastewater (Tanks 6901 and 6902), hydrostatic test water, laboratory wastewater, cooling tower and boiler blowdown (including maintenance wastewaters), loading area and process area washdown, tank farm wastewater, heat exchanger blasting slab wastewater, water treatment wastes, maintenance wastewater, steam condensate and blowdown, utility wastewater, groundwater from monitoring and recovery wells (onsite and offsite), construction stormwater, and stormwater (including, but not limited to, runoff from production units, landfarm runoff and supernate (from wastewater treatment solids), and stormwater from the adjacent cogeneration facility) at a daily average flow not to exceed 3.2 MGD (interim phase), 3.8 MGD (final phase) via Outfall 001; stormwater, utility wastewater, hydrostatic test water, service water, water from maintenance activities, construction stormwater, landfarm runoff and supernate (from wastewater treatment solids), and de minimis quantities from spill cleanup on an intermittent and flow-variable basis via Outfalls 002; stormwater, utility wastewater, hydrostatic test water, service water, water from maintenance activities, construction stormwater, and de minimis quantities from spill cleanup on an intermittent and flow-variable basis via Outfalls 003, 004, 005, 006, 009, and 010; stormwater associated with construction activities from a concrete batch plant on an intermittent and flow-variable basis via Outfall 007; and cooling tower and boiler blowdown (including maintenance wastewaters), stormwater, utility wastewater, hydrostatic test water, service water, water from maintenance activities, construction stormwater, and de minimis quantities from spill cleanup on a continuous and flow-variable basis via Outfall 008.

The discharge of process wastewater via Outfall 001 from this facility is subject to federal effluent limitations guidelines at 40 CFR Part 414-Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF). Waste streams are subject to guidelines

[7] Lyondell Chemical Company's TCEQ-10055 (05/10/2019) Industrial Wastewater Permit Application Technical Report 1.0, Worksheet 2.0 for Outfalls 001-004, Pollutant Analyses Requirements.

at Subpart F-*Commodity Organic Chemicals*, Subpart G-*Bulk Organic Chemicals*, Subpart H- *Specialty Organic Chemicals*, and Subpart I-*Direct Discharge Point Sources that Use End-of-Pipe Biological Treatment*. A new source determination was performed, and the discharge of process wastewater is not a new source as defined at 40 CFR Section 122.2, except for Subpart G wastewater. Therefore, new source performance standards (NSPS) are required for the Subpart G wastewater discharge. Note that NSPS for Subparts F, G, and H are identical to the BPT effluent limitations, which are the effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT) currently available.

The discharge of Barge Dock wastewater (Tanks 6901 and 6902), hydrostatic test water, laboratory wastewater, cooling tower and boiler blowdown (including maintenance wastewaters), loading area and process area washdown, tank farm wastewater, heat exchanger blasting slab wastewater, water treatment wastes, maintenance wastewater, steam condensate and blowdown, utility wastewater, groundwater from monitoring and recovery wells (onsite and offsite), construction stormwater, and stormwater (including, but not limited to, runoff from production units, landfarm runoff and supernate (from wastewater treatment solids), and stormwater from the adjacent cogeneration facility) via Outfall 001 are not subject to federal effluent limitations guidelines, and any technology-based effluent limitations are based on BPJ.

The discharge of stormwater, utility wastewater, hydrostatic test water, service water, water from maintenance activities, construction stormwater, and de minimis discharges of water from spill cleanup via Outfalls 002, 003, 004, 005, 006, 008, 009, and 010 are not subject to federal effluent limitations guidelines, and any technology-based effluent limitations are based on BPJ.

The discharge of stormwater associated with construction activities from a concrete batch plant via Outfall 007 is not subject to federal effluent limitation guidelines, and any technology-based effluent limitations are based on BPJ and the Construction General Stormwater Permit (TXR150000). The discharge represented at reporting Outfall 007 specifically addresses discharges from a concrete batch plant located in the construction area, which is an eligible discharge included in the Stormwater Associated with Construction Activities provision of the draft permit located at Other Requirement No. 18 of the draft permit.

Outfall 001

The Lyondell Chemical Company Channelview South Complex produces bulk, commodity, and specialty organic chemicals. There is also an associated cogeneration facility, which produces steam and electricity for use in the chemical manufacturing process. The Channelview South Complex includes a High Purity Isobutylene (HPIB) unit. Isobutylene is handled as an intermediate product and an isobutylene feed of 90% is supplied by internal pipeline to the HPIB unit. Wastewater from the HPIB unit is routed the same as that of the Methyl Tertiary Butyl Ether (MTBE) and Ethyl Tertiary Butyl Ether (ETBE) unit. Lyondell plans to construct a Propylene Oxide (PO) / Tertiary Butyl Alcohol (TBA) plant.

In general, the treatment of process wastewaters includes physical, chemical, biological, and filtration treatment processes. Primary treatment includes primary oil removal, equalization, contaminated stormwater management, and neutralization. Secondary treatment combines the biological and chemical treatment processes through the use of an activated sludge biological treatment system. The system includes nutrient addition, aeration, clarification, and optional granular activated carbon treatment. Sludge handling includes digestion, thickening, and on-site Class II land application. Process wastewaters are authorized for discharge only via Outfall 001.

Wastewaters from the Propylene Oxide/Styrene Monomer Unit I (PO/SM I), Ethylbenzene Unit I (EB I), Phenylethyl Alcohol (PEA) unit, PO/SM II, EB II units, and cogeneration unit (Cogen) are routed to two equalization tanks. Wastewaters from the MTBE/ETBE/EB I/HPIB/BOO units are normally routed directly from the process unit to the two equalization tanks. During abnormal operations, the wastewater from the Butanediol (BOO) unit, MTBE/ETBE/HPIB units, and Polyols unit are routed to a surge tank prior to being sent to the equalization tanks due to the variability in wastewater composition. Use of the surge tank allows blending of the wastewater into the treatment system at a slow and controlled rate. If necessary, wastewater from the surge tank can be routed to the on-site underground injection system. The primary function of the equalization system is to allow wastewater from the various sources to become uniformly mixed prior to the biological system. The equalization process dampens surges in hydraulic and organic loading to the biological treatment system, which results in more efficient operation. In addition, it is also possible to neutralize the wastewater prior to treatment. This includes neutralization at the process units prior to routing to the wastewater treatment facilities or in the feed to the aeration tanks. Neutralization is accomplished by the addition of sulfuric acid to reduce the pH to an acceptable range for biological treatment. Occasionally, neutralization of the wastewater once within the wastewater treatment facilities is required.

From the two equalization tanks, the equalized wastewater flows to the two aeration tanks. Secondary treatment is provided through the activated sludge biological treatment process. The process combines biochemical reduction of soluble organic compounds by bacteria in the aeration system and the physical separation of the biosolids in the clarifying system. Nutrients are added to the wastewater as it is routed to the aeration tanks. The facility uses phosphoric acid and aqueous ammonia to supply the proper balance of nitrogen and phosphorus for biological treatment. The return activated sludge (biosolids) from the clarifiers is added directly to the aeration tanks.

The aeration system consists of two aboveground aerated tanks, which may be operated in series or in parallel. The aeration tanks are equipped with a jet mixing system that introduces air at the bottom ofthe tanks to ensure aerobic conditions and effective mixing between the microorganisms, wastewater,and nutrients. This results in the breaking down of the organic contaminants to stable materials such as water, carbon dioxide, and new cells. A third tank is available to serve as an additional aeration tank or digester on an as needed basis. This tank has surface mechanical aerators.

The effluent from the aeration tanks is routed to the final clarifiers where biosolids are removed by settling with the aid of treatment chemicals such as polymers and anti-foaming agents. A portion of the concentrated solids at the bottom of the clarifiers is returned to the aeration tanks (return activated sludge, RAS), which ensures that the activated sludge system is adequately populated with microorganisms. The remaining sludge (waste activated sludge, WAS) is routed to the aerobic sludge digester as part of the sludge handling system. The clarified water overflows to a sump where it is combined with several non-process wastewaters, including cooling tower and boiler blowdown, and ion exchange regeneration wastewater, and these combined waters are discharged through Outfall 001.

Aerobic digestion of the waste sludge occurs in an in-ground basin. The third aeration tank may also be used as an aerobic digester. This process results in a reduction of the volume of sludge, which is later landfarmed. Aerobic digestion occurs when the activated sludge is aerated over a period of time and utilizes its own biomass as a substrate. Periodically, digested sludge is routed to the adjacent sludge holding basin, which is used as a thickener to concentrate the solids further prior to landfarming the digested solids. The supernatant liquid from the sludge holding basin is pumped to the feed of the aeration tanks for reprocessing in the biological treatment facility.

The thickened sludge is pumped to one of the four operating cells at the Class II landfarm. Once a cell is at approximately 75% capacity with solids, the cell is taken out of service and dewatered. A crop is planted within the cell to further remove constituents from the sludge. Once the crop is matured, it is harvested and sent to an off-site waste disposal site. Afterwards, a filtration grass is planted within the cell. Once the grass is matured, the cell can be put back in service. Stormwater that accumulates in active landfarm cells is pumped back to the equalization tanks for treatment along with other industrial wastewaters. Stormwater that accumulates in inactive landfarm cells can be discharged though stormwater Outfall 002 or sent through wastewater treatment.

The other primary means of process wastewater disposal generated in the manufacturing units is by use of two on-site hazardous waste injection wells. As feasible, Lyondell implements projects to reroute streams that are currently being injected, to the biological treatment facility. In addition to the process wastewaters, there are several non-process wastewater sources that discharge through Outfall 001, including cooling tower blowdown, boiler blowdown, and ion exchange regeneration wastewaters. In addition, stormwater may be diverted from Outfall 002. Prior to mixing with the wastewater treated in the biological treatment facility, the boiler blowdown and ion exchange regeneration wastewater are neutralized to a pH between 6 and 9 in one of two neutralization basins. The remaining non-process wastewaters, such as cooling tower blowdown, are not typically treated prior to discharge to the sump upstream of Outfall 001.

The existing wastewater treatment system is being upgraded to efficiently treat the new wastewater generated from the PO/TBA plant along with the existing site wastewater. The PO/TBA wastewater characteristics are similar

and compatible as the PO product is currently being produced from the PO/SM units, and TBA is presently handled as an intermediate product in the MTBE/ETBE unit. The PO/TBA wastewater streams will be routed directly to a new equalization (EQ) tank located in the PO/TBA plant and subsequently pumped across the site to one new aeration tank, which will be constructed in the existing wastewater treatment unit.

The new aeration tank will be sized to match the existing aeration tank volumes and will have a jet aeration/mixing system with recirculation pumps and aeration blowers similar to the existing system. This will maximize the mixed liquor suspended solids concentration with all three tanks online and if needed, allow the site production units to continue operating with one aeration tank offline. An increased quantity of supplemental nitrogen and phosphorus will be dosed into the combined wastewater to provide for the increased organic loading from the PO/TBA wastewater. The new aeration tank will be covered to collect the off-gas for treatment. Because of the added chemical oxygen demand (COD) load with the PO/TBA wastewaters, it is expected that more heat will be generated from the biological reactions in the activated sludge units, so a heat exchanger will be added to the new aeration tank, similar to the existing exchangers.

Flow will be gravity-fed from the aeration tank to a new degas tank with a mechanical mixer. From the degas tank, the mixed liquor will flow by gravity into the new clarifier where the biomass and other solids will settle and be separated from the mixed liquor by gravity. The new clarifier will be equipped with a polymer feed system for the increased flow and solids loading. The effluent from the new clarifier and the two existing clarifiers will flow through the effluent weir box and combine in the new sand filter feed sump. The effluent will then be pumped into four new continuously backwashing sand filters. The sand filters will further remove TSS from the clarified effluent prior to discharge. The sand filter effluent will flow by gravity to Outfall 001 for discharge. The backwash water from the sand filters will be collected in a new backwash tank and pumped to the existing digester.

In addition to the PO/TBA wastewaters being routed to the existing wastewater treatment unit, contaminated stormwater, utility wastewaters, and miscellaneous authorized streams generated from the new PO/TBA plant will be routed to a new stormwater tank located within the PO/TBA plant area. This stormwater tank will be designated specifically for first-flush stormwater and contaminated non process wastewaters where they will be collected and transferred to the new PO/TBA equalization tank, and then to the wastewater treatment unit. There will also be a new stand-alone 3,000-gallon per minute (gpm) cooling tower.

Outfall 002

Outfall 002 is primarily a stormwater outfall. Other wastewaters that may be discharged include utility wastewaters, hydrostatic test water, service water, water from maintenance activities, water from the landfarm, and de minimis wastewaters from spill cleanups. The total area drained through

Outfall 002 is 221.75 acres. Outfall 002 discharges through a 2.5-foot Cipolletti (trapezoidal) weir to an on-site ditch, the same as Outfall 001. Discharge volume is calculated by rainfall amount and run-off coefficient rather than an instantaneous weir reading.

Outfall 002 discharges stormwater from the eastern portion of the plant including the PO/SM I, EB I,PEA, Polyols, MTBE/ETBE/HPIB, and BOO manufacturing units through various sumps, the formerfire training field, and the East Maintenance Area. Stormwater from inactive cells in the on-site landfarm may be routed to either the wastewater treatment unit or to Outfall 002.

The process units each have systems to collect and contain potentially contaminated stormwater. Theareas within the process units containing unit operations with the potential to contaminate stormwater runoff have been segregated by curbs from the stormwater system. Stormwater that is potentially contaminated and first-flush stormwater is contained and routed to the biological treatment system. Additional stormwater may be contained in stormwater sumps (all units) and retention tanks (PO/SMI, EB I, PEA, Polyols, and MTBE/ETBE/HPIB units) prior to determining final disposition of the stormwater. Based on internal assessment, the water may be released to the stormwater system or routed to the biological treatment facility.

Stormwater from non-process areas is collected in a series of concrete stormwater ditches. The ditches are equipped with gates that allow for the segregation of stormwater from various areas of the facility. When contamination of stormwater is suspected, the ditch gates can be closed to contain the stormwater and prevent it from commingling with uncontaminated stormwater. The stormwater contained in the ditch may then be sampled and analyzed prior to discharge or rerouting to the biological treatment facility or to Outfall 001.

Outfall 003

Outfall 003 is primarily a stormwater outfall. Other wastewaters that may be discharged include utility wastewaters, hydrostatic test water, service water, water from maintenance activities, and de minimiswastewaters from spill cleanups. The total area drained through Outfall 003 is 69.2 acres. Outfall 003 discharges through a 90° V-notch weir into two stormwater detention areas in series, which were required by the HCFCD to reduce the rate of flow before release into HCFCD ditch G103-02-03.

Outfall 003 discharges uncontaminated stormwater collected from the PO/SM II and EB II manufacturing units through various sumps. The PO/SM II and EB II process units have a system to collect and contain potentially contaminated stormwater. The areas within the process units that contain unit operations with the potential to contaminate stormwater have been segregated by curbs from the stormwater system. Stormwater that is potentially contaminated is contained and routed to the biological treatment system. Additional stormwater is contained in stormwater sumps, designated stormwater retention tanks, or a stormwater retention pond

(BDO unit) prior to determining final disposition of the stormwater. Based on analytical results, the water may be released to the stormwater system or routed to the biological treatment facility.

Uncontaminated stormwater from outside the curbed areas is not contained but flows through a seriesof concrete stormwater ditches to the outfall. The ditches are equipped with gates to allow for segregation of stormwater in the event contamination is suspected. The stormwater may then be sampled and analyzed prior to discharge or rerouting to the biological treatment facility.

Outfall 004
Outfall 004 is primarily a stormwater outfall. Other wastewaters that may be discharged include utility wastewaters, hydrostatic test water, service water, water from maintenance activities, and de minimiswastewaters from spill cleanups. The total area drained through Outfall 004 is 15.61 acres. Outfall 004 discharges through a 60° V-notch weir via a 48-inch pipe into an on-site ditch. Outfall 004 discharges stormwater collected from the warehouse and concrete slabs where the formeradministration buildings were located north of the PO/SM II complex. The administration buildings were demolished in December 2019, after a new administration building was constructed at the North Plant. What remains from the South Plant administration buildings are the concrete slabs and warehouses.

Outfalls 005 and 006
Outfalls 005 and 006 are primarily stormwater outfalls. Other wastewaters that may be discharged include utility wastewaters, hydrostatic test water, service water, water from maintenance activities, and de minimis wastewaters from spill cleanups. The total area drained by the two outfalls is 68.6 acres. Each outfall receives approximately half of the runoff from the area. Outfall 005 discharges through a 60° V-notch weir into a 54-inch pipe. Outfall 006 discharges through a 90° V-notch weir into a 48-inch pipe. Both outfalls flow into HCFCD ditchG103-02-03. Outfalls 005 and 006 discharge stormwater from the area west of the PO/SM II complex. This area contains the two PO/SM II process flares, a maintenance laydown area, warehouses, office buildings,and parking areas.

Outfalls 008, 009, and 010
Outfalls 008, 009, and 010 were added to the TPDES permit in 2017 as proposed outfalls associated with the future PO/TBA manufacturing unit. The unit is now currently under construction and Outfalls 008 and 009 are expected to be started up in 2022. Outfall 010 has not been constructed and may not be needed, but Lyondell wishes to retain it in the permit in case the need arises. All three outfalls are authorized in the existing TPDES permit to discharge stormwater, utility wastewaters, hydrostatic test water, service water, water from maintenance activities, and de minimiswastewaters from spill cleanups. Outfall 008 is also authorized to discharge cooling tower blowdown and there is an amendment request to add boiler blowdown and cooling tower and boiler maintenance wastewaters. Outfall 008 will discharge from the future Pond 3 into an on-site ditch. Outfall 009 will

discharge from the future Pond 1 and 2 system into an unnamed ditch. Outfall 010 will discharge into the Wallisville roadside ditch.

Ponds 1, 2, and 3 are exempt from the liner requirements in Other Requirement No. 4 of the existing permit. This requirement specifies that before any new pond that will receive only non-process wastewater is placed in service, that a determination be obtained from the TCEQ whether the pond must be lined. Lyondell submitted a request for liner determination on October 11, 2018 and the TCEQ approved the liner exemption by letter on February 4, 2019.

Two new stormwater tanks will be located in the PO/TBA unit to manage post-first flush, non-contaminated stormwater. Water in the tanks will be tested and if found to meet the stormwater discharge limits, will be drained to a stormwater ditch and discharged via Outfall 008. Water that does not meet stormwater discharge limits will be routed to the wastewater treatment unit via the new equalization tank.

Outfall 008 will drain the majority of the PO/TBA unit stormwater, cooling tower blowdown, boiler blowdown, and utility wastewaters. Normally boiler blowdown will be routed to the cooling tower recirculation line via cooling tower circulation pumps, and as such, will become part of the cooling tower blowdown. During initial startup of the PO/TBA unit, however, the boilers will be started up first, resulting in boiler blowdown discharging to Outfall 008 directly instead of routing to the cooling tower. Once both the boiler and cooling tower systems are running, the boiler blowdown will be routed to the PO/TBA cooling tower recirculation line. However, there may be times during maintenance or repair, that the boiler blowdown would need to be routed directly to the outfall. With the inclusion of cooling tower blowdown, the discharge from Outfall 008 will be continuous. Outfall 008 will discharge from Pond 3 on the south side of the PO/TBA plant into an on-site ditch, which then flows into HCFCD ditch G103-02-03.

Non-process areas located in the southeastern and northeastern sections of the PO/TBA unit will discharge through Outfall 009 to an on-site ditch. The discharge from the outfall will be intermittent and variable. The future detention Ponds 1 and 2 will be interconnected and Outfall 009 will discharge from Pond 2.

Water Supply

Lyondell Channelview obtains potable water from the Harris County Water Control and Improvement District (WCID) No. 84. Water used for industrial purposes at Lyondell Channelview is supplied from Lake Houston. The City of Houston owns 100% of Lake Houston and the Coastal Water Authority (CWA) manages Lake Houston. The intake structure at Lake Houston is controlled and operated by CWA.

Water from CWA is pumped into a canal system that leads to the adjacent Equistar Chemicals Channelview North Complex. The water from the canal is pumped to a surface water treatment unit where the water is filtered and clarified before being pumped to Lyondell Channelview for use in the

manufacturing process. Periodically, the water from Lake Houston may have elevated copper levels, which is monitored at the entry and exit to the surface water treatment unit. Currently, the CWA is implementing the Luce Bayou Interbasin Transfer Project, which will transfer water from the TrinityRiver to Lake Houston via a canal system to meet the increased demand for surface water by municipalities and industry within Harris County. This project is scheduled to be completed in 2021.

Domestic Wastewater
Domestic wastewater generated at the facility is not authorized for discharge from this facility. Domestic wastewater is routed to Harris County Water Control and Improvement District No. 84 (TPDES Permit No. WQ0010558-001) wastewater treatment plant or to Equistar Chemicals, LP Channelview Complex (TPDES Permit No. WQ0000391000) for treatment and disposal. Some domestic wastewater may be collected in on-site portable toilets during construction/maintenance work and transported off-site for treatment.

2. CALCULATIONS

See Appendix A of this fact sheet for calculations and further discussion of technology-based effluent limitations proposed in the draft permit. A comparison of technology-based effluent limits, existing effluent limitations, and calculated water quality-based effluent limits can be found in Appendix D of this fact sheet.

3. 316(B) COOLING WATER INTAKE STRUCTURES

a. SCREENING

The facility obtains water from the City of Houston, a public water system (PWS No. TX1010013), for cooling purposes. The use of water obtained from a public water system for cooling purposes does not constitute the use of a cooling water intake structure; therefore, the facility is not subject to Section 316(b) of the CWA or 40 CFR Part 125, Subpart J.

b. PERMIT ACTION

Other Requirement No. 12 has been included in the draft permit to require the permittee to notify the TCEQ in the event of a change to the method by which cooling water is obtained. Upon receipt of such notification, the TCEQ may reopen the permit to include additional terms and conditions as necessary.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

The *Texas Surface Water Quality Standards* found at 30 TAC Chapter 307 state that surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life. The

methodology outlined in the TCEQ guidance document *Procedures to Implement the Texas Surface Water Quality Standards* (IPs) is designed to ensure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to ensure that no source will be allowed to discharge any wastewater that (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation that threatens human health. Calculated water quality-based effluent limits can be found in Appendix B of this fact sheet.

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

2. AQUATIC LIFE CRITERIA

a. SCREENING

Water quality-based effluent limitations are calculated from freshwater and saltwater aquatic life criteria found in Table 1 of the *Texas Surface Water Quality Standards* (30 TAC Chapter 307). The following evaluation applies to Outfalls 001-006 and Outfalls 008-010.

Outfalls 001-006 and 008-010

There is no mixing zone or zone of initial dilution (ZID) for these discharges directly to HCFCD ditch G102-02-03 (Outfalls 001-006 and 008), to an unnamed ditch (Outfall 009), and to the Wallisville roadside ditch (Outfall 010) all are intermittent streams; acute freshwater criteria apply at the end of pipe. All intermittent streams are within three miles of the San Jacinto River Tidal (Segment No. 1001). Acute and chronic saltwater criteria are applied in the bay, estuary, or wide tidal river.

For all the intermittent streams, the percent effluent for acute protection of aquatic life is 100% because the seven-day, two-year low-flow (7Q2) of the intermittent stream is 0.0 cubic feet per second (cfs). TCEQ practice is to establish minimum estimated effluent percentages at the edges of the ZID and aquatic life mixing zone for discharges that are 10 MGD or less into bays, estuaries, and wide tidal rivers that are at least 400 feet wide. These critical effluent percentages are as follows:

Acute Effluent % (stream)	100 %
Acute Effluent % (bay, estuary, or wide tidal river)	30 %
Chronic Effluent % (bay, estuary, or wide tidal river)	8 %

Outfall 007
Outfall 007 will be discharges of stormwater associated with construction activities from a concrete batch plant, which is not currently active, and its location will vary by construction project. Typically, critical conditions are not developed for stormwater outfalls and water quality-based effluent limits are not developed.

General Screening Procedures
Wasteload allocations (WLAs) are calculated using the above estimated effluent percentages, criteria outlined in the *Texas Surface Water Quality Standards*, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). Discharges via Outfalls 001-006 and 008-010 are to an intermittent freshwater water body (HCFCD ditch G102-02-0), an unnamed ditch, or the Wallisville roadside ditch) within three miles of a wide tidal river, the San Jacinto River Tidal. The WLA is the end-of-pipe effluent concentration that can be discharged when, after mixing in the receiving stream, the instream numerical criteria will not be exceeded. The long-term average (LTA) is the long-term average effluent concentration for which the WLA will never be exceeded using a selected percentile confidence level.

For the freshwater portion of the discharge route, from the WLA, a LTA is calculated using a lognormal probability distribution, a given coefficient of variation (0.6), and a 99th percentile confidence level. The LTA is used to calculate a daily average and daily maximum effluent limitation for the protection of aquatic life using the same statistical considerations with the 99th percentile confidence level and a standard number of monthly effluent samples collected (12).

For the wide tidal river portion of the discharge route, from the WLA, a LTA is calculated using a lognormal probability distribution, a given coefficient of variation (0.6), and a 90th percentile confidence level. The lower of the two LTAs (acute and chronic) is used to calculate a daily average and daily maximum effluent limitation for the protection of aquatic life using the same statistical considerations with the 99th percentile confidence level and a standard number of monthly effluent samples collected (12).

Assumptions used in deriving the effluent limitations include segment-specific values for TSS, pH, hardness, and chloride according to the *IPs*. The permittee requested to use a site-specific hardness for calculating water quality-based effluent limits. Per the interoffice memorandum dated March 30, 2021 (standards), the approved site-specific hardness value of 147 mg/L (as calcium carbonate, $CaCO_3$) applies only to the freshwater portions of the HCFCD ditch G103-02-03, the unnamed ditch, and the Wallisville roadside ditch. A site-specific water-effect-ratio of 1.8 applies for total copper for the San Jacinto River Tidal (Segment No. 1001) based on TSWQS, Appendix E.

Per the interoffice memorandum dated May 5, 2021 (critical conditions), freshwater segment values from Segment No. 1016 are used for the

immediate freshwater receiving water bodies and are 82 mg/L chlorides, 7.5 SU for pH, and 12 mg/L for TSS. The segment-specific value for TSS for Segment No. 1001 is used for the San Jacinto River Tidal and is 8 mg/L for TSS. For additional details on the calculation of water quality-based effluent limitations, refer to the *IPs*.

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

Calculated water quality-based effluent limitations at Outfall 001 are compared to calculated technology-based effluent limitations for parameters required under EPA categorical guidelines (40 CFR Part 414) and to existing effluent limitations. Since the EPA categorical guideline-based effluent limitations at Outfall 001 are required to be expressed in terms of mass (lbs/day), equivalent mass effluent limitations for the water quality-based effluent limitations are calculated and used for direct comparison purposes.

When the mass equivalent water quality-based effluent limitation is more stringent than the required mass technology-based effluent limitation, the water quality-based effluent limitation is imposed at the outfall. See Appendix B of this fact sheet for the calculation of water quality-based effluent limitations for aquatic life protection.

b. PERMIT ACTION

Effluent data for primarily stormwater driven Outfalls 005 and 006 were not initially included with the application and were subsequently submitted. Outfalls 008-010 were also not included with the application because they are not yet in operation. Effluent testing included in existing Other Requirement No. 19 is continued in the draft permit for Outfalls 008-010.

The permittee submitted effluent data for Outfalls 003, 004, and 005 in compliance with existing Other Requirement No. 14 comparing total and dissolved aluminum concentrations. Evaluation of the submitted effluent data indicated an aluminum partition coefficient study was appropriate, per an August 15, 2014, electronic mail from Michael Pfeil of the Water Quality Standards Implementation Team of the Water Quality Assessment Section. The study results were submitted to the TCEQ on December 21, 2020. Per the interoffice memorandum dated March 30, 2021 (standards) the site-specific aluminum partitioning coefficients (dissolved fraction) have been approved at Outfalls 003, 004, and 005. The dissolved fraction applicable to the freshwater portions of the

discharge route for Outfall 003 is 0.755, for Outfall 004 is 0.797, and for Outfall 005 is 0.484.

Analytical data reported in the application was screened against the calculated water quality-based effluent limitations for the protection of aquatic life. The average of the reported analytical data (including the monthly effluent data for outfalls 003, 004, and 005) does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection, except for total aluminum at Outfalls 002, 003, 004, 005, and 006.

The average effluent concentration for total aluminum of 2.394 mg/L at Outfall 002 exceeds the calculated water quality-based total aluminum daily average effluent limitation of 0.835 mg/L for aquatic life protection at Outfall 002. The average effluent concentration for total aluminum of 3.047 mg/L at Outfall 003 exceeds the calculated water quality-based total aluminum daily average effluent limitation of 1.103 mg/L for aquatic life protection at Outfall 003. The average effluent concentration for total aluminum of 6.848 mg/L at Outfall 004 exceeds the calculated water quality-based total aluminum daily average effluent limitation of 1.047 mg/L for aquatic life protection at Outfall 004. The average effluent concentration for total aluminum of 9.194 mg/L at Outfall 005 exceeds the calculated water quality-based total aluminum daily average effluent limitation of 1.725 mg/L for aquatic life protection at Outfall 005. The average effluent concentration for total aluminum of 1.858 mg/L at Outfall 006 exceeds the calculated water quality-based total aluminum daily average effluent limitation of 0.835 mg/L for aquatic life protection at Outfall 006. Therefore, daily maximum total aluminum effluent limitations have been included at Outfalls 002, 003, 004, 005, and 006.

An interim three-year compliance period is included in the draft permit for total aluminum at Outfalls 002, 003, 004, 005, and 006 in accordance with 30 TAC § 307.2(f). The interim compliance period will give the applicant time to identify sources of the aforementioned pollutants, develop mitigation strategies and treatment options, and attain the water quality-based limits.

In addition, the average effluent concentration for total zinc of 169 mg/L at Outfall 005 exceeds 70 percent of the calculated water quality-based total aluminum daily average effluent limitation of 236 mg/L for aquatic life protection at Outfall 005. Therefore, a self-expiring daily maximum total zinc monitoring and reporting requirement has been included at Outfall 005.

The limits in the existing permit were compared to the calculated water quality-based effluent limits to determine whether the existing limits are still protective. See Appendix D of this fact sheet for a comparison of the existing effluent limits with the calculated water quality-based effluent limits.

The limits in the existing permit were compared to the calculated water quality-based effluent limits to determine whether the existing limits are still protective. The calculated water quality-based effluent limitations at Outfall 001 for benzo(a)anthracene, benzo(a)pyrene, and hexachlorobenzene in the Interim Phase; and benzo(a)anthracene, benzo(a)pyrene, hexachlorobenzene, hexachlorobutadiene, and phenanthrene (daily maximum) in the Final Phase are more stringent and have been included in the draft permit. An interim three-year compliance period is not included in the draft permit for these pollutants because the permittee's discharge monitoring reports indicate the pollutants are not present in detectable concentrations.

The permittee requested to increase the total copper effluent limitations at Outfall 001. Water quaity-based effluent limitations for total copper are included in the draft permit at Outfall 001. See section IX (Summary of Changes from Existing Permit) of this fact sheet for the discussion and determination of these requests.

No additional limits or monitoring and reporting requirements have been added to the draft permit for aquatic life protection.

3. WHOLE EFFLUENT TOXICITY (BIOMONITORING) CRITERIA

a. SCREENING AND REASONABLE POTENTIAL ANALYSIS

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

In the past three years, the permittee performed twenty-four chronic tests with no demonstrations of significant toxicity (i.e., no failures) by the mysid shrimp (*Mysidopsis bahia*) or inland silverside (*Menidia beryllina*).

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

With no demonstrations of significant toxicity during the period of record for either test species, a determination of no reasonable potential was made. All of the test results were used for this determination.

b. PERMIT ACTION

The provisions of this section apply to Outfall 001.

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

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

i) Chronic static renewal 7-day survival and growth test using the mysid shrimp (*Mysidopsis bahia*). The frequency of the testing shall be once per quarter.

ii) Chronic static renewal 7-day larval survival and growth test using the inland silverside (*Menidia beryllina*). The frequency of the testing shall be once per quarter.

Toxicity tests shall be performed in accordance with protocols described in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms,* Third Edition (EPA-821-R-02-014) or the latest revision. The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the state water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge.

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

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

c. DILUTION SERIES

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 3%, 5%, 6%, 8%, and 11%. The low-flow effluent concentration (critical dilution) is defined as 8% effluent.

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

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

a. SCREENING

The existing permit includes 24-hour acute marine biomonitoring requirements for Outfall 001. In the past three years, the permittee has performed twelve 24-hour acute tests, with no demonstrations of significant mortality. Minimum 24-hour acute marine biomonitoring requirements are proposed in the draft permit as outlined below.

b. PERMIT ACTION

Twenty-four-hour 100% acute biomonitoring tests are required at Outfall 001 at a frequency of once per six months for the life of the permit.

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

i) Acute 24-hour static toxicity test using the mysid shrimp (*Mysidopsis bahia*). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

ii) Acute 24-hour static toxicity test using the inland silverside (*Menidia beryllina*). A minimum of five (5) replicates with eight (8) organisms per replicate shall be used for this test.

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

5. AQUATIC ORGANISM BIOACCUMULATION CRITERIA

a. SCREENING

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

Chapter 307). The following evaluation applies to Outfalls 001-006 and Outfalls 008-010.

Outfalls 001-006 and 008-010
Discharges are to HCFCD ditch G102-02-03 (Outfalls 001-006 and 008), to an unnamed ditch (Outfall 009), and to the Wallisville roadside ditch (Outfall 010) all are intermittent streams within three miles of the San Jacinto River Tidal, a wide tidal river. Fish tissue bioaccumulation criteria are applied in the bay, estuary, or wide tidal river for a discharge to an intermittent stream that enters a bay, estuary, or wide tidal river within 3 miles downstream of the discharge point. TCEQ practice is to establish a minimum estimated effluent percentage for discharges that are 10 MGD or less into bays, estuaries, and wide tidal rivers that are at least 400 feet wide. This critical effluent percentage is:

Human Health Effluent %: 4%

Outfall 007
Outfall 007 will be discharges of stormwater associated with construction activities from a concrete batch plant, which is not currently active, and its location will vary by construction project. Typically, critical conditions are not developed for stormwater outfalls and water quality-based effluent limits are not developed.

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

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

Calculated water quality-based effluent limitations at Outfall 001 are compared to calculated technology-based effluent limitations for parameters required under EPA categorical guidelines (40 CFR Part 414) and to existing effluent limitations. Since the guideline-based effluent limitations at Outfall 001 are required to be expressed in the terms of mass (lbs/day), equivalent mass effluent limitations for the water quality-based effluent limitations are calculated, and if more stringent they are imposed at the outfall in place of the technology-based effluent limitation. See Appendix B of this fact sheet for calculations of water quality-based effluent limitations for human health protection. Also, see Appendix D of this fact sheet for comparisons of technology-based with water quality-based effluent limitations.

b. PERMIT ACTION

Effluent data for primarily stormwater driven Outfalls 005 and 006 were not initially included with the application and were subsequently submitted. Outfalls 008-010 were also not included with the application because they are not yet in operation. Effluent testing included in existing Other Requirement No. 19 is continued in the draft permit for Outfalls 008-010.

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

The limits in the existing permit were compared to the calculated water quality-based effluent limits to determine whether the existing limits are still protective. The calculated water quality-based effluent limits for benzo(*a*)anthracene, benzo(*a*)pyrene, hexachlorobenzene, and hexachlorobutadiene are more stringent than the existing limits at Outfall 001.

An interim three-year compliance period is not included in the draft permit for these pollutants because the permittee's discharge monitoring reports indicate the pollutants are not present in detectable concentrations.

6. DRINKING WATER SUPPLY PROTECTION

a. SCREENING

Segment No. 1001, which receives the discharge from this facility, is not designated as a public water supply. Screening reported analytical data of the effluent against water quality-based effluent limitations calculated for the protection of a drinking water supply is not applicable.

b. PERMIT ACTION

None.

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

a. SCREENING

Concentrations and relative ratios of dissolved minerals such as chloride and sulfate that compose total dissolved solids (TDS) will be maintained to protect existing and attainable uses. Discharge via Outfall 001 is to an intermittent stream within three miles of a wide tidal river. The San

Jacinto River Tidal (Segment No. 1001) is a classified saltwater segment. In order to evaluate the intermittent stream, Segment No. 1016 values are used for screening. The discharge to saltwater is evaluated on a case-by-case basis as outlined in the *IPs*.

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

b. PERMIT ACTION

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

8. PROTECTION OF pH STANDARDS

a. SCREENING

The existing permit includes pH limits of 6.0 – 9.0 standard units at Outfalls 001-010, which discharge into unclassified water bodies. Consistent with the procedures for pH screening that were submitted to EPA with a letter dated May 28, 2014, and approved by EPA in a letter dated June 2, 2014, requiring a discharge to an unclassified water body to meet pH limits of 6.0 – 9.0 standard units reasonably ensures instream compliance with *Texas Surface Water Quality Standards* pH criteria.

The permittee requests to increase the daily maximum pH limit at Outfall 002 from 9.0 SU to 9.5 SU. Outfall 002 discharges primarily stormwater, but is also authorized to discharge construction stormwater, utility wastewater, hydrostatic test water, service water, water from maintenance activities, and de minimis quantities from spill cleanup.

The permittee asserts the elevated pH levels at Outfall 002 are believed to be caused by algae growth in the open ditch system prior to Outfall 002. Algal photosynthetic activity can temporarily increase the pH over 9.0 SU during daylight hours, particularly during warmer periods that promote algal growth. Algae use carbon dioxide as a carbon source for growth during photosynthesis. Carbon dioxide in water produces carbonic acid. When carbon dioxide is reduced, carbonic acid is also reduced and the pH increases. Outfall 002 discharges when there is a high enough rainfall event. Between discharges there will be some residual water in the ditches and also, the ditch gates may be closed at times to temporarily retain waters; consequently, algae can grow in the water that remains in the ditches between outfall discharges.

Furthermore, the existing permit requires Outfall 002 pH effluent sampling occur within the first hour of discharge. Although rainwater typically has a pH below 7 SU, it can be expected that the pH measurements collected within the first hour of discharge would be higher if stormwater is pushing through residual ditch water with a higher pH, and that eventually the pH would decrease in the outfall discharge.

Moreover, Outfall 002 discharges into an on-site ditch that also receives the discharge from Outfall 001. Outfall 002 is approximately 35 feet upstream of where the Outfall 001 discharge pipe enters the ditch and mixing of the two flows is almost immediate. On average, the Outfall 001 daily maximum pH is lower than the Outfall 002 daily maximum pH, which helps moderate any higher pH flows from Outfall 002. Based on monitoring data from July 2017 to July 2020, the median of the Outfall 001 daily maximum pH values is 7.9 SU compared to 8.2 SU for Outfall 002. The ditch carrying the flows from Outfalls 001 and 002 drains into HCFCD ditch G103-02-03, approximately 0.23 of a mile upstream of the San Jacinto River Tidal.

b. PERMIT ACTION

The existing pH limits of 6.0 – 9.0 SU are carried forward in the draft permit at Outfalls 001 and 003-010.

Based on the above reasons and per the interoffice memorandum dated March 30, 2021 (standards), the requested pH effluent limits of 6.0 – 9.5 SU are included at Outfall 002 and are not expected to cause a violation of the 6.5-9.0 SU pH criteria for the San Jacinto River Tidal (Segment No. 1001.

9. DISSOLVED OXYGEN PROTECTION

a. SCREENING

In accordance with the interoffice memorandum dated May 18, 2021 (modeling), a dissolved oxygen (DO) analysis of the discharge at Outfall 001 was conducted using an uncalibrated QUAL-TX model along with an updated version of the calibrated QUAL-TX model documented in the *Waste Load Evaluation WLE-1R for the Houston Ship Channel System* (September 2006) for an interim effluent flow of 3.2 MGD and a final effluent flow of 3.8 MGD at Outfall 001.

Coefficients and kinetics used in the models are a combination of site-specific, standardized default, and estimated values. The results of this evaluation can be re-examined upon receipt of information that conflicts with the assumptions employed in this analysis.

Due to the intermittent nature and limited oxygen demanding constituents expected from Outfalls 002-010, no significant depletion of oxygen is expected in the receiving waters due to these discharges.

No additional modeling work was performed for the current permit action.

b. PERMIT ACTION

Based on model results, the existing effluent limits of 414 lbs/day $CBOD_5$, 46 lbs/day ammonia nitrogen (NH_3-N), and 4 mg/L DO for the interim phase and 703 lbs/day $CBOD_5$, 46 lbs/day NH_3-N, and 4 mg/L DO for the final phase is predicted to be adequate to maintain the DO criteria of 2.0 mg/L for the HCFCD ditch G103-02-03 and the DO criteria of 4.0 mg/L for the San Jacinto River Tidal (Segment No. 1001). Therefore, the existing effluent limitations for $CBOD_5$, NH_3-N, and 4 mg/L DO are continued in the draft permit.

XI. PRETREATMENT REQUIREMENTS

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

XII. VARIANCE REQUESTS

No variance requests have been received.

XIII. PROCEDURES FOR FINAL DECISION

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

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

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

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

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

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

For additional information about this application, contact Melinda Luxemburg, P.E. at (512) 239-4541.

XIV. ADMINISTRATIVE RECORD

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

A. PERMIT

TPDES Permit No. WQ0002927000 issued on January 11, 2017.

B. APPLICATION

TPDES wastewater permit application received on January 5, 2021 and additional information received on May 12, 2021.

C. 40 CFR CITATIONS

40 CFR Part 414 Subparts F, G, and H (BPT) and Subpart I.

D. LETTERS/MEMORANDA/RECORDS OF COMMUNICATION

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

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

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

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

TCEQ Interoffice Memorandum dated March 30, 2021, from Jenna R. Lueg of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Standards Memo).

TCEQ Interoffice Memorandum dated May 5, 2021, from Katie Cunningham of the Water Quality Assessment Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Critical Conditions Memo).

TCEQ Interoffice Memorandum dated May 18, 2021, from Xing Lu, P.E. of the Water Quality Assessment Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Modeling Memo).

TCEQ Interoffice Memorandum dated June 9, 2021, from Brad (Charles) Caston of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Biomonitoring Memo).

E. MISCELLANEOUS

The *State of Texas 2018 Integrated Report* – Texas 303(d) List (Category 5), TCEQ, November 19, 2015.

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

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

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

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

Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition (EPA-821-R-02-014).

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

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

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

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

Appendix A
Calculated Technology-Based Effluent Limits

Interim Phase

Effluent limitations guidelines (ELGs) under 40 CFR Part 414 are applicable to the Lyondell Chemical Channelview Complex. Effluent limitations calculated using the applicable ELGs, which includes Subparts F, G, H, and I, are included in the draft permit. The following calculations are based on the most recent available information submitted with the Lyondell Chemical Company's TCEQ-10055 (05/10/2019) Industrial Wastewater Permit Application Technical Report, Attachment T-1, Table 3.1, page 13 of 17. The discharge from the primary wastewater outfall (Outfall 001) at the facility consists of process wastewater, utility wastewaters, and stormwater. The average flows provided are as follows:

Waste Stream Description	**Outfall 001 (Interim Phase)**
OCPSF Process Wastewater includes the following:	
PO/SM-I, EB-I, and PEA Unit Complex	360,000 gpd
PO/SM-II and EB-II Unit Complex	180,000 gpd
MTBE/ETBE/HPIB Unit	360,000 gpd
Polyols Unit (normally to deep well disposal & not included in total)	72,000 gpd
Butanediol Unit	72,000 gpd
Stormwater, potentially contaminated	210,300 gpd
Landfarm runoff	57,600 gpd
Clarifier sludge to digester (removed from treatment system through clarifier sludge wasting and subtracted from total).	<79,200 gpd>
Total OCPSF Process Wastewater	1,160,700 gpd ≈ 1.16 MGD
Utility Wastewater includes the following:	
Cogen	28,800 gpd
Cooling tower blowdown	1,440,000 gpd
Boiler blowdown, ion exchange regeneration	576,000 gpd
Miscellaneous minor flows	Variable
Total Utility Wastewater	2,044,800 gpd ≈ 2.045 MGD
Domestic Wastewater	0.0 gpd
Total Interim Phase Flow	3,205,500 gpd ≈ 3.2 MGD

Appendix A
Calculated Technology-Based Effluent Limits

Interim Phase

The process wastewaters are subject to the Organic Chemical, Plastics, and Synthetic Fibers (OCPSF) Categorical Effluent Guidelines promulgated under 40 Code of Federal Regulations (CFR) Part 414.

Outfall 001 Interim Phase Conventional Pollutant Allocation Calculations:

OCPSF PROCESS WASTEWATER - BOD_5 and TSS are based on the ELGs provided in Subparts F, G, and H. The application indicates the following percentages for the applicable subpart:

Commodity Organic Chemicals (414.41 – Subpart F)	30%
Bulk Organic Chemicals (414.41 – Subpart G)	22%
Specialty Organic Chemicals (414.41 – Subpart H)	48%

The ELGs are prorated based on these production values by the following formula:

(Subpart F ELG × fraction of total production) + (Subpart G ELG × fraction of total production) + (Subpart H ELG × fraction of total production) = Total Production ELG

BOD_5-Average

Sub-F	(30 mg/L) × (0.30)	=	9.0 mg/L
Sub-G	(34 mg/L) × (0.22)	=	7.48 mg/L
Sub-H	(45 mg/L) × (0.48)	=	+ 21.6 mg/L
TOTAL			38.08 mg/L

BOD_5-Maximum

Sub-F	(80 mg/L) × (0.30)	=	24.0 mg/L
Sub-G	(92 mg/L) × (0.22)	=	20.24 mg/L
Sub-H	(120 mg/L) × (0.48)	=	+ 57.6 mg/L
TOTAL			101.84 mg/L

TSS-Average

Sub-F	(46 mg/L) × (0.30)	=	13.8 mg/L
Sub-G	(49 mg/L) × (0.22)	=	10.78 mg/L
Sub-H	(57 mg/L) × (0.48)	=	+ 27.36 mg/L
TOTAL			51.94 mg/L

TSS-Maximum

Sub-F	(149 mg/L) × (0.30)	=	44.7 mg/L
Sub-G	(159 mg/L) × (0.22)	=	34.98 mg/L
Sub-H	(183 mg/L) × (0.48)	=	+ 87.84 mg/L
TOTAL			167.52 mg/L

The following formula is used to convert concentration to mass:

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

Daily Average BOD_5 = (38.08 mg/L) × (1.1607 MGD) × (8.345) = 368.8 lbs/day

Appendix A
Calculated Technology-Based Effluent Limits

Interim Phase

Daily Maximum BOD_5 = (101.84 mg/L) × (1.1607 MGD) × (8.345) = 986.4 lbs/day

Daily Average TSS = (51.94 mg/L) × (1.1607 MGD) × (8.345) = 503.1 lbs/day
Daily Maximum TSS = (167.52 mg/L) × (1.1607 MGD) × (8.345) = 1,622 lbs/day

UTILITY WASTEWATER - Based on BPJ allocations for non-categorical/non-domestic contributing waste sources.

Daily Average BOD_5 =(10 mg/L) × (2.045 MGD) × (8.345) = 170.6 lbs/day
Daily Maximum BOD_5 = (20 mg/L) × (2.045 MGD) × (8.345) = 341.3 lbs/day
Daily Average TSS = (30 mg/L) × (2.045 MGD) × (8.345) = 511.9 lbs/day
Daily Maximum TSS = (100 mg/L) × (2.045 MGD) × (8.345) = 1,706 lbs/day

DOMESTIC WASTEWATER - Based on 30 TAC 309.1(b).

Daily Average BOD_5 = (20 mg/L) × (0.0 MGD) × (8.345) = 0.0 lbs/day
Daily Maximum BOD_5 = (45 mg/L) × (0.0 MGD) × (8.345) = 0.0 lbs/day
Daily Average TSS = (20 mg/L) × (0.0 MGD) × (8.345) = 0.0 lbs/day
Daily Maximum TSS = (45 mg/L) × (0.0 MGD) × (8.345) = 0.0 lbs/day

CONVENTIONAL POLLUTANTS ALLOCATIONS SUMMATIONS - The contributing wastestreams were summed to calculate the technology-based mass effluent limitations.

		Daily Average Lbs/day	Daily Maximum Lbs/day
BOD_5			
	OCPSF Wastewater	368.8	986.4
	Utility Wastewater	170.6	341.3
	Domestic Wastewater	+ 0.0	+ 0.0
	TOTAL	539.4 ≈ 539 lbs/day	1,327.7 ≈ 1,327 lbs/day
TSS			
	OCPSF Wastewater	503.1	1,622
	Utility Wastewater	511.9	1,706
	Domestic Wastewater	+ 0.0	+ 0.0
	TOTAL	1,015.0 ≈ 1,015 lbs/day	3,328.0 = 3,328 lbs/day

OCPSF - TOXIC POLLUTANT STANDARDS

BAT Effluent Limitations for the OCPSF Point Source Category40 CFR 414.91 (Subpart I) - Federal Register Vol. 58, No. 130, July 9, 1993

Total Flow from Outfall 001	3.2 MGD
Process Wastewater Flow	1.1607 MGD
Chromium-Bearing Wastewater Flow	0.131 MGD
Copper-Bearing Wastewater Flow	0.131 MGD

Appendix A
Calculated Technology-Based Effluent Limits

Interim Phase

Mass, lbs/day = (Concentration, µg/L/1000) × Flow, MGD × 8.345

Parameter	Daily Avg µg/L	Daily Max µg/L	Daily Avg lbs/day	Daily Max lbs/day
Chromium	1110	2770	1.2134	3.0281
Copper	1450	3380	1.5851	3.6949
Acenaphthene	22	59	0.2131	0.5715
Acenaphthylene	22	59	0.2131	0.5715
Acrylonitrile	96	242	0.9299	2.3440
Anthracene	22	59	0.2131	0.5715
Benzene	37	136	0.3584	1.3173
Benzo(a)anthracene	22	59	0.2131	0.5715
3,4-Benzofluoranthene	23	61	0.2228	0.5908
Benzo(k)fluoranthene	22	59	0.2131	0.5715
Benzo(a)pyrene	23	61	0.2228	0.5908
Bis(2-ethylhexyl)phthalate	103	279	0.9977	2.7024
Carbon Tetrachloride	18	38	0.1743	0.3681
Chlorobenzene	15	28	0.1453	0.2712
Chloroethane	104	268	1.0073	2.5959
Chloroform (includes utility wastewater, flow = 3.2 MGD)	21	46	0.5607	1.2283
2-Chlorophenol	31	98	0.3003	0.9492
Chrysene	22	59	0.2131	0.5715
Di-n-butyl phthalate	27	57	0.2615	0.5521
1,2-Dichlorobenzene	77	163	0.7458	1.5788
1,3-Dichlorobenzene	31	44	0.3003	0.4262
1,4-Dichlorobenzene	15	28	0.1453	0.2712
1,1-Dichloroethane	22	59	0.2131	0.5715
1,2-Dichloroethane	68	211	0.6587	2.0438
1,1-Dichloroethylene	16	25	0.1550	0.2422
1,2-trans Dichloroethylene	21	54	0.2034	0.5230
2,4-Dichlorophenol	39	112	0.3778	1.0848
1,2-Dichloropropane	153	230	1.4820	2.2278
1,3-Dichloropropylene	29	44	0.2809	0.4262
Diethyl phthalate	81	203	0.7846	1.9663
2,4-Dimethylphenol	18	36	0.1743	0.3487
Dimethyl phthalate	19	47	0.1840	0.4552
4,6-Dinitro-o-cresol	78	277	0.7555	2.6830
2,4-Dinitrophenol	71	123	0.6877	1.1914
2,4-Dinitrotoluene	113	285	1.0945	2.7605

Calculated Technology-Based Effluent Limits

Interim Phase

Parameter	Daily Avg µg/L	Daily Max µg/L	Daily Avg lbs/day	Daily Max lbs/day
2,6-Dinitrotoluene	255	641	2.4699	6.2088
Ethylbenzene	32	108	0.3100	1.0461
Fluoranthene	25	68	0.2422	0.6587
Fluorene	22	59	0.2131	0.5715
Hexachlorobenzene	15	28	0.1453	0.2712
Hexachlorobutadiene	20	49	0.1937	0.4746
Hexachloroethane	21	54	0.2034	0.5230
Methyl Chloride	86	190	0.8330	1.8403
Methylene Chloride	40	89	0.3874	0.8621
Naphthalene	22	59	0.2131	0.5715
Nitrobenzene	27	68	0.2615	0.6587
2-Nitrophenol	41	69	0.3971	0.6683
4-Nitrophenol	72	124	0.6974	1.2011
Phenanthrene	22	59	0.2131	0.5715
Phenol	15	26	0.1453	0.2518
Pyrene	25	67	0.2422	0.6490
Tetrachloroethylene	22	56	0.2131	0.5424
Toluene	26	80	0.2518	0.7749
1,2,4-Trichlorobenzene	68	140	0.6587	1.3560
1,1,1-Trichloroethane	21	54	0.2034	0.5230
1,1,2-Trichloroethane	21	54	0.2034	0.5230
Trichloroethylene	21	54	0.2034	0.5230
Vinyl Chloride	104	268	1.0073	2.5959

The existing daily maximum (DM) effluent limitations for TOC and oil and grease at Outfall 001 of 4,581 lbs/day TOC DM and 399 lbs/day oil and grease DM are continued in the draft permit.

Single grab values have been calculated as follows:

Single grab, mg/L = (Daily Max, µg/L/1000) × 2.0 × (Process flow, MGD/Total Flow, MGD)

Single grab, mg/L = (Daily Max, µg/L/1000) × 2.0 × (1.1607 MGD/3.2 MGD)

Appendix A

Calculated Technology-Based Effluent Limits

Final Phase

Effluent limitations guidelines (ELGs) under 40 CFR Part 414 are applicable to the Lyondell Chemical Channelview Complex. Effluent limitations calculated using the applicable ELGs, which includes Subparts F, G, H, and I, are included in the draft permit. The following calculations are based on the most recent available information submitted with the Lyondell Chemical Company's TCEQ-10055 (05/10/2019) Industrial Wastewater Permit Application Technical Report, Attachment T-1, Table 3.2, page 13 of 17. The discharge from the primary wastewater outfall (Outfall 001) at the facility consists of process wastewater, utility wastewaters, and stormwater. The average flows provided are as follows:

Waste Stream Description	**Outfall 001 (Final Phase)**
OCPSF Process Wastewater includes the following:	
PO/SM-I, EB-I, and PEA Unit Complex	360,000 gpd
PO/SM-II and EB-II Unit Complex	180,000 gpd
MTBE/ETBE/HPIB Unit	360,000 gpd
Polyols Unit (normally to deep well disposal & not included in total)	72,000 gpd
Butanediol Unit	72,000 gpd
Stormwater, potentially contaminated	210,300 gpd
PO/TBA Unit	218,000 gpd
PO/TBA stormwater, potentially contaminated	415,600 gpd
Landfarm runoff	57,600 gpd
Clarifier sludge to digester (removed from treatment system through clarifier sludge wasting and subtracted from total).	<118,800 gpd >
Total OCPSF Process Wastewater	1,754,400 gpd ≈ 1.755 MGD
Utility Wastewater includes the following:	
Cogen	28,800 gpd
Cooling tower blowdown	1,440,000 gpd
Boiler blowdown, ion exchange regeneration	576,000 gpd
PO/TBA cooling tower blowdown (normally to Outfall 008 and not included in total).	380,160 gpd
Miscellaneous minor flows	Variable
Total Utility Wastewater	2,044,800 gpd ≈ 2.045 MGD
Domestic Wastewater	0.0 gpd
Total Final Phase Flow	3,799,500 gpd ≈ 3.8 MGD

Appendix A

Calculated Technology-Based Effluent Limits

Final Phase

The process wastewaters are subject to the OCPSF Categorical Effluent Guidelines promulgated under 40 CFR Part 414.

Outfall 001 Final Phase Conventional Pollutant Allocation Calculations:

OCPSF PROCESS WASTEWATER - BOD_5 and TSS are based on the ELGs provided in Subparts F, G, and H. The application indicates the following percentages for the applicable subpart:

Commodity Organic Chemicals (414.41 – Subpart F)	31%
Bulk Organic Chemicals (414.41 – Subpart G)	36%
Specialty Organic Chemicals (414.41 – Subpart H)	33%

The ELGs are prorated based on these production values by the following formula:

(Subpart F ELG × fraction of total production) + (Subpart G ELG × fraction of total production) + (Subpart H ELG × fraction of total production) = Total Production ELG

BOD_5-Average			
Sub-F	(30 mg/L) × (0.31)	=	9.3 mg/L
Sub-G	(34 mg/L) × (0.36)	=	12.24 mg/L
Sub-H	(45 mg/L) × (0.33)	=	+ 14.85 mg/L
TOTAL			36.39 mg/L
BOD_5-Maximum			
Sub-F	(80 mg/L) × (0.31)	=	24.8 mg/L
Sub-G	(92 mg/L) × (0.36)	=	33.12 mg/L
Sub-H	(120 mg/L) × (0.33)	=	+ 39.60 mg/L
TOTAL			97.52 mg/L
TSS-Average			
Sub-F	(46 mg/L) × (0.31)	=	14.26 mg/L
Sub-G	(49 mg/L) × (0.36)	=	17.64 mg/L
Sub-H	(57 mg/L) × (0.33)	=	+ 18.81 mg/L
TOTAL			50.71 mg/L
TSS-Maximum			
Sub-F	(149 mg/L) × (0.31)	=	46.19 mg/L
Sub-G	(159 mg/L) × (0.36)	=	57.24 mg/L
Sub-H	(183 mg/L) × (0.33)	=	+ 60.39 mg/L
TOTAL			163.82 mg/L

The following formula is used to convert concentration to mass:

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

Daily Average BOD_5 = (36.39 mg/L) × (1.755 MGD) × (8.345) = 532.9 lbs/day

Appendix A
Calculated Technology-Based Effluent Limits

Final Phase

Daily Maximum BOD_5 = (97.52 mg/L) × (1.755 MGD) × (8.345) = 1,428 lbs/day

Daily Average TSS = (50.71 mg/L) × (1.755 MGD) × (8.345) = 742.6 lbs/day
Daily Maximum TSS = (163.82 mg/L) × (1.755 MGD) × (8.345) = 2,399 lbs/day

UTILITY WASTEWATER - Based on BPJ allocations for non-categorical/non-domestic contributing waste sources.

Daily Average BOD_5 =(10 mg/L) × (2.045 MGD) × (8.345) = 170.6 lbs/day
Daily Maximum BOD_5 = (20 mg/L) × (2.045 MGD) × (8.345) = 341.3 lbs/day
Daily Average TSS = (30 mg/L) × (2.045 MGD) × (8.345) = 511.9 lbs/day
Daily Maximum TSS = (100 mg/L) × (2.045 MGD) × (8.345) = 1,706 lbs/day

DOMESTIC WASTEWATER - Based on 30 TAC 309.1(b).

Daily Average BOD_5 = (20 mg/L) × (0.0 MGD) × (8.345) = 0.0 lbs/day
Daily Maximum BOD_5 = (45 mg/L) × (0.0 MGD) × (8.345) = 0.0 lbs/day
Daily Average TSS = (20 mg/L) × (0.0 MGD) × (8.345) = 0.0 lbs/day
Daily Maximum TSS = (45 mg/L) × (0.0 MGD) × (8.345) = 0.0 lbs/day

CONVENTIONAL POLLUTANTS ALLOCATIONS SUMMATIONS - The contributing wastestreams were summed to calculate the technology-based mass effluent limitations.

		Daily Average Lbs/day	Daily Maximum Lbs/day
BOD_5			
	OCPSF Wastewater	532.9	1,428
	Utility Wastewater	170.6	341.3
	Domestic Wastewater	+ 0.0	+ 0.0
	TOTAL	703.5 ≈ 703 lbs/day	1,769.3 ≈ 1,769 lbs/day
TSS			
	OCPSF Wastewater	742.6	2,399.2
	Utility Wastewater	511.9	1,706.5
	Domestic Wastewater	+ 0.0	+ 0.0
	TOTAL	1,254.5 ≈ 1,254 lbs/day	4,105.7 = 4,105 lbs/day

OCPSF - TOXIC POLLUTANT STANDARDS

BAT Effluent Limitations for the OCPSF Point Source Category40 CFR 414.91 (Subpart I) - Federal Register Vol. 58, No. 130, July 9, 1993

Total Flow from Outfall 001	3.8 MGD
Process Wastewater Flow	1.755 MGD
Chromium-Bearing Wastewater Flow	0.131 MGD
Copper-Bearing Wastewater Flow	0.131 MGD

Appendix A
Calculated Technology-Based Effluent Limits

Final Phase

Mass, lbs/day = (Concentration, µg/L/1000) × Flow, MGD × 8.345

Parameter	Daily Avg µg/L	Daily Max µg/L	Daily Avg lbs/day	Daily Max lbs/day
Chromium	1110	2770	1.2134	3.0281
Copper	1450	3380	1.5851	3.6949
Acenaphthene	22	59	0.3222	0.8641
Acenaphthylene	22	59	0.3222	0.8641
Acrylonitrile	96	242	1.4060	3.5442
Anthracene	22	59	0.3222	0.8641
Benzene	37	136	0.5419	1.9918
Benzo(a)anthracene	22	59	0.3222	0.8641
3,4-Benzofluoranthene	23	61	0.3368	0.8934
Benzo(k)fluoranthene	22	59	0.3222	0.8641
Benzo(a)pyrene	23	61	0.3368	0.8934
Bis(2-ethylhexyl)phthalate	103	279	1.5085	4.0861
Carbon Tetrachloride	18	38	0.2636	0.5565
Chlorobenzene	15	28	0.2197	0.4101
Chloroethane	104	268	1.5231	3.9250
Chloroform (includes utility wastewater, flow = 3.7992 MGD)	21	46	0.6657	1.4583
2-Chlorophenol	31	98	0.4540	1.4353
Chrysene	22	59	0.3222	0.8641
Di-n-butyl phthalate	27	57	0.3954	0.8348
1,2-Dichlorobenzene	77	163	1.1277	2.3872
1,3-Dichlorobenzene	31	44	0.4540	0.6444
1,4-Dichlorobenzene	15	28	0.2197	0.4101
1,1-Dichloroethane	22	59	0.3222	0.8641
1,2-Dichloroethane	68	211	0.9959	3.0902
1,1-Dichloroethylene	16	25	0.2343	0.3661
1,2-trans Dichloroethylene	21	54	0.3076	0.7909
2,4-Dichlorophenol	39	112	0.5712	1.6403
1,2-Dichloropropane	153	230	2.2408	3.3685
1,3-Dichloropropylene	29	44	0.4247	0.6444
Diethyl phthalate	81	203	1.1863	2.9730
2,4-Dimethylphenol	18	36	0.2636	0.5272
Dimethyl phthalate	19	47	0.2783	0.6883
4,6-Dinitro-o-cresol	78	277	1.1423	4.0568
2,4-Dinitrophenol	71	123	1.0398	1.8014
2,4-Dinitrotoluene	113	285	1.6549	4.1740

Calculated Technology-Based Effluent Limits

Final Phase

Parameter	Daily Avg µg/L	Daily Max µg/L	Daily Avg lbs/day	Daily Max lbs/day
2,6-Dinitrotoluene	255	641	3.7346	9.3877
Ethylbenzene	32	108	0.4687	1.5817
Fluoranthene	25	68	0.3661	0.9959
Fluorene	22	59	0.3222	0.8641
Hexachlorobenzene	15	28	0.2197	0.4101
Hexachlorobutadiene	20	49	0.2929	0.7176
Hexachloroethane	21	54	0.3076	0.7909
Methyl Chloride	86	190	1.2595	2.7826
Methylene Chloride	40	89	0.5858	1.3034
Naphthalene	22	59	0.3222	0.8641
Nitrobenzene	27	68	0.3954	0.9959
2-Nitrophenol	41	69	0.6005	1.0105
4-Nitrophenol	72	124	1.0545	1.8160
Phenanthrene	22	59	0.3222	0.8641
Phenol	15	26	0.2197	0.3808
Pyrene	25	67	0.3661	0.9812
Tetrachloroethylene	22	56	0.3222	0.8201
Toluene	26	80	0.3808	1.1716
1,2,4-Trichlorobenzene	68	140	0.9959	2.0504
1,1,1-Trichloroethane	21	54	0.3076	0.7909
1,1,2-Trichloroethane	21	54	0.3076	0.7909
Trichloroethylene	21	54	0.3076	0.7909
Vinyl Chloride	104	268	1.5231	3.9250

The existing daily maximum (DM) effluent limitations for TOC and oil and grease at Outfall 001 of 5,440 lbs/day TOC DM and 474 lbs/day oil and grease DM are continued in the draft permit.

Single grab values have been calculated as follows:

Single grab, mg/L = (Daily Max, µg/L/1000) × 2.0 × (Process flow, MGD/Total Flow, MGD)

Single grab, mg/L = (Daily Max, µg/L/1000) × 2.0 × (1.755 MGD/3.8 MGD)

Appendix A

Calculated Technology-Based Effluent Limits

Primarily Stormwater Driven Outfalls 002 – 010 Determinations

Effluent limitations for primarily stormwater driven Outfalls 002-006 and 008-010. The following industrial stormwater technology-based effluent limitations are applicable:

Outfalls	Parameter	Daily Average, mg/L	Daily Maximum, mg/L
002-006 &	Flow (based on BPJ)	Report, MGD	Report, MGD
008-010	TOC	N/A	75
	Oil & Grease	N/A	15
	pH, SU	6.0 minimum	9.0 maximum (9.5 max at Outfall 002)

In addition, allowable non-stormwaters, which are *de minimis* in nature, are included with utility wastewaters. The allowable non-stormwaters are based on the Multi Sector General Permit (MSGP), TPDES General Permit No. TXR050000 and include the following:

(a) discharges from emergency fire-fighting activities;
(b) uncontaminated fire hydrant flushing (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated, and discharges are not expected to adversely affect aquatic life);
(c) potable water sources (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated, and discharges are not expected to adversely affect aquatic life);
(d) lawn watering and similar irrigation drainage, provided that all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
(e) water from the routine external washing of buildings, conducted without the use of detergents or other chemicals;
(f) water from the routine washing of pavement conducted without the use of detergents or other chemicals and where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed);
(g) uncontaminated air conditioner condensate, compressor condensate, and steam condensate, and condensate from the outside storage of refrigerated gases or liquids;
(h) water from foundation or footing drains where flows are not contaminated with pollutants (e.g., process materials, solvents, or other pollutants);
(i) uncontaminated water used for dust suppression;
(j) springs and other uncontaminated groundwater; and
(k) incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility but excluding intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown or drains).

Outfall 007: Effluent limitations for stormwater associated with construction activities from a concrete batch plant located in the construction area. The following technology-based effluent limits are based on the Construction General Stormwater Permit (TXR150000):

Outfall	Parameter	Daily Average, mg/L	Daily Maximum, mg/L
007	Flow (based on BPJ)	Report, MGD	Report, MGD
	TSS	N/A	100
	Oil & Grease	N/A	15
	pH, SU	6.0 minimum	9.0 maximum

Appendix B

Calculated Water Quality-Based Effluent Limits

Outfalls 001-006 and 008-010

TEXTOX MENU #10 – INTERMITTENT FRESHWATER STREAM WITHIN 3 MILES OF A BAY OR WIDE TIDAL 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 and Saltwater Aquatic Life
Table 2, 2018 Texas Surface Water Quality Standards (TSWQS) for Human Health
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010 (IPs)

The site-specific hardness value of 147 mg/L (as calcium carbonate, $CaCO_3$) applies only to the freshwater portions of HCFCD ditch G103-02-03, the unnamed ditch, and Wallisville Roadside ditch. Site-specific aluminum partitioning coefficients (dissolved fraction) have been approved at Outfalls 003, 004, and 005. The dissolved fraction applicable to the freshwater portions of the discharge route for Outfall 003 is 0.755, for Outfall 004 is 0.797, and for Outfall 005 is 0.484. A site-specific water-effect-ratio of 1.8 applies for total copper for the San Jacinto River Tidal (Segment No. 1001) based on TSWQS, Appendix E.

PERMIT INFORMATION

Permittee Name:	Lyondell Chemical Company
TPDES Permit No.:	WQ0002927000
Outfall No.:	001-006 & 008-010
Prepared by:	Melinda Luxemburg, P.E.
Date:	June 23, 2021

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	intermittent streams (use freshwater segment values)	
Segment No. for Freshwater Ambient Data:	1016	
TSS (mg/L) (Intermittent):	12	
pH (Standard Units) (Intermittent):	7.5	
Hardness (mg/L as CaCO3) (Intermittent):	147	(Site-specific hardness value)
Chloride (mg/L) (Intermittent):	82	
Effluent Flow for Aquatic Life (MGD):	<10	
% Effluent for Acute Aquatic Life (Intermittent):	100	
Saltwater Receiving Waterbody:	San Jacinto River Tidal	
Segment No.:	1001	
TSS (mg/L)(Bay / Tidal River):	8	
% Effluent for Chronic Aquatic Life (Bay/Tidal River):	8	
% Effluent for Acute Aquatic Life (Bay/Tidal River):	30	
Oyster Waters:	No	
Effluent Flow for Human Health (MGD):	<10	
% Effluent for Human Health (Bay/Tidal River):	4	

Appendix B
Calculated Water Quality-Based Effluent Limits

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

Stream/River Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum (Outfalls 001, 002, 006, & 008-010)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Aluminum (Outfalls 003)	N/A	N/A	N/A	0.755	Site-specific	1.00	Assumed
Aluminum (Outfalls 004)	N/A	N/A	N/A	0.797	Site-specific	1.00	Assumed
Aluminum (Outfalls 005)	N/A	N/A	N/A	0.484	Site-specific	1.00	Assumed
Arsenic	5.68	-0.73	78018.52	0.516		1.00	Assumed
Cadmium	6.60	-1.13	240173.56	0.258		1.00	Assumed
Chromium (total)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (trivalent)	6.52	-0.93	328368.46	0.202		1.00	Assumed
Chromium (hexavalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	166496.80	0.334		1.00	Assumed
Lead	6.45	-0.80	386060.17	0.178		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	118813.75	0.412		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	185542.46	0.310		1.00	Assumed
Zinc	6.10	-0.70	221092.05	0.274		1.00	Assumed

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

Estuarine Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	*Source*
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Cadmium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (total)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (trivalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Chromium (hexavalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	4.85	-0.72	15840.73	0.888		1.80	30 TAC §307 Appendix E
Lead	6.06	-0.85	196053.01	0.389		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	5.86	-0.74	155493.92	0.446		1.00	Assumed
Zinc	5.36	-0.52	77695.02	0.617		1.00	Assumed

Appendix B
Calculated Water Quality-Based Effluent Limits

AQUATIC LIFE - CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*SW Acute Criterion (µg/L)*	*SW Chronic Criterion (µg/L)*	*FW WLAa (µg/L)*	*SW WLAa (µg/L)*	*SW WLAc (µg/L)*	*FW LTAa (µg/L)*	*SW LTAa (µg/L)*	*SW LTAc (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Aldrin	3.0	1.3	N/A	3.0	4.33	N/A	1.72	1.39	N/A	2.04	4.31
Aluminum (Outfalls 001, 002, 006, & 008-010)	991	N/A	N/A	991	N/A	N/A	568	N/A	N/A	835	1766
Aluminum (Outfalls 003)	991	N/A	N/A	1313	N/A	N/A	752	N/A	N/A	1106	2339
Aluminum (Outfalls 004)	991	N/A	N/A	1243	N/A	N/A	712	N/A	N/A	1047	2216
Aluminum (Outfalls 005)	991	N/A	N/A	2048	N/A	N/A	1173	N/A	N/A	1725	3649
Arsenic	340	149	78	658	497	975	377	159	595	234	494
Cadmium	12.5	40.0	8.75	48.4	133	109	27.8	42.7	66.7	40.8	86.3
Carbaryl	2.0	613	N/A	2.0	2043.33	N/A	1.15	653.87	N/A	1.68	3.56
Chlordane	2.4	0.09	0.004	2.4	0.300	0.050	1.38	0.096	0.031	0.045	0.095
Chlorpyrifos	0.083	0.011	0.006	0.083	0.037	0.075	0.048	0.012	0.046	0.017	0.036
Chromium (trivalent)	781	N/A	N/A	3859	N/A	N/A	2211	N/A	N/A	3251	6877
Chromium (hexavalent)	15.7	1090	49.6	15.7	3633	620	9.00	1163	378	13.2	28.0
Copper	20.4	24.3	6.48	61.2	91.3	91.3	35.1	29.2	55.7	42.9	90.8
Copper (oyster waters)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyanide (free)	45.8	5.6	5.6	45.8	18.7	70.0	26.2	5.97	42.7	8.78	18.6
4,4'-DDT	1.1	0.13	0.001	1.1	0.433	0.013	0.630	0.139	0.0076	0.011	0.024
Demeton	N/A	N/A	0.1	N/A	N/A	1.25	N/A	N/A	0.763	1.12	2.37
Diazinon	0.17	0.819	0.819	0.17	2.73	10.2	0.097	0.874	6.24	0.143	0.303
Dicofol [Kelthane]	59.3	N/A	N/A	59.3	N/A	N/A	34.0	N/A	N/A	49.9	106
Dieldrin	0.24	0.71	0.002	0.24	2.37	0.025	0.138	0.757	0.015	0.022	0.047
Diuron	210	N/A	N/A	210	N/A	N/A	120.330	N/A	N/A	176.885	374.226
Endosulfan I (*alpha*)	0.22	0.034	0.009	0.22	0.113	0.113	0.126	0.036	0.069	0.053	0.113
Endosulfan II (*beta*)	0.22	0.034	0.009	0.22	0.113	0.113	0.126	0.036	0.069	0.053	0.113
Endosulfan sulfate	0.22	0.034	0.009	0.22	0.113	0.113	0.126	0.036	0.069	0.053	0.113
Endrin	0.086	0.037	0.002	0.086	0.123	0.025	0.049	0.039	0.015	0.022	0.047
Guthion [Azinphos Methyl]	N/A	N/A	0.01	N/A	N/A	0.125	N/A	N/A	0.076	0.112	0.237
Heptachlor	0.52	0.053	0.004	0.52	0.177	0.050	0.298	0.057	0.031	0.045	0.095
Hexachlorocyclohexane (*gamma*) [Lindane]	1.126	0.16	N/A	1.126	0.533	N/A	0.645	0.171	N/A	0.251	0.531
Lead	98	133	5.3	552	1139	170	316	364	104	153	323
Malathion	N/A	N/A	0.01	N/A	N/A	0.125	N/A	N/A	0.076	0.112	0.237
Mercury	2.4	2.1	1.1	2.4	7.00	13.8	1.38	2.24	8.39	2.02	4.28
Methoxychlor	N/A	N/A	0.03	N/A	N/A	0.375	N/A	N/A	0.229	0.336	0.711
Mirex	N/A	N/A	0.001	N/A	N/A	0.013	N/A	N/A	0.0076	0.011	0.024
Nickel	649	118	13.1	1573	393	164	902	126	99.9	147	311
Nonylphenol	28	7	1.7	28	23.3	21.3	16.0	7.47	13.0	11.0	23.2
Parathion (ethyl)	0.065	N/A	N/A	0.065	N/A	N/A	0.037	N/A	N/A	0.055	0.116
Pentachlorophenol	14.4	15.1	9.6	14.4	50.3	120	8.3	16.1	73.2	12.1	25.7
Phenanthrene	30	7.7	4.6	30	25.7	57.5	17.2	8.21	35.1	12.1	25.5
Polychlorinated Biphenyls [PCBs]	2.0	10	0.03	2.0	33.3	0.375	1.15	10.7	0.229	0.336	0.711
Selenium	20	564	136	20	1880	1700	11.5	602	1037	16.8	35.6
Silver	0.8	2	N/A	17.80	15.0	N/A	10.20	4.79	N/A	7.04	14.9
Toxaphene	0.78	0.21	0.0002	0.78	0.700	0.0025	0.447	0.224	0.0015	0.0022	0.0047
Tributyltin [TBT]	0.13	0.24	0.0074	0.13	0.800	0.093	0.074	0.256	0.056	0.083	0.175
2,4,5 Trichlorophenol	136	259	12	136	863	150	77.9	276	91.5	115	242
Zinc	162	92.7	84.2	593	501	1707	340	160	1041	236	499

Appendix B
Calculated Water Quality-Based Effluent Limits

HUMAN HEALTH - CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (ug/L)*	*WLAh (ug/L)*	*LTAh (ug/L)*	*Daily Avg. (ug/L)*	*Daily Max. (ug/L)*
Acrylonitrile	115	2875	2674	3930	8315
Aldrin	1.147E-05	2.87E-04	2.67E-04	3.92E-04	8.29E-04
Anthracene	1317	32925	30620	45012	95229
Antimony	1071	26775	24901	36604	77441
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	581	14525	13508	19857	42011
Benzidine	0.107	2.68	2.49	3.66	7.74
Benzo(a)anthracene	0.025	0.625	0.581	0.854	1.81
Benzo(a)pyrene	0.0025	0.063	0.058	0.085	0.181
Bis(chloromethyl)ether	0.2745	6.86	6.38	9.38	19.8
Bis(2-chloroethyl)ether	42.83	1071	996	1464	3097
Bis(2-ethylhexyl)phthalate	7.55	189	176	258	546
Bromodichloromethane (Dichlorobromomethane)	275	6875	6394	9399	19885
Bromoform [Tribromomethane]	1060	26500	24645	36228	76646
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	46	1150	1070	1572	3326
Chlordane	0.0025	0.063	0.058	0.085	0.181
Chlorobenzene	2737	68425	63635	93544	197906
Chlorodibromomethane (Dibromochloromethane)	183	4575	4255	6254	13232
Chloroform [Trichloromethane]	7697	192425	178955	263064	556551
Chromium (hexavalent)	502	12550	11672	17157	36298
Chrysene	2.52	63.0	58.6	86.1	182
Cresols [Methylphenols]	9301	232525	216248	317885	672532
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.050	0.047	0.068	0.145
4,4'-DDE	0.00013	0.0033	0.0030	0.0044	0.0094
4,4'-DDT	0.0004	0.010	0.0093	0.014	0.029
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	473	11825	10997	16166	34201
1,2-Dibromoethane	4.24	106	98.6	145	307
m-Dichlorobenzene [1,3-Dichlorobenzene]	595	14875	13834	20336	43023
o-Dichlorobenzene [1,2-Dichlorobenzene]	3299	82475	76702	112752	238542
p-Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	2.24	56.0	52.1	76.6	162
1,2-Dichloroethane	364	9100	8463	12441	26320
1,1-Dichloroethylene [1,1-Dichloroethene]	55114	1377850	1281401	1883659	3985156
Dichloromethane [Methylene Chloride]	13333	333325	309992	455689	964076
1,2-Dichloropropane	259	6475	6022	8852	18728
1,3-Dichloropropene [1,3- Dichloropropylene]	119	2975	2767	4067	8605
Dicofol [Kelthane]	0.30	7.50	6.98	10.3	21.7
Dieldrin	2.0E-05	5.00E-04	4.65E-04	6.84E-04	1.45E-03
2,4-Dimethylphenol	8436	210900	196137	288321	609986
Di-*n*-Butyl Phthalate	92.4	2310	2148	3158	6681

Appendix B
Calculated Water Quality-Based Effluent Limits

HUMAN HEALTH - CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*Fish Only Criterion (ug/L)*	*WLAh (ug/L)*	*LTAh (ug/L)*	*Daily Avg. (ug/L)*	*Daily Max. (ug/L)*
Dioxins/Furans [TCDD Equivalents]	7.97E-08	1.99E-06	1.85E-06	2.72E-06	5.76E-06
Endrin	0.02	0.500	0.465	0.684	1.45
Epichlorohydrin	2013	50325	46802	68799	145555
Ethylbenzene	1867	46675	43408	63809	134998
Ethylene Glycol	1.68E+07	4.20E+08	3.91E+08	5.74E+08	1.21E+09
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0001	0.0025	0.0023	0.0034	0.0072
Heptachlor Epoxide	0.00029	0.0073	0.0067	0.010	0.021
Hexachlorobenzene	0.00068	0.017	0.016	0.023	0.049
Hexachlorobutadiene	0.22	5.50	5.12	7.52	15.9
Hexachlorocyclohexane (*alpha*)	0.0084	0.210	0.195	0.287	0.607
Hexachlorocyclohexane (*beta*)	0.26	6.50	6.05	8.89	18.8
Hexachlorocyclohexane (*gamma*) [Lindane]	0.341	8.53	7.93	11.7	24.7
Hexachlorocyclopentadiene	11.6	290	270	396	839
Hexachloroethane	2.33	58.3	54.2	79.6	168
Hexachlorophene	2.90	72.5	67.4	99.1	210
4,4'-Isopropylidenediphenol [Bisphenol A]	15982	399550	371582	546225	1155618
Lead	3.83	246	229	336	711
Mercury	0.025	0.625	0.581	0.854	1.81
Methoxychlor	3.0	75	70	103	217
Methyl Ethyl Ketone	9.92E+05	2.48E+07	2.31E+07	3.39E+07	7.17E+07
Methyl *tert*-butyl ether [MTBE]	10482	262050	243707	358249	757927
Nickel	1140	28500	26505	38962	82431
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1873	46825	43547	64014	135432
N-Nitrosodiethylamine	2.1	52.5	48.8	71.8	152
N-Nitroso-di-*n*-Butylamine	4.2	105	97.7	144	304
Pentachlorobenzene	0.355	8.88	8.25	12.1	25.7
Pentachlorophenol	0.29	7.25	6.74	9.91	21.0
Polychlorinated Biphenyls [PCBs]	6.4E-04	0.016	0.015	0.022	0.046
Pyridine	947	23675	22018	32366	68475
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.24	6.00	5.58	8.20	17.4
1,1,2,2-Tetrachloroethane	26.35	659	613	901	1905
Tetrachloroethylene [Tetrachloroethylene]	280	7000	6510	9570	20246
Thallium	0.23	5.75	5.35	7.86	16.6
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.011	0.275	0.256	0.376	0.795
2,4,5-TP [Silvex]	369	9225	8579	12611	26681
1,1,1-Trichloroethane	784354	19608850	18236231	26807259	56714677
1,1,2-Trichloroethane	166	4150	3860	5673	12003
Trichloroethylene [Trichloroethene]	71.9	1798	1672	2457	5199
2,4,5-Trichlorophenol	1867	46675	43408	63809	134998
TTHM [Sum of Total Trihalomethanes]	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	16.5	413	384	564	1193

Appendix B
Calculated Water Quality-Based Effluent Limits

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

Aquatic Life	***70% of Daily Avg.***	***85% of Daily Avg.***
Parameter	***(µg/L)***	***(µg/L)***
Aldrin	1.43	1.73
Aluminum (Outfalls 001, 002, 006, & 008-010)	584	710
Aluminum (Outfalls 003)	774	940
Aluminum (Outfalls 004)	733	890
Aluminum (Outfalls 005)	1207	1466
Arsenic	164	199
Cadmium	28.6	34.7
Carbaryl	1.18	1.43
Chlordane	0.031	0.038
Chlorpyrifos	0.012	0.015
Chromium (trivalent)	2275	2763
Chromium (hexavalent)	9.26	11.2
Copper	30.1	36.5
Copper (oyster waters)	N/A	N/A
Cyanide (free)	6.15	7.46
4,4'-DDT	0.0078	0.0095
Demeton	0.785	0.953
Diazinon	0.100	0.122
Dicofol [Kelthane]	35.0	42.5
Dieldrin	0.016	0.019
Diuron	124	150
Endosulfan I (*alpha*)	0.037	0.045
Endosulfan II (*beta*)	0.037	0.045
Endosulfan sulfate	0.037	0.045
Endrin	0.016	0.019
Guthion [Azinphos Methyl]	0.078	0.095
Heptachlor	0.031	0.038
Hexachlorocyclohexane (*gamma*) [Lindane]	0.176	0.213
Lead	107	130
Malathion	0.078	0.095
Mercury	1.42	1.72
Methoxychlor	0.235	0.286
Mirex	0.0078	0.0095
Nickel	103	125
Nonylphenol	7.68	9.33
Parathion (ethyl)	0.038	0.047
Pentachlorophenol	8.5	10.3
Phenanthrene	8.45	10.3
Polychlorinated Biphenyls [PCBs]	0.235	0.286
Selenium	11.8	14.3
Silver	4.93	5.98
Toxaphene	0.0016	0.0019
Tributyltin [TBT]	0.058	0.071
2,4,5 Trichlorophenol	80.2	97.4
Zinc	165	200

Appendix B
Calculated Water Quality-Based Effluent Limits

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

Human Health	***70% of Daily Avg.***	***85% of Daily Avg.***
Parameter	***(µg/L)***	***(µg/L)***
Acrylonitrile	2751	3341
Aldrin	2.74E-04	3.33E-04
Anthracene	31508	38260
Antimony	25623	31113
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	13900	16879
Benzidine	2.56	3.11
Benzo(*a*)anthracene	0.598	0.726
Benzo(*a*)pyrene	0.060	0.073
Bis(chloromethyl)ether	6.57	7.97
Bis(2-chloroethyl)ether	1025	1244
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	181	219
Bromodichloromethane [Dichlorobromomethane]	6579	7989
Bromoform [Tribromomethane]	25360	30794
Cadmium	N/A	N/A
Carbon Tetrachloride	1101	1336
Chlordane	0.060	0.073
Chlorobenzene	65481	79512
Chlorodibromomethane [Dibromochloromethane]	4378	5316
Chloroform [Trichloromethane]	184145	223605
Chromium (hexavalent)	12010	14584
Chrysene	60.3	73.2
Cresols [Methylphenols]	222519	270202
Cyanide (free)	N/A	N/A
4,4'-DDD	0.048	0.058
4,4'-DDE	0.0031	0.0038
4,4'-DDT	0.0096	0.0116
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	11316	13741
1,2-Dibromoethane [Ethylene Dibromide]	101	123
m-Dichlorobenzene [1,3-Dichlorobenzene]	14235	17285
o-Dichlorobenzene [1,2-Dichlorobenzene]	78926	95839
p-Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A
3,3'-Dichlorobenzidine	53.6	65.1
1,2-Dichloroethane	8708	10575
1,1-Dichloroethylene [1,1-Dichloroethene]	1318561	1601110
Dichloromethane [Methylene Chloride]	318982	387335
1,2-Dichloropropane	6196	7524
1,3-Dichloropropene [1,3-Dichloropropylene]	2847	3457
Dicofol [Kelthane]	7.18	8.72
Dieldrin	4.78E-04	5.81E-04
2,4-Dimethylphenol	201825	245073
Di-*n*-Butyl Phthalate	2211	2684
Dioxins/Furans [TCDD Equivalents]	1.91E-06	2.32E-06

Appendix B
Calculated Water Quality-Based Effluent Limits

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

Human Health	*70% of Daily Avg.*	*85% of Daily Avg.*
Parameter	***70%***	***85%***
Endrin	0.478	0.581
Epichlorohydrin	48160	58479
Ethylbenzene	44667	54238
Ethylene Glycol	4.02E+08	4.88E+08
Fluoride	N/A	N/A
Heptachlor	0.0024	0.0029
Heptachlor Epoxide	0.0069	0.0084
Hexachlorobenzene	0.016	0.020
Hexachlorobutadiene	5.26	6.39
Hexachlorocyclohexane (*alpha*)	0.201	0.244
Hexachlorocyclohexane (*beta*)	6.22	7.55
Hexachlorocyclohexane (*gamma*) [Lindane]	8.16	9.91
Hexachlorocyclopentadiene	278	337
Hexachloroethane	55.7	67.7
Hexachlorophene	69.4	84.2
4,4'-Isopropylidenediphenol [Bisphenol A]	382357	464291
Lead	235	286
Mercury	0.598	0.726
Methoxychlor	71.8	87.2
Methyl Ethyl Ketone	2.37E+07	2.88E+07
Methyl *tert*-butyl ether [MTBE]	250774	304511
Nickel	27274	33118
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	44810	54412
N-Nitrosodiethylamine	50.2	61.0
N-Nitroso-di-*n*-Butylamine	100	122
Pentachlorobenzene	8.49	10.3
Pentachlorophenol	6.94	8.42
Polychlorinated Biphenyls [PCBs]	0.015	0.019
Pyridine	22656	27511
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	5.74	6.97
1,1,2,2-Tetrachloroethane	630	765
Tetrachloroethylene [Tetrachloroethylene]	6699	8134
Thallium	5.50	6.68
Toluene	N/A	N/A
Toxaphene	0.263	0.320
2,4,5-TP [Silvex]	8828	10720
1,1,1-Trichloroethane	1.88E+07	2.28E+07
1,1,2-Trichloroethane	3971	4822
Trichloroethylene [Trichloroethene]	1720	2089
2,4,5-Trichlorophenol	44667	54238
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	395	479

Appendix B
Calculated Water Quality-Based Effluent Limits

Water quality-based mass equivalent limitations at Outfall 001 are calculated by using the following formula:

Mass limits = [(concentration limits ug/L)/1000] x [Flow MGD] x [8.345] = limits lbs/day

Interim Phase

Aquatic Life TEXTOX Flow is <10 MGD use 3.2 MGD

POLLUTANT	Dly Avg ug/L	Dly Max ug/L	Dly Avg lbs/day	Dly Max lbs/day
Phenanthrene	12.1	25.5	0.3231	0.6809
Aluminum, total	835	1,766	22.29	47.16
Copper, total	42.9	90.8	1.14	2.42
Zinc, total	236	499	6.302	13.32

Human Health TEXTOX Flow is <10 MGD use 3.2 MGD

POLLUTANT	Dly Avg ug/L	Dly Max ug/L	Dly Avg lbs/day	Dly Max lbs/day
Acrylonitrile	3,930	8,315	104	222
Anthracene	45,012	95,229	1,202	2,542
Benzene	19,857	42,011	530	1,121
Benzo(a)anthracene	0.854	1.81	0.0228	0.0483
Benzo(a)pyrene	0.085	0.181	0.0022	0.00483
Bis(2-ethylhexyl)phthalate	258	546	6.88	14.5
Carbon Tetrachloride	1,572	3,326	41.97	88.81
Chlorobenzene	93,544	197,906	2,497	5,284
Chloroform	263,064	556,551	7,024.861	14,862.137
Chrysene	86.1	182	2.299	4.860
Di-n-butyl Phthalate	3,158	6,681	84.33	178
1,2-Dichlorobenzene (Ortho)	112,752	238,542	3,010	6,370
1,3-Dichlorobenzene (Meta)	20,336	43,023	543	1,148
1,4-Dichlorobenzene (Para)	N/A	N/A	N/A	N/A
1,2-Dichloroethane	12,441	26,320	332	702
1,1-Dichloroethylene	1,883,659	3,985,156	50,301	106,419
1,2-Dichloropropane	8,852	18,728	236	500
1,3-Dichloropropene (1,3-Dichloropropylene)	4,067	8,605	108	229
2,4-Dimethylphenol	288,321	609,986	7,699	16,289
Ethylbenzene	63,809	134,998	1,703	3,604

Appendix B
Calculated Water Quality-Based Effluent Limits

Interim Phase

POLLUTANT	Dly Avg ug/L	Dly Max ug/L	Dly Avg lbs/day	Dly Max lbs/day
Hexachlorobenzene	0.023	0.049	0.00061	0.00131
Hexachlorobutadiene	7.52	15.9	0.2008	0.4245
Hexachloroethane	79.6	168	2.125	4.486
Dichloromethane (Methylene Chloride)	455,689	964,076	12,168	25,744
Nitrobenzene	64,014	135,432	1,709	3,616
Tetrachloroethylene	9,570	20,246	255	540
Toluene	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane	26,807,259	56,714,677	715,861	1,514,508
1,1,2-Trichloroethane	5,673	12,003	151	320
Trichloroethylene	2,457	5,199	65.61	138
Vinyl Chloride	564	1,193	15.06	31.85

Final Phase

Aquatic Life TEXTOX Flow is <10 MGD use 3.8 MGD

POLLUTANT	Dly Avg ug/L	Dly Max ug/L	Dly Avg lbs/day	Dly Max lbs/day
Phenanthrene	12.1	25.5	0.383	0.808
Aluminum, total	835	1,766	26.4	56.0
Copper, total	42.9	90.8	1.36	2.87
Zinc, total	236	499	7.48	15.8

Human Health TEXTOX Flow is <10 MGD use 3.8 MGD

POLLUTANT	Dly Avg ug/L	Dly Max ug/L	Dly Avg lbs/day	Dly Max lbs/day
Acrylonitrile	3,930	8,315	124	263
Anthracene	45,012	95,229	1,427	3,019
Benzene	19,857	42,011	629	1,332
Benzo(a)anthracene	0.854	1.81	0.0270	0.0574
Benzo(a)pyrene	0.085	0.181	0.0027	0.00574
Bis(2-ethylhexyl)phthalate	258	546	8.18	17.3
Carbon Tetrachloride	1,572	3,326	49.8	105

Appendix B
Calculated Water Quality-Based Effluent Limits

Final Phase

POLLUTANT	Dly Avg ug/L	Dly Max ug/L	Dly Avg lbs/day	Dly Max lbs/day
Chlorobenzene	93,544	197,906	2,966	6,275
Chloroform	263,064	556,551	8,342	17,648
Chrysene	86.1	182	2.73	5.77
Di-n-butyl Phthalate	3,158	6,681	100	211
1,2-Dichlorobenzene (Ortho)	112,752	238,542	3,575	7,564
1,3-Dichlorobenzene (Meta)	20,336	43,023	644	1,364
1,4-Dichlorobenzene (Para)	N/A	N/A	N/A	N/A
1,2-Dichloroethane	12,441	26,320	394	834
1,1-Dichloroethylene	1,883,659	3,985,156	59,732	126,373
1,2-Dichloropropane	8,852	18,728	280	593
1,3-Dichloropropene (1,3-Dichloropropylene)	4,067	8,605	128	272
2,4-Dimethylphenol	288,321	609,986	9,142	19,343
Ethylbenzene	63,809	134,998	2,023	4,280
Hexachlorobenzene	0.023	0.049	0.00073	0.00155
Hexachlorobutadiene	7.52	15.9	0.238	0.504
Hexachloroethane	79.6	168	2.52	5.32
Dichloromethane (Methylene Chloride)	455,689	964,076	14,450	30,571
Nitrobenzene	64,014	135,432	5,029	4,294
Tetrachloroethylene	9,570	20,246	303	642
Toluene	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane	26,807,259	56,714,677	850,084	1,798,479
1,1,2-Trichloroethane	5,673	12,003	179	380
Trichloroethylene	2,457	5,199	77.9	164
Vinyl Chloride	564	1,193	17.8	37.8

Appendix B
Calculated Water Quality-Based Effluent Limits

Outfall 007: Aquatic life and human health screening is not generally applicable to predominately stormwater discharges. TPDES stormwater permits normally do not contain water quality-based effluent limitations. As stated in 30 TAC § 307.8(e), controls on the quality of permitted stormwater discharges are largely based on implementing best management practices and technology-based limits. Stormwater quality is compared to the allowable concentrations of metals found in 30 TAC § 319.22 (Quality Levels – Inland Waters) and 30 TAC § 319.23 (Quality Levels – Tidal Waters) to ensure that those concentrations are not exceeded, as detailed in the following tables:

30 TAC § 319.22 Quality Levels – Inland Waters (Stormwater Metal Limitations)

Parameter	Daily Average mg/L	Daily Maximum mg/L	MAL mg/L
Arsenic, total	0.1	0.2	0.0005
Barium, total	1.0	2.0	0.003
Cadmium, total	0.05	0.1	0.001
Chromium, total	0.5	1.0	0.003
Copper, total	0.5	1.0	0.002
Lead, total	0.5	1.0	0.0005
Manganese, total	1.0	2.0	0.0005
Mercury, total	0.005	0.005	0.000005
Nickel, total	1.0	2.0	0.002
Selenium, total	0.05	0.1	0.005
Silver, total	0.05	0.1	0.0005
Zinc, total	1.0	2.0	0.005

30 TAC § 319.23 Quality Levels – Tidal Waters (Stormwater Metal Limitations)

Parameter	Daily Average mg/L	Daily Maximum mg/L	MAL mg/L
Arsenic, total	0.1	0.2	0.0005
Barium, total	1.0	2.0	0.003
Cadmium, total	0.1	0.2	0.001
Chromium, total	0.5	1.0	0.003
Copper, total	0.5	1.0	0.002
Lead, total	0.5	1.0	0.0005
Manganese, total	1.0	2.0	0.0005
Mercury, total	0.005	0.005	0.000005
Nickel, total	1.0	2.0	0.002
Selenium, total	0.1	0.2	0.005
Silver, total	0.05	0.1	0.0005
Zinc, total	1.0	2.0	0.005

Appendix C
TDS, Chloride, and Sulfate Screening Calculations

Intermittent Stream within 3 miles of a wide tidal river:

The following procedures are used to evaluate TDS, chloride, and sulfate loadings in discharges to an intermittent stream within 3 miles of a lake considered part of a wide tidal river. Screening procedures and effluent limitations are calculated using the methodology in the document "Procedures to Implement the Texas Surface Water Quality Standards" (IPs; June 2010, as approved by EPA) and criteria in the Texas Surface Water Quality Standards (30 TAC § 307, as approved by EPA).

TCEQ Implementation Procedures specify the use of two screening procedures for intermittent streams within 3 miles of a wide tidal river. Since discharge enters Bear Lake, which is part of the San Jacinto River Tidal, a classified segment, the lake may also be evaluated, if needed. Segment No. 1001 is a classified saltwater segment. In order to evaluate the intermittent stream, Segment No. 1016 values will be used. Note discharges to marine waters are evaluated on a case-by-case basis.

Segment Number: **Marine Segment No. 1001 and Freshwater Segment No. 1016**

Enter values needed for screening:			**Data Source (edit if different)**
TDS CC - segment criterion - TDS	**1000**	mg/L	2014 TSWQS, Appendix A
Cl CC - segment criterion - chloride	**150**	mg/L	2014 TSWQS, Appendix A
SO4 CC - segment criterion - sulfate	**150**	mg/L	2014 TSWQS, Appendix A
TDS CE - average effluent concentration - TDS	**2585**	mg/L	Permit application
Cl CE - average effluent concentration - chloride	**240**	mg/L	Permit application
SO4 CE - average effluent concentration - sulfate	**1300**	mg/L	Permit application

TDS Screening

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

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

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

C_{TDS} = 5000 mg/L

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

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

Appendix C
TDS, Chloride, and Sulfate Screening Calculations

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

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

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

Values needed for Screening			Data Source
TDS CE - average effluent TDS concentration	2585	mg/L	Permit application
TDS Csv - TDS screening value	**5000**	mg/L	Determined above

No control measures needed if:	2585	≤	5000
Consider control measures if:	2585	>	5000

No control measures needed for TDS

Chloride and sulfate are not typically screened for discharges to intermittent streams because the TDS screening should be adequately protective. However, for situations where TDS screening alone may not provide adequate protection, similar screening may be performed for chloride and sulfate, per the June 2010 IPs, page 177.

Chloride Screening

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

$$CL\ C_{SV} = (TDS\ C_{SV} / TDS\ CC) * CL\ CC$$

Where:	
	CL C_{SV} = Chloride screening value
	TDS Csv = TDS screening value
	TDS CC = TDS criterion at the first downstream segment
	CL CC = Chloride criterion at the first downstream segment

TDS, Chloride, and Sulfate Screening Calculations

CL Csv = (5000 mg/L / 1000 mg/L) * 150 mg/L = 750 mg/L

Values needed for Screening			Data Source
CL CE - average effluent chloride concentration	240	mg/L	Permit application
CL Csv - Chloride screening value	**750**	mg/L	Determined above

No control measures needed if:	240	≤	750
Consider control measures if:	240	>	750

No control measures needed for Chloride

Sulfate Screening

The sulfate screening value is determined by first calculating an initial sulfate concentration, SO4, as follows:

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

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

SO4 Csv = (5000 mg/L / 1000 mg/L) * 150 mg/L = 750 mg/L

Values needed for Screening			Data Source
SO4 CE - average effluent sulfate concentration	1300	mg/L	Permit application
SO4 Csv - Sulfate screening value	**750**	mg/L	Determined above

No control measures needed if:	1300	≤	750
Consider control measures if:	1300	>	750

No control measures needed for Chloride

Possible Control Measures needed for Sulfate – Evaluate discharge to a wide tidal river, the first receiving water downstream of the intermittent stream. Note the San Jacinto River Tidal is tidally influenced.

Please note the following screening procedure is not specifically outlined in the June 2010 IPs, but is applied by inference to further evaluate sulfate loadings in discharges to a bay or wide tidal river (June 2010 IPs, page 180):

TDS, Chloride, and Sulfate Screening Calculations

Bay or Wide Tidal River

The following procedure may be used to evaluate sulfate loadings in discharges to a wide tidal river. Compare the effluent sulfate concentration to the segment median values. Sources for determining the median concentrations include: (1) the tables in Appendix D of the Procedures to Implement the TSWQS (IPs); (2) the most recent five years of data in the Surface Water Quality Monitoring Information System (SWQMIS) database; or (3) other available data. The absence of numerical criteria will not preclude evaluations and regulatory actions to protect estuarine salinity.

Further sulfate screening may be performed as follows:

$$SO4\ C_{SV} = (TDS\ C_{SV} / TDS\ C_A) * SO4\ C_A = 750\ mg/L$$

Where:	SO4 CC = No segment criterion set for Segment No. 1001 TDS Csv = TDS screening value TDS CA = Median ambient concentration from Appendix D = 940 mg/L SO4 CA = Median ambient concentration from Appendix D = 246 mg/L SO4 CE = average effluent sulfate concentration = 1300 mg/L

$$SO4\ C_{SV} = (5{,}000\ mg/L / 940\ mg/L) * 246\ mg/L = 1{,}308.5\ mg/L$$

Using the less protective TDS C_{SV} for intermittent streams within 3 miles of tidal waters of 6,000 mg/L.

$$SO4\ C_{SV} = (6{,}000\ mg/L / 940\ mg/L) * 246\ mg/L = 1{,}570\ mg/L$$

No control measures needed if C_E. ≤. SO4 C_{SV}:	1,300 mg/L ≤ 1,308 mg/L or 1,570 mg/L
Consider control measures if C_E > SO4 C_{SV}:	1,300 mg/L > 1,308 mg/L or 1,570 mg/L

No Control Measures needed for Sulfate.

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

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

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		lbs/day	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*
001 Interim Phase	Flow, MGD	3.2	7.2			**3.2**	**7.2**
	$CBOD_5$	539	1,327	414 (*15.5 mg/L= WLE-1R*)		**414**	**1,016**
	Ammonia Nitrogen (NH_3-N)			46 (*1.72 mg/L= WLE-1R*)		**46**	**183**
	Total Suspended Solids (TSS)	1,015	3,328			**1,015**	**3,328**
	Total Organic Carbon (TOC)	Report	4,581			Report	**4,581**
	Oil and grease	-	399			**N/A**	**399**
	Chromium, Total	1.21	3.02			**1.21**	**3.02**
	Copper, Total	1.58	3.69	**1.14** (*0.0429 mg/L*)	**2.42** (*0.0908 mg/L*)	0.638	1.35
	Acenaphthene	0.213	0.571			**0.213**	**0.571**
	Acenaphthylene	0.213	0.571			**0.213**	**0.571**
	Acrylonitrile	0.929	2.34	104	222	**0.929**	**2.34**
	Anthracene	0.213	0.571	1,202	2,542	**0.213**	**0.571**
	Benzene	0.358	1.31	530	1,121	**0.358**	**1.31**
	Benzo(a)anthracene	0.213	0.571	**0.0228**	**0.0483**	0.213	0.571
	3,4-Benzofluoranthene	0.222	0.590			**0.222**	**0.590**
	Benzo(k)fluoranthene	0.213	0.571			**0.213**	**0.571**
	Benzo(a)pyrene	0.222	0.590	**0.0022**	**0.0048**	0.222	0.590
	Bis(2-ethylhexyl)phthalate	0.997	2.70	6.88	14.5	**0.997**	**2.70**
	Carbon Tetrachloride	0.174	0.368	41.9	88.8	**0.174**	**0.368**
	Chlorobenzene	0.145	0.271	2,497	5,284	**0.145**	**0.271**

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

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		lbs/day	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*
001 Interim Phase	Chloroethane	1.00	2.59			**1.00**	**2.59**
	Chloroform	0.560	1.22	7,024	14,862	**0.560**	**1.22**
	2-Chlorophenol	0.300	0.949			**0.300**	**0.949**
	Chrysene	0.213	0.571	2.29	4.86	**0.213**	**0.571**
	Di-n-butyl Phthalate	0.261	0.552	84.3	178	**0.261**	**0.552**
	1,2-Dichlorobenzene (ortho)	0.745	1.57	3,010	6,370	**0.745**	**1.57**
	1,3-Dichlorobenzene (meta)	0.300	0.426	543	1,148	**0.300**	**0.426**
	1,4-Dichlorobenzene (para)	0.145	0.271			**0.145**	**0.271**
	1,1-Dichloroethane	0.213	0.571			**0.213**	**0.571**
	1,2-Dichloroethane	0.658	2.04	332	702	**0.658**	**2.04**
	1,1-Dichloroethylene	0.155	0.242	50,301	106,419	**0.155**	**0.242**
	1,2-trans-Dichloroethylene	0.203	0.523			**0.203**	**0.523**
	2,4-Dichlorophenol	0.377	1.08			**0.377**	**1.08**
	1,2-Dichloropropane	1.48	2.22	236	500	**1.48**	**2.22**
	1,3-Dichloropropylene	0.280	0.426	108	229	**0.280**	**0.426**
	Diethyl Phthalate	0.784	1.96			**0.784**	**1.96**
	2,4-Dimethylphenol	0.174	0.348	7,699	16,289	**0.174**	**0.348**
	Dimethyl Phthalate	0.184	0.455			**0.184**	**0.455**
	4,6-Dinitro-o-cresol	0.755	2.68			**0.755**	**2.68**
	2,4-Dinitrophenol	0.687	1.19			**0.687**	**1.19**
	2,4-Dinitrotoluene	1.09	2.76			**1.09**	**2.76**
	2,6-Dinitrotoluene	2.46	6.20			**2.46**	**6.20**
	Ethylbenzene	0.310	1.04	1,703	3,604	**0.310**	**1.04**
	Fluoranthene	0.242	0.658			**0.242**	**0.658**
	Fluorene	0.213	0.571			**0.213**	**0.571**
	Hexachlorobenzene	0.145	0.271	**0.00061**	**0.00131**	0.00401	0.00881
	Hexachlorobutadiene	0.193	0.474	0.200	**0.424**	**0.193**	0.474

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

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		lbs/day	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*
001 Interim Phase	Hexachloroethane	0.203	0.523	2.12	4.48	**0.203**	**0.523**
	Methyl Chloride	0.833	1.84			**0.833**	**1.84**
	Methylene Chloride	0.387	0.862	12,168	25,744	**0.387**	**0.862**
	Naphthalene	0.213	0.571			**0.213**	**0.571**
	Nitrobenzene	0.261	0.658	1,709	3,616	**0.261**	**0.658**
	2-Nitrophenol	0.397	0.668			**0.397**	**0.668**
	4-Nitrophenol	0.697	1.20			**0.697**	**1.20**
	Phenanthrene	0.213	0.571	0.323	0.680	**0.213**	**0.571**
	Phenol	0.145	0.251			**0.145**	**0.251**
	Pyrene	0.242	0.649			**0.242**	**0.649**
	Tetrachloroethylene	0.213	0.542	255	540	**0.213**	**0.542**
	Toluene	0.251	0.774			**0.251**	**0.774**
	1,2,4-Trichlorobenzene	0.658	1.35			**0.658**	**1.35**
	1,1,1-Trichloroethane	0.203	0.523	715,861	1,514,508	**0.203**	**0.523**
	1,1,2-Trichloroethane	0.203	0.523	151	320	**0.203**	**0.523**
	Trichloroethylene	0.203	0.523	65.6	138	**0.203**	**0.523**
	Vinyl Chloride	1.00	2.59	15.0	31.8	**1.00**	**2.59**
	Xylenes, Total					2.14	4.27
	Dissolved Oxygen (DO), minimum			4.0 min (*WLE-1R*)	N/A	**4.0 min.**	N/A
	pH (standard units)	6.0 SU min.	9.0 SU	6.5 SU [1] min.	9.0 SU [1]	**6.0 SU min.**	**9.0 SU**

[1] Segment No. 1001 criteria.

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

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		lbs/day	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*
001 Final Phase	Flow, MGD	3.8	7.2			**3.8**	**7.2**
	$CBOD_5$	703	1,769	703 (*22.1 mg/L= WLE-1R*)		**703**	**1,725**
	Ammonia Nitrogen (NH_3-N)			46 (*1.45 mg/L= WLE-1R*)		**46**	**183**
	Total Suspended Solids (TSS)	1,254	4,105			**1,254**	**4,105**
	Total Organic Carbon (TOC)	Report	5,440			**Report**	**5,440**
	Oil and grease	-	474			**N/A**	**474**
	Chromium, Total	1.21	3.02			**1.21**	**3.02**
	Copper, Total	1.58	3.69	**1.36** (*0.0239 mg/L*)	**2.87** (*0.051 mg/L*)	0.757	1.60
	Acenaphthene	0.322	0.864			**0.322**	**0.864**
	Acenaphthylene	0.322	0.864			**0.322**	**0.864**
	Acrylonitrile	1.40	3.54	124	263	**1.40**	**3.54**
	Anthracene	0.322	0.864	1,427	3,019	**0.322**	**0.864**
	Benzene	0.541	1.99	629	1,332	**0.541**	**1.99**
	Benzo(a)anthracene	0.322	0.864	**0.0270**	**0.0574**	0.322	0.756
	3,4-Benzofluoranthene	0.336	0.893			**0.336**	**0.893**
	Benzo(k)fluoranthene	0.322	0.864			**0.322**	**0.864**
	Benzo(a)pyrene	0.336	0.893	**0.0027**	**0.0057**	0.336	0.756
	Bis(2-ethylhexyl)phthalate	1.50	4.08	8.18	17.3	**1.50**	**4.08**
	Carbon Tetrachloride	0.263	0.556	49.8	105	**0.263**	**0.556**
	Chlorobenzene	0.219	0.410	2,966	6,275	**0.219**	**0.410**
	Chloroethane	1.52	3.92			**1.52**	**3.92**
	Chloroform	0.665	1.45	8,342	17,648	**0.665**	**1.45**
	2-Chlorophenol	0.454	1.43			**0.454**	**1.43**

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

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		lbs/day	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*
001 Final Phase	Chrysene	0.322	0.864	2.73	5.77	**0.322**	**0.864**
	Di-n-butyl Phthalate	0.395	0.834	100	211	**0.395**	**0.834**
	1,2-Dichlorobenzene (ortho)	1.12	2.38	3,575	7,564	**1.12**	**2.38**
	1,3-Dichlorobenzene (meta)	0.454	0.644	644	1,364	**0.454**	**0.644**
	1,4-Dichlorobenzene (para)	0.219	0.410			**0.219**	**0.410**
	1,1-Dichloroethane	0.322	0.864			**0.322**	**0.864**
	1,2-Dichloroethane	0.995	3.09	394	834	**0.995**	**3.09**
	1,1-Dichloroethylene	0.234	0.366	59,732	126,373	**0.234**	**0.366**
	1,2-trans-Dichloroethylene	0.307	0.790			**0.307**	**0.790**
	2,4-Dichlorophenol	0.571	1.64			**0.571**	**1.64**
	1,2-Dichloropropane	2.24	3.36	280	593	**2.24**	**3.36**
	1,3-Dichloropropylene	0.424	0.644	128	272	**0.424**	**0.644**
	Diethyl Phthalate	1.18	2.97			**1.18**	**2.97**
	2,4-Dimethylphenol	0.263	0.527	9,142	19,343	**0.263**	**0.527**
	Dimethyl Phthalate	0.278	0.688			**0.278**	**0.688**
	4,6-Dinitro-o-cresol	1.14	4.05			**1.14**	**4.05**
	2,4-Dinitrophenol	1.03	1.80			**1.03**	**1.80**
	2,4-Dinitrotoluene	1.65	4.17			**1.65**	**4.17**
	2,6-Dinitrotoluene	3.73	9.38			**3.73**	**9.38**
	Ethylbenzene	0.468	1.58	2,023	4,280	**0.468**	**1.58**
	Fluoranthene	0.366	0.995			**0.366**	**0.995**
	Fluorene	0.322	0.864			**0.322**	**0.864**
	Hexachlorobenzene	0.219	0.410	**0.00073**	**0.00155**	0.00475	0.01046
	Hexachlorobutadiene	0.292	0.717	**0.238**	**0.504**	0.292	0.717
	Hexachloroethane	0.307	0.790	2.52	5.32	**0.307**	**0.790**
	Methyl Chloride	1.25	2.78			**1.25**	**2.78**
	Methylene Chloride	0.585	1.30	14,450	30,571	**0.585**	**1.30**
	Naphthalene	0.322	0.864			**0.322**	**0.864**

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

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		lbs/day	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*	*lbs/day*
001 Final Phase	Nitrobenzene	0.395	0.995	5,029	4,294	**0.395**	**0.995**
	2-Nitrophenol	0.600	1.01			**0.600**	**1.01**
	4-Nitrophenol	1.05	1.81			**1.05**	**1.81**
	Phenanthrene	0.322	0.864	0.383	**0.808**	**0.322**	0.810
	Phenol	0.219	0.380			**0.219**	**0.380**
	Pyrene	0.366	0.981			**0.366**	**0.981**
	Tetrachloroethylene	0.322	0.820	303	642	**0.322**	**0.820**
	Toluene	0.380	1.17			**0.380**	**1.17**
	1,2,4-Trichlorobenzene	0.995	2.05			**0.995**	**2.05**
	1,1,1-Trichloroethane	0.307	0.790	850,084	1,798,479	**0.307**	**0.790**
	1,1,2-Trichloroethane	0.307	0.790	179	380	**0.307**	**0.790**
	Trichloroethylene	0.307	0.790	77.9	164	**0.307**	**0.790**
	Vinyl Chloride	1.52	3.92	17.8	37.8	**1.52**	**3.92**
	Xylenes, Total					2.14	4.27
	Dissolved Oxygen (DO), minimum			4.0 min (*WLE-1R*)	N/A	**4.0 min.**	N/A
	pH (standard units)	6.0 SU min.	9.0 SU	6.5 SU [1] min.	9.0 SU [1]	**6.0 SU min.**	**9.0 SU**

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		mg/L	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
002	Flow MGD	Report	Report			**Report**	**Report**
	TOC	N/A	75			**N/A**	**75**
	Oil and grease	N/A	15			**N/A**	**15**
	Total Aluminum			**-**	**1.766** [3]	**N/A**	**Report** [2]
	pH (standard units)	6.0 SU min.	**9.5 SU**	6.5 SU [1] min.	9.0 SU [1]	**6.0 SU min.**	9.0 SU

[2] Beginning upon the date of permit issuance and lasting three-years from the date of permit issuance.

[3] Beginning three years from the permit issuance date and lasting until the date of permit expiration.

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

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		mg/L	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
003	Flow MGD	Report	Report			**Report**	**Report**
	TOC	N/A	75			**N/A**	**75**
	Oil and grease	N/A	15			**N/A**	**15**
	Total Aluminum			**-**	**2.339** [3]	**N/A**	**Report** [2]
	pH (standard units)	6.0 SU min.	9.0 SU	6.5 SU [1] min.	9.0 SU [1]	**6.0 SU min.**	**9.0 SU**

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		mg/L	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
004	Flow MGD	Report	Report			**Report**	**Report**
	TOC	N/A	75			**N/A**	**75**
	Oil and grease	N/A	15			**N/A**	**15**
	Total Aluminum			**-**	**2.216** [3]	**N/A**	**Report** [2]
	pH (standard units)	6.0 SU min.	9.0 SU	6.5 SU [1] min.	9.0 SU [1]	**6.0 SU min.**	**9.0 SU**

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		mg/L	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
005	Flow MGD	Report	Report			**Report**	**Report**
	TOC	N/A	75			**N/A**	**75**
	Oil and grease	N/A	15			**N/A**	**15**
	Total Aluminum			**-**	**3.649** [3]	**N/A**	**Report** [2]
	Total Zinc			**-**	**Report** [4]	**N/A**	**Report** [4]
	pH (standard units)	6.0 SU min.	9.0 SU	6.5 SU [1] min.	9.0 SU [1]	**6.0 SU min.**	**9.0 SU**

[2] Beginning upon the date of permit issuance and lasting three-years from the date of permit issuance.

[3] Beginning three years from the permit issuance date and lasting until the date of permit expiration.

[4] Beginning upon the date of permit issuance and lasting eighteen months from the date of permit issuance.

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

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		mg/L	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
006	Flow MGD	Report	Report			**Report**	**Report**
	TOC	N/A	75			**N/A**	**75**
	Oil and grease	N/A	15			**N/A**	**15**
	Total Aluminum			**-**	**1.766** [3]	**N/A**	**Report** [2]
	pH (standard units)	6.0 SU min.	9.0 SU	6.5 SU [1] min.	9.0 SU [1]	**6.0 SU min.**	**9.0 SU**

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		mg/L	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
007	Flow MGD	Report	Report			**Report**	**Report**
	TSS	N/A	100			**N/A**	**75**
	Oil and grease	N/A	15			**N/A**	**15**
	pH (standard units)	6.0 SU min.	9.0 SU	6.5 SU [1] min.	9.0 SU [1]	**6.0 SU min.**	**9.0 SU**

Outfall	*Pollutant*	*Technology-Based*		*Water Quality-Based*		*Existing Permit*	
		Daily Avg	*Daily Max*	*Daily Avg*	*Daily Max*	*Daily Avg*	*Daily Max*
		mg/L	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
008-010	Flow MGD	Report	Report			**Report**	**Report**
	TOC	N/A	75			**N/A**	**75**
	Oil and grease	N/A	15			**N/A**	**15**
	pH (standard units)	6.0 SU min.	9.0 SU	6.5 SU [1] min.	9.0 SU [1]	**6.0 SU min.**	**9.0 SU**

[2] Beginning upon the date of permit issuance and lasting three-years from the date of permit issuance.
[3] Beginning three years from the permit issuance date and lasting until the date of permit expiration.

TPDES PERMIT NO. WQ0002927000
[For TCEQ office use only -
EPA I.D. No. TX0069493]

This major amendment replaces TPDES Permit No. WQ0002927000, issued on January 11, 2017.

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

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

Lyondell Chemical Company

whose mailing address is

P.O. Box 777
Channelview, Texas 77530

is authorized to treat and discharge wastes from the Lyondell Chemical Channelview facility, which manufactures synthetic organic chemicals (SIC 2865 and 2869)

located at 2502 Sheldon Road in the City of Channelview, Harris County, Texas 77530

via Outfalls 001-006, and 008 to Harris County Flood Control District (HCFCD) ditch G103-02-03; via Outfall 009 to an unnamed ditch, thence to Bear Lake, which is considered to be part of the San Jacinto River Tidal; via Outfall 010 to a Wallisville roadside ditch; thence all to San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin

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

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

ISSUED DATE:

For the Commission

1. During the period beginning upon the date of issuance and lasting through the completion of the new PO/TBA Process Unit, the permittee is authorized to discharge process wastewater, Barge Dock wastewater (Tanks 6901 and 6902), hydrostatic test water, laboratory wastewater, cooling tower and boiler blowdown (including maintenance wastewaters), loading area and process area washdown, tank farm wastewater, heat exchanger blasting slab wastewater, water treatment wastes[1], maintenance wastewater, steam condensate and blowdown, utility wastewater[2], groundwater from monitoring and recovery wells (onsite and offsite), construction stormwater[3], and stormwater (including, but not limited to, runoff from production units, landfarm runoff and supernate (from wastewater treatment solids), and stormwater from the adjacent cogeneration facility) subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 3.2 million gallons per day (MGD). The daily maximum flow of effluent shall not exceed 7.2 MGD.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	lbs/day	lbs/day	mg/L	Measurement Frequency	Sample Type
Flow	3.2 MGD	7.2 MGD	N/A	1/Operating Shift	Instantaneous
Carbonaceous Biochemical Oxygen Demand, 5-Day ($CBOD_5$)	414	1,016	76.0	2/Week	Composite
Ammonia - Nitrogen (NH_3-N)	46	183	13.7	2/Week	Composite
Total Suspended Solids (TSS)	1,015	3,328	249	2/Week	Composite
Total Organic Carbon (TOC)	Report	4,581	343	2/Week	Composite
Dissolved Oxygen, minimum	4.0 mg/L min.	N/A	4.0	1/Month	Grab
Oil and Grease	N/A	399	29.8	Quarterly	Grab
Chromium, total	1.21	3.02	0.226	1/Year	Composite
Copper, total	1.14	2.42	0.182	1/Year	Composite
Acenaphthene	0.213	0.571	0.0428	1/Year	Composite
Acenaphthylene	0.213	0.571	0.0428	1/Year	Composite
Acrylonitrile	0.929	2.34	0.175	1/Year	Composite
Anthracene	0.213	0.571	0.0428	1/Year	Composite
Benzene	0.358	1.31	0.0987	1/Year	Composite
Benzo(a)anthracene	0.0228	0.0483	0.005	1/Year	Composite
3,4-Benzofluoranthene	0.222	0.590	0.0443	1/Year	Composite
Benzo(k)fluoranthene	0.213	0.571	0.0428	1/Year	Composite
Benzo(a)pyrene	0.0022	0.0048	0.005	1/Year	Composite
Bis(2-Ethylhexyl) Phthalate	0.997	2.70	0.202	1/Year	Composite
Carbon Tetrachloride	0.174	0.368	0.0276	1/Year	Composite
Chlorobenzene	0.145	0.271	0.0203	1/Year	Composite

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	lbs/day	lbs/day	mg/L	Measurement Frequency	Sample Type
Chloroethane	1.00	2.59	0.194	1/Year	Composite
Chloroform	0.560	1.22	0.0914	1/Year	Composite
2-Chlorophenol	0.300	0.949	0.0711	1/Year	Composite
Chrysene	0.213	0.571	0.0428	1/Year	Composite
Di-n-butyl Phthalate	0.261	0.552	0.0413	1/Year	Composite
1,2-Dichlorobenzene (ortho)	0.745	1.57	0.118	1/Year	Composite
1,3-Dichlorobenzene (meta)	0.300	0.426	0.0319	1/Year	Composite
1,4-Dichlorobenzene (para)	0.145	0.271	0.0203	1/Year	Composite
1,1-Dichloroethane	0.213	0.571	0.0428	1/Year	Composite
1,2-Dichloroethane	0.658	2.04	0.153	1/Year	Composite
1,1-Dichloroethylene	0.155	0.242	0.0181	1/Year	Composite
1,2-trans-Dichloroethylene	0.203	0.523	0.0392	1/Year	Composite
2,4-Dichlorophenol	0.377	1.08	0.0812	1/Year	Composite
1,2-Dichloropropane	1.48	2.22	0.166	1/Year	Composite
1,3-Dichloropropylene	0.280	0.426	0.0319	1/Year	Composite
Diethyl Phthalate	0.784	1.96	0.147	1/Year	Composite
2,4-Dimethylphenol	0.174	0.348	0.0261	1/Year	Composite
Dimethyl Phthalate	0.184	0.455	0.0341	1/Year	Composite
4,6-Dinitro-o-cresol	0.755	2.68	0.200	1/Year	Composite
2,4-Dinitrophenol	0.687	1.19	0.0892	1/Year	Composite
2,4-Dinitrotoluene	1.09	2.76	0.206	1/Year	Composite
2,6-Dinitrotoluene	2.46	6.20	0.465	1/Year	Composite
Ethylbenzene	0.310	1.04	0.0783	1/Year	Composite
Fluoranthene	0.242	0.658	0.0493	1/Year	Composite
Fluorene	0.213	0.571	0.0428	1/Year	Composite
Hexachlorobenzene	0.00061	0.00131	0.005	1/Year	Composite

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	lbs/day	lbs/day	mg/L	Measurement Frequency	Sample Type
Hexachlorobutadiene	0.193	0.424	0.0318	1/Year	Composite
Hexachloroethane	0.203	0.523	0.0392	1/Year	Composite
Methyl Chloride	0.833	1.84	0.137	1/Year	Composite
Methylene Chloride	0.387	0.862	0.0646	1/ Year	Composite
Naphthalene	0.213	0.571	0.0428	1/Year	Composite
Nitrobenzene	0.261	0.658	0.0493	1/Year	Composite
2-Nitrophenol	0.397	0.668	0.0501	1/Year	Composite
4-Nitrophenol	0.697	1.20	0.0900	1/Year	Composite
Phenanthrene	0.213	0.571	0.0428	1/Year	Composite
Phenol	0.145	0.251	0.0189	1/Year	Composite
Pyrene	0.242	0.649	0.0486	1/Year	Composite
Tetrachloroethylene	0.213	0.542	0.0406	1/Year	Composite
Toluene	0.251	0.774	0.0580	1/Year	Composite
1,2,4-Trichlorobenzene	0.658	1.35	0.101	1/Year	Composite
1,1,1-Trichloroethane	0.203	0.523	0.0392	1/Year	Composite
1,1,2-Trichloroethane	0.203	0.523	0.0392	1/Year	Composite
Trichloroethylene	0.203	0.523	0.0392	1/Year	Composite
Vinyl Chloride	1.00	2.59	0.194	1/Year	Composite

[1] See Other Requirement No. 14.
[2] See Other Requirement No. 13.
[3] See Other Requirement No. 18.

2. The pH shall not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored continuously (see Other Requirement No. 7).
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: Outfall 001, at the point of discharge from the effluent box prior to discharge to the HCFCD ditch G103-02-03.

1. During the period beginning upon the completion of the new PO/TBA Process Unit and lasting through the date of expiration, the permittee is authorized to discharge process wastewater, Barge Dock wastewater (Tanks 6901 and 6902), hydrostatic test water, laboratory wastewater, cooling tower and boiler blowdown (including maintenance wastewaters), loading area and process area washdown, tank farm wastewater, heat exchanger blasting slab wastewater, water treatment wastes[1], maintenance wastewater, steam condensate and blowdown, utility wastewater[2], groundwater from monitoring and recovery wells (onsite and offsite), construction stormwater[3], and stormwater (including, but not limited to, runoff from production units, landfarm runoff and supernate (from wastewater treatment solids), and stormwater from the adjacent cogeneration facility) subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 3.8 million gallons per day (MGD). The daily maximum flow of effluent shall not exceed 7.2 MGD.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	lbs/day	lbs/day	mg/L	Measurement Frequency	Sample Type
Flow	3.8 MGD	7.2 MGD	N/A	1/Operating Shift	Instantaneous
Carbonaceous Biochemical Oxygen Demand, 5-Day ($CBOD_5$)	703	1,725	108	2/Week	Composite
Ammonia - Nitrogen (NH_3-N)	46	183	11.5	2/Week	Composite
Total Suspended Solids (TSS)	1,254	4,105	258	2/Week	Composite
Total Organic Carbon (TOC)	Report	5,440	343	2/Week	Composite
Dissolved Oxygen, minimum	4.0 mg/L min.	N/A	4.0	1/Month	Grab
Oil and Grease	N/A	474	29.8	Quarterly	Grab
Chromium, total	1.21	3.02	0.191	1/Year	Composite
Copper, total	1.36	2.87	0.182	1/Year	Composite
Acenaphthene	0.322	0.864	0.0545	1/Year	Composite
Acenaphthylene	0.322	0.864	0.0545	1/Year	Composite
Acrylonitrile	1.40	3.54	0.223	1/Year	Composite
Anthracene	0.322	0.864	0.0545	1/Year	Composite
Benzene	0.541	1.99	0.125	1/Year	Composite
Benzo(a)anthracene	0.0270	0.0574	0.005	1/Year	Composite
3,4-Benzofluoranthene	0.336	0.893	0.0563	1/Year	Composite
Benzo(k)fluoranthene	0.322	0.864	0.0545	1/Year	Composite
Benzo(a)pyrene	0.0027	0.0057	0.005	1/Year	Composite
Bis(2-Ethylhexyl) Phthalate	1.50	4.08	0.257	1/Year	Composite
Carbon Tetrachloride	0.263	0.556	0.0351	1/Year	Composite
Chlorobenzene	0.219	0.410	0.0259	1/Year	Composite

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	lbs/day	lbs/day	mg/L	Measurement Frequency	Sample Type
Chloroethane	1.52	3.92	0.247	1/Year	Composite
Chloroform	0.665	1.45	0.0914	1/Year	Composite
2-Chlorophenol	0.454	1.43	0.0905	1/Year	Composite
Chrysene	0.322	0.864	0.0545	1/Year	Composite
Di-n-butyl Phthalate	0.395	0.834	0.0526	1/Year	Composite
1,2-Dichlorobenzene (ortho)	1.12	2.38	0.150	1/Year	Composite
1,3-Dichlorobenzene (meta)	0.454	0.644	0.0406	1/Year	Composite
1,4-Dichlorobenzene (para)	0.219	0.410	0.0259	1/Year	Composite
1,1-Dichloroethane	0.322	0.864	0.0545	1/Year	Composite
1,2-Dichloroethane	0.995	3.09	0.194	1/Year	Composite
1,1-Dichloroethylene	0.234	0.366	0.0231	1/Year	Composite
1,2-trans-Dichloroethylene	0.307	0.790	0.0499	1/Year	Composite
2,4-Dichlorophenol	0.571	1.64	0.103	1/Year	Composite
1,2-Dichloropropane	2.24	3.36	0.212	1/Year	Composite
1,3-Dichloropropylene	0.424	0.644	0.0406	1/Year	Composite
Diethyl Phthalate	1.18	2.97	0.187	1/Year	Composite
2,4-Dimethylphenol	0.263	0.527	0.0333	1/Year	Composite
Dimethyl Phthalate	0.278	0.688	0.0434	1/Year	Composite
4,6-Dinitro-o-cresol	1.14	4.05	0.255	1/Year	Composite
2,4-Dinitrophenol	1.03	1.80	0.113	1/Year	Composite
2,4-Dinitrotoluene	1.65	4.17	0.263	1/Year	Composite
2,6-Dinitrotoluene	3.73	9.38	0.592	1/Year	Composite
Ethylbenzene	0.468	1.58	0.0998	1/Year	Composite
Fluoranthene	0.366	0.995	0.0628	1/Year	Composite
Fluorene	0.322	0.864	0.0545	1/Year	Composite
Hexachlorobenzene	0.00073	0.00155	0.005	1/Year	Composite

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	lbs/day	lbs/day	mg/L	Measurement Frequency	Sample Type
Hexachlorobutadiene	0.238	0.504	0.0318	1/Year	Composite
Hexachloroethane	0.307	0.790	0.0499	1/Year	Composite
Methyl Chloride	1.25	2.78	0.175	1/Year	Composite
Methylene Chloride	0.585	1.30	0.0822	1/ Year	Composite
Naphthalene	0.322	0.864	0.0545	1/Year	Composite
Nitrobenzene	0.395	0.995	0.0628	1/Year	Composite
2-Nitrophenol	0.600	1.01	0.0637	1/Year	Composite
4-Nitrophenol	1.05	1.81	0.114	1/Year	Composite
Phenanthrene	0.322	0.808	0.0510	1/Year	Composite
Phenol	0.219	0.380	0.0240	1/Year	Composite
Pyrene	0.366	0.981	0.0619	1/Year	Composite
Tetrachloroethylene	0.322	0.820	0.0517	1/Year	Composite
Toluene	0.380	1.17	0.0739	1/Year	Composite
1,2,4-Trichlorobenzene	0.995	2.05	0.129	1/Year	Composite
1,1,1-Trichloroethane	0.307	0.790	0.0499	1/Year	Composite
1,1,2-Trichloroethane	0.307	0.790	0.0499	1/Year	Composite
Trichloroethylene	0.307	0.790	0.0499	1/Year	Composite
Vinyl Chloride	1.52	3.92	0.247	1/Year	Composite

[1] See Other Requirement No. 14.
[2] See Other Requirement No. 13.
[3] See Other Requirement No. 18.

2. The pH shall not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored continuously (see Other Requirement No. 7).
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following location: Outfall 001, at the point of discharge from the effluent box prior to discharge to the HCFCD ditch G103-02-03.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS — Outfall Number 002

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge stormwater[1], utility wastewater[2], hydrostatic test water[3], service water, water from maintenance activities, landfarm runoff and supernate (from wastewater treatment solids), construction stormwater[4], and de minimis quantities from spill cleanup[5] subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/ Week[6]	Estimate
TOC	N/A	75	75	1/ Week[6]	Grab
Oil and Grease	N/A	15	15	1/ 2 Weeks[6]	Grab
Aluminum, total[7]	N/A	Report[7]	N/A	1/Month[6]	Grab
Aluminum, total[8]	N/A	1.766[8]	1.766[8]	1/Month[6]	Grab

[1] Stormwater includes, but is not limited to, runoff from production units and land farm runoff (see Other Requirement No. 8).
[2] See Other Requirement No. 13. Not to include any raw material, intermediate product, product, or process wastewater.
[3] Only uncontaminated water from the hydrostatic testing of new pipe/equipment, or existing pipe/ equipment that may or may not have previously contained any raw material, intermediate product, product, or waste material shall be discharged. All other hydrostatic water may be discharged via Outfall 001.
[4] Including stormwater associated with construction activities. See Other Requirement No. 18.
[5] Not to include any raw material, intermediate product, product, or process wastewater, which shall only be discharged via Outfall 001.
[6] When a discharge occurs, samples shall be collected within one hour after the commencement of discharge.
[7] Beginning upon the date of permit issuance and lasting three years from the date of permit issuance. See Other Requirement No. 5.
[8] Beginning three years from the permit issuance date and lasting until the date of permit expiration.

2. The pH shall not be less than 6.0 standard units (SU) nor greater than 9.5 SU and shall be monitored 1/week[6] by grab sample.

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

4. Effluent monitoring samples shall be taken at the following locations: Outfall 002, at the 2 ½ foot weir located in the southeast corner of the plant, prior to discharge to an unnamed ditch, which intersects HCFCD ditch G103-02-03.

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge stormwater, utility wastewater[1], hydrostatic test water[2], service water, water from maintenance activities, construction stormwater[3], and de minimis quantities from spill cleanup[4] subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/ Week[5]	Estimate
TOC	N/A	75	75	1/ Week[5]	Grab
Oil and Grease	N/A	15	15	1/ 2 Weeks[5]	Grab
Aluminum, total[6]	N/A	Report[6]	N/A	1/Month[5]	Grab
Aluminum, total[7]	N/A	2.339[7]	2.339[7]	1/Month[5]	Grab

[1] See Other Requirement No. 13. Not to include any raw material, intermediate product, product, or process wastewater.
[2] Only uncontaminated water from the hydrostatic testing of new pipe/equipment, or existing pipe/ equipment that may or may not have previously contained any raw material, intermediate product, product, or waste material shall be discharged. All other hydrostatic water may be discharged via Outfall 001.
[3] Including stormwater associated with construction activities. See Other Requirement No. 18.
[4] Not to include any raw material, intermediate product, product, or process wastewater, which shall only be discharged via Outfall 001.
[5] When a discharge occurs, samples shall be collected within one hour after the commencement of discharge.
[6] Beginning upon the date of permit issuance and lasting three years from the date of permit issuance. See Other Requirement No. 5.
[7] Beginning three years from the permit issuance date and lasting until the date of permit expiration.

2. The pH shall not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/week[5] by grab sample.

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

4. Effluent monitoring samples shall be taken at the following location: Outfall 003, at the mid-south side of the plant at the V-notch weir prior to discharge into two stormwater detention areas.

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge stormwater, utility wastewater[1], hydrostatic test water[2], service water, water from maintenance activities, construction stormwater[3], and de minimis quantities from spill cleanup[4] subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/Quarter[5]	Estimate
TOC	N/A	75	75	1/Quarter[5]	Grab
Oil and Grease	N/A	15	15	1/Quarter[5]	Grab
Aluminum, total[6]	N/A	Report[6]	N/A	1/Month[5]	Grab
Aluminum, total[7]	N/A	2.216[7]	2.216[7]	1/Month[5]	Grab

[1] See Other Requirement No. 13. Not to include any raw material, intermediate product, product, or process wastewater.
[2] Only uncontaminated water from the hydrostatic testing of new pipe/equipment, or existing pipe/ equipment that may or may not have previously contained any raw material, intermediate product, product, or waste material shall be discharged. All other hydrostatic water may be discharged via Outfall 001.
[3] Including stormwater associated with construction activities. See Other Requirement No. 18.
[4] Not to include any raw material, intermediate product, product, or process wastewater, which shall only be discharged via Outfall 001.
[5] When a discharge occurs, samples shall be collected within one hour after the commencement of discharge.
[6] Beginning upon the date of permit issuance and lasting three years from the date of permit issuance. See Other Requirement No. 5.
[7] Beginning three years from the permit issuance date and lasting until the date of permit expiration.

2. The pH shall not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/quarter[5] by grab sample.

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

4. Effluent monitoring samples shall be taken at the following locations: Outfall 004, at the mid-north portion of the plant at the V-notch weir prior to discharge into a 48-inch diameter pipe, which discharges to HCFCD ditch G103-02-03.

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge stormwater, utility wastewater[1], hydrostatic test water[2], service water, water from maintenance activities, construction stormwater[3], and de minimis quantities from spill cleanup[4] subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/Quarter[5]	Estimate
TOC	N/A	75	75	1/Quarter[5]	Grab
Oil and Grease	N/A	15	15	1/Quarter[5]	Grab
Aluminum, total[6]	N/A	Report[6]	N/A	1/Month[5]	Grab
Aluminum, total[7]	N/A	3.649[7]	3.649[7]	1/Month[5]	Grab
Zinc, total[8]	N/A	Report[8]	N/A	1/Month[5]	Grab

[1] See Other Requirement No. 13. Not to include any raw material, intermediate product, product, or process wastewater.
[2] Only uncontaminated water from the hydrostatic testing of new pipe/equipment, or existing pipe/ equipment that may or may not have previously contained any raw material, intermediate product, product, or waste material shall be discharged. All other hydrostatic water may be discharged via Outfall 001.
[3] Including stormwater associated with construction activities. See Other Requirement No. 18.
[4] Not to include any raw material, intermediate product, product, or process wastewater, which shall only be discharged via Outfall 001.
[5] When a discharge occurs, samples shall be collected within one hour after the commencement of discharge.
[6] Beginning upon the date of permit issuance and lasting three years from the date of permit issuance. See Other Requirement No. 5.
[7] Beginning three years from the permit issuance date and lasting until the date of permit expiration.
[8] Beginning upon the date of permit issuance and lasting eighteen months from the date of permit issuance.

2. The pH shall not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/quarter[5] by grab sample.

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

4. Effluent monitoring samples shall be taken at the following locations: Outfall 005, at the southwest portion of the plant at the V-notch weir prior to stormwater entering the 54-inch diameter pipe, which discharges to HCFCD ditch G103-02-03.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS — Outfall Number 006

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge stormwater, utility wastewater[1], hydrostatic test water[2], service water, water from maintenance activities, construction stormwater[3], and de minimis quantities from spill cleanup[4] subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/Quarter[5]	Estimate
TOC	N/A	75	75	1/Quarter[5]	Grab
Oil and Grease	N/A	15	15	1/Quarter[5]	Grab
Aluminum, total[6]	N/A	Report[6]	N/A	1/Month[5]	Grab
Aluminum, total[7]	N/A	1.766[7]	1.766[7]	1/Month[5]	Grab

[1] See Other Requirement No. 13. Not to include any raw material, intermediate product, product, or process wastewater.
[2] Only uncontaminated water from the hydrostatic testing of new pipe/equipment, or existing pipe/ equipment that may or may not have previously contained any raw material, intermediate product, product, or waste material shall be discharged. All other hydrostatic water may be discharged via Outfall 001.
[3] Including stormwater associated with construction activities. See Other Requirement No. 18.
[4] Not to include any raw material, intermediate product, product, or process wastewater, which shall only be discharged via Outfall 001.
[5] When a discharge occurs, samples shall be collected within one hour after the commencement of discharge.
[6] Beginning upon the date of permit issuance and lasting three years from the date of permit issuance. See Other Requirement No. 5.
[7] Beginning three years from the permit issuance date and lasting until the date of permit expiration.

2. The pH shall not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/quarter[5] by grab sample.
3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
4. Effluent monitoring samples shall be taken at the following locations: Outfall 006, at the southwest portion of the plant at the V-notch weir prior to stormwater entering the 48-inch diameter pipe, which discharges to HCFCD ditch G103-02-03.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 007

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge stormwater associated with construction activities from a concrete batch plant[1] subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/Quarter[2]	Estimate
TSS	N/A	100	100	1/Quarter[2]	Grab
Oil and Grease	N/A	15	15	1/Quarter[2]	Grab

[1] See Other Requirement No. 18.
[2] Samples must be obtained within one hour following the commencement of discharge.

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

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

4. Effluent monitoring samples shall be taken at the following location: Outfall 007, at the discharge point of stormwater runoff from the concrete batch plant located in the construction area and prior to combining with other stormwater runoff or wastewaters.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 008

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge cooling tower and boiler blowdown (including maintenance wastewaters), stormwater, utility wastewater[1], hydrostatic test water[2], service water, water from maintenance activities, construction stormwater[3], and de minimis quantities from spill cleanup[4] subject to the following effluent limitations:

   Volume: Continuous and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/Week[5]	Estimate
TOC	N/A	75	75	1/Week[5]	Grab
Oil and Grease	N/A	15	15	1/Week[5]	Grab

[1] See Other Requirement No. 13. Not to include any raw material, intermediate product, product, or process wastewater.
[2] Only uncontaminated water from the hydrostatic testing of new pipe/equipment, or existing pipe/ equipment that may or may not have previously contained any raw material, intermediate product, product, or waste material shall be discharged. All other hydrostatic water may be discharged via Outfall 001.
[3] Including stormwater associated with construction activities. See Other Requirement No. 18.
[4] Not to include any raw material, intermediate product, product, or process wastewater, which shall only be discharged via Outfall 001.
[5] When a discharge occurs, samples shall be collected within one hour after the commencement of discharge.

2. The pH shall not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/week[5] by grab sample.

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

4. Effluent monitoring samples shall be taken at the following locations: Outfall 008, at the discharge from Pond 3 prior to discharging into an unnamed ditch, which discharges to HCFCD ditch G103-02-03.

1. During the period beginning upon date of issuance and lasting through date of expiration, the permittee is authorized to discharge stormwater, utility wastewater[1], hydrostatic test water[2], service water, water from maintenance activities, construction stormwater[3], and de minimis quantities from spill cleanup[4] subject to the following effluent limitations:

   Volume: Intermittent and flow-variable.

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average	Daily Maximum	Single Grab	Report Daily Average and Daily Maximum	
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	Report MGD	Report MGD	N/A	1/Quarter[5]	Estimate
TOC	N/A	75	75	1/Quarter[5]	Grab
Oil and Grease	N/A	15	15	1/Quarter[5]	Grab

[1] See Other Requirement No. 13. Not to include any raw material, intermediate product, product, or process wastewater.
[2] Only uncontaminated water from the hydrostatic testing of new pipe/equipment, or existing pipe/ equipment that may or may not have previously contained any raw material, intermediate product, product, or waste material shall be discharged. All other hydrostatic water may be discharged via Outfall 001.
[3] Including stormwater associated with construction activities. See Other Requirement No. 18.
[4] Not to include any raw material, intermediate product, product, or process wastewater, which shall only be discharged via Outfall 001.
[5] When a discharge occurs, samples shall be collected within one hour after the commencement of discharge.

2. The pH shall not be less than 6.0 standard units (SU) nor greater than 9.0 SU and shall be monitored 1/quarter[5] by grab sample.

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

4. Effluent monitoring samples shall be taken at the following locations:

   Outfall 009, at the discharge from Pond 2 prior to discharging into an unnamed ditch, which discharges to Bear Lake.

   Outfall 010, at the northeast section of the PO/TBA Plant adjacent to Wallisville Road and prior to discharging to the Wallisville roadside ditch.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

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

1. Flow Measurements

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

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

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

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

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

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

2. Concentration Measurements

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

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

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

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

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

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

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

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

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

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

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

3. Sample Type

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

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

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

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

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

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

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

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

2. Test Procedures

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

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

3. Records of Results

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

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

   c. Records of monitoring activities shall include the following:

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

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

4. Additional Monitoring by Permittee

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

5. Calibration of Instruments

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

6. Compliance Schedule Reports

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

7. Noncompliance Notification

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

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

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

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

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

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

9. Changes in Discharges of Toxic Substances

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

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

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

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

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

10. Signatories to Reports

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

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

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

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

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

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

PERMIT CONDITIONS

1. General

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

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

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

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

2. Compliance

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

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

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

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

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

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

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

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

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

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

3. Inspections and Entry

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

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

4. Permit Amendment or Renewal

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

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

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

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

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

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

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

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

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

5. Permit Transfer

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

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

6. Relationship to Hazardous Waste Activities

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

7. Relationship to Water Rights

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

8. Property Rights

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

9. Permit Enforceability

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

10. Relationship to Permit Application

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

11. Notice of Bankruptcy.

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

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

    b. This notification must indicate:

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

OPERATIONAL REQUIREMENTS

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

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

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

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

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

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

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

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

7. Documentation

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

TCEQ Revision 05/2021

OTHER REQUIREMENTS

1. The Executive Director has reviewed this action for consistency with the goals and policies of the Texas Coastal Management Program (CMP) in accordance with the regulations of the General Land Office and has determined that the action is consistent with the applicable CMP goals and policies.

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

Pollutant	**MAL[2] (mg/L)**
Aluminum (Total)	0.0025
Chromium (Total)	0.003
Copper (Total)	0.002
Zinc (Total)	0.005

Pollutant	**MAL (mg/L)**
Acenaphthene	0.010
Acenaphthylene	0.010
Acrylonitrile	0.050
Anthracene	0.010
Benzene	0.010
Benzo(*a*)anthracene	0.005
3,4-Benzofluoranthene (Benzo(*b*)fluoranthene)	0.010
Benzo(*k*)fluoranthene	0.005
Benzo(*a*)pyrene	0.005
Bis(2-Ethylhexyl) Phthalate	0.010
Carbon Tetrachloride	0.002
Chlorobenzene	0.010
Chloroethane	0.050
Chloroform	0.010
2-Chlorophenol	0.010
Chrysene	0.005
Di-n-Butyl Phthalate	0.010
1,2-Dichlorobenzene (ortho)	0.010
1,3-Dichlorobenzene (meta)	0.010
1,4-Dichlorobenzene (para)	0.010
1,1-Dichloroethane	0.010
1,2-Dichloroethane	0.010
1,1-Dichloroethylene	0.010
1,2-trans-Dichloroethylene	0.010
2,4-Dichlorophenol	0.010
1,2-Dichloropropane	0.010
1,3-Dichloropropylene	0.010
Diethyl Phthalate	0.010
2,4-Dimethylphenol	0.010
Dimethyl Phthalate	0.010
4,6-Dinitro-o-Cresol	0.050
2,4-Dinitrophenol	0.050
2,4-Dinitrotoluene	0.010

[1] 24-hour reporting requirements to TCEQ Region 12 and the Enforcement Division are not applicable.
[2] Minimum analytical level.

Pollutant	MAL (mg/L)
2,6-Dinitrotoluene	0.010
Ethylbenzene	0.010
Fluoranthene	0.010
Fluorene	0.010
Hexachlorobenzene	0.005
Hexachlorobutadiene	0.010
Hexachloroethane	0.020
Methylene Chloride	0.020
Methyl Chloride	0.050
Naphthalene	0.010
Nitrobenzene	0.010
2-Nitrophenol	0.020
4-Nitrophenol	0.050
Oil and grease [EPA Method 1664]	5.00
Phenanthrene	0.010
Phenol	0.010
Pyrene	0.010
Tetrachloroethylene	0.010
Toluene	0.010
1,2,4-Trichlorobenzene	0.010
1,1,1-Trichloroethane	0.010
1,1,2-Trichloroethane	0.010
Trichloroethylene	0.010
Vinyl Chloride	0.010

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

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) must 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 must be used for that measurement when determining calculations and reporting requirements for the self-reporting form. A zero (0) may not be used.

3. This permit does not authorize the discharge of domestic wastewater. All domestic wastewaters must be disposed of in an approved manner, such as routing to Harris County Water Control and Improvement District No. 84 [Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0010558-001], to Equistar Chemicals, LP Channelview Complex [TPDES Permit No. WQ0000391000] for treatment via the permitted wastewater treatment facilities, to an approve on-site septic tank and drainfield system or to an authorized third party for treatment and disposal.

4. POND REQUIREMENTS

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

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

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

C. A **new** wastewater pond constructed after the issuance date of this permit must be lined in compliance with one of the following requirements if it will contain process wastewater as defined in 40 CFR § 122.2. The executive director will review ponds that will contain only non-process wastewater on a case-by-case basis to determine whether the pond must be lined. If a pond will contain only non-process wastewater, the owner shall notify the Industrial Permits Team (MC 148) to obtain a written determination at least 90 days before the pond is placed into service and copy the TCEQ Enforcement Division (MC 224) and regional office. The permittee must submit all information about the proposed pond contents that is reasonably necessary for the executive director to make a determination. If the executive director determines that a pond does not need to be lined, then the pond is exempt from C(1) through C(3) and D through G of POND REQUIREMENTS.

A wastewater pond that only contains domestic wastewater must comply with the design requirements in 30 TAC Chapter 217 and 30 TAC § 309.13(d) in lieu of items C(1) through C(3) of this subparagraph.

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

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

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

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

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

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

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

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

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

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

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

b. Pond liner damage must be repaired at the recommendation of a Texas-licensed professional engineer or Texas-licensed professional geoscientist. If the damage is significant or could result in unauthorized discharge, then the repair must be documented and certified by a Texas-licensed professional engineer. Within 60 days after a repair is completed, liner certification must be provided to the TCEQ Water

Quality Assessment Team (MC 150) and regional office. A copy of the liner certification must be maintained at the facility or in a reasonably accessible location and made available to the executive director upon request.

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

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

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

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

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

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

5. SCHEDULE OF COMPLIANCE FOR WATER QUALITY-BASED EFFLUENT LIMITS

The permittee shall comply with the following schedule of activities for the attainment of water quality-based final effluent limitations for total aluminum at Outfalls 002, 003, 004, 005, and 006:

a. determine exceedance cause(s);
b. develop control options;
c. evaluate and select control mechanisms;
d. implement corrective action; and
e. attain final effluent limitations no later than three years from the date of permit issuance.

The permittee shall submit quarterly progress reports in accordance with the schedule below. The requirement to submit quarterly progress reports expires three years from the date of permit issuance.

PROGRESS REPORT DATE

January 1
April 1
July 1
October 1

The quarterly progress reports must include a discussion of the interim requirements that have been completed at the time of the report and must address the progress towards attaining the water quality-based final effluent limitations for total aluminum at Outfalls 002, 003, 004, 005, and 006 no later than three years from the date of permit issuance.

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date. Any reports of noncompliance must include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement. All reports must be submitted to the Region 12 Office and to the Enforcement Division (MC 224) of the TCEQ.

6. Non-hazardous wastewater treatment plant sludge may be disposed of on-site in accordance with conditions delineated at Operational Requirements, Item No. 11 on Pages 12 - 13 of this permit. Additionally, stormwater must be diverted away from the land disposal area. Runoff from the active portion of the disposal site must either be collected and diverted to the wastewater treatment plant or tested prior to discharge and meet the water quality effluent limitations delineated on page 2f of this permit.

   The permittee may also receive wastewater treatment sludge from Equistar Chemicals, LP Channelview Complex (TPDES Permit No. WQ0000391000) located on contiguous property, provided all other requirements necessary for the transport of sludge have been met.

7. The permittee shall maintain the pH at Outfall 001 within the range specified on Page nos. 2b and 2e of this permit. Excursions from the range are permitted. An excursion is an unintentional and temporary incident in which the pH value of the wastewater exceeds the range set forth on Page nos. 2b and 2e. A pH excursion is not a violation and a non-compliance report is not required for pH excursions provided:

   (a) the excursion does not exceed the range of 5-11 standard pH units;
   (b) the individual excursion does not exceed 60 minutes; and
   (c) the sum of all excursions does not exceed 7 hours and 26 minutes in any calendar month.

8. Once per year the permittee shall take samples of landfarm runoff and perform chemical analyses for total cadmium, total copper, total chromium, total zinc, and total manganese. Within 90 days of the sampling events, the test results must be reported in writing to the TCEQ Industrial Permits Team (MC 148) and the Region 12 office (MC R12). A copy of the results must be retained onsite for five years, made readily available by authorized representatives of the TCEQ, and provided with each permitting action that includes a renewal of the existing permit.

9. There is no mixing zone established for these discharges to intermittent streams. Acute toxic criteria apply at the point of discharge at Outfalls 001, 002, 003, 004, 005, and 006. Future discharges via new primarily stormwater discharge Outfalls 008, 009, and/or 010 may be evaluated similarly.

10. Monitoring results must be provided at the intervals specified in the permit. For pollutants which are monitored annually, effluent reports must be submitted by January 20th for monitoring conducted during the previous 12-month period (i.e. through December). For pollutants which are monitored twice per year effluent reports must be submitted by July 20th and January 20th, for monitoring conducted during the previous 6-month period (i.e., through June and December, respectively). For pollutants which are monitored four times per year, effluent reports must be submitted with the DMRs by April 20th, July 20th, October 20th, and January 20th for monitoring conducted during the previous calendar quarter (i.e., through March, June, September, and December, respectively).

11. Reporting requirements according to 30 TAC §§ 319.1-319.12 and any additional effluent reporting requirements contained in the permit at Outfalls 001 (Final Phase), 007, 008, 009, and/or 010 are suspended from the effective date of the permit until each individual outfall startup or discharge, whichever occurs first, from the facilities described by this permit. The permittee shall provide written notice to the TCEQ Region 12 Office, Applications Review and Processing Team (MC 148) of the Water Quality Division, Enforcement Division (MC 224), and Harris County Pollution Control Service at least forty-five days prior to plant startup or anticipated discharge, whichever occurs first, on Notification of Completion Form 20007, for each Outfall 001 (Final Phase), 007, 008, 009, and/or 010.

12. <u>COOLING WATER INTAKE STRUCTURE REQUIREMENTS</u>

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

13. Utility wastewater includes, but is not limited to: potable water, vehicle rinse water, firewater (which has not come in direct contact with raw material, intermediate product, finished product, by-product, or waste product), hydrotest water, clarified water, demineralized water, steam condensate and blowdown, non-contact once-through cooling water, de minimis amounts of cooling tower water, raw and well water, groundwater seepage, condensate, analyzer instrumentation drain wastewaters, and allowable non-stormwaters. Allowable non-stormwaters are based on the *Multi-Sector General Permit for Industrial Stormwater* (MSGP; TXR050000, Part II, Section A, Item 6) and include the following:

    A. discharges from emergency firefighting;

    B. uncontaminated fire hydrant flushing (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated, and discharges are not expected to adversely affect aquatic life);

    C. potable water sources (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated, and the discharges are not expected to adversely affect aquatic life);

    D. lawn watering and similar irrigation drainage, provided that all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;

    E. water from the routine external washing of buildings, conducted without the use of detergents or other chemicals;

    F. water from the routine washing of pavement conducted without the use of detergents or other chemicals and where spills or leaks of toxic or hazardous materials have not occurred

(unless all spilled material has been removed);

G. uncontaminated air conditioner condensate, compressor condensate, and steam condensate, and condensate from the outside storage of refrigerated gases or liquids;

H. water from foundation or footing drains where flows are not contaminated with pollutants (e.g., process materials, solvents, or other pollutants);

I. uncontaminated water used for dust suppression;

J. springs and other uncontaminated groundwater; and

K. incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility but excluding intentional discharges from the cooling tower (e.g., piped cooling tower blowdown or drains).

14. The term *water treatment wastes* includes, but is not limited to, cold lime water treatment wastes, demineralizer backwash, ion exchange demineralizer regeneration blowdown, demineralizer regeneration blowdown, filter backwash, ion exchange water treatment system wastes, membrane regeneration wastes, and reverse osmosis reject water.

15. Stormwater Best Management Practices for Outfalls 002, 003, 004, 005, 006, 008, 009, and 010

The permittee must develop and implement a stormwater pollution prevention plan (SWP3) that includes a set of best management practices (BMPs) to eliminate or lessen the exposure of stormwater to industrial activities and pollutants. The SWP3 must be maintained on site and be made readily available for review by authorized TCEQ personnel. The SWP3 must contain elements, or sections, to require implementation of the following activities:

A. *Good Housekeeping Measures* - Activities must be defined and implemented to ensure areas of the facility that either contribute or potentially contribute pollutants to stormwater discharges are maintained and operated in a clean and orderly manner. The frequency for conducting each of the good housekeeping measures must be defined in the SWP3.

B. *Spill Prevention and Response Measures* - Areas must be identified where spills would likely contribute pollutants to stormwater discharges. Procedures must be identified and implemented to minimize or prevent contamination of stormwater from spills. Spill cleanup techniques must be identified and the necessary materials and equipment for cleanup made available to facility personnel. Facility personnel that work in the identified areas must be trained in spill prevention and response measures at a minimum frequency of once per year. A record of employee training shall be maintained on a minimum frequency of once per year, maintained on site, and be made readily available for inspection by authorized TCEQ personnel upon request.

The SWP3 may be modified at any time in order to implement either additional or more effective pollution control measures. A summary of revisions, including the dates of the revisions, shall be maintained on a quarterly basis, maintained as a part of the SWP3 document, and made readily available for inspection by authorized TCEQ personnel upon request.

Qualified personnel, who are familiar with the industrial activities performed at the facility, must conduct quarterly inspections to determine the effectiveness of the Good Housekeeping Measures, Spill Prevention and Response Measures, Best Management Practices, and the Employee Training Program. The results of inspections must be documented in an inspection

summary report; include an assessment for any necessary revisions or additional measures to increase effectiveness of the SWP3; and include a time frame for implementation of any follow-up actions. The summary report must be maintained on site and be made readily available for inspection by authorized TCEQ personnel upon request.

16. Discharges of de minimis quantities from spill cleanups via Outfalls 002, 003, 004, 005, 006, 008, 009, and 010 are only authorized under the following conditions:

    a. The discharge must not contain process wastewater or spilled materials (process wastewater includes any water that contains or has come into direct contact with a raw material, intermediate product, by-product, final product, or waste product).

    b. The discharge may contain secondary washwaters from spill cleanup; however any waters containing spilled material or primary washwaters from spill cleanup must be treated and discharged via Outfall 001 or collected and hauled off-site for treatment and/or disposal at a properly authorized facility.

17. This permit does not provide authorization for the permittee to accept wastewaters from third party sources, nor does it prohibit acceptance of such wastewaters. This permit only provides the authorization to discharge these wastes. Should authorization to accept third party waste be required, it is the obligation of the permittee to obtain such authorization from the appropriate regulatory authority.

    Wastewater may be received from non-adjacent (off-site) affiliates provided that:

    a. The permittee demonstrates that the off-site wastes are generated at a facility that is subject to the same provisions in 40 CFR Part 414 as the LyondellBasell Industries Channelview South Plant; or the permittee demonstrates that the off-site wastewaters are of similar nature and the treatment of such wastewaters is compatible with the wastewaters produced and treated at the LyondellBasell Industries Channelview South Plant;

    b. the volume and nature of the off-site wastewaters do not have an impact on the LyondellBasell Industries Channelview South Plant's ability to consistently achieve the effluent limitations specified in this permit; and

    c. the permittee provides written pre-notification of acceptance of wastewaters from non-adjacent affiliates' activities to the TCEQ Region 12 office.

18. <u>STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES</u>

    Lyondell Chemical Company (permittee) must either 1) develop a Stormwater Pollution Prevention Plan (SWP3) and follow the other conditions of this permit to authorize stormwater discharges from each construction activity performed by the permittee that results in a land disturbance of one (1) or more acres, or 2) apply under TPDES general permit TXR150000 for authorization to discharge stormwater runoff from construction activities. If the permittee opts to discharge construction stormwater via this permit, only discharges of stormwater runoff from construction activities that are located at the facility authorized under this TPDES permit are eligible for authorization under this permit.

    A. Discharges of stormwater from small and large (1 acre or more) construction activities and support activities, include, but are not limited to: concrete batch plants, rock crushers, asphalt batch plants, equipment staging areas, material storage yards, material borrow areas, and excavated material disposal areas, may be authorized under this permit. Also, the following non-stormwater discharges may be discharged as a result of the construction activities: water

line flushing and similar potable water sources; uncontaminated pumped groundwater, including infiltrated water in trenches or other excavated areas; air conditioning condensate; and pavement, exterior building, vehicle, and equipment wash water from washing activities conducted without the use of detergents or other chemicals.

1. Construction Stormwater Discharges

The permittee shall develop and implement a stormwater pollution prevention plan (SWP3). The SWP3 must be maintained onsite and made readily available for review by the TCEQ upon request. The SWP3 must, at a minimum, include the following:

a. a site or project description, which includes the following information:

1) a description of the nature of the construction activity;

2) a list of potential pollutants and their sources;

3) a description of the intended schedule or sequence of activities that will disturb soils for major portions of the site;

4) the total number of acres of the entire property and the total number of acres where construction activities will occur, including off-site material storage areas, overburden and stockpiles of dirt, and borrow areas;

5) data describing the soil or the quality of any discharge from the site;

6) a map showing the general location of the site (e.g., a portion of a city or county map);

7) a detailed site map (or maps) indicating the following:

(a) drainage patterns and approximate slopes anticipated after major grading activities;

(b) areas where soil disturbance will occur;

(c) locations of all major erosion and sediment controls and natural buffers, either planned or in place;

(d) locations where temporary or permanent stabilization practices are expected to be used;

(e) locations of construction support activities, including off-site activities, including material, waste, borrow, fill, or equipment storage areas;

(f) surface waters (including wetlands) either at, adjacent, or in close proximity to the site;

(g) locations where stormwater discharges from the site directly to a surface water body or a municipal separate storm sewer system; and

(h) vehicle wash areas.

8) the location and description of support activities such as the concrete plant, gravel washing facilities, and other activities providing support to the construction site; and

9) the name of receiving waters at or near the site(s) that may be disturbed or that may receive discharges from disturbed areas of the project(s).

b. A description of the Best Management Practices (BMPs) that will be used to minimize pollution in runoff. The description must identify the general timing or sequence for implementation. At a minimum, the description must include the following components:

1) General Requirements

(a) Erosion and sediment controls must be designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall.

(b) Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications.

(c) Controls must be developed to minimize the offsite transport of litter, construction debris, and construction materials.

2) Erosion Control and Stabilization Practices

The SWP3 must include a description of temporary and permanent erosion control and stabilization practices for the site(s), including a schedule of when the practices will be implemented. Site plans should ensure that existing vegetation is preserved where it is possible.

(a) Erosion control and stabilization practices may include but are not limited to: establishment of temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and vegetation, slope texturing, temporary velocity dissipation devices, flow diversion mechanisms, and other similar measures.

(b) The following records must be maintained and either attached to or referenced in the SWP3:

(i) the dates when major grading activities occur;

(ii) the dates when construction activities temporarily or permanently cease on a portion of the site; and

(iii) the dates when stabilization measures are initiated.

(c) Erosion control and stabilization measures must be initiated immediately in portions of the site(s) where construction activities have temporarily ceased. Stabilization measures that provide a protective cover must be initiated immediately in portions of the site(s) where construction activities have permanently ceased. Except as provided in (c)(i) through (c)(iii) below, these measures must be completed no more than 14 days after the construction activity in that portion of the site(s) has temporarily or permanently ceased:

(i) Where the immediate initiation of stabilization measures after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practicable.

(ii) In arid areas, semi-arid areas, or drought-stricken areas where the immediate initiation of stabilization measures after construction activity has temporarily or permanently ceased or is precluded by arid conditions, erosion control and stabilization measures must be initiated as soon as practicable. Where vegetative controls are not feasible due to arid conditions, the permittee shall immediately install, and within 14 calendar days of a temporary or permanent cessation of work in any portion of the site(s) complete, non-vegetative erosion controls. If non-vegetative controls are not feasible, the permittee shall install temporary sediment controls as required in Paragraph (c)(iii) below.

(iii) In areas where temporary stabilization measures are infeasible, the permittee may alternatively utilize temporary perimeter controls. The permittee must document in the SWP3 the reason why stabilization measures are not feasible, and must demonstrate that the perimeter controls will retain sediment on site(s) to the extent practicable. The permittee must continue to inspect the BMPs for unstabilized sites.

3) Sediment Control Practices

The SWP3 must include a description of any sediment control practices used to remove eroded soils from stormwater runoff, including the general timing or sequence for implementation of controls.

(a) Sedimentation Basin(s)

(i) A sedimentation basin is required, where feasible, for a common drainage location that serves an area with ten (10) or more acres disturbed at one time. A sedimentation basin may be temporary or permanent, and must provide sufficient storage to contain a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained.

When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone permanent stabilization, if these flows are diverted around both the disturbed areas of the site(s) and the sediment basin. Capacity calculations shall be included in the SWP3.

(ii) Where rainfall data is not available or a calculation cannot be performed, the sedimentation basin must provide at least 3,600 cubic feet of storage per acre drained until final stabilization of the site(s).

(iii) If a sedimentation basin is not feasible, then the permittee shall provide equivalent control measures until final stabilization of the site(s). In determining whether installing a sediment basin is feasible, the permittee may consider factors such as site soils, slope, available area, public safety, precipitation patterns, site geometry, site vegetation, infiltration capacity, geotechnical factors, depth to groundwater, and other similar considerations. The permittee shall document the reason that the sediment basins are not feasible, and shall utilize equivalent control measures, which may include a

series of smaller sediment basins.

(b) Perimeter Controls - At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site(s) conditions.

(c) Controls for Sites With Drainage Areas Less than Ten Acres:

(i) Sediment traps and sediment basins may be used to control solids in stormwater runoff for drainage locations serving less than ten (10) acres. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries of the construction area, and for those side slope boundaries deemed appropriate as dictated by individual site(s) conditions.

(ii) Alternatively, a sediment basin that provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained may be utilized. Where rainfall data is not available or a calculation cannot be performed, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained may be provided. If a calculation is performed, then the calculation shall be included in the SWP3.

c. Description of Permanent Stormwater Controls

A description of any measures that will be installed during the construction process to control pollutants in stormwater discharges that may occur after construction operations have been completed must be included in the SWP3.

d. Other Required Controls and BMPs

1) The permittee shall minimize, to the extent practicable, the off-site vehicle tracking of sediments and the generation of dust. The SWP3 must include a description of controls utilized to accomplish this requirement.

2) The SWP3 must include a description of construction and waste materials expected to be stored on-site and a description of controls to minimize pollutants from these materials.

3) The SWP3 must include a description of potential pollutant sources from areas other than construction (such as stormwater discharges from dedicated gravel washing facilities and dedicated concrete batch plants), and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

4) The permittee shall place velocity dissipation devices at discharge locations and along the length of any outfall channel (such as runoff conveyance) to provide a non-erosive flow velocity from the structure to a water course, so that the natural physical and biological characteristics and functions are maintained and protected.

5) The permittee shall design and utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water from the site(s).

e. Maintenance Requirements

1) All protective measures identified in the SWP3 must be maintained in effective operating condition. If, through inspections or other means, the permittee determines that BMPs are not operating effectively, then the permittee shall perform maintenance as necessary to maintain the continued effectiveness of stormwater controls, and prior to the next rain event if feasible. If maintenance prior to the next anticipated storm event is impracticable, the reason shall be documented in the SWP3 and maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

2) If periodic inspections or other information indicates a control has been used incorrectly, is performing inadequately, or is damaged, then the permittee shall replace or modify the control as soon as practicable after making the discovery.

3) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%. For perimeter controls such as silt fences, berms, etc., the trapped sediment must be removed before it reaches 50% of the above-ground height.

4) If sediment escapes the site(s), accumulations must be removed at a frequency that minimizes offsite impacts, and prior to the next rain event, if feasible.

f. Inspections of Controls

1) Personnel provided by the permittee must inspect disturbed areas of the construction site(s) that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, discharge locations, and structural controls for evidence of, or the potential for, pollutants entering the drainage system. Personnel conducting these inspections must be knowledgeable of this permit, familiar with the construction site(s), and knowledgeable of the SWP3 for the site(s). Sediment and erosion control measures identified in the SWP3 must be inspected to ensure that they are operating correctly. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking. Inspections must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

2) Where sites have been finally or temporarily stabilized or where runoff is unlikely due to winter conditions (e.g., site(s) is covered with snow, ice, or frozen ground exists), inspections must be conducted at least once every month. During periods of drought, inspections must be conducted at least once every month and within 24 hours after the end of a storm event of 0.5 inches or greater.

3) As an alternative to the above-described inspection schedule of once every 14 calendar days and within 24 hours of a storm event of 0.5 inches or greater, the SWP3 may be developed to require that these inspections will occur at least once every seven (7) calendar days. If this alternative schedule is developed, then the inspection must occur on a specifically defined day, regardless of whether or not there has been a rainfall event since the previous inspection.

4) The inspections may occur on either schedule provided that the SWP3 reflects the current schedule and that any changes to the schedule are conducted in accordance with the following provisions: the schedule may be changed a maximum of one time each month, the schedule change must be implemented at the beginning of a calendar

month, and the reason for the schedule change must be documented in the SWP3 (e.g., end of "dry" season and beginning of "wet" season).

5) In the event of flooding or other uncontrollable situations which prohibit access to the inspection sites, inspections must be conducted as soon as access is practicable.

6) The SWP3 must be modified based on the results of inspections, as necessary, to better control pollutants in runoff. Revisions to the SWP3 must be completed within seven (7) calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SWP3 and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable.

7) The permittee shall prepare, and retain as part of the SWP3 a report summarizing the scope of the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWP3 must be made and retained as part of the SWP3. Major observations should include: The locations of discharges of sediment or other pollutants from the site(s); locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed.

8) Actions taken as a result of inspections must be described within, and retained as a part of, the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit. The report must be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

9) The names and qualifications of personnel making the inspections for the permittee may be documented once in the SWP3 rather than being included in each report.

g. Erosion and Sediment Control Requirements

The permittee shall ensure that the discharge, achieves, at a minimum, the following effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT).

1) Erosion and sediment controls - Design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:

(a) Control stormwater volume and velocity within the site(s) to minimize soil erosion;

(b) Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion;

(c) Minimize the amount of soil exposed during construction activity;

(d) Minimize the disturbance of steep slopes;

(e) Minimize sediment discharges from the site(s). The design, installation, and maintenance of erosion and sediment controls must address factors such as the

amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site(s);

(f) If earth disturbance activities are located in close proximity to a surface water, provide and maintain appropriate natural buffers if feasible and as necessary, around surface waters, depending on site-specific topography, sensitivity, and proximity to water bodies. Direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration unless unfeasible; and

(g) Minimize soil compaction and, unless infeasible, preserve topsoil.

(h) TCEQ does not consider stormwater control features (e.g., stormwater conveyance channels, storm drain inlets, sediment basins) to constitute "surface waters" for the purposes of triggering the buffer requirement in item (f) above. Also, areas that the permittee does not own or that are otherwise outside their operational control may be considered areas of undisturbed natural buffer for purposes of compliance with this requirement.

2) Soil stabilization - Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site(s), or temporarily ceased on any portion of the site(s) and will not resume for a period exceeding 14 calendar days. Temporary stabilization must be completed within 14 days after initiation of soil stabilization measures, and final stabilization must be achieved prior to termination of permit coverage. In arid, semi-arid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative non-vegetative stabilization measures must be employed as soon as practicable.

3) Dewatering - Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited, unless managed by appropriate controls.

4) Pollution prevention measures - Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:

(a) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

(b) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site(s) to precipitation and to stormwater; and

(c) Minimize the discharge of pollutants from spills and leaks, and implement chemical spill and leak prevention and response procedures.

5) Prohibited discharges - The following discharges are prohibited:

(a) Wastewater from wash out of concrete trucks, unless managed by an appropriate control;

(b) Wastewater from wash out and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(c) Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and

(d) Soaps or solvents used in vehicle and equipment washing.

6) Surface outlets - When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.

2. Concrete Batch Plant Stormwater Discharges

The permittee shall develop and implement a SWP3. The SWP3 must be maintained onsite and made readily available for review by the TCEQ upon request. The SWP3 may be a separate document for the Concrete Batch Plant or may be combined with the SWP3 developed for construction activities described above in item 8. The SWP3 must at a minimum include the following:

a. Description of Potential Pollutant Sources - The SWP3 must provide a description of potential sources (activities and materials) that may reasonably be expected to affect the quality of stormwater discharges associated with the concrete batch plant. The SWP3 must describe practices that that will be used to reduce the pollutants in these discharges to assure compliance with this permit, including the protection of water quality, and must ensure the implementation of these practices. The following must be developed, at a minimum, in support of developing this description:

1) Drainage Area Site Map – The site map must include the following information:

(a) the location of all outfalls for stormwater discharges associated with the concrete batch plant authorized under this permit;

(b) a depiction of the drainage area and the direction of flow to the outfall(s) and an identification of the types of pollutants that are likely to be present in the stormwater discharges from each area of the facility that generates stormwater discharges with a reasonable potential for containing significant amounts of pollutants, including sediments (for example, toxicity of the chemical, and the quantity of chemicals uses, produced, or discharged);

(c) structural controls (for example, ponds, vegetated buffers, and constructed stormwater pollution controls) used within the drainage area(s);

(d) the locations of the following areas associated with the concrete batch plant that are exposed to precipitation: vehicle and equipment maintenance activities (including fueling, repair, and storage areas for vehicles and equipment scheduled for maintenance); areas used for the treatment, storage, or disposal of wastes; liquid storage tanks; material processing and storage areas; and loading and unloading areas; and

(e) any bag house or other dust control device(s); recycle/sedimentation pond, clarifier or other device used for the treatment of facility wastewater (including the areas that drain to the treatment device); areas with significant materials; and areas where major spills or leaks have occurred.

2) Inventory of Exposed Materials – A list of materials handled at the concrete batch plant that may be exposed to stormwater and that have a potential to affect the quality of stormwater discharges associated with the concrete batch plant.

3) Spills and Leaks - A list of significant spills and leaks of toxic or hazardous pollutants that occurred in areas exposed to stormwater and that drain to stormwater outfalls associated with the concrete batch plant must be developed, maintained, and updated as needed.

4) Sampling Data - A summary of existing stormwater discharge sampling data must be maintained as part of the SWP3.

b. Pollution Prevention Measures and Controls - The SWP3 must include a description of management controls to regulate pollutants identified in the SWP3's "Description of Potential Pollutant Sources" in item 9.a above, and a schedule for implementation of the measures and controls. This must include, at a minimum:

1) Good Housekeeping Measures - Good housekeeping measures must be developed and implemented in the area(s) associated with the concrete batch plant.

(a) The permittee shall prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), settled dust, or other significant materials from paved portions of the site that are exposed to stormwater. Measures used to minimize the presence of these materials may include regular sweeping or other equivalent practices. The SWP3 must indicate the frequency of sweeping or other practices. These practices must be conducted at a frequency that is determined based on consideration of the amount of industrial activity occurring in the area and frequency of precipitation, and shall occur at least once per week when cement, fly ash, and kiln dust or aggregate is being handled or otherwise processed in the area.

(b) The permittee shall prevent the exposure of fine granular solids, such as cement, fly ash and kiln dust to stormwater. Where practicable, these materials must be stored in enclosed silos, hoppers or buildings, or other structure, to prevent exposure to precipitation or runoff.

2) Inventory Measures – A preventive maintenance program must include routine inspection and maintenance of stormwater management controls (including oil/water separators, catch basins, drip pans, berms, dikes, and other similar controls), as well as inspecting and testing facility equipment and systems to discover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and measures to ensure appropriate maintenance and performance of facility equipment and systems.

3) Spill Prevention and Response Procedures - Areas where potential spills that can contribute pollutants to stormwater runoff, and the drainage areas from these locations, must be identified in the SWP3. Where appropriate, the SWP3 must specify material handling procedures, storage requirements, and use of equipment. Procedures for cleaning up spills must be identified in the SWP3 and made available to the appropriate personnel.

4) Inspections - The permittee shall identify qualified facility personnel (for example, a person or persons with knowledge of this permit, the concrete batch plant, and the SWP3 related to the concrete batch plant for the site) to inspect designated equipment and areas of the facility specified in the SWP3. The inspection frequency must be specified in the SWP3 based upon a consideration of the level of concrete production at the facility but must be a minimum of once per month while the facility is in operation. The inspection must take place while the facility is in operation and must, at a minimum, include all areas that are exposed to stormwater at the site, including material handling areas, above ground storage tanks, hoppers or silos, dust collection or containment systems, truck wash down and equipment cleaning areas. Follow-up procedures must be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections must be maintained and be made readily available for inspection upon request.

5) Employee Training - An employee training program must be developed to educate personnel responsible for implementing any component of the SWP3, or personnel otherwise responsible for stormwater pollution prevention, with the provisions of the SWP3. The frequency of training must be documented in the SWP3, and at a minimum, must consist of one training prior to the initiation of operation of the concrete batch plant.

6) Record Keeping and Internal Reporting Procedures - A description of spills and similar incidents, plus additional information that is obtained regarding the quality and quantity of stormwater discharges, must be included in the SWP3. Inspection and maintenance activities must be documented and records of those inspection and maintenance activities must be incorporated in the SWP3.

7) Sediment and Erosion Control - The SWP3 must identify areas that have a high potential for soil erosion and identify structural or vegetative control measures or BMP to reduce or limit erosion.

8) Management of Runoff - The SWP3 must contain a narrative consideration for reducing the volume of runoff from concrete batch plants by diverting runoff or otherwise managing runoff, including use of infiltration, detention ponds, retention ponds, or reusing of runoff.

19. Stormwater discharged via new Outfalls 008, 009, and 010 must be sampled and analyzed for all the specified pollutants on Table 1-SW at least once by either 1) a grab sample during the first 30 minutes or 2) a flow weighted composite sample if equipment is available for compositing by flow. The permittee shall report the flow at Outfalls 008, 009, and 010 in MGD. Analytical testing for Outfalls 008, 009, and 010 must be completed within 60 days of initial discharge. Results of the analytical testing must be submitted within 90 days of initial discharge to the TCEQ Industrial Permits Team (MC-148). Based on a technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations, monitoring requirements, or both.

TABLE 1-SW

Outfall No.:	Maximum Values (mg/L)		Average Values (mg/L)		Number of Storm Events Sampled	MAL [3] (mg/L)
Pollutant	**Grab Sample [4]**	**Composite Sample [5]**	**Grab Sample [4]**	**Composite Sample [5]**		
pH (Standard Units)	(max)	—	(min)	—		—
Total Suspended Solids						—
Chemical Oxygen Demand						—
Total Organic Carbon						—
Oil and Grease						—
Arsenic, Total						0.0005
Barium, Total						0.003
Cadmium, Total						0.001
Chromium, Total						0.003
Chromium, Trivalent						N/A
Chromium, Hexavalent						0.003
Copper, Total						0.002
Lead, Total						0.0005
Mercury, Total						0.000005
Nickel, Total						0.002
Selenium, Total						0.005
Silver, Total						0.0005
Zinc, Total						0.005

3 Minimum Analytical Level.
4 Taken during the first 30 minutes of a storm event.
5 Flow-weighted composite sample.

CHRONIC BIOMONITORING REQUIREMENTS: MARINE

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 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 below and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms," third edition (EPA-821-R-02-014) or its most recent update:

1) Chronic static renewal 7-day survival and growth test using the mysid shrimp (*Mysidopsis bahia*) (Method 1007.0). A minimum of eight replicates with five organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

2) Chronic static renewal 7-day larval survival and growth test using the inland silverside (*Menidia beryllina*) (Method 1006.0). 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 3%, 5%, 6%, 8%, and 11% effluent. The critical dilution, defined as 8% 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 limit, a best management practice, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

e. Testing Frequency Reduction

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

2) If one or more of the first four consecutive quarterly tests demonstrates significant toxicity, the permittee shall continue quarterly testing for that

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

2. Required Toxicity Testing Conditions

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

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

2) a control mean dry weight of surviving mysid shrimp of 0.20 mg or greater;

3) a control mean dry weight for surviving unpreserved inland silverside of 0.50 mg or greater and 0.43 mg or greater for surviving preserved inland silverside.

4) a control coefficient of variation percent (CV%) between replicates of 40 or less in the growth and survival tests;

5) a critical dilution CV% of 40 or less in the growth and survival endpoints for either growth and survival 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 37 or less for mysid shrimp growth; and

7) a percent minimum significant difference of 28 or less for inland silverside growth.

b. Statistical Interpretation

1) For the mysid shrimp and the inland silverside 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.

2) 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.

3) 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.

4) 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 herein defined as a statistically significant difference between the survival, reproduction, or growth of the test organism in a specified effluent dilution compared to the survival, reproduction, or growth of the test organism in the control (0% effluent).

5) 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 2.

6) Pursuant to the responsibility assigned to the permittee in Part 2.b.2), 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 Part 1.b. will be used when making a determination of test acceptability.

7) 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 as close as possible to the point of discharge into the perennial marine waters but unaffected by the discharge.

2) Where the receiving water proves unsatisfactory as a result of preexisting instream toxicity (i.e. fails to fulfill the test acceptance criteria of item 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 item 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 of this Section.

3) The synthetic dilution water shall consist of standard, reconstituted seawater. Upon approval, the permittee may substitute other 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.

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 mysid shrimp, Parameter TLP3E, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For the mysid shrimp, Parameter TOP3E, report the NOEC for survival.

3) For the mysid shrimp, Parameter TXP3E, report the LOEC for survival.

4) For the mysid shrimp, Parameter TWP3E, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."

5) For the mysid shrimp, Parameter TPP3E, report the NOEC for growth.

6) For the mysid shrimp, Parameter TYP3E, report the LOEC for growth.

7) For the inland silverside, Parameter TLP6B, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

8) For the inland silverside, Parameter TOP6B, report the NOEC for survival.

9) For the inland silverside, Parameter TXP6B, report the LOEC for survival.

10) For the inland silverside, Parameter TWP6B, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."

11) For the inland silverside, Parameter TPP6B, report the NOEC for growth.

12) For the inland silverside, Parameter TYP6B, report the LOEC for growth.

d. Enter the following codes for retests only:

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

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

4. Persistent Toxicity

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

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

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

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

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

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

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

5. Toxicity Reduction Evaluation

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

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

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled “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 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 and source of effluent toxicity;

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

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

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

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

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

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are herein 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 their control stalled the toxicity identification evaluation/TRE. The report shall provide information pertaining to the specific control mechanism selected that will, when implemented, result in the reduction of effluent toxicity to no significant lethality at the critical dilution. The report shall also provide a specific corrective action schedule for implementing the selected control mechanism.

h. Based 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 to specify a chemical-specific limit.

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

TABLE 1 (SHEET 1 OF 4)

MYSID SHRIMP SURVIVAL AND GROWTH

Dates and Times Composites Collected

Date Time Date Time

No. 1 FROM: _____ TO: _____

No. 2 FROM: _____ TO: _____

No. 3 FROM: _____ TO: _____

Test initiated: _____am/pm _____date

Dilution water used: _____ Receiving water _____ Synthetic dilution water

MYSID SHRIMP SURVIVAL

Percent Effluent	Percent Survival in Replicate Chambers								Mean Percent Survival			CV%*
	A	B	C	D	E	F	G	H	24h	48h	7 day	
0%												
3%												
5%												
6%												
8%												
11%												

* Coefficient of Variation = standard deviation x 100/mean

DATA TABLE FOR GROWTH OF MYSID SHRIMP

Replicate	Mean dry weight in milligrams in replicate chambers					
	0%	3%	5%	6%	8%	11%
A						
B						
C						
D						
E						

TABLE 1 (SHEET 2 OF 4)

MYSID SHRIMP SURVIVAL AND GROWTH

DATA TABLE FOR GROWTH OF MYSID SHRIMP (Continued)

Replicate	Mean dry weight in milligrams in replicate chambers					
	0%	3%	5%	6%	8%	11%
F						
G						
H						
Mean Dry Weight (mg)						
CV%*						
PMSD						

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

   CRITICAL DILUTION (8%): _____ YES _____ NO

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 dry weight (growth) at 7 days significantly less than the control's dry weight (growth) for the % effluent corresponding to non-lethal effects?

   CRITICAL DILUTION (8%): _____ 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

TABLE 1 (SHEET 3 OF 4)

INLAND SILVERSIDE MINNOW LARVAL SURVIVAL AND GROWTH TEST

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

Test initiated: _____am/pm _____date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

INLAND SILVERSIDE SURVIVAL

Percent Effluent	Percent Survival in Replicate Chambers					Mean Percent Survival			CV%*
	A	B	C	D	E	24h	48h	7 days	
0%									
3%									
5%									
6%									
8%									
11%									

* Coefficient of Variation = standard deviation x 100/mean

TABLE 1 (SHEET 4 OF 4)

INLAND SILVERSIDE LARVAL SURVIVAL AND GROWTH TEST

INLAND SILVERSIDE GROWTH

Percent Effluent	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight (mg)	CV%*
	A	B	C	D	E		
0%							
3%							
5%							
6%							
8%							
11%							
PMSD							

Weights are for: ____ preserved larvae, or ____ unpreserved larvae

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

   CRITICAL DILUTION (8%): _____ YES _____ NO

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 dry weight (growth) at 7 days significantly less than the control's dry weight (growth) for the % effluent corresponding to non-lethal effects?

   CRITICAL DILUTION (8%): _____ 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: MARINE

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

1. Scope, Frequency, and Methodology

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

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

1) Acute 24-hour static toxicity test using the mysid shrimp (*Mysidopsis bahia*). 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 inland silverside (*Menidia beryllina*). 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, then repeat, an invalid test during the same reporting period. The repeat test shall include the control and all effluent dilutions 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. Except as discussed in Part 2.b., the control and dilution water shall consist of standard, synthetic, reconstituted seawater.

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

2. Required Toxicity Testing Conditions

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

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

c. Samples and Composites

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

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

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

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

3. Reporting

All reports, tables, plans, summaries, and related correspondence required of 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, 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 mysid shrimp, Parameter TIE3E, 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 inland silverside, Parameter TIE6B, 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 "1."

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

4. Persistent Mortality

The requirements of this part apply when a toxicity test demonstrates significant lethality, here defined as a mean mortality of 50% or greater to organisms exposed to the 100% effluent concentration after 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 additional 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 item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5 of this Section.

5. Toxicity Reduction Evaluation

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

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

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

Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

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

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

4) Project Organization - The TRE action plan should describe the project staff, 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.

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

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

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

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

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

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

The permittee may be exempted from complying with 30 TAC § 307.6(e)(2)(B) upon proving that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g., metals) form a salt compound. Following the exemption, the 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 to specify a chemical specific limit.

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

TABLE 2 (SHEET 1 OF 2)

MYSID SHRIMP 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)

INLAND SILVERSIDE 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

The TCEQ is committed to accessibility.
To request a more accessible version of this report, please contact the TCEQ Help Desk at (512) 239-4357.

Compliance History Report

Compliance History Report for CN600344402, RN100633650, Rating Year 2023 which includes Compliance History (CH) components from September 1, 2018, through August 31, 2023.

Customer, Respondent, or Owner/Operator:	CN600344402, Lyondell Chemical Company	**Classification:** SATISFACTORY	**Rating:** 4.22
Regulated Entity:	RN100633650, LYONDELL CHEMICAL CHANNELVIEW	**Classification:** SATISFACTORY	**Rating:** 3.23
Complexity Points:	42	**Repeat Violator:** NO	
CH Group:	05 - Chemical Manufacturing		
Location:	2502 SHELDON RD CHANNELVIEW, TX 77530-2681, HARRIS COUNTY		
TCEQ Region:	REGION 12 - HOUSTON		

ID Number(s):

AIR OPERATING PERMITS ACCOUNT NUMBER HG1575W
AIR OPERATING PERMITS PERMIT 1387
AIR NEW SOURCE PERMITS AFS NUM 4820100417
AIR NEW SOURCE PERMITS ACCOUNT NUMBER HG1575W
AIR NEW SOURCE PERMITS REGISTRATION 48597
AIR NEW SOURCE PERMITS REGISTRATION 42082
AIR NEW SOURCE PERMITS REGISTRATION 40092
AIR NEW SOURCE PERMITS REGISTRATION 40094
AIR NEW SOURCE PERMITS REGISTRATION 40093
AIR NEW SOURCE PERMITS REGISTRATION 38432
AIR NEW SOURCE PERMITS REGISTRATION 37654
AIR NEW SOURCE PERMITS REGISTRATION 36353
AIR NEW SOURCE PERMITS REGISTRATION 35477
AIR NEW SOURCE PERMITS REGISTRATION 34833
AIR NEW SOURCE PERMITS REGISTRATION 32435
AIR NEW SOURCE PERMITS PERMIT 20416
AIR NEW SOURCE PERMITS PERMIT 19613
AIR NEW SOURCE PERMITS PERMIT 19155
AIR NEW SOURCE PERMITS PERMIT 18103
AIR NEW SOURCE PERMITS PERMIT 4121
AIR NEW SOURCE PERMITS PERMIT 3346
AIR NEW SOURCE PERMITS PERMIT 3286A
AIR NEW SOURCE PERMITS PERMIT 2993
AIR NEW SOURCE PERMITS REGISTRATION 75719
AIR NEW SOURCE PERMITS REGISTRATION 73851
AIR NEW SOURCE PERMITS REGISTRATION 74852
AIR NEW SOURCE PERMITS REGISTRATION 77723
AIR NEW SOURCE PERMITS REGISTRATION 78756
AIR NEW SOURCE PERMITS REGISTRATION 79199
AIR NEW SOURCE PERMITS REGISTRATION 79945
AIR NEW SOURCE PERMITS REGISTRATION 79542
AIR NEW SOURCE PERMITS REGISTRATION 80344
AIR NEW SOURCE PERMITS REGISTRATION 81465
AIR NEW SOURCE PERMITS REGISTRATION 35412
AIR NEW SOURCE PERMITS REGISTRATION 81958
AIR NEW SOURCE PERMITS PERMIT 83817
AIR NEW SOURCE PERMITS REGISTRATION 84090
AIR NEW SOURCE PERMITS REGISTRATION 98198
AIR NEW SOURCE PERMITS REGISTRATION 96529
AIR NEW SOURCE PERMITS REGISTRATION 100257
AIR NEW SOURCE PERMITS REGISTRATION 110744
AIR NEW SOURCE PERMITS PERMIT 137856
AIR NEW SOURCE PERMITS REGISTRATION 110759
AIR NEW SOURCE PERMITS REGISTRATION 108363
AIR NEW SOURCE PERMITS EPA PERMIT PSDTX1480
AIR NEW SOURCE PERMITS EPA PERMIT GHGPSDTX149
AIR NEW SOURCE PERMITS REGISTRATION 110749
AIR NEW SOURCE PERMITS REGISTRATION 110753
AIR NEW SOURCE PERMITS REGISTRATION 108390
AIR NEW SOURCE PERMITS REGISTRATION 110747
AIR NEW SOURCE PERMITS REGISTRATION 110748
AIR NEW SOURCE PERMITS REGISTRATION 131147
AIR NEW SOURCE PERMITS EPA PERMIT N234
AIR NEW SOURCE PERMITS REGISTRATION 107594
AIR NEW SOURCE PERMITS REGISTRATION 110745
AIR NEW SOURCE PERMITS REGISTRATION 150982
AIR NEW SOURCE PERMITS REGISTRATION 154483
AIR NEW SOURCE PERMITS REGISTRATION 154043
AIR NEW SOURCE PERMITS REGISTRATION 151560
AIR NEW SOURCE PERMITS REGISTRATION 153364
AIR NEW SOURCE PERMITS PERMIT AMOC86
AIR NEW SOURCE PERMITS REGISTRATION 154220
AIR NEW SOURCE PERMITS REGISTRATION 167049
AIR NEW SOURCE PERMITS REGISTRATION 169166
AIR NEW SOURCE PERMITS REGISTRATION 169047
AIR NEW SOURCE PERMITS REGISTRATION 167651
AIR NEW SOURCE PERMITS REGISTRATION 165455
AIR NEW SOURCE PERMITS REGISTRATION 164468
AIR NEW SOURCE PERMITS REGISTRATION 167653
AIR NEW SOURCE PERMITS REGISTRATION 166559
AIR NEW SOURCE PERMITS REGISTRATION 163982
AIR NEW SOURCE PERMITS REGISTRATION 163984
AIR NEW SOURCE PERMITS REGISTRATION 169258
AIR NEW SOURCE PERMITS REGISTRATION 167333
AIR NEW SOURCE PERMITS REGISTRATION 166665
AIR NEW SOURCE PERMITS REGISTRATION 166560
AIR NEW SOURCE PERMITS REGISTRATION 167648
AIR NEW SOURCE PERMITS REGISTRATION 166338

AIR NEW SOURCE PERMITS REGISTRATION 146922
AIR NEW SOURCE PERMITS REGISTRATION 146914
AIR NEW SOURCE PERMITS PERMIT AMOC1
AIR NEW SOURCE PERMITS REGISTRATION 159522
AIR NEW SOURCE PERMITS PERMIT AMOC158
AIR NEW SOURCE PERMITS REGISTRATION 156080
AIR NEW SOURCE PERMITS EPA PERMIT N282
AIR NEW SOURCE PERMITS REGISTRATION 157435
AIR NEW SOURCE PERMITS REGISTRATION 159150
AIR NEW SOURCE PERMITS REGISTRATION 161551
AIR NEW SOURCE PERMITS REGISTRATION 158060
AIR NEW SOURCE PERMITS REGISTRATION 159528
AIR NEW SOURCE PERMITS REGISTRATION 162741
AIR NEW SOURCE PERMITS REGISTRATION 160679
AIR NEW SOURCE PERMITS REGISTRATION 171842
AIR NEW SOURCE PERMITS REGISTRATION 171830
AIR NEW SOURCE PERMITS REGISTRATION 167649
AIR NEW SOURCE PERMITS REGISTRATION 174602
AIR NEW SOURCE PERMITS REGISTRATION 169041
IHW CORRECTIVE ACTION SOLID WASTE REGISTRATION # (SWR) 30676
UNDERGROUND INJECTION CONTROL PERMIT WDW162
UNDERGROUND INJECTION CONTROL PERMIT WDW148
UNDERGROUND INJECTION CONTROL PERMIT WDW438
WASTEWATER PERMIT WQ0002927000
AIR EMISSIONS INVENTORY ACCOUNT NUMBER HG1575W
POLLUTION PREVENTION PLANNING ID NUMBER P00038
INDUSTRIAL AND HAZARDOUS WASTE EPA ID TXD083472266
INDUSTRIAL AND HAZARDOUS WASTE SOLID WASTE REGISTRATION # (SWR) 30676
INDUSTRIAL AND HAZARDOUS WASTE PERMIT 50288
TAX RELIEF ID NUMBER 24634
TAX RELIEF ID NUMBER 24638
TAX RELIEF ID NUMBER 24635
TAX RELIEF ID NUMBER 24636
TAX RELIEF ID NUMBER 24639
TAX RELIEF ID NUMBER 24637
TAX RELIEF ID NUMBER 25127

Compliance History Period: September 01, 2018 to August 31, 2023 **Rating Year:** 2023 **Rating Date:** 09/01/2023

Date Compliance History Report Prepared: December 07, 2023

Agency Decision Requiring Compliance History: Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.

Component Period Selected: January 05, 2017 to January 05, 2021

TCEQ Staff Member to Contact for Additional Information Regarding This Compliance History.

Name: Monica Baez **Phone:** (512) 239-5784

Site and Owner/Operator History:

1) Has the site been in existence and/or operation for the full five year compliance period? YES
2) Has there been a (known) change in ownership/operator of the site during the compliance period? NO

Components (Multimedia) for the Site Are Listed in Sections A - J

A. Final Orders, court judgments, and consent decrees:

1 Effective Date: 04/13/2017 ADMINORDER 2016-1166-AIR-E (1660 Order-Agreed Order With Denial)
Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter B 116.115(b)(2)(F)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Rqmt Prov: Special Condition 1 PERMIT
Description: Failure to meet the demonstration criteria for an affirmative defense for unauthorized emissions during an emissions event. (Category A12.i(6])

2 Effective Date: 04/25/2017 ADMINORDER 2016-1520-AIR-E (1660 Order-Agreed Order With Denial)
Classification: Moderate
Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Rqmt Prov: Special Condition 1 PERMIT
Special Conditions No. 1 OP
Description: Failure to prevent unauthorized emissions during an emissions event. [Category A.12.i.6]

3 Effective Date: 05/11/2017 ADMINORDER 2016-1189-AIR-E (1660 Order-Agreed Order With Denial)
Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter B 116.115(b)(2)(F)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)

Rqmt Prov: Special Condition 1 PERMIT
STC No. 25 OP

Description: Failed to prevent unauthorized emissions from the POSM-2 Emergency Flare, EPN EFL68493.

Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter F 101.201(a)(2)(F)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)

Rqmt Prov: STC 2.F. OP

Description: Failure to submit a complete and accurate initial notification within 24 hours after discovery of the emissions event.

4 Effective Date: 06/20/2017 ADMINORDER 2017-0027-AIR-E (1660 Order-Agreed Order With Denial)

Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(2)
30 TAC Chapter 113, SubChapter C 113.120
30 TAC Chapter 115, SubChapter B 115.121(a)(2)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT G 63.113(a)(2)
5C THSC Chapter 382 382.085(b)

Rqmt Prov: Special Condition #21 PERMIT
Special Terms and Condition #25 OP
Special Terms and Condtion #1A OP

Description: Failure to meet control requirements during annual testing of catalytic converter (F64170VNT). (Category A8)

5 Effective Date: 07/10/2018 ADMINORDER 2017-1634-AIR-E (1660 Order-Agreed Order With Denial)

Classification: Major

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
5C THSC Chapter 382 382.085(b)

Rqmt Prov: Special Condition 1 PERMIT

Description: Failure to meet the demonstration criteria for an affirmative defense for unauthorized emissions during an emissions event. [Category A (12)(i)(6)]

6 Effective Date: 09/03/2019 ADMINORDER 2018-1321-AIR-E (1660 Order-Agreed Order With Denial)

Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)

Rqmt Prov: NSR, SC 1 PERMIT
O1387 OP

Description: Failed to prevent unauthorized emissions.

See addendum for information regarding federal actions.

B. Criminal convictions:

N/A

C. Chronic excessive emissions events:

N/A

D. The approval dates of investigations (CCEDS Inv. Track. No.):

Item 1	January 19, 2017	(1398007)
Item 2	February 16, 2017	(1404906)
Item 3	March 01, 2017	(1394440)
Item 4	March 16, 2017	(1411985)

Compliance History Report for CN600344402, RN100633650, Rating Year 2023 which includes Compliance History (CH) components from January 05, 2017, through January 05, 2021.

Item 5	April 17, 2017	(1418488)
Item 6	April 19, 2017	(1407328)
Item 7	May 17, 2017	(1426086)
Item 8	May 19, 2017	(1414492)
Item 9	June 19, 2017	(1432126)
Item 10	June 20, 2017	(1416352)
Item 11	July 06, 2017	(1421621)
Item 12	July 18, 2017	(1424831)
Item 13	July 25, 2017	(1421346)
Item 14	July 28, 2017	(1420658)
Item 15	August 17, 2017	(1444383)
Item 16	September 11, 2017	(1435371)
Item 17	September 15, 2017	(1435213)
Item 18	September 18, 2017	(1450974)
Item 19	October 17, 2017	(1456843)
Item 20	November 01, 2017	(1447335)
Item 21	November 16, 2017	(1462302)
Item 22	December 07, 2017	(1430214)
Item 23	December 13, 2017	(1429885)
Item 24	December 19, 2017	(1468685)
Item 25	December 21, 2017	(1454126)
Item 26	January 19, 2018	(1475396)
Item 27	February 13, 2018	(1466611)
Item 28	February 19, 2018	(1487592)
Item 29	March 21, 2018	(1473871)
Item 30	April 18, 2018	(1494522)
Item 31	May 17, 2018	(1501469)
Item 32	May 30, 2018	(1485370)
Item 33	June 19, 2018	(1508559)
Item 34	July 16, 2018	(1490301)
Item 35	July 17, 2018	(1496723)
Item 36	July 25, 2018	(1496730)
Item 37	August 06, 2018	(1505241)
Item 38	August 09, 2018	(1506015)
Item 39	August 17, 2018	(1520944)
Item 40	August 27, 2018	(1512268)
Item 41	September 19, 2018	(1528124)
Item 42	September 21, 2018	(1500062)
Item 43	October 17, 2018	(1523377)
Item 44	October 18, 2018	(1534467)
Item 45	November 20, 2018	(1542301)
Item 46	December 20, 2018	(1546069)
Item 47	January 17, 2019	(1531809)
Item 48	January 18, 2019	(1562244)
Item 49	February 20, 2019	(1562242)
Item 50	March 07, 2019	(1550941)
Item 51	March 19, 2019	(1562243)
Item 52	April 09, 2019	(1554130)
Item 53	April 18, 2019	(1572667)
Item 54	May 20, 2019	(1569397)
Item 55	June 20, 2019	(1584944)
Item 56	July 18, 2019	(1594017)
Item 57	July 31, 2019	(1570312)
Item 58	August 13, 2019	(1580650)
Item 59	August 16, 2019	(1600338)
Item 60	September 20, 2019	(1607230)
Item 61	October 17, 2019	(1614082)
Item 62	October 21, 2019	(1603900)

Item 63	October 30, 2019	(1604267)
Item 64	November 20, 2019	(1619893)
Item 65	December 20, 2019	(1627254)
Item 66	January 06, 2020	(1617209)
Item 67	January 08, 2020	(1617997)
Item 68	January 10, 2020	(1617228)
Item 69	January 20, 2020	(1634889)
Item 70	February 20, 2020	(1641506)
Item 71	February 26, 2020	(1631413)
Item 72	March 19, 2020	(1648015)
Item 73	April 20, 2020	(1654366)
Item 74	May 08, 2020	(1645534)
Item 75	May 13, 2020	(1597711)
Item 76	May 19, 2020	(1660931)
Item 77	June 19, 2020	(1667464)
Item 78	July 17, 2020	(1674413)
Item 79	August 11, 2020	(1666079)
Item 80	August 18, 2020	(1681188)
Item 81	September 17, 2020	(1687757)
Item 82	October 16, 2020	(1678773)
Item 83	October 19, 2020	(1694103)
Item 84	October 28, 2020	(1684474)
Item 85	December 15, 2020	(1696925)
Item 86	December 17, 2020	(1714967)

E. Written notices of violations (NOV) (CCEDS Inv. Track. No.):

A notice of violation represents a written allegation of a violation of a specific regulatory requirement from the commission to a regulated entity. A notice of violation is not a final enforcement action, nor proof that a violation has actually occurred.

1 Date: 02/03/2020 (1592466)

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 111, SubChapter A 111.111(a)(7)(A)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Term & Condition 3C(i) OP

Description: Failure to prevent visible emissions (Category B18g1).

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition 15 PERMIT
Special Term & Condition 25 OP

Description: Failure to maintain average temperature differential for the Catalytic Incinerator (EPN: F97950) (Category C4).

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition 11I PERMIT
Special Condition 14I PERMIT
Special Condition 19I PERMIT
Special Condition 28I PERMIT
Special Term & Condition 25 OP

Description: Failure to update daily cumulative emissions for the Delay of Repair list (EPN: FUGITIVES) (Category B3)

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 115, SubChapter H 115.725(d)(2)(A)(i)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition 13B PERMIT
Special Terms & Conditions 1A & 25 OP

Description: Failure to conduct quarterly multi-point calibration for the Flare (EPN: 4I68491) (Category B1).

2 Date: 10/31/2020 (1714966)

Self Report? YES Classification: Moderate

Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
30 TAC Chapter 305, SubChapter F 305.125(1)

Description: Failure to meet the limit for one or more permit parameter

3 Date: 11/25/2020 (1672455)

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 115, SubChapter D 115.352(4)
30 TAC Chapter 115, SubChapter H 115.783(5)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-6(a)(1)
5C THSC Chapter 382 382.085(b)
Special Condition 15E PERMIT
Special Terms and Condition 1A OP
Special Terms and Condition 25 OP
Special Terms and Condition 26 OP

Description: Failure to prevent an open ended line (OEL).

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition 15 PERMIT
Special Terms and Condition 25 OP

Description: Failure to maintain average temperature differential for the Catalytic Incinerator (EPN: F97950).

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
Special Condition 5 PERMIT
Special Terms and Condition 25 OP

Description: Failure to maintain maximum production rate limit of ETBE.

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(3)(ii)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(6)(ii)
5C THSC Chapter 382 382.085(b)
Special Condition 4A PERMIT
Special Terms and Condition 28 OP

Description: Failure to maintain minimum heating value of flare (EPN: FL6105).

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(2)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(5)
5C THSC Chapter 382 382.085(b)
Special Condition 12C PERMIT
Special Terms and Condition 28 OP
Speciation Terms and Condition 1A OP

Description: Failure to maintain pilot flame on deepwell flare (EPN: FL68910).

F. Environmental audits:

Notice of Intent Date: 03/15/2017 (1401171)

Disclosure Date: 10/04/2017

Viol. Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
30 TAC Chapter 122, SubChapter B 122.145(2)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(3)(ii)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(6)(ii)

Rqmt Prov: PERMIT SC 2(A)
OP SC&C 25

Description: Periodic failure to maintain minimum heating value on POSM 1 flare (EPN EFL6073 l); deviation submitted

Compliance History Report for CN600344402, RN100633650, Rating Year 2023 which includes Compliance History (CH) components from January 05, 2017, through January 05, 2021.

via Title V report dated July 27, 2017, deviation # 98619.
Viol. Classification: Minor
Citation: 30 TAC Chapter 122, SubChapter B 122.145(2)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(3)(ii)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(6)(ii)
Rqmt Prov: PERMIT SC 4
OP ST&C 25
Description: Periodic failure to maintain minimum heating value on BO flare (EPN EFL6105).

Notice of Intent Date: 09/20/2017 (1438522)
No DOV Associated

Notice of Intent Date: 06/20/2018 (1498543)
Disclosure Date: 04/24/2019
Viol. Classification: Major
Citation: 30 TAC Chapter 116, SubChapter B 116.110
Description: Documentation of NSR Authorization for one storage tote was not available.

Notice of Intent Date: 03/29/2019 (1576010)
Disclosure Date: 07/10/2019
Viol. Classification: Minor
Citation: 30 TAC Chapter 115, SubChapter H 115.725(c)(3)
Description: Failed to conduct quarterly inspections on some PSV monitoring systems as required by the HRVOC Vent Gas Monitoring Plan.
Viol. Classification: Minor
Citation: 30 TAC Chapter 115, SubChapter D 115.352(4)
40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.167(a)(1)
Rqmt Prov: PERMIT SC 14.E.
PERMIT SC 15.E.
Description: Failed to properly secure three open-ended lines with a second closed valve, blind flange, cap, or plug.
Viol. Classification: Minor
Citation: 40 CFR Chapter 262, SubChapter I, PT 262, SubPT B 262.20(a)(1)
Description: Failed to properly fill out manifests Additional information was recorded in Section 9b instead of Section 11.

Notice of Intent Date: 04/12/2019 (1555816)
No DOV Associated

Notice of Intent Date: 08/10/2020 (1670979)
No DOV Associated

G. Type of environmental management systems (EMSs):
N/A

H. Voluntary on-site compliance assessment dates:
N/A

I. Participation in a voluntary pollution reduction program:
N/A

J. Early compliance:
N/A

Sites Outside of Texas:
N/A