Texas Commission on Environmental Quality INTEROFFICE MEMORANDUM

То:	Final Documents Team Lo Chief Clerk's Office	eader DATE: February 21, 2025			
From:	Michael Parr Staff Attorney Environmental Law Divis	ion			
Subject:	Backup Filed for the ED's Response to Hearing Requests				
	Applicant:	Dow Hydrocarbons and Resources LLC and Union Carbide Corporation			
	Proposed Permit No.:	WQ0000447000			
	Program:	Water			
	Docket No.:	2025-0080-IWD			
Enclosed p	please find a copy of the fo	llowing documents for inclusion in the			

background material for this permit application:

- Technical Summary & Proposed Permit
- The Compliance History Report

For draft Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0000447000, U.S. Environmental Protection Agency (EPA) ID No. TX0002844, to discharge to water in the state

Issuing Office:	Texas Commission on Environmental Quality (TCEQ) P.O. Box 13087 Austin, Texas 78711-3087
Applicant:	Dow Hydrocarbons and Resources LLC and Union Carbide Corporation P.O. Box 186 Port Lavaca, Texas 77979
Prepared By:	Mónica Vallin-Báez Wastewater Permitting Section Water Quality Division (512) 239-5784
Date:	October 20, 2023 (Revised February 26, 2024, June 4, 2024, and September 16, 2024)
Permit Action:	Major amendment without renewal; TPDES Permit No. WQ0000447000

The permittee has requested a major amendment without renewal to identify the current flow from "Flow" to "Flow (dry weather)" at Outfall 001; to add and identify flow as "total flow" at Outfall 001; to add monitoring and reporting requirements for the daily average and daily maximum for "total flow" at Outfall 001; to apply the mass loading effluent limitations and concentration effluent limitations for biochemical oxygen demand, 5-day (BOD₅) and total suspended solids (TSS) to the "total flow" at Outfall 001; to change the monitoring frequency for BOD_{5} and TSS from "once per day" to "three per week" at Outfall 001; to change the Sample Type from "Grab" to "Composite" at Outfall 001; to revise Other Requirement No. 1 so that it will be consistent with requested changes for flow, BOD₅, and TSS for Outfall 001; to revise the sampling point for Enterococci at Outfall 001; to add a Final Phase for Outfall 002 to authorize the discharge of cooling tower blowdown, water treatment wastes, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, stormwater from Seadrift Operations, hydrostatic test water, firewater, and *de minimis* quantities of process wastewater at a daily average flow not to exceed 17 million gallons per day (MGD) and a daily maximum flow not to exceed 43 MGD; to move the sampling point for flow at Outfall 002 in the Final Phase; to remove "dry-weather" from flow for Outfall 002 in the Final Phase: to authorize an increase in the daily maximum effluent limitation for total residual chlorine from 0.2 mg/L to 2.0 mg/L at Outfall 002; to move the compliance point for floating solids, visible foam and visible oil for Outfalls 001, 002, 006, and 012; to add a provision in the Other Requirements Section for alternate monitoring for continuous meters for flow, pH, and temperature for Outfalls 001 and 002; to add a minimum analytical level of 5 mg/L for oil and grease in Item No. 2 of the Other Requirements Section; to change the method for submitting biomonitoring reports; and to remove Outfalls 007, 008, 009, and 010. Therefore, only items impacted by the amendment requests were considered during the drafting of this permit. The existing Fact Sheet for the permit issued on July 8, 2021, is still valid and is provided in Attachment A of this Fact Sheet.

I. <u>EXECUTIVE DIRECTOR RECOMMENDATION</u>

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. **The draft permit retains the current expiration date of July 8, 2026**.

II. <u>APPLICANT ACTIVITY</u>

The applicant currently operates UCC Seadrift Operations, a chemical facility that manufactures plastics (polyethylene and polypropylene), glycols, and oxide derivatives.

III. <u>DISCHARGE LOCATION</u>

As described in the application, the facility is located at 7501 State Highway 185 North, near the City of Seadrift, Calhoun County, Texas 77983. Discharge is via Outfalls 001, 002, 005, 006, and 012 directly to Victoria Barge Canal Tidal in Segment No. 1701 of the Lavaca-Guadalupe Coastal Basin; via Outfall 003 to a ditch, thence to West Coloma Creek, thence to Coloma Creek; via Outfalls 014 and 015 to West Coloma Creek, thence to ColomaCreek; via Outfall 016 to West Coloma Creek Lateral No. 17, thence to West Coloma Creek, thence to Coloma Creek, thence to Matagorda Bay/Powderhorn Lake in Segment No. 2451 of the Bays and Estauries; via Outfall 004 to an unnamed ditch, thence to San Antonio Bay/Hynes Bay/Guadalupe Bay/Mission Lake in Segment No. 2462 of the Bays and Estuaries.

IV. <u>RECEIVING STREAM USES</u>

The designated uses for Segment No. 1701 are non-contact recreation and high aquatic life use. The designated uses for Segment Nos. 2451 and 2462 are primary contact recreation, exceptional aquatic life use, and oyster waters.

V. <u>STREAM STANDARDS</u>

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

VI. <u>DISCHARGE DESCRIPTION</u>

The following is a quantitative description of the discharge described in the monthly effluent report data for the period **July 2019** through **August 2023**. 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. Only flow, BOD₅, TSS, and Enterococci data for Outfall 001, and flow and total residual chlorine data for Outfall 002 is presented below. Bacteria levels are expressed in colony forming units (cfu) or most probable number (MPN) per 100 mL. The **major amendment without renewal request does not pertain to any other pollutant.** The **existing Fact Sheet for the permit issued on July 8, 2021, is still valid and is provided in Attachment A of this Fact Sheet. See Attachment A for a summary of pollutants.**

A. Flow

Outfall	Frequency	Average of	Maximum of		
		Daily Average, MGD	Daily Maximum, MGD		
001	Continuous	4.01	24.3		
002	Continuous	4.09	17.6		

B. Effluent Characteristics

Outfall	Pollutant	Average of Daily	Maximum of Daily	
Outian Fonutant		Average	Maximum	
001	BOD ₅	7.62 mg/L	26.8 mg/L	
		245 lbs/day	1,424 lbs/day	
	TSS	24 mg/L	149 mg/L	
		695 lbs/day	4,709 lbs/day	
	Enterococci	1.79 cfu/100 mL	2,420 cfu/100 mL	
002	TRC	N/A	0.6 mg/L	

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

0	Pollutant (units)	Month/	Daily Average		Daily Maximum	
Outrall		Year	Limit	Reported	Limit	Reported
001	Flow (dry weather)	08/2020	5.80	7		
	(MGD)					
		05/2021		9.2		
		06/2021		14.7		
		08/2021		12.8		
		05/2023		7.6		
	Enterococci (cfu/100	11/2019			104	201
	mL)					
		12/2019				686
		10/2020	35	94		2419
		12/2020				2420
		07/2021				2420
		02/2022				142
		09/2022				2420
002	Flow (dry weather)	12/2022			17	17.6
	(MGD)					
	TRC (mg/L)	02/2021				0.3
		12/2022	N/A	N/A	0.2	0.6
		02/2023				0.3

D. Effluent Limitation Violations

The violations for flow and Enterococci at Outfall 001 do not show a trend of non-compliance. During this reporting period flow was only exceed one time. This exceedance does not show a trend of non-compliance. In the last two years (August 2021 through August 2023) total residual chlorine was exceeded two times. The permittee has requested in this major amendment an increase in the daily maximum for TRC from 0.2 mg/L to 2.0 mg/L. Even though, these exceedances do not show a trend of non-compliance, the daily maximum for TRC

has been increased to 2.0 mg/L at Outfall 002. Please see additional information below on this item.

VII. DRAFT EFFLUENT LIMITATIONS

See Appendix B of this fact sheet for effluent limitations comparison table (technology-based, water quality-based, and existing) and final effluent limitations are established in the draft permit.

OUTFALL LOCATIONS

Outfall	Latitude	Longitude
001	28.498758 N	96.795547 W
002	28.498758 N	96.795547 W
003	28.521762 N	96.763829 W
004	28.491458 N	96.764658 W
005	28.491071 N	96.777994 W
006	28.508003 N	96.779011 W
012	28.503706 N	96.786628 W
014	28.531900 N	96.767233 W
015	28.532169 N	96.766783 W
016	28.537006 N	96.757989 W

VIII. SUMMARY OF CHANGES FROM APPLICATION

- A. The applicant requested the following amendments that the executive director did not grant:
 - 1. To add monitoring and reporting requirements for daily average and daily maximum for flow and label it as "total flow" at Outfall 001. Compliance with the flow limitation established at Outfall 001 is based upon days in which there is dry-weather flow only. Flows on days when rainfall exceeds 0.1 inches during any 24-hour period, may not be used in calculating the daily average and daily maximum flows to be submitted on the monthly effluent report. Therefore, this request was not granted.
 - 2. *To modify Other Requirement No.* 1 to clarify compliance monitoring for *flow, BOD*₅, *and TSS.* UCC requests that Other Requirement No. 1 in the current permit be updated to delete the table relating rainfall to wet weather flow and to provide detail on how calculations and reporting of flow, BOD₅, and TSS are to be done. The Other Requirement No. 1 has been updated and the table has been removed. Other Requirement No. 1 specifically states that the flow limitations are applicable to dryweather flow. Furthermore, Other Requirement No. 1 defines dry-weather flow. Please see Other Requirement No. 1 in the draft permit for more information.

However, Other Requirement No. 1 does not have information on how BOD_5 and TSS should be calculated. The current permit has daily average and daily maximum mass loadings effluent limits for BOD_5 and TSS, a daily average concentration effluent limit for BOD_5 , daily average monitoring and reporting concentration requirement for TSS, and daily maximum monitoring and reporting concentration requirement for BOD_5 and TSS that are applicable when the daily average flow is less than or equal to 5.8 MGD (noted as

Footnote No. 4 in the Effluent Page for Outfall 001). The current permit also has a daily maximum concentration effluent limit for BOD_5 and TSS that are applicable when the daily average flow is greater than 5.8 MGD (noted as Footnote No. 5 in the Effluent Page for Outfall 001).

Please note that the wet-weather effluent limitations for BOD_5 and TSS were first established for permit issued on October 7, 1996 at Outfall 001.

The following is a summary of the contents of Appendix A of the Fact Sheet dated April 4, 1996. This provides a brief description of the historical basis for the wet-weather effluent limitations for BOD_5 and TSS at Outfall 001.

Mass limits (lbs/day) are intended to apply to the normal operating conditions at a facility. Therefore, it is difficult to calculate appropriate mass limits for to account for stormwater flows generated from a wide range of rainfall events. For example, mass limits for BOD_5 and TSS could be calculated using the stormwater flow generated from a 100-year rainfall event. In that case the limits would be very high and not representative of normal operating conditions of the facility. Consequently, permit limits in units of concentration (mg/L) are usually better applied to high stormwater flow events.

- 3. To move the compliance point for floating solids, visible foam, and visible oil for *Outfalls 001, 002, 006, and 012*.UCC requests that the monitoring location for compliance with the prohibition on floating solids, visible foam, and visible oil for Outfalls 001, 002, 006, and 012 in the current permit (pages 2c, 2f, and 2g) be moved to the location where these discharges enter the receiving water (Victoria Barge Canal). Discharges from each of these outfalls enters the conveyance channel, which transports the water to the combined outfall structure at the Victoria Barge Canal. No information is provided from the permittee on how it can protect the receiving water in case of a potential failure to control floating solids, visible foam, or oil spill. Therefore, this request was not granted.
- B. The following changes have been made from the application that make the draft permit more stringent:
 - 1. Based on re-evaluation of the critical conditions, the daily average and daily maximum effluent limitation for Hexachlorobutadiene is more protective than the effluent limitations established in the current permit for Outfall 001. Therefore, the newly calculated effluent limitations for Hexachlorobutadiene have been included in the draft permit for Outfall 001 (Interim Phase). Based on the self-reported data, it shows that the permittee can meet the newly proposed effluent limit and no compliance period is proposed in the draft permit.
 - 2. The permittee has requested a daily average and daily maximum flow increase for Outfall 002 and requested that the current effluent limits and monitoring requirements be set as the Interim Phase for Outfall 002 and the proposed limitations under the Final Phase. The critical conditions is evaluated on flows from Outfall 001 and 002. Based on the flow increase for Outfall 002, the critical conditions were re-evaluated for Outfalls 001 and 002. In order to apply the changes to Outfall 002 and be protective of the discharge from Outfall 001 once the Final Phase is in effect, a Final Phase was added to Outfall 001.

- 3. Based on re-evaluation of the critical conditions for the Final Phase at Outfall 001, the daily average and daily maximum effluent limitation for Benzo(a)anthracene, Benzo(a)pyrene, Hexachlorobenzene, and Hexachlorobutadiene are more protective than the effluent limitations established in the current permit for Outfall 001. Therefore, the newly calculated effluent limitations for Outfall 001 (Final Phase) for Benzo(a)anthracene, Benzo(a)pyrene, Hexachlorobenzene, and Hexachlorobutadiene have been included in the draft permit for Outfall 001 (Final Phase). Based on the self-reported data, it shows that the permittee can meet the newly proposed effluent limit and no compliance period is proposed in the draft permit.
- 4. A daily maximum effluent limit for total residual chlorine of 0.1 mg/L has been added to the draft permit at Outfall 001. The permittee has requested a daily maximum increase for total residual chlorine from 0.2 mg/L to 2.0 mg/L at Outfall 002. In order to ensure protection of aquatic life, the 0.1 mg/L TRC is proposed to be sampled when Outfalls 001 and 002 is commingled prior to discharging to the Victoria Barge Canal Tidal.
- 5. More protective effluent limitations for total copper have been included at Outfall 002 (Final Phase), based on the newly calculated water quality-based effluent limitation for Outfall 002 (Final Phase).

IX. <u>SUMMARY OF CHANGES FROM EXISTING PERMIT</u>

The permittee requested the following amendments that the Executive Director recommends granting:

- 1. To re-label the current flow requirements for Outfall 001, which relate to dry-weather flow, from "Flow" to "Flow (dry-weather)." This would make it consistent with the parameter label in the discharge monitoring report (DMR) database and make it clear what is being reported. The effluent page for Outfall 001, already notes that the flow requirement in the effluent page is applicable to "dry-weather." Per permittee's request, "dry-weather" has been included after flow on the table for clarity. This request does not constitute a relaxation of the permit. No antibacksliding justification is required.
- 2. To make the mass loading and concentration effluent limits for BOD_5 and TSS applicable to total flow at Outfall 001. In the current permit, mass limits apply only when flows are less than or equal to 5.8 MGD and concentrations limits only when flows are greater than 5.8 MGD. Without asking for an increase in these limits, making the effluent limits applicable to total flow (i.e., any flow) would be more restrictive. The footnotes from the current permit for BOD_5 and TSS which specified when these limits were applicable have been removed at Outfall 001 and are not continued in the draft permit. The effluent limits for BOD_5 and TSS in the draft permit are applicable to any flow. This request does not constitute a relaxation of the permit. No antibacksliding justification is required.
- 3. To set the Measurement Frequency for BOD_5 and TSS to three times per week (3/week). The current permit requires a Measurement Frequency of 3/week when flows are less than or equal to 5.8 MGD, but one per day (1/day) when flow is greater than 5.8 MGD. Because the wastewater stabilization pond system discharging via Outfall 001 has such a long retention time, the effluent quality does not change dramatically from day to day; therefore, a Measurement Frequency of 3/week would adequately characterize the outfall discharge. The permittee has requested in this major amendment permit

action to apply the mass loading and concentration effluent limits for BOD_5 and TSS to any type of flow, therefore, the Measurement Frequency for 1/day has been removed for BOD_5 and TSS and is not continued in the draft permit. This request does not constitute a relaxation of the permit. No antibacksliding justification is required.

- 4. To set the Sample Type for BOD_5 and TSS to "composite." The current permit requires composite samples when flows are less than or equal to 5.8 MGD, but grab samples when flow is greater than 5.8 MGD. Composite samples provide better characterization of the effluent quality. Because the wastewater stabilization pond system discharging via Outfall 001 has such a long retention time, the effluent quality does not change dramatically from day to day. The permittee has requested in this major amendment permit action to apply the mass loading and concentration effluent limits for BOD_5 and TSS to any type of flow, therefore, the grab sample has been removed for BOD_5 and TSS and is not continued in the draft permit. This request does not constitute a relaxation of the permit. No antibacksliding justification is required.
- 5. *To revise the monitoring point for Enterococci at Outfall 001 to reflect modifications to the Enterococci Treatment System.* This request does not constitute a relaxation of the permit. No antibacksliding justification is required. The monitoring point for Enterococci at Outfall 001 has been revised to the following:

Enterococci shall be monitored downstream of Tank 1106 and all of the sampling results from downstream of Tank 1106 shall be used in the calculations of the daily average (geometric mean for Enterococci) and daily maximum concentration."

6. To add a Final Phase for Outfall 002 to authorize the discharge of cooling water blowdown, water treatment waste, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, stormwater from Seadrift Operations, hydrostatic test water, firewater, and de minimis quantities of process wastewater at a daily average flow not to exceed 17 MGD and a daily maximum flow not to exceed 43 MGD.

The facility will be making significant modifications in the Outfall 002 system to manage stormwater more effectively and provide filtration for solids. These changes include construction of a stormwater surge basin, silt basin, and filtering and solids management system; rerouting stormwater from Outfall 006 drainage area to the Outfall 002 system; and an increase in cooling water blowdown to manage cooling water quality. The increase in flow limits is based on the capacity of the Outfall 002 filtering system: 12,000 gallons per minute (gpm) (monthly average) and 30,000 gpm (daily maximum), equivalent to 17 MGD and 43 MGD, respectively.

A Final Phase for Outfall 002 has been included in the draft permit. Based on the substantial changes at the facility, the flow increase is consistent with antibacksliding in accordance with 40 CFR 122.44(l)(2)(i)(A).

7. To increase the daily maximum effluent limitation for total residual chlorine at Outfall 002 from 0.2 mg/L to 2 mg/L. Based on the analytical data summarized above for TRC, the daily maximum effluent limits was exceeded twice in the last two years. Even though, these exceedances do not show a trend of non-compliance, the daily maximum for TRC has been increased to 2.0 mg/L at Outfall 002. In addition, a daily maximum TRC of 0.1

mg/L has been included at Outfall 001 and must be sampled after the combined flows from Outfalls 001 and 002 for the protection of aquatic life.

- 8. *To move the monitoring point for flow at Outfall 002 in the Final Phase*. This request does not constitute a relaxation of the permit. No antibacksliding justification is required.
- 9. To remove reference to "dry-weather" flow at Outfall 002 in the Final Phase in conjunction with the request to increase the flow limits for Outfall 002. The increase in flow limits is not based on dry-weather flow, rather on the entire, all weather flow to be discharged from Outfall 002 after the system modification are complete. This request does not constitute a relaxation of the permit. No antibacksliding justification is required.
- 10. To add a provision in the Other Requirements for alternate monitoring for continuous meters for flow, pH, and temperature for Outfalls 001 and 002 to allow alternate monitoring when continuous monitoring devices for flow, pH, and temperature may be down for maintenance and/or repair or otherwise (e.g., power outage). The proposed language has been included in the Other Requirement Section of the draft permit:
 - 19. The permittee shall monitor continuously for flow and pH at Outfall 001 in accordance with pages 2b and 2e and for flow, temperature, and pH at Outfall 002 in accordance with pages 2f, 2h, 2i and 2k when the continuous monitoring devices are in operation. When pH is monitored continuously, the exemption in Other Requirement No. 10 applies. If a continuous monitoring device for flow, pH or temperature is down for planned maintenance and/or repair, the permittee shall provide written notification 24-hours prior to the alternate monitoring to the TCEQ Region 14 Office and provide for a monitoring frequency of at least once a day until the continuous monitoring device is back in operation. In the event of an unplanned outage (e.g., power outage) of any continuous monitoring device, the notification shall be made within 24-hours of becoming aware of the outage. The permittee must notify the TCEQ Region 14 Office in writing within 24-hours when the continuous meters are back in normal operations.
- 11. To add minimum analytical level (MAL) of 5 mg/L for oil and grease in the Other *Requirement No. 2;* and to add a note that oil and grease is not subject to the 24-hour and written report requirements for a violation of the daily maximum limit because oil and grease is not a toxic pollutant. Item No. *2* in the Other Requirement Section requires an MAL sensitivity from 1.5 mg/L to 5 mg/L using approved analytical methods. In accordance with 40 CFR 122.44(i)(1)(iv)(A)(1), a method is "sufficiently sensitive" when the method minimum level (ML) is at or below the level of the effluent limit established in the permit for the measured pollutant, which is also consistent with the definition of the MAL in 30 TAC § 307.3(40).

The effluent limit violations reporting requirement in Item 2 of the Other Requirement Section is applicable to constituents with effluent limits in the proposed permit that are included in the Priority Pollutant List at 40 CFR Part 423, Appendix A. Oil and grease is not a priority pollutant and therefore is not subject to the effluent limit violations reporting requirements.

Other Requirement No. 2 has been updated to include an MAL for oil and grease. This request does not constitute a relaxation of the permit. No antibacksliding justification is required.

- 12. *Requests that biomonitoring reports (Table 1 forms) be allowed to be submitted electronically to the TCEQ instead of mailing paper copies.* The permittee may submit the biomonitoring reports via e-mail. This request does not require any changes to the draft permit for this request.
- 13. To remove Outfalls 007, 008, 009, and 010. The permit authorizes these outfalls for the discharge of stormwater and certain allowable non-stormwater. However, because there is no longer any industrial activity by UCC in the drainage areas of these outfalls, *TPDES authorization is no longer required*. The removal of these outfalls makes the draft permit more protective, therefore, this request does not constitute a relaxation of the permit. No antibacksliding justification is required.

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

- 1. A "single grab" for TSS at Outfall 001 has been included in the draft permit to be reflective of the amendment requests and is consistent with TCEQ Practice.
- 2. The "single grab" for BOD₅ has been revised to be more in accordance with TCEQ Practice when the Sample Type is "Composite."
- 3. The daily maximum monitoring and reporting requirement for dissolved oxygen (DO) at Outfall 001 has been removed. The daily maximum monitoring and reporting requirement for DO was added erroneously and it is removed in accordance with antibacksliding.
- 4. The compliance period for benzo(a)anthracene, benzo(a)pyrene, and hexachlorobenzene is no longer applicable and has been removed. The footnotes on pages 2a and 2b have been removed and are not continued in the draft permit.
- 5. Other Requirement No. 1 has been revised in the draft permit.
- 6. Other Requirement No. 2 has been revised in the draft permit to include oil and grease.
- 7. Other Requirement No. 7, regarding mixing zone has been updated.
- 8. Added Other Requirement No. 19, which allows the permittee to use an alternative monitoring device for flow, temperature, and pH at Outfalls 001 and 002, when the devises are down for maintenance, repair or otherwise (e.g., power outage).
- 9. Added Other Requirement No. 20 regarding notification to TCEQ within 45 upon completion of the final phase for Outfalls 001 and 002.
- 10. Added Other Requirement No. 21 regarding the use of the site process sewer clarifier systems.
- 11. The whole effluent toxicity (WET) effluent dilution series for Outfall 001 were changed in the draft permit from 3%, 5%, 6%, 8%, and 11%, with a critical dilution of 8% effluent to 4%, 5%, 7%, 9%, and 12% with a critical dilution of 9% effluent, based on recommendation from the Standards Implementation Team, Interoffice Memorandum dated October 13, 2023.
- 12. The ownership changed from Union Carbide Corporation to Dow Hydrocarbons and Resources LLC and Union Carbide Corporation, based on a transfer of ownership issued in accordance with 30 TAC Section 305.64 on February 7, 2024.

X. <u>DRAFT PERMIT RATIONALE</u>

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. <u>REASON FOR PERMIT ISSUANCE</u>

The applicant applied to the TCEQ for a major amendment to Permit No. WQ0000447000 to identify the current flow from "Flow" to "Flow (dry weather)" at Outfall 001; to add and identify flow as "total flow" at Outfall 001; to add monitoring and reporting requirements for the daily average and daily maximum for "total flow" at Outfall 001; to apply the mass loading effluent limitations and concentration effluent limitations for biochemical oxygen demand, 5-day (BOD₅) and total suspended solids (TSS) to the "total flow" at Outfall 001; to change the monitoring frequency for BOD₅ and TSS from "once per day" to "three per week" at Outfall 001; to change the Sample Type from "Grab" to "Composite" at Outfall 001; to revise Other Requirement No. 1 so that it will be consistent with requested changes for flow, BOD₅, and TSS for Outfall 001; to revise the sampling point for Enterococci at Outfall 001; to add a Final Phase for Outfall 002 to authorize the discharge of cooling tower blowdown, water treatment waste, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, stormwater from Seadrift Operations, hydrostatic test water, firewater, and de minimis quantities of process wastewater at a daily average flow not to exceed 17 MGD and a daily maximum flow not to exceed 43 MGD; to move the sampling point for flow at Outfall 002 in the Final Phase; to remove "dry-weather" from flow for Outfall 002 in the Final Phase; to authorize an increase in the daily maximum effluent limitation for total residual chlorine from 0.2 mg/L to 2.0 mg/L at Outfall 002; to move compliance point for floating solids, visible foam and visible oil for Outfalls 001, 002, 006, and 012; to add a provision in the Other Requirement Section for alternate monitoring for continuous meters for flow, pH, and temperature for Outfalls 001 and 002; to add a minimum analytical level of 5 mg/L for oil and grease in Item No. 2 of the Other Requirement Section; to change the method for submitting biomonitoring reports; and to remove Outfalls 007, 008, 009, and 010.

The existing permit authorizes the discharge of process wastewater from Union Carbide Corporation, remediated ground water, domestic wastewater, utility wastewater, hydrostatic test water, and stormwater at a daily average dry-weather flow not to exceed 5.8 MGD via Outfall 001, and cooling water blowdown, water treatment waste, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, stormwater from Union Carbide, hydrostatic test water, firewater, and *de minimis* quatities of process wastewater at a daily average dry-weather flow not to exceed 12 MGD via Outfall 002; and stormwater on an intermittent and flow-variable basis via Outfalls 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 015 and 016.

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. <u>WATER QUALITY SUMMARY</u>

Discharge Route(s)

The discharge route is via Outfalls 001, 002, 005, 006, and 012 directly to Victoria Barge Canal Tidal in Segment No. 1701 of the Lavaca-Guadalupe Coastal Basin; via Outfall 003 to a ditch, thence to West Coloma Creek, thence to Coloma Creek; via Outfalls 014 and 015 to West Coloma Creek, thence to ColomaCreek; via Outfall 016 to West Coloma Creek, thence to West Coloma Creek, thence to Coloma Creek, thence to Matagorda Bay/Powderhorn Lake in Segment No. 2451 of the Bays and Estauries; via Outfall 004 to an unnamed ditch, thence to San Antonio Bay/Hynes Bay/Guadalupe Bay/Mission Lake in Segment No. 2462 of the Bays and Estuaries. The designated uses for Segment No. 1701 are non-contact recreation and high aquatic life use. The designated uses for Segment Nos. 2451 and 2462 are primary contact recreation, exceptional aquatic life use, and oyster waters. 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 30 TAC § 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 Segment No. 1701, which has been identified as having high aquatic life use. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in Segment Nos. 2451 and 2462, which have been identified as having exceptional aquatic life uses respectively. 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 action is not expected to have an effect on any federal endangered or threatened aquatic or aquatic-dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS'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. Though the piping plover, *Charadrius melodus* Ord, can occur in Segment Nos. 2451 and 2462 as well as Calhoun County, the county is north of Copano Bay and not a watershed of high priority per Appendix A of the 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.

The Whooping Crane (*Grus Americana*), an endangered aquatic dependent species has been determined to occur in Calhoun County in Segment No. 2462 of the Bays and Estuaries. However, this is not a watershed of critical concern for the Whooping Crane.

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

Impaired Water Bodies

Segment Nos. 1701 and 2451 are not currently listed in the state's inventory of impaired and threatened waters, the 2022 Clean Water Act Section 303(d) list. However, Segment No. 2462 is currently listed for bacteria in oyster waters for San Antonio Bay/Hyne Bays/Guadalupe Bay/Mission Lake at the mean high tide line (AU 2462_01). Stormwater is discharged via Outfall 004. Outfall 004 is the only outfall that discharge into Segment No. 2462. Therefore, the discharge via Outfall 004 is not anticipated to cause any additional adverse impact to the receiving waters with respect to the listed bacteria impairment because domestic wastewater is not authorized to be discharged via Outfall 004.

Outfall 001 is authorized to discharge domestic wastewater to Segment No. 1701. Current TCEQ practice is to impose effluent limitations and monitoring requirements for the appropriate indicator bacteria for the discharge of domestic wastewater. Enterococci is the indicator bacteria designated for the saltwater portion of Segment No. 1701 in 30 TAC §307.10. Effluent limitations for Enterococci are continued in the draft permit from the existing permit, daily average effluent limitation of 35 cfu or MPN per 100 mL and daily maximum effluent limitation of 104 cfu or MPN/100 mL.

Completed Total Maximum Daily Loads (TMDLs)

There are no completed TMDLs for Segment Nos. 1701, 2451, and 2462.

C. <u>TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS</u>

1. <u>GENERAL COMMENTS</u>

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 from Seadrift Operations, remediated ground water, domestic wastewater, utility wastewater, hydrostatic test water, and stormwater at a daily average dry-weather flow not to exceed 5.8 MGD via Outfall 001; cooling water blowdown, water treatment wastes, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, stormwater from Seadrift Operations, hydrostatic test water, firewater, and *de minimis* quantities of process wastewater at a daily average dryweather flow not to exceed 12 MGD via Outfall 002 (Interim Phase); cooling water blowdown, water treatment waste, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, stormwater from Seadrift

Operations, hydrostatic test water, firewater, and *de minimis* quantities of process wastewater at a daily average flow not to exceed 17 MGD via Outfall 002 (Final Phase); and stormwater on an intermittent and flow-variable basis via Outfalls 003, 004, 005, 006, 012, 014, 015 and 016.

The discharge of process wastewater via Outfall 001 and *de minimis* quantities of process wastewater via Outfall 002 from this facility is subject to federal effluent limitation guidelines at 40 CFR Part 414. A new source determination was performed, and the discharge of process wastewater and *de minimis* quantities of process wastewater and *de minimis* quantities of process wastewater is not a new source as defined at 40 CFR §122.2. Therefore, new source performance standards (NSPS) are not required for this discharge.

The discharge of remediated groundwater, utility wastewater, hydrostatic test water, domestic wastewater, and stormwater via Outfall 001; cooling water blowdown, water treatment waste, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, hydrostatic test water, firewater, and stormwater via Outfall 002; and stormwater via Outfalls 003, 004, 005, 006, 012, 014, 015, and 016 is not subject to federal effluent limitation guidelines and any technology-based effluent limitations are based on best professional judgment.

The wastewater generated at the Seadrift Operations Plant is managed by three separate sewer systems: High Strength Sewer (HSS) System, Low Strength Sewer (LSS) System, and sanitary sewer system. The wastewater from these systems join at various points in a combined system for additional treatment.

HSS System

The HSS System receives wastewaters that have total organic carbon (TOC) concentrations greater than 500 mg/L. These wastewaters are routed to the Wastewater Treatment Reactor (WWTR). The WWTR is a covered anaerobic treatment lagoon that is designed to provide primary treatment for the process wastewater before it is routed to the Secondary Wastewater Treatment System (Secondary Pond). The WWTR is heated (as needed) and recirculation of the effluent to the head of the lagoon is provided in order to increase treatment efficiency and process reliability.

The system includes a 4.7 million-gallon off-line storage tank (Tank 911). When TOC and pH are out of range, the system is designed to route the wastewater to Tank 911. The tank 911 wastewater is then routed to the WWTR at a controlled rate.

The HSS System has several designed alternative routes to the Low Strength Sewer System. These systems are designed to contain wastewater in the wastewater treatment system during high stormwater runoff, when equipment requires maintenance or repair, or during emergencies.

LSS System

The main plant area discharges wastewater to the LSS System. Although this wastewater typically has TOC concentrations less than 500 mg/L, the LSS System can receive wastewater that has TOC concentrations greater than 500 mg/L.

Wastewater can enter the LSS System through the process sewer. Wastewater entering the process sewer is directed to two clarifiers operating in parallel for preliminary treatment and then pumped via a pipeline transfer line to the Secondary Pond. There is a third clarifier that may be used if needed. Solids and scum with other floatable collected from the clarifiers are dried on sand drying beds and then are disposed of in an on-site landfill. Caustic is used in the process sewer for pH adjustment.

The Wastewater Transfer Ditch collects wastewater and stormwater for further processing in the Wastewater Stabilization Pond System. In addition to the wastewater that enters the process sewer from the clarifiers, the Wastewater Transfer Ditch also receives wastewater from immediate process areas. In some cases, the wastewater is first routed through resin recovery systems. The recovered material is landfilled, sold as scrap material, or sold as product.

Braskem (third party on-site facility) also discharges wastewater to the Wastewater Transfer Ditch. Given that Braskem manufactures polypropylene, as does UCC, its wastewaters are compatible with the UCC wastewater treatment system.

Wastewater from Braskem's unit continues to discharge into the Wastewater Transfer Ditch because they are downstream of the clarifiers.

The new transfer pipeline allows pumping of 3,800 gallons per minute (gpm) of the clarifier effluent to the Secondary Pond. The new weir system in the Wastewater Transfer Ditch allows processing of wastewater from Semicon, LP-2, and HP-2 through the clarifiers, thus bypassing the Wastewater Transfer Ditch. This diversion from the Wastewater Transfer Ditch minimizes/eliminates the formation of hydrogen sulfide.

The new system includes a new lift box pump station to collect the discharge from the clarifiers and three 50-horsepower (HP) pumps to accommodate the range in clarifier flow. The new system also includes a 10-HP pump to pump the HP-2, LP-2, and Semicon process sewer from the weir system into the clarifier lift box.

The new system leaves the current open ditch system in place for the collection and transfer of stormwater and cooling pond blowdown water, while the new closed transfer system handles all the low strength sewer water processed by the clarifier.

A flow meter was added to the inlet of the Secondary Pond to monitor incoming flow.

The two new Acclaim Catalyst production lines will use the same technology and raw material as the existing production lines. Wastewater from the new

production lines is expected to be less than 612 gpm and will be routed to the onsite wastewater treatment system. Wastewaters will include process wastewater (Acid K.O. Ot, Washpot), cooling water, stormwater, used potable water, and tempered water. Wastewater will be routed to a sump. Water from the sump will typically be routed to the LSS System, but may be also routed to the HSS System.

The new Prodigy Catalyst production line is new to the Seadrift site (new technology and new raw materials like toluene, Isopar C, MAO solution). Wastewater from the new production line is expected to be less than 0.74 gpm and will be routed to the on-site wastewater treatment system. Wastewater will include tempered water (0.74 gpm). Wastewater will be routed to a sump. Water from the sump will typically be routed to the LSS System, but may be also routed to the HSS System.

Sanitary Wastewater Treatment System

The sanitary wastewater is routed via its own separate collection and conveyance system to the Enterococci Treatment System.

Septic sewage is added to the treatment system via an approximate 4,000-gallon holding/contact transfer tank. The purpose of this tank is solely to facilitate the unloading of vacuum trucks that collect septic sewage from areas within the facility that are not connected to the dedicated sanitary wastewater collection system. The vacuum truck holding/contact transfer tank has grinder pumps to ensure thorough mixing and contact time with the disinfectant.

Sanitary wastewater from the collection and conveyance system and the septic sewage from the vacuum truck holding/transfer tank is transferred to the chlorine contact tank (approximately 15,000 gallons) that precedes Tank 1106 in the Enterococci Treatment area. The chlorine contact tank has a chlorine feed system and mixing/grinder recirculation pumps to mix the sewage and disinfectant (currently bleach) for the necessary residence time to ensure complete disinfection. The treated sanitary wastewater is then be routed to Tank 1106 for additional contact time. Each of the three tanks in the treatment system can add disinfectant in a staged approach, as deemed necessary based on process conditions and/or sampling. ORP probes downstream of the discharge pumps from Tank 1106 are used as process control to determine the correct amounts of disinfectant and mixing /agitation that is necessary for complete disinfection of the sanitary wastewater stream. Under the modified system design, chlorine is the primary disinfection agent and caustic is used as a secondary disinfection agent only if necessary. Caustic is only added, if necessary, at Tank 1106. Also, during periods of high loading, additional treatment may be provided at the individual sumps as deemed necessary by process conditions and/or sampling.

The treated wastewater from Tank 1106 is then conveyed to the WWTR anaerobic reactor. The effluent from the WWTR is routed through Tanks 1870, 1883, 1890, and 1884, then to the Wastewater Stabilization Pond System, which ultimately discharges through Outfall 001.

Routing of the treated sanitary wastewater through the WWTR anaerobic reactor is the normal operations pathway for this stream; however, there may be times

where the treated sanitary wastewater is routed to the Wastewater Stabilization Pond System via the wastewater transfer ditch or Low Strength Process Wastewater Pipeline. The transfer of the stream to the WWTR or Wastewater Stabilization Pond System will only occur after complete treatment (disinfection) of the sanitary wastewater stream.

Combined Treatment System (Wastewater Stabilization Pond System)

Wastewater from the Wastewater Transfer Ditch and wastewater effluent from the WWTR are routed to the Wastewater Stabilization Pond System. The Wastewater Stabilization Pond System consists of the Secondary Wastewater Treatment Pond, the Upper Tertiary Wastewater Treatment Pond, and the Free Water Surface Wetland Treatment System (FWS Wetland). The pond system is designed to provide operation flexibility in treatment of the wastewater. The Secondary Pond is designed with the flexibility to route all or a portion of the wastewater being treated to alternative locations in the lagoon system. For operational flexibility, draw-off points are provided at three locations within the Secondary Pond that can route wastewater to the Tertiary Pond, the FWS Wetland, or Outfall 001. The FWS Wetland is divided into two parallel systems consisting of two cells each (a total of four cells). The dual system provides operational flexibility by allowing half of the system to be operated while the other half undergoes routine maintenance. The pond system discharges via Outfall 001 to the Victoria Barge Canal.

Outfall 001 discharges into the Storm Water Ditch immediately adjacent to the outlet structure to the Victoria Barge Canal. The Outfall 001 discharge commingles with the discharge from the main stormwater Outfall 002 just upstream of the outlet structure. The outlet structure can be shut in the event of a spill to the Storm Water Sewer System, and these valves can be remotely operated. An installed pump at this site can be used to pump the Storm Water Ditch flow to the Secondary Pond.

Outfall 002 Current System

Outfall 002 discharges stormwater, boiler blowdown, cooling water blowdown, polyolefin resin pad wash water, polyolefin resin container rinse water, steam condensate, non-contact cooling water, certain drinking water treatment rinse water, an *de minimis* amounts of process wastewater, hydrostatic test water, and fire water. Stormwater includes runoff from areas associated with both industrial activity (e.g., roadways, laydown yards) and non-industrial activity (e.g., farm land) of the UCC and former ISP Plant areas (ISP is shutdown and partially decommissioned). Rain water that falls on product shipment containers, drums, cylinders, and tote tanks that are in use or storage is normally not contained and can enter the Stormm Water Sewer System. Water treating rinse water includes brine rinse water that is required to regenerate the sodium zeolite softeners and the water treatment sample overflows from the demineralization (Denim) pH equalization tank. Denim regeneration wastewater is also routed to Outfall 002.

Outfall 002 is equipped with a continuous pH monitoring system. If any material leaks are detected, they are immediately responded to, and the area is quickly cleaned up. Small amounts of pollutants originating from fugitive emissions from

areas that are adjacent to and from roofs within process, construction, and maintenance areas could be present in the stormwater runoff.

Waters discharged through Outfall 002 are not treated. However, there is a floating underflow baffle and diversion pond to stop any floating material from entering the Victoria Barge Canal. At the gated outfall structure to the Victoria Barge Canal, a screen mesh protects the outfall pipes and serves as an additional barrier to prevent the release of solid material. Floating material is periodically removed and landfilled on-site.

Most of the Seadrift site's secondary containments drain to the wastewater treatment system; however, some secondary containments have the capability of draining to the Storm Water Sewer System. On some occasions, the stormwater that is collected in these containments would be sent to the Storm Water System only after the collected waster is inspected for organics.

During periods of high stormwater runoff, overflows from the Sanitary Sewer system, LSS System, and HSS System can enter the Storm Water Sewer System and be discharged with stormwater through Outfall 002. These overflows would normally be of short duration and the Outfall 002 discharge would contain very low levels of contaminants. The sources of these overflows could include resin recovery pits, sumps, manhole and grating covers, and secondary containment structures. Other rare events such as stopped up lines, mechanical failures, and power failures could also cause process wastewater to enter the Storm Water Sewer System. Additionally, when a deluge system is tested or in a very rare instance when there is a need to use water during a fire emergency, the resulting firewater could be discharged through Outfall 002 and/or Outfall 001.

There are some engineered overflows that can cause bypass of some of the wastewater treatment steps as described above. For example, several of the resin recovery pits at the plant have designed overflows to Storm Water Sewer System. Another example is the Oxide Unit process sewer overflow to the Storm Water Sewer System – in this case, an alarm is sent to the Oxide Unit control room when the liquid level in the process sewer reaches the storm sewer overflow.

If a bypass and/or overflow occurs, the site's response would be to keep these process waters from entering the Storm Water Sewer System. If it does enter this sewer system, then the gates at the Victoria Barge Canal would be closed. Pumps, which can be remotely operated, would be turned on and the waters in the Storm Water Ditch would be pumped to the Secondary Pond for subsequent treatment. The gates would remain closed until waters at Outfall 002 and at the gates show no elevation of total organic carbon.

System Modifications

The facility will be making a number of modifications in the Outfall 002 system as part of its SDO C3PO project.

The SDO C3PO project will install improved solids filtering and management equipment along the conveyance channel, which runs from the existing Outfall 002 at State Highway (SH)-185 down to the combined Outfall 001-002 discharge

point into the Victoria Barge Canal. The improved solids filtering and management equipment will be designed to provide reliable solids removal from stormwater flows through the conveyance channel up to and including stormwater flows resulting from a 25-year/24-hour storm event. Civil improvements to increase the conveyance capacity of the channel and manage peak stormwater flows will also be constructed to ensure the performance of the system. Conveyance capacity of the channel will be improved by removing existing vegetation, widening the channel, installing a partial cement lining, and increasing the embarkment height where needed. The management of peak flows during larger storm events will be achieved with the construction of a stormwater surge basin just upstream of the new proposed Outfall 002 location.

Other changes include routing stormwater runoff from the Outfall 006 drainage area to the Outfall 002 system. There will be a new transformer yard and stormwater from this area will also be routed to the Outfall 002 system. Stormwater from the C3PO new transformer containment area in the new Outfall 002 pond area will be routed to the conveyance ditch at Outfall 002.

Conveyance Channel Capacity Improvements and Stormwater Flow Management

Conveyance channel improvements will begin downstream of the existing Outfall 002, just south of SH-185. Capacity of the channel will be increased by removing the existing vegetation and trees, widening the channel, installing a partial cement lining, and increasing the embankment height where needed on the western end, down to the combined Outfalls 001/002 discharge to the Victoria Barge Canal. The cement lining will begin just downstream of the box culvert under the road to the raw water pump station and continue to the combined outfall headwall. The section of the channel just upstream of the box culvert under the road to the raw water pump station will be designed as a silt basin with a reinforced concrete bottom and side slopes. A 54-inch HDPE pipe will be installed in addition to the three current 48-inch diameter pipes at the end of the conveyance channel at the combined outfall to the Victoria Barge Canal.

The conveyance channel improvements will be designed to a capacity of 160,000 gpm to manage a significant amount of rain events. However, to manage peak stormwater flows entering the conveyance channel up to and including a 25-year/24-hour storm event, a 45-acre-foot (14.7 million gallon (MG)) capacity stormwater surge basin will constructed immediately north of the silt basin. The surge basin is designed to allow short term accumulation of flow to trim the peak of the storm hydrograph and to allow unrestrained release back to the conveyance channel as the storm flow passes. The surge basin will include an emergency spillway back to the conveyance channel to ensure that extreme event flows greater than the 25-year/24-hour storm flow will not overtop the crest of the basin embankment. The emergency spill way elevation is designed at elevation 18.0 feet and the top of the surge basin embankment is elevation 20.0 feet, allowing for 2 feet of freeboard. The surge basin will have a clay liner. Technical specifications for the liner were approved by the TCEQ on November 2, 2022.

Off-site drainage currently coming into the conveyance channel from the roadside ditch north along SH-185 will be rerouted to a new ditch. This ditch will be

constructed immediately north of the new surge basin and will discharge immediately upstream of the wetlands area north of the project site. The wetlands area will provide storage to reduce peak flows in the conveyance channel and also have the added benefit of potentially improving wetlands hydrology. The stored flow will eventually drain back into the conveyance channel downstream of the new Outfall 002 through an existing 30-inch culvert equalization pipe with flap gate.

Outfall 002 Flow Measurement and Monitoring Point Relocation

The monitoring point for Outfall 002 will be relocated from its current location immediately north of SH-185 to immediately downstream of the silt basin and the surge basin emergency spillway. The monitoring point will be near the box culvert under the road to the raw water pump station and will include all flows entering the channel from the Outfall 002 system.

Solids Filtering and Management Equipment

Solids filtering equipment will be installed at both the new Outfall 002 location and at the combined Outfalls001/002 discharge structure immediately upstream of the discharge pipes to the Victoria Barge Canal. The dewatering and solids management equipment will all be installed near the new Outfall 002 location.

The filtering equipment at the new Outfall 002 location will include various screens and filters. Solids collected from the filtering system will be dewatered and taken to an authorized landfill. The dewatering system will require small amounts of a treatment chemicals such as surfactants and polymers.

The filtering at the combined Outfalls 001/002 discharge will be supplied with vertical drum screens. The screens will be installed immediately upstream of the discharge pipes to the Victoria Barge Canal, including the fourth pipe being added for this project. The solids filtered by the screens will be collected in two sumps and will be pumped via an 8-inch underground HDPE pipe back to the silt basin. These solids will then be filtered and dewatered in the Outfall 002 filtering system as described above.

Rerouting of Outfall 006 Stormwater to Outfall 002 System

As part of this SDO C3PO project modifications, stormwater from the Outfall 006 drainage area will be rerouted to the Outfall 002 system, entering the conveyance channel downstream of the current Outfall 002 location and continuing to the silt basin where it will commingle with other flows in the Outfall 002 system. Once the new Outfall 002 is started up, Outfall 006 will be discontinued because flows from its drainage area will now be part of the Outfall 002 discharge. However, Outfall 006 will not be discontinued until after the amended permit is issued (expected Q4 2023). Until Outfall 006 is removed from the permit, "no discharge" will be reported for Outfall 006 in the discharge monitoring reports. (Outfall 006 can be removed from the permit in the next permit action, e.g., the permit renewal in 2026 or a minor modification before then.)

Stormwater Outfalls

Outfall 003

Outfall 003 discharges stormwater from the North Landfill area. Leachate and/or impounded stormwater from the landfill itself are pumped to the WWTR for treatment. The Outfall 003 drainage area is approximately 1.4 acres. Industrial units in this area consist of a non-hazardous landfill, a closed non-hazardous landfill, and a closed RCRA landfill. Stormwater flows by gravity to Outfall 003, thence to an unnamed ditch, thence to West Coloma Creek.

Outfall 004

The Outfall 004 drainage area contains the 26-acre South Railcar Storage Area. Railcars stored in this area generally contain polyolefin pellets and fluff, but chemical tank cars may also be stored here. A small detention pond and coarse screen are used to remove solids before outfall discharge. Outfall 004 discharges to an unnamed ditch along Highway 185. The ditch flows towards San Antonio Bay.

Outfall 005

The Outfall 005 drainage area includes the Barge Loading/Unloading Area. A concrete wall divides the area into two sections. The southern section (nearest the dock) includes pumps and pipe racks for loading and unloading barges. This section drains to the UCC HSS System. The northern section is covered with gravel/caliche, and drains to Outfall 005, which is located at the northwest corner of the UCC Channel. This section includes a maintenance shop with outdoor storage of waste oil drums, a covered trash dumpster, a scrap metal storage bin, two pumps in a poly-lined pit, a boiler, and two water tanks and pumps on a concrete pad. There are also tanks for hydraulic oil and boiler additive, a hydraulic oil pump pad, and a vacuum system pump pad; this equipment is within secondary containment and water collecting within the containment areas is discharged to the UCC HSS System or Wastewater Stabilization Pond System. These containment areas, therefore, are not part of the Outfall 005 drainage area. The secondary containment area for Tank 601 previously drained to Outfall 005; however, the tank has been removed as well as part of its containment berm. Outfall 005 discharges to the UCC Channel, thence to the Victoria Barge Canal.

Outfall 006

The Outfall 006 drainage area is in the northeast corner of the Pipeline Building /Laydown Yard Area. This area includes a small grassy area at the corner of Highway 185 and Clubhouse Road. No potential contaminant sources are located in this drainage area. The grassy area is mowed regularly to maintain the vegetative cover in good condition. Outfall 006 discharges to the Victoria Barge Canal.

As part of the Outfall 002 system modifications, stormwater from the Outfall 006 drainage area will be routed to the new Outfall 002 system.

Outfall 012

The Outfall 012 drainage area includes only the West Landfill area. The West Landfill is a RCRA landfill that was capped and closed in April 1984 under a closure plan approved by the Texas Water Commission (as the TCEQ was known then). There are no other significant features in the Outfall 012 drainage area. Outfall 012 discharges to the Storm Water Ditch, thence to the Victoria Barge Canal.

Outfall 014

Outfall 014 discharges stormwater from approximately 7,700 linear feet of railroad main lead and interchange tracks that service the North Railcar Storage Area. The area is surrounded by an earthen berm, preventing run-on of stormwater from outside the area. The inventory of materials that could be present at any time within the Outfall 014 drainage area is limited to the full tanks of the diesel-powered switch engine and approximately 100 railcars. The contents of the railcars consist primarily of thermoplastic resin pellets produced at the facility. Due to switching operations, tank cars may be temporarily located within the confines of this drainage area. The contents of these tank cars could consist of any of the chemicals received and/or produced at the facility. However, since no vehicle fueling, maintenance or washing, loading or unloading, or chemical storage occurs, the potential for exposure of any stormwater significant materials is unlikely. Also, since no regular rail traffic is allowed on the main lead and interchange tracks (i.e., only UCC Seadrift authorized railcars are transferred to and from the storage area under established Plant traffic control procedures), and since the tracks are well maintained, the likelihood of a rail accident that could cause a spill is minimal. There is a screen upstream of the discharge and collected material is periodically removed and landfilled on-site. Outfall 014 discharges to West Coloma Creek, thence to Coloma Creek, thence to Powderhorn Lake, and thence to Matagorda Bay.

Outfall 015

The Outfall 015 drainage area includes approximately 42,000 linear feet of railcar storage tracks and railroad main lead and interchange tracks, which comprise a portion of the North Railcar Storage Area. The area is surrounded by an earthen berm, preventing run-on of stormwater from outside the berm. The inventory of materials that could be present at any time within the drainage area is limited to the full tanks of the diesel-powered switch engine and approximately 625 railcars. The contents of the railcars consist primarily of thermoplastic resin pellets produced at the facility. Due to switching operations, tank cars may be temporarily located within the confines of this drainage area. The contents of these tank cars could consist of any of the chemicals received and/or produced at the facility. However, since no vehicle fueling, maintenance or washing, or loading or unloading occurs, the potential for exposure of any stormwater to significant materials is unlikely. Also, since no regular traffic is allowed on the main lead, interchange tracks, or in the storage vard (i.e., only UCC Seadrift authorized railcars are stored and transferred to and from the storage area under established plant traffic control procedures), and since the tracks are well maintained, the likelihood of a rail accident that could cause a spill is minimal.

There us a screen upstream of the discharge and collected material is periodically removed and landfilled on-site. Outfall 015 discharges to West Coloma Creek, thence to Coloma Creek, thence to Powderhorn Lake, and thence to Matagorda Bay.

Outfall 016

The Outfall 016 drainage area includes 6,600 linear feet of railcar storage tracks and railroad main lead and interchange tracks, which comprise a portion of the North Railcar Storage Area. The inventory of materials that could be present at any time within the drainage area is limited to the full tanks of the diesel-powered switch engine and approximately 100 railcars. The contents of the railcars consist primarily of thermoplastic resin pellets produced at the facility. Due to switching operations, tank cars may be temporarily located within this drainage area. The contents of these tank cars could consist of any of the chemicals received and/or produced at the facility. However, since no vehicle fueling, maintenance or washing, loading or unloading occurs, the potential for exposure of any materials to significant materials is unlikely. Also, since no regular rail traffic is allowed on the main lead and interchange tracks or in the storage yard (i.e., only UCC Seadrift authorized railcars are transferred to and from the storage area under established plant traffic control procedures), and since the tracks are well maintained, the likelihood of a rail accident that could cause a spill is minimal. There is a screen upstream of the discharge and collected material is periodically removed and landfilled on-site. Outfall 016 discharges to West Coloma Creek Lateral No. 17, thence to West Coloma Creek, thence to Coloma Creek, thence to Matagorda Bay\ Powderhorn Lake.

2. <u>CALCULATIONS</u>

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

- 3. <u>316(B) COOLING WATER INTAKE STRUCTURES</u>
 - a. <u>SCREENING</u>

The major amendment without renewal request does not include changes to the cooling water source. Therefore, the information provided in the Fact Sheet for the permit issued on July 8, 2021, is still valid. Please see Attachment 1.

b. <u>PERMIT ACTION</u>

Other Requirement No. 10 is continued in the draft permit.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. <u>GENERAL COMMENTS</u>

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 A 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 technologybased effluent limits and calculated water quality-based effluent limits can be found in Appendix D of this fact sheet.

2. <u>AQUATIC LIFE CRITERIA</u>

a. <u>SCREENING</u>

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

Acute saltwater criteria are applied at the edge of the zone of initial dilution (ZID), and chronic saltwater criteria are applied at the edge of the aquatic life mixing zone. The ZID for this discharge is defined as a volume within a radius of 49.88 feet from the point where the discharge enters Victoria Barge Canal Tidal. The aquatic life mixing zone for this discharge is defined as a volume within a radius of 199.5 feet from the point where the discharge enters the discharge enters the Victoria Barge Canal Tidal.

TCEQ uses the EPA horizontal jet plume model to estimate dilution at the edges of the ZID and aquatic life mixing zone for discharges greater than 10 MGD into bays, estuaries, or wide tidal rivers or discharges into sections of bays, estuaries, and wide tidal rivers that are less than 400 feet wide. General assumptions used in the horizontal jet plume model are a non-buoyant discharge, a submersed pipe, and no cross flow.

Effluent from Outfall 001 and 002 commingled in an on-site ditch prior to discharging through the same outfall structure into Victoria Barge Canal Tidal. Therefore, combined flows for Outfalls 001 and 002 were used to calculate the percentage effluent values. Based on this analysis, the following critical effluent percentages are calculated for Outfall 001 and Interim Outfall 002 and Outfall 001 and Final Outfall 002:

Outfall 001 and Outfall 002 (now Interim Outfall 002)

Acute Effluent %35%Chronic Effluent %9%

Outfall 001 and Final Outfall 002

Acute Effluent %41%Chronic Effluent %10%

Outfalls 003, 004, 006, 012, 014, 015, and 016

Stormwater is authorized to discharge via these outfalls. Typically, critical conditions are not developed for stormwater outfalls, as this is standard TCEQ practice. Therefore, no water quality criteria screening was performed for these outfalls.

General Screening Procedures

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

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

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

Assumptions used in deriving the effluent limitations include the segment-specific value for TSS according to the *IPs*. The segment value is 22 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.

b. <u>PERMIT ACTION</u>

No analytical data is available for screening against water quality-based effluent limitations for Outfall 001 and Outfall 002 (now Interim Outfall 002) because this is a major amendment without renewal to include a

Final phase for Outfall 002. However, based on recommendations from the Water Quality Assessment Team the critical conditions for Outfall 001 and Interim Outfall 002 have been re-calculated.

The existing effluent limits for total copper at Outfall 002 (now Interim Outfall 002) in the existing permit were compared to the newly calculated water quality-based effluent limits to determine whether the existing limits are still protective. The existing effluent limits for total copper at Interim Outfall 002 are more protective than the newly calculated effluent limits for Interim Outfall 002 and are continued in the draft permit (see Appendix A).

The calculated effluent limits for total copper for Final Outfall 002 are more protective than the effluent limits in the Interim Phase and the more protective effluent limits for total copper in the Final Outfall 002 have been included in the draft permit for the protection of aquatic life. The following effluent limitations are included in the draft permit for aquatic life protection.

Outfall	Parameter	Daily Average	Daily Maximum
002 (Interim)	Copper, Total	0.0365 mg/L	0.0773 mg/L
002 (Final)	Copper, Total	0.0325 mg/L	0.0689 mg/L

A site-specific water-effect-ratio of 1.8 was used for total copper based on 30 TAC Chapter 307, Appendix E.

3. <u>WHOLE EFFLUENT TOXICITY (BIOMONITORING) CRITERIA (7-DAY</u> <u>CHRONIC)</u>

a. <u>SCREENING AND REASONABLE POTENTIAL ANALYSIS</u>

The existing permit includes chronic marine biomonitoring requirements at combined Outfalls 001 and 002. In the past three years, the permittee performed twenty-three chronic tests on combined Outfalls 001/002, with zero demonstrations of significant toxicity (i.e., zero failures) by either species.

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 zero failures a determination of no reasonable potential was made.

All test data results were used for this determination.

b. <u>PERMIT ACTION</u>

The provisions of this section apply to Combined Outfalls 001 and 002.

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* or *Americamysis 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 *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. 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 to continue quarterly testing for that species until the permit is reissued.

c. <u>DILUTION SERIES</u>

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 4%, 5%, 7%, 9%, and 12%. The low-flow effluent concentration (critical dilution) is defined as 9% 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. <u>AQUATIC ORGANISM TOXICITY CRITERIA (24-HOUR ACUTE)</u>

a. <u>SCREENING</u>

The existing permit includes 24-hour acute marine biomonitoring requirements for Outfalls 001 and 002. In the past three years, the permittee has performed sixteen 24-hour acute tests for Outfalls 001 and 002, with zero demonstrations of significant mortality (i.e., zero failures).

b. <u>PERMIT ACTION</u>

Twenty-four-hour 100% acute biomonitoring tests are required at Outfalls 001 and 002 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:

- Acute 24-hour static toxicity test using the mysid shrimp (*Mysidopsis bahia* or *Americamysis 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. <u>SCREENING</u>

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).

Outfall 001 and Interim Outfall 002

Fish tissue bioaccumulation criteria are applied at the edge of the human health mixing zone for discharges into bays, estuaries and wide tidal rivers. The human health mixing zone for this discharge is defined as a volume within a radius of 400 feet from the point where the discharge enters Victoria Barge Canal Tidal. TCEQ practice is to establish a minimum estimated effluent percentage at the edge of the human health mixing zone 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 001 and Final Outfall 002

Fish tissue bioaccumulation criteria are applied at the edge of the human health mixing zone for discharges into bays, estuaries and wide tidal rivers. The human health mixing zone for this discharge is defined as a volume within a radius of 399 feet from the point where the discharge enters Victoria Barge Canal Tidal. TCEQ uses the EPA horizontal jet plume model to estimate dilution at the edge of the human health mixing zone for discharges greater than 10 MGD into a bay, estuary, or wide tidal river or discharges into sections of bays, estuaries, or wide tidal rivers that are less than 400 feet wide. General assumptions used in the horizontal jet plume model are a non-buoyant discharge, a submersed pipe, and no cross flow. Based on this analysis, the following critical effluent percentage is calculated:

Human Health Effluent %: 5%

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

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

b. <u>PERMIT ACTION</u>

No analytical data is available for screening against water quality-based effluent limitations for Outfall 001 and Outfall 002 (now Interim Outfall 002) because this is a major amendment without renewal to include a Final phase for Outfall 002. However, based on recommendations from the Water Quality Assessment Team the critical conditions for Outfall 001 and Interim Outfall 002 have been re-calculated.

The existing effluent limits for benzo(a)anthracene, benzo(a)pyrene, hexachlorobenzene, and hexachlorobutadiene at Outfall 001 in the existing permit were compared to the newly calculated water qualitybased effluent limits to determine whether the existing limits are still protective. The existing effluent limits for benzo(a)anthracene, benzo(a)pyrene, hexachlorobenzene, and hexachlorobutadiene at Outfall 001 are as protective as the newly calculated effluent limits for Outfall 001 and are continued in the draft permit (see Appendix A).

The newly calculated water quality-based effluent limits for Outfall 001 and Final Outfall 001 for benzo(a)anthracene, benzo(a)pyrene, hexachlorobenzene, and hexachlorobutadiene are more protective than the effluent limits in the current permit for Outfall 001 and the more protective benzo(a)anthracene, benzo(a)pyrene, hexachlorobenzene, and hexachlorobutadiene have been included in the draft permit for the protection of human health. The following effluent limitations are included in the draft permit for human health protection.

Outfall	Parameter	Daily	Daily	
		Average	Maximum	
001 (Interim)	Benzo(a)anthracene	0.041 lbs/day	0.087 lbs/day	
	Benzo(a)pyrene	0.0041 lbs/day	0.0087 lbs/day	
	Hexachlorobenzene	0.0011 lbs/day	0.0023 lbs/day	
	Hexachlorobutadiene	0.363 lbs/day	0.769 lbs/day	
001 (Final)	Benzo(a)anthracene	0.033 lbs/day	0.070 lbs/day	
	Benzo(a)pyrene	0.0033 lbs/day	0.0070 lbs/day	
	Hexachlorobenzene	0.0009 lbs/day	0.0019 lbs/day	
	Hexachlorobutadiene	0.291 lbs/day	0.615 lbs/day	

6. DRINKING WATER SUPPLY PROTECTION

a. <u>SCREENING</u>

Segment Nos. 1701, 2451, and 2462 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. <u>PERMIT ACTION</u>

None.

7. TOTAL DISSOLVED SOLIDS, CHLORIDE, AND SULFATE STANDARDS <u>PROTECTION</u>

a. <u>SCREENING</u>

Segment Nos. 1701, 2451, and 2462, which receives the discharges from this facility, does not have criteria established for TDS, chloride, or sulfate

in 30 TAC Chapter 307; therefore, no screening was performed for TDS, chloride, or sulfate in the effluent.

b. <u>PERMIT ACTION</u>

None.

8. <u>PROTECTION OF pH STANDARDS</u>

a. <u>SCREENING</u>

Outfalls 001 and 002

The existing permit includes pH limits of 6.0 - 9.0 SU at Outfalls 001 and 002, which discharges directly into Victoria Barge Canal Tidal, Segment No. 1701. Screening was performed to ensure that these existing pH limits would not cause a violation of the 6.5 - 9.0 SU pH criteria for Victoria Barge Canal Tidal (see Appendix B).

Outfalls 003, 004, 005, 006, 012, 014, 015, and 016

Discharges from Outfalls 003, 004, 005, 006, 012, 014, 015, and 016 were not screened against pH criteria, consistent with the TCEQ practice for outfalls which predominately discharge stormwater.

b. <u>PERMIT ACTION</u>

Outfalls 001 and 002

The existing pH effluent limits of 6.0 - 9.0 standard units are carried forward in the draft permit at Outfalls 001 and 002.

Outfalls 003, 004, 005, 006, 012, 014, 015, and 016

pH effluent limits between 6.0 - 9.0 SU are continued in the draft permit from the existing permit.

9. DISSOLVED OXYGEN PROTECTION

a. <u>SCREENING</u>

An analysis of the discharge from Outfall 001 was conducted using an uncalibrated QUAL-TX model at an effluent flow of 5.8 MGD. Coefficients and kinetics used in the model are a combination of standardized default and estimated values. The results of this evaluation can be reexamined upon receipt of information that conflicts with the assumptions employed in this analysis.

Due to the low concentrations of oxygen demanding constituents expected in the type of wastewaters authorized in the remaining outfalls, no significant impacts on dissolved oxygen are expected as a result of discharges from Outfall 002 or the remaining stormwater outfalls.

b. <u>PERMIT ACTION</u>

Based on model results, the existing effluent limit of 1187 lbs/day (34.8 mg/L) BOD₅ for Outfall 001 is predicted to be adequate to maintain dissolved oxygen levels above the criterion stipulated by the Standards Implementation Team for the Victoria Barge Canal. Monitoring and reporting requirements is continued in the draft permit from the existing permit for minimum dissolved oxygen.

10. <u>BACTERIA STANDARDS PROTECTION</u>

The major amendment without renewal request does not include changes to the effluent limitations for bacteria at Outfall 001. Therefore, the information provided in the Fact Sheet for the permit issued on July 8, 2021, is still valid. Please see Attachment 1.

11. THERMAL STANDARDS PROTECTION

The major amendment without renewal request does not include changes to the thermal component via Outfall 002. Therefore, the information provided in the Fact Sheet for the permit issued on July 8, 2021, is still valid. Please see Attachment 1.

XI. <u>PRETREATMENT REQUIREMENTS</u>

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 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 Mónica Vallin-Báez at (512) 239-5784.

XIV. <u>ADMINISTRATIVE RECORD</u>

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

A. <u>PERMIT(S)</u>

TPDES Permit No. WQ0000447000 issued on July 8, 2021.

B. <u>APPLICATION</u>

TPDES wastewater permit application received on December 27, 2022 and additional information received on January 9, 2023, January 19, 2023, February 28, 2023, and March 16, 2023.

C. <u>40 CFR CITATION(S)</u>

40 CFR Part 414 (BPT, BCT, & BAT).

D. <u>LETTERS/MEMORANDA/RECORDS OF COMMUNICATION</u>

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

Letter dated May 12, 2014, from William K. Honker, P.E., Director, Water Quality Protection Division, EPA, to L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ (Approval of TCEQ proposed development strategy for thermal evaluation procedures).

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

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

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

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

TCEQ Interoffice Memorandum dated April 27, 2023 (Superseded October 9, 2923), from Brittany M. Lee of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Standards Memo).

TCEQ Interoffice Memorandum dated May 4, 2023 (Superseded October 12, 2023), from Brian Christman 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 5, 2023, from Gunnar Dubke, P.E. (Superseded November 8, 2023 by Orlando M. Vasquez, Jr., 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 22, 2023 (Superseded October 13, 2023), from Brittany M. Lee of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Biomonitoring Memo).

Letter dated January 6, 2023, from Abesha Michael of the Application Review and Processing Team, Water Quality Division, to Cindy Shilinga, Environmental Specialist, Union Carbide Corporation, Seadrift Operations (Notice of Deficiency (NOD)).

Letter dated January 19, 2023, from Cindy Shilinga, Environmental Specialist, Union Carbide Corporation, Seadrift Operations, to Abesha Michael of the Application Review and Processing Team, Water Quality Division (Response to NOD dated January 6, 2023).

Letter dated March 26, 2023, from Cindy Shilinga, Environmental Specialist, Union Carbide Corporation, Seadrift Operations, to Abesha Michael of the Application Review and Processing Team, Water Quality Division (Response to February 28, 2023, email on NORI text).

E. <u>MISCELLANEOUS</u>

The *State of Texas 2022 Integrated Report* – Texas 303(d) List (Category 5), TCEQ, July 7, 2022.

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.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Interim Outfall 002

TEXTOX MENU #5 - 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 Saltwater Aquatic Life Table 2, 2018 Texas Surface Water Quality Standards for Human Health "Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

Union Carbide Corporation		
WQ0000447000		
001 & Interim 002		
Mónica Báez		
October 13, 2023		
Victoria Barge Canal Tidal		
1701		
22		
15 *		
9		
35		
No		
9.593 **		
4		

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	7646.38	0.856		1.80	***
Lead	6.06	-0.85	82973.75	0.354		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	73554.16	0.382		1.00	Assumed
Zinc	5.36	-0.52	45913.48	0.497		1.00	Assumed

***30 TAC Chapter 307-Appendix E

*Effluent from Outfalls 001 and 002 comingle in an on-site ditch prior to discharging through the same outfall structure into Victoria Barge Canal Tidal (Segment NO. 1701). Therefore, combined flows for Outfalls 001 and 002 were used to calculate the percentage effluent values.

Effluent flow for Aquatic life is the sum of the 2-year maximum flow reported for Outfall 001 not exceeding 5.80 MGD daily average dry-weather flow and the 2-year maximum flow reported for Outfall 002.

**Effluent flow for Human Health is the sum of the 2-year average flow reported for Outfall 001 not exceeding the authorized 5.80 MGD daily average dry-weather flow and the 2-year average flow for Outfall 002.
Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Interim Outfall 002

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

	SW Acute Criterion	SW Chronic Criterion	WLAa	WLAc	LTAa	LTAc	Daily Avg.	Daily Max.
Parameter	(µg/L)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(μg/L)	(µg/L)	(µg/L)
Acrolein	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aldrin	1.3	N/A	3.71	N/A	1.19	N/A	1.74	3.69
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	149	78	426	867	136	529	200	423
Cadmium	40.0	8.75	114	97.2	36.6	59.3	53.7	113
Carbaryl	613	N/A	1751	N/A	560	N/A	823	1743
Chlordane	0.09	0.004	0.257	0.0444	0.0823	0.0271	0.0398	0.0843
Chlorpyrifos	0.011	0.006	0.0314	0.0667	0.0101	0.0407	0.0147	0.0312
Chromium (trivalent)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium (hexavalent)	1090	49.6	3114	551	997	336	494	1045
Copper	24.3	6.48	81.1	84.1	26.0	51.3	38.1	80.7
Copper (oyster waters)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyanide (free)	5.6	5.6	16.0	62.2	5.12	38.0	7.52	15.9
4,4'-DDT	0.13	0.001	0.371	0.0111	0.119	0.00678	0.00996	0.0210
Demeton	N/A	0.1	N/A	1.11	N/A	0.678	0.996	2.10
Diazinon	0.819	0.819	2.34	9.10	0.749	5.55	1.10	2.32
Dicofol [Kelthane]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	0.71	0.002	2.03	0.0222	0.649	0.0136	0.0199	0.0421
Diuron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan I (<i>alpha</i>)	0.034	0.009	0.0971	0.1000	0.0311	0.0610	0.0456	0.0966
Endosulfan II (<i>beta</i>)	0.034	0.009	0.0971	0.1000	0.0311	0.0610	0.0456	0.0966
Endosulfan sulfate	0.034	0.009	0.0971	0.1000	0.0311	0.0610	0.0456	0.0966
Endrin	0.037	0.002	0.106	0.0222	0.0338	0.0136	0.0199	0.0421
Guthion [Azinphos Methyl]	N/A	0.01	N/A	0.111	N/A	0.0678	0.0996	0.210
Heptachlor	0.053	0.004	0.151	0.0444	0.0485	0.0271	0.0398	0.0843
Hexachlorocyclohexane (gamma) [Lindane]	0.16	N/A	0.457	N/A	0.146	N/A	0.215	0.454
Lead	133	5.3	1074	166	344	101	149	315
Malathion	N/A	0.01	N/A	0.111	N/A	0.0678	0.0996	0.210
Mercury	2.1	1.1	6.00	12.2	1.92	7.46	2.82	5.97
Methoxychlor	N/A	0.03	N/A	0.333	N/A	0.203	0.298	0.632
Mirex	N/A	0.001	N/A	0.0111	N/A	0.00678	0.00996	0.0210
Nickel	118	13.1	337	146	108	88.8	130	276
Nonylphenol	7	1.7	20.0	18.9	6.40	11.5	9.40	19.9
Parathion (ethyl)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pentachlorophenol	15.1	9.6	43.1	107	13.8	65.1	20.2	42.9
Phenanthrene	7.7	4.6	22.0	51.1	7.04	31.2	10.3	21.8
Polychlorinated Biphenyls [PCBs]	10	0.03	28.6	0.333	9.14	0.203	0.298	0.632
Selenium	564	136	1611	1511	516	922	758	1603
Silver	2	N/A	15.0	N/A	4.79	N/A	7.03	14.8
Toxaphene	0.21	0.0002	0.600	0.00222	0.192	0.00136	0.00199	0.00421
Tributyltin [TBT]	0.24	0.0074	0.686	0.0822	0.219	0.0502	0.0737	0.155
2,4,5 Trichlorophenol	259	12	740	133	237	81.3	119	252
Zinc	92.7	84.2	532	1881	170	1147	250	529

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Interim Outfall 002

HUMAN HEALTH

	Fish Only				
Parameter	Criterion (µa/L)	WLAh (µa/L)	LTAh (µa/L)	Daily Avg. (μα/L)	Daily Max. (μa/L)
Acrylonitrile	115	2875	2674	3930	8315
Aldrin	1.147E-05	0.000287	0.000267	0.000392	0.000829
Anthracene	1317	32925	30620	45011	95228
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	42010
Benzidine	0.107	2.68	2.49	3.65	7.73
Benzo(a)anthracene	0.025	0.625	0.581	0.854	1.80
Benzo(<i>a</i>)pyrene	0.0025	0.0625	0.0581	0.0854	0.180
Bis(chloromethyl)ether	0.2745	6.86	6.38	9.38	19.8
Bis(2-chloroethyl)ether	42.83	1071	996	1463	3096
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	7.55	189	176	258	545
Bromodichloromethane [Dichlorobromomethane]	275	6875	6394	9398	19884
Bromoform [Tribromomethane]	1060	26500	24645	36228	76645
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	46	1150	1070	1572	3326
Chlordane	0.0025	0.0625	0.0581	0.0854	0.180
Chlorobenzene	2737	68425	63635	93543	197905
Chlorodibromomethane [Dibromochloromethane]	183	4575	4255	6254	13232
Chloroform [Trichloromethane]	7697	192425	178955	263064	556550
Chromium (hexavalent)	502	12550	11672	17157	36298
Chrysene	2.52	63.0	58.6	86.1	182
Cresols [Methylphenols]	9301	232525	216248	317884	672532
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.0500	0.0465	0.0683	0.144
4,4'-DDE	0.00013	0.00325	0.00302	0.00444	0.00939
4,4'-DDT	0.0004	0.0100	0.00930	0.0136	0.0289
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	473	11825	10997	16165	34201
1,2-Dibromoethane [Ethylene Dibromide]	4.24	106	98.6	144	306
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	595	14875	13834	20335	43022
o-Dichlorobenzene [1,2-Dichlorobenzene]	3299	82475	76702	112751	238542
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	2.24	56.0	52.1	76.5	161
1,2-Dichloroethane	364	9100	8463	12440	26319
1,1-Dichloroethylene [1,1-Dichloroethene]	55114	1377850	1281401	1883658	3985155
Dichloromethane [Methylene Chloride]	13333	333325	309992	455688	964075
1,2-Dichloropropane	259	6475	6022	8851	18727
1,3-Dichloropropene [1,3-Dichloropropylene]	119	2975	2767	4067	8604
Dicofol [Kelthane]	0.30	7.50	6.98	10.2	21.6
Dieldrin	2.0E-05	0.000500	0.000465	0.000683	0.00144
2,4-Dimethylphenol	8436	210900	196137	288321	609986
Di-n-Butyl Phthalate	92.4	2310	2148	3158	6681
Dioxins/Furans [TCDD Equivalents]	7.97E-08	0.0000020	0.0000019	0.0000027	0.0000058

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Interim Outfall 002

HUMAN HEALTH-continued

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

	Fish Only				
-	Criterion	WLAh	LTAh	Daily Avg.	Daily Max.
Parameter	(μg/L)	(µg/L)	(µg/L)	(μg/L)	(µg/L)
Endrin Existe a state	0.02	0.500	0.465	0.683	1.44
	2013	50325	46802	68799	145554
Ethylbenzene	1867	46675	43408	63809	134998
	1.68E+U/	42000000	390600000	5/4182000	1214/66000
Fluoride	N/A	N/A	N/A	N/A	N/A
	0.0001	0.00250	0.00233	0.00341	0.00723
	0.00029	0.00725	0.00674	0.00991	0.0209
Hexachiorobenzene	0.00068	0.0170	0.0158	0.0232	0.0491
	0.22	5.50	5.12	7.51	15.9
Hexachiorocyclonexane (<i>alpha</i>)	0.0084	0.210	0.195	0.287	0.607
Hexachlorocyclonexane (beta)	0.26	6.50	6.05	8.88	18.7
Hexachlorocyclonexane (gamma) [Lindane]	0.341	8.53	7.93	11.6	24.6
Hexachlorocyclopentadiene	11.6	290	2/0	396	838
Hexachioroethane	2.33	58.3	54.2	79.6	168
Hexachiorophene	2.90	/2.5	67.4	99.1	209
	15982	399550	3/1582	546224	1155618
Lead	3.83	2/1	252	369	/82
Mercury	0.0250	0.625	0.581	0.854	1.80
Methoxychlor	3.0	/5.0	69.8	102	216
Methyl Ethyl Ketone	9.92E+05	24800000	23064000	33904080	/1/29040
Methyl tert-butyl ether [MTBE]	10482	262050	243707	358248	757927
Nickel	1140	28500	26505	38962	82430
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1873	46825	43547	64014	135431
N-Nitrosodiethylamine	2.1	52.5	48.8	71.7	151
N-Nitroso-di-n-Butylamine	4.2	105	97.7	143	303
Pentachlorobenzene	0.355	8.88	8.25	12.1	25.6
Pentachlorophenol	0.29	7.25	6.74	9.91	20.9
Polychlorinated Biphenyls [PCBs]	6.4E-04	0.0160	0.0149	0.0218	0.0462
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	17.3
1,1,2,2-Tetrachloroethane	26.35	659	613	900	1905
Tetrachloroethylene [Tetrachloroethylene]	280	7000	6510	9569	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	0.375	0.795
2,4,5-TP [Silvex]	369	9225	8579	12611	26681
1,1,1-Trichloroethane	784354	19608850	18236231	26807258	56714676
1,1,2-Trichloroethane	166	4150	3860	5673	12003
Trichloroethylene [Trichloroethene]	71.9	1798	1672	2457	5198
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	563	1193

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Interim Outfall 002

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

Aquatic Life	70% of Daily Avg.	85% of Daily Avg.
Parameter	(ua/L)	(µa/L)
Acrolein	N/A	N/A
Aldrin	1.22	1.48
Aluminum	N/A	N/A
Arsenic	140	170
Cadmium	37.6	45.6
Carbaryl	576	700
Chlordane	0.0278	0.0338
Chlorpyrifos	0.0103	0.0125
Chromium (trivalent)	N/A	N/A
Chromium (hexavalent)	345	420
Copper	26.7	32.4
Copper (ovster waters)	N/A	N/A
Cvanide (free)	5.26	6.39
4,4'-DDT	0.00697	0.00846
Demeton	0.697	0.846
Diazinon	0.770	0.935
Dicofol [Kelthane]	N/A	N/A
Dieldrin	0.0139	0.0169
Diuron	N/A	N/A
Endosulfan I (alpha)	0.0319	0.0388
Endosulfan II (<i>beta</i>)	0.0319	0.0388
Endosulfan sulfate	0.0319	0.0388
Endrin	0.0139	0.0169
Guthion [Azinphos Methyl]	0.0697	0.0846
Heptachlor	0.0278	0.0338
Hexachlorocyclohexane (gamma) [Lindane]	0.150	0.182
Lead	104	126
Malathion	0.0697	0.0846
Mercury	1.97	2.39
Methoxychlor	0.209	0.254
Mirex	0.00697	0.00846
Nickel	91.3	110
Nonylphenol	6.58	7.99
Parathion (ethyl)	N/A	N/A
Pentachlorophenol	14.2	17.2
Phenanthrene	7.24	8.79
Polychlorinated Biphenyls [PCBs]	0.209	0.254
Selenium	530	644
Silver	4.92	5.98
Toxaphene	0.00139	0.00169
Tributyltin [TBT]	0.0516	0.0626
2,4,5 Trichlorophenol	83.6	101
Zinc	175	212

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Interim Outfall 002

Human Hoalth	70% of Daily Ava	85% of Daily Ava
	Dully Avg.	Dully Avg.
Acodemitrile	<u>(μg/L)</u>	(µg/L)
Actylolitine	2751	0.000222
Aldrin	0.000274	0.000333
Anthracene	31508	38260
Antimony	25622	31113
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	13899	16878
Benzidine	2.55	3.10
Benzo(<i>a</i>)anthracene	0.598	0.726
Benzo(<i>a</i>)pyrene	0.0598	0.0726
Bis(chloromethyl)ether	6.56	7.97
Bis(2-chloroethyl)ether	1024	1244
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	180	219
Bromodichloromethane [Dichlorobromomethane]	6579	7988
Bromoform [Tribromomethane]	25359	30793
Cadmium	N/A	N/A
Carbon Tetrachloride	1100	1336
Chlordane	0.0598	0.0726
Chlorobenzene	65480	79512
Chlorodibromomethane [Dibromochloromethane]	4378	5316
Chloroform [Trichloromethane]	184144	223604
Chromium (hexavalent)	12009	14583
Chrysene	60.2	73.2
Cresols [Methylphenols]	222519	270202
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0478	0.0581
4,4'-DDE	0.00311	0.00377
4,4'-DDT	0.00956	0.0116
2.4'-D	N/A	N/A
Danitol [Fenpropathrin]	11316	13741
1.2-Dibromoethane [Ethylene Dibromide]	101	123
<i>m</i> -Dichlorobenzene [1.3-Dichlorobenzene]	14234	17285
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	78926	95838
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A
3.3'-Dichlorobenzidine	53.5	65.0
1 2-Dichloroethane	8708	10574
1.1-Dichloroethylene [1.1-Dichloroethene]	1318561	1601109
Dichloromethane [Methylene Chloride]	318982	387335
1 2-Dichloropropage	6196	7524
1 3-Dichloropropene [1 3-Dichloropropylene]	2846	2457
	7 17	0 71
	0.000/79	0.71
2 4-Dimethylphenol	201921	2/15/172
	201024	243073
Disving / Europe [TCDD Equivalants]	0.0000010	2084
	0.0000013	0.0000023

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Interim Outfall 002

Human Health-continued	70% of Daily Ava	85% of Daily Ava
Parameter	(ua/I)	(ua/L)
Endrin	0.478	0 581
Enichlorobydrin	48159	58479
Ethylbenzene	44666	54237
Ethylene Glycol	401927400	488054700
Fluoride	N/A	N/A
Hentachlor	0.00239	0.00290
Heptachlor Epoxide	0.00693	0.00842
Hexachlorobenzene	0.0162	0.0197
Hexachlorobutadiene	5.26	6.39
Hexachlorocyclobexane (<i>alpha</i>)	0.200	0.244
Hexachlorocyclohexane (<i>beta</i>)	6.22	7.55
Hexachlorocyclohexane (<i>gamma</i>) [lindane]	8 15	9.90
Hexachlorocyclonentadiene	277	336
Hexachloroethane	55 7	67.6
Hexachlorophene	69.3	84.2
4.4'-Isopropylidenediphenol [Bisphenol A]	382357	464291
lead	258	314
Mercury	0.598	0.726
Methoxychlor	71.7	87.1
Methyl Ethyl Ketone	23732856	28818468
Methyl tert-butyl ether [MTBE]	250773	304511
Nickel	27273	33117
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	44810	54412
N-Nitrosodiethylamine	50.2	61.0
N-Nitroso-di- <i>n</i> -Butylamine	100	122
Pentachlorobenzene	8.49	10.3
Pentachlorophenol	6.93	8.42
Polychlorinated Biphenyls [PCBs]	0.0153	0.0185
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]	6698	8134
Thallium	5.50	6.68
Toluene	N/A	N/A
Toxaphene	0.263	0.319
2,4,5-TP [Silvex]	8828	10719
1,1,1-Trichloroethane	18765081	22786170
1,1,2-Trichloroethane	3971	4822
Trichloroethylene [Trichloroethene]	1720	2088
2,4,5-Trichlorophenol	44666	54237
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	394	479

Appendix A **Calculated Water Quality-Based Effluent Limits** Outfall 001 and Final Outfall 002

TEXTOX MENU #5 - 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 Saltwater Aquatic Life Table 2, 2018 Texas Surface Water Quality Standards for Human Health "Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	Union Carbide Corporation			
TPDES Permit No:	WQ0000447000			
Outfall No:	001 & Final 002			
Prepared by:	Mónica Báez			
Date:	October 13, 2023			
DISCHARGE INFORMATION				
Receiving Waterbody:	Victoria Barge Canal Tidal			
Segment No:	1701			
TSS (mg/L):	22			
Effluent Flow for Aquatia Life (MCD)	22.0	*		

Effluent Flow for Aquatic Life (MGD) % Effluent for Chronic Aquatic Life (Mixing Zone): % Effluent for Acute Aquatic Life (ZID): **Ovster Waters?** Effluent Flow for Human Health (MGD):

% Effluent for Human Health:

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	7646.38	0.856		1.80	***
Lead	6.06	-0.85	82973.75	0.354		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	73554.16	0.382		1.00	Assumed
Zinc	5.36	-0.52	45913.48	0.497		1.00	Assumed

10

41

No 21.038

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*Effluent from Outfalls 001 and 002 comingle in an on-site ditch prior to discharging through the same outfall structure into Victoria Barge Canal Tidal (Segment No. 1701). Therefore, combined flows for Outfalls 001 and 002 were used to calculate the percentage effluent values.

Effluent flow for aquatic life is the sum of the 2-year maximum flow reported for Outfall 001 not exceeding the authorized 5.80 MGD daily average dry-weather flow and the proposed Final Phase flow of 17 MGD for Outfall 002.

** Effluent flow for human health is the sum of the 2-year average flow reported for Outfall 001 not exceeding the authorized 5.80 MGD daily average dry-weather flow and the proposed Final Phase flow of 17 MGD for Outfall 002.

***30 TAC Chapter 307, Appendix E, Site-Specific

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Final Outfall 002

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

	SW Acute Criterion	SW Chronic Criterion	WLAa	WLAc	LTAa	LTAc	Daily Avg.	Daily Max.
Parameter	(μg/L)	(µg/L)	(μg/L)	(μg/L)	(μg/L)	(µg/L)	(μg/L)	(μg/L)
Acrolein	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aldrin	1.3	N/A	3.17	N/A	1.01	N/A	1.49	3.15
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	149	78	363	780	116	476	170	361
Cadmium	40.0	8.75	97.6	87.5	31.2	53.4	45.8	97.0
Carbaryl	613	N/A	1495	N/A	478	N/A	703	1487
Chlordane	0.09	0.004	0.220	0.0400	0.0702	0.0244	0.0358	0.0758
Chlorpyrifos	0.011	0.006	0.0268	0.0600	0.00859	0.0366	0.0126	0.0267
Chromium (trivalent)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium (hexavalent)	1090	49.6	2659	496	851	303	444	940
Copper	24.3	6.48	69.2	75.7	22.2	46.2	32.5	68.9
Copper (oyster waters)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyanide (free)	5.6	5.6	13.7	56.0	4.37	34.2	6.42	13.5
4,4'-DDT	0.13	0.001	0.317	0.0100	0.101	0.00610	0.00896	0.0189
Demeton	N/A	0.1	N/A	1.00	N/A	0.610	0.896	1.89
Diazinon	0.819	0.819	2.00	8.19	0.639	5.00	0.939	1.98
Dicofol [Kelthane]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	0.71	0.002	1.73	0.0200	0.554	0.0122	0.0179	0.0379
Diuron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan I (<i>alpha</i>)	0.034	0.009	0.0829	0.0900	0.0265	0.0549	0.0390	0.0825
Endosulfan II (<i>beta</i>)	0.034	0.009	0.0829	0.0900	0.0265	0.0549	0.0390	0.0825
Endosulfan sulfate	0.034	0.009	0.0829	0.0900	0.0265	0.0549	0.0390	0.0825
Endrin	0.037	0.002	0.0902	0.0200	0.0289	0.0122	0.0179	0.0379
Guthion [Azinphos Methyl]	N/A	0.01	N/A	0.1000	N/A	0.0610	0.0896	0.189
Heptachlor	0.053	0.004	0.129	0.0400	0.0414	0.0244	0.0358	0.0758
Hexachlorocyclohexane (gamma) [Lindane]	0.16	N/A	0.390	N/A	0.125	N/A	0.183	0.388
Lead	133	5.3	917	150	293	91.3	134	284
Malathion	N/A	0.01	N/A	0.1000	N/A	0.0610	0.0896	0.189
Mercury	2.1	1.1	5.12	11.0	1.64	6.71	2.40	5.09
Methoxychlor	N/A	0.03	N/A	0.300	N/A	0.183	0.269	0.569
Mirex	N/A	0.001	N/A	0.0100	N/A	0.00610	0.00896	0.0189
Nickel	118	13.1	288	131	92.1	79.9	117	248
Nonylphenol	7	1.7	17.1	17.0	5.46	10.4	8.03	16.9
Parathion (ethyl)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pentachlorophenol	15.1	9.6	36.8	96.0	11.8	58.6	17.3	36.6
Phenanthrene	7.7	4.6	18.8	46.0	6.01	28.1	8.83	18.6
Polychlorinated Biphenyls [PCBs]	10	0.03	24.4	0.300	7.80	0.183	0.269	0.569
Selenium	564	136	1376	1360	440	830	647	1369
Silver	2	N/A	12.8	N/A	4.09	N/A	6.00	12.7
Toxaphene	0.21	0.0002	0.512	0.00200	0.164	0.00122	0.00179	0.00379
Tributyltin [TBT]	0.24	0.0074	0.585	0.0740	0.187	0.0451	0.0663	0.140
2,4,5 Trichlorophenol	259	12	632	120	202	73.2	107	227
Zinc	92.7	84.2	454	1693	145	1032	213	452

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Final Outfall 002

HUMAN HEALTH

	Fish Only				
Parameter	Criterion	WLAh (ug/l)	LTAh (ug/l)	Daily Avg.	Daily Max.
Acrylopitrile	(µy/L) 115	2300	(µy/L) 2130	<u>(μ<u>y</u>/L) 31///</u>	(µy/L) 6652
Aldrin	1 1/7F-05	0.000229	0.000213	0.000313	0052
Anthracene	1.1471-03	26340	2//96	36009	76183
Antimacene	1071	20340	10021	20003	61053
Arconic	10/1	Z1420	19921 N/A	29265	01955
Parium	N/A	N/A	N/A	N/A	N/A
Ponzono	E 91	11620	10907	16006	22600
Ponzidino	0 107	2 14	1 00	13883	6.19
Ponzo(g)anthracana	0.107	0.500	0.465	0.692	0.10
Benzo(a)antinacene	0.025	0.500	0.405	0.083	1.44
Belizo(d)pyrene	0.0025	0.0500	0.0405	0.0683	0.144
Bis(Chioromethyl)ether	0.2745	5.49	5.11	7.50	15.8
Bis(2-chloroethyl)ether	42.83	857	/9/	11/1	2477
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	7.55	151	140	206	436
Bromodichloromethane [Dichlorobromomethane]	275	5500	5115	/519	1590
Bromoform [Tribromomethane]	1060	21200	19/16	28982	61316
	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	46	920	856	1257	2660
Chlordane	0.0025	0.0500	0.0465	0.0683	0.144
Chlorobenzene	2737	54740	50908	74835	158324
Chlorodibromomethane [Dibromochloromethane]	183	3660	3404	5003	10585
Chloroform [Trichloromethane]	7697	153940	143164	210451	445240
Chromium (hexavalent)	502	10040	9337	13725	29038
Chrysene	2.52	50.4	46.9	68.9	145
Cresols [Methylphenols]	9301	186020	172999	254307	538025
Cyanide (free)	N/A	N/A	N/A	N/A	N//
4,4'-DDD	0.002	0.0400	0.0372	0.0546	0.115
4,4'-DDE	0.00013	0.00260	0.00242	0.00355	0.00751
4,4'-DDT	0.0004	0.00800	0.00744	0.0109	0.0231
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	473	9460	8798	12932	27361
1,2-Dibromoethane [Ethylene Dibromide]	4.24	84.8	78.9	115	245
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	595	11900	11067	16268	34418
o-Dichlorobenzene [1,2-Dichlorobenzene]	3299	65980	61361	90201	190833
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A	N/A	N/A	N/4
3,3'-Dichlorobenzidine	2.24	44.8	41.7	61.2	129
1,2-Dichloroethane	364	7280	6770	9952	21055
1,1-Dichloroethylene [1,1-Dichloroethene]	55114	1102280	1025120	1506926	3188124
Dichloromethane [Methylene Chloride]	13333	266660	247994	364550	771260
1,2-Dichloropropane	259	5180	4817	7081	14982
1,3-Dichloropropene [1,3-Dichloropropylene]	119	2380	2213	3253	6883
Dicofol [Kelthane]	0.30	6.00	5.58	8.20	17.3
Dieldrin	2.0E-05	0.000400	0.000372	0.000546	0.00115
2,4-Dimethylphenol	8436	168720	156910	230657	487988
Di-n-Butyl Phthalate	92.4	1848	1719	2526	5344
Dioxins/Furans [TCDD Equivalents]	7.97E-08	0.0000016	0.0000015	0.0000022	0.0000046

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Final Outfall 002

HUMAN HEALTH-continued

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

	Fish Only				
Parameter	Criterion (μg/L)	WLAh (µg/L)	LTAh (µg/L)	Daily Avg. (μg/L)	Daily Max. (μg/L)
Endrin	0.02	0.400	0.372	0.546	1.15
Epichlorohydrin	2013	40260	37442	55039	116443
Ethylbenzene	1867	37340	34726	51047	107998
Ethylene Glycol	1.68E+07	336000000	312480000	459345600	971812800
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0001	0.00200	0.00186	0.00273	0.00578
Heptachlor Epoxide	0.00029	0.00580	0.00539	0.00792	0.0167
Hexachlorobenzene	0.00068	0.0136	0.0126	0.0185	0.0393
Hexachlorobutadiene	0.22	4.40	4.09	6.01	12.7
Hexachlorocyclohexane (alpha)	0.0084	0.168	0.156	0.229	0.485
Hexachlorocyclohexane (beta)	0.26	5.20	4.84	7.10	15.0
Hexachlorocyclohexane (gamma) [Lindane]	0.341	6.82	6.34	9.32	19.7
Hexachlorocyclopentadiene	11.6	232	216	317	671
Hexachloroethane	2.33	46.6	43.3	63.7	134
Hexachlorophene	2.90	58.0	53.9	79.2	167
4,4'-Isopropylidenediphenol [Bisphenol A]	15982	319640	297265	436979	924494
Lead	3.83	216	201	295	625
Mercury	0.0250	0.500	0.465	0.683	1.44
Methoxychlor	3.0	60.0	55.8	82.0	173
Methyl Ethyl Ketone	9.92E+05	19840000	18451200	27123264	57383232
Methyl <i>tert</i> -butyl ether [MTBE]	10482	209640	194965	286598	606341
Nickel	1140	22800	21204	31169	65944
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1873	37460	34838	51211	108345
N-Nitrosodiethylamine	2.1	42.0	39.1	57.4	121
N-Nitroso-di- <i>n</i> -Butylamine	4.2	84.0	78.1	114	242
Pentachlorobenzene	0.355	7.10	6.60	9.70	20.5
Pentachlorophenol	0.29	5.80	5.39	7.92	16.7
Polychlorinated Biphenyls [PCBs]	6.4E-04	0.0128	0.0119	0.0174	0.0370
Pyridine	947	18940	17614	25892	54780
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.24	4.80	4.46	6.56	13.8
1,1,2,2-Tetrachloroethane	26.35	527	490	720	1524
Tetrachloroethylene [Tetrachloroethylene]	280	5600	5208	7655	16196
Thallium	0.23	4.60	4.28	6.28	13.3
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.011	0.220	0.205	0.300	0.636
2,4,5-TP [Silvex]	369	7380	6863	10089	21345
1,1,1-Trichloroethane	784354	15687080	14588984	21445807	45371741
1,1,2-Trichloroethane	166	3320	3088	4538	9602
Trichloroethylene [Trichloroethene]	71.9	1438	1337	1965	4159
2,4,5-Trichlorophenol	1867	37340	34726	51047	107998
TTHM [Sum of Total Trihalomethanes]	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	16.5	330	307	451	954

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Final Outfall 002

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

Aquatic Life	70% of Dailv Ava.	85% of Dailv Ava.
Parameter	(μg/L)	(μg/L)
Acrolein	N/A	N/A
Aldrin	1.04	1.26
Aluminum	N/A	N/A
Arsenic	119	145
Cadmium	32.1	39.0
Carbaryl	492	597
Chlordane	0.0251	0.0304
Chlorpyrifos	0.00883	0.0107
Chromium (trivalent)	N/A	N/A
Chromium (hexavalent)	311	378
Copper	22.7	27.6
Copper (oyster waters)	N/A	N/A
Cyanide (free)	4.49	5.46
4,4'-DDT	0.00627	0.00762
Demeton	0.627	0.762
Diazinon	0.657	0.798
Dicofol [Kelthane]	N/A	N/A
Dieldrin	0.0125	0.0152
Diuron	N/A	N/A
Endosulfan I (<i>alpha</i>)	0.0273	0.0331
Endosulfan II (<i>beta</i>)	0.0273	0.0331
Endosulfan sulfate	0.0273	0.0331
Endrin	0.0125	0.0152
Guthion [Azinphos Methyl]	0.0627	0.0762
Heptachlor	0.0251	0.0304
Hexachlorocyclohexane (<i>agmma</i>) [Lindane]	0.128	0.156
lead	93.9	114
Malathion	0.0627	0.0762
Mercury	1.68	2.04
Methoxychlor	0.188	0.228
Mirex	0.00627	0.00762
Nickel	82.2	99.8
Nonviphenol	5.62	6.82
Parathion (ethyl)	N/A	N/A
Pentachlorophenol	12.1	14.7
Phenanthrene	6.18	7.50
Polychlorinated Biphenyls [PCBs]	0 188	0 228
Selenium	452	550
Silver	4 20	5.10
Toxanhene	0 00125	0.00152
	0.00123	0.00132
2 4 5 Trichloronhenol	75 2	91 <i>/</i>
Zinc	1/0	121
Silver Toxaphene Tributyltin [TBT] 2,4,5 Trichlorophenol Zinc	4.20 0.00125 0.0464 75.3 149	5.10 0.00152 0.0564 91.4 181

Human Health	70% of Daily Ava.	85% of Dailv Ava.
Parameter	(µa/L)	(µa/L)
Acrylonitrile	2201	2672
Aldrin	0.000219	0.000266
Anthracene	25206	30608
Antimony	20498	24890
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	11119	13502
Benzidine	2.04	2.48
Benzo(a)anthracene	0.478	0.581
Benzo(<i>a</i>)pyrene	0.0478	0.0581
Bis(chloromethyl)ether	5.25	6.37
Bis(2-chloroethyl)ether	819	995
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	144	175
Bromodichloromethane [Dichlorobromomethane]	5263	6391
Bromoform [Tribromomethane]	20287	24635
Cadmium	N/A	N/A
Carbon Tetrachloride	880	1069
Chlordane	0.0478	0.0581
Chlorobenzene	52384	63609
Chlorodibromomethane [Dibromochloromethane]	3502	4253
Chloroform [Trichloromethane]	147315	178883
Chromium (hexavalent)	9607	11666
Chrysene	48.2	58.5
Cresols [Methylphenols]	178015	216161
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0382	0.0464
4,4'-DDE	0.00248	0.00302
4,4'-DDT	0.00765	0.00929
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	9052	10992
1,2-Dibromoethane [Ethylene Dibromide]	81.1	98.5
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	11387	13828
o-Dichlorobenzene [1,2-Dichlorobenzene]	63140	76671
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A
3,3'-Dichlorobenzidine	42.8	52.0
1,2-Dichloroethane	6966	8459
1,1-Dichloroethylene [1,1-Dichloroethene]	1054848	1280887
Dichloromethane [Methylene Chloride]	255185	309868
1,2-Dichloropropane	4957	6019
1,3-Dichloropropene [1,3-Dichloropropylene]	2277	2765
Dicofol [Kelthane]	5.74	6.97
Dieldrin	0.000382	0.000464
2,4-Dimethylphenol	161459	196058
Di-n-Butyl Phthalate	1768	2147
Dioxins/Eurans [TCDD Equivalents]	0.0000015	0 0000019

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Final Outfall 002

Appendix A Calculated Water Quality-Based Effluent Limits Outfall 001 and Final Outfall 002

Uuman Uaalth continued	70% of	85% of
	Dully Avg.	Dully Avg.
Fadrin	(μg/L)	(µg/L)
Endrin	0.382	0.404
	36527	40783
Ethylpenzene	35/33	43390
	321541920	390443760
Fluoride	N/A	N/A
Heptachlor	0.00191	0.00232
Heptachlor Epoxide	0.00555	0.00673
Hexachlorobenzene	0.0130	0.0158
Hexachlorobutadiene	4.21	5.11
Hexachlorocyclohexane (alpha)	0.160	0.195
Hexachlorocyclohexane (beta)	4.97	6.04
Hexachlorocyclohexane (gamma) [Lindane]	6.52	7.92
Hexachlorocyclopentadiene	222	269
Hexachloroethane	44.5	54.1
Hexachlorophene	55.5	67.3
4,4'-Isopropylidenediphenol [Bisphenol A]	305885	371432
Lead	207	251
Mercury	0.478	0.581
Methoxychlor	57.4	69.7
Methyl Ethyl Ketone	18986284	23054774
Methyl tert-butyl ether [MTBE]	200619	243609
Nickel	21818	26494
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	35848	43529
N-Nitrosodiethylamine	40.1	48.8
N-Nitroso-di-n-Butylamine	80.3	97.6
Pentachlorobenzene	6.79	8.25
Pentachlorophenol	5.55	6.73
Polychlorinated Biphenyls [PCBs]	0.0122	0.0148
Pyridine	18125	22008
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	4.59	5.57
1.1.2.2-Tetrachloroethane	504	612
Tetrachloroethylene [Tetrachloroethylene]	5359	6507
Thallium	4.40	5.34
Toluene	N/A	N/A
Toxaphene	0.210	0.255
2.4.5-TP [Silvex]	7062	8575
1 1 1-Trichloroethane	15012064	18228936
1 1 2-Trichloroethane	3177	2857
	1276	1671
	2570	1701
Z,4,5- I ICHOLOPHENOI	30/33	43390
	N/A	N/A
vinyi Chloride	315	383

Appendix A Calculated Mass Limits from the Calculated Water Quality-Based Effluent Limits Outfalls 001 and 002 (Interim)

Aquatic Life

Outfall	Parameter	Dly Avg µg/L	Dly Max µg/L	Dly Avg. lbs/day	Dly Max lbs/day
001	Phenanthrene	10.3	21.8	0.499	1.06
				mg/L	mg/L
002	Copper, Total	38.1	80.7	0.0381	0.081

Human Health

Mass limit (lbs/day) = [concentration (μ g/L)/1000) × Flow (MGD)] × 8.345 Flow = 5.8 MGD

Outfall	Parameter	Dly Avg	Dly Max	Dly Avg	Dly Max
001		μg/L	μg/L	lbs/day	lbs/day
	Acrylonitrile	3930	8315	190	402
	Anthracene	45011	95228	2179	4609
	Benzene	19857	42010	961	2033
	Benzo(a)anthracene	0.854	1.80	0.041	0.087
	Benzo(a)pyrene	0.0854	0.180	0.0041	0.0087
	Bis(2-ethylhexyl) phthalate	258	545	12.4	26.3
	Carbon Tetrachloride	1572	3326	76.0	160.9
	Chlorobenzene	93543	197905	4527	9578
	Chloroform	263064	556550	12732	26937
	Chrysene	86.1	182	4.16	8.80
	Di-n-Butyl Phathalate	3158	6681	152	323
	1,2-Dichlorobenzene	112751	238542	5457	11545
	1,3-Dichlorobenzene	20335	43022	984	2082
	1,2-Dichloroethane	12440	26319	602	1273
	1,1-Dichloroethylene	1883658	3985155	91170	192885
	1,2-Dichloropropane	8851	18727	428	906
	1,3- Dichloropropylene	4067	8604	196	416
	2,4-Dimethylphenol	288321	609986	13955	29523
	Ethylbenzene	63809	134998	3088	6534
	Hexachlorobenzene	0.0232	0.0491	0.0011	0.0023
	Hexachlorobutadiene	7.51	15.9	0.363	0.769
	Hexachloroethane	79.6	168	3.85	8.13
	Methylene Chloride (Dichloromethane)	455688	964075	22055	46662
	Nitrobenzene	64014	135431	3098	6554
	Tetrachloroethylene	9569	20246	463	979
	1,1,1-Trichloroethane	26807258	56714676	1297498	2745047
	1,1,2-Trichloroethane	5673	12003	274	580
	Trichloroethylene	2457	5198	118	251
	Vinyl Chloride	563	1193	27.2	57.7

Appendix A Calculated Mass Limits from the Calculated Water Quality-Based Effluent Limits Outfalls 001 and 002 (Final)

Aquatic Life

Outfall	Parameter	Dly Avg µg/L	Dly Max µg/L	Dly Avg. lbs/day	Dly Max lbs/day
001	Phenanthrene	8.83	18.6	0.427	0.900
				mg/L	mg/L
002	Copper, Total	32.5	68.9	0.0325	0.0689

Human Health

Mass limit (lbs/day) = [concentration (μ g/L)/1000) × Flow (MGD)] × 8.345 Flow = 5.8 MGD

Outfall	Parameter	Dly Avg	Dly Max	Dly Avg	Dly Max
001		μg/L	μg/L	lbs/day	lbs/day
	Acrylonitrile	3144	6652	152	321
	Anthracene	36009	76183	1743	3687
	Benzene	15885	33608	769	1627
	Benzo(a)anthracene	0.683	1.44	0.033	0.0697
	Benzo(a)pyrene	0.0683	0.144	0.0033	0.00697
	Bis(2-ethylhexyl) phthalate	206	436	9.97	21.1
	Carbon Tetrachloride	1257	2660	60.8	129
	Chlorobenzene	74835	158324	3622	7663
	Chloroform	210451	445240	10186	21550
	Chrysene	68.9	145	3.33	7.02
	Di-n-Butyl Phathalate	2526	5344	122	259
	1,2-Dichlorobenzene	90201	190833	4365	9237
	1,3-Dichlorobenzene	16268	34418	787	1666
	1,2-Dichloroethane	9952	21055	482	1019
	1,1-Dichloroethylene	1506926	3188124	72937	154308
	1,2-Dichloropropane	7081	14982	343	725
	1,3- Dichloropropylene	3253	6883	157	333
	2,4-Dimethylphenol	230657	487988	11164	23619
	Ethylbenzene	51047	107998	2471	5227
	Hexachlorobenzene	0.0185	0.0393	0.000895	0.0019
	Hexachlorobutadiene	6.01	12.7	0.291	0.615
	Hexachloroethane	63.7	134	3.08	6.49
	Methylene Chloride (Dichloromethane)	364550	771260	17645	37330
	Nitrobenzene	51211	108345	2479	5244
	Tetrachloroethylene	7655	16196	371	784
	1,1,1-Trichloroethane	21445807	45371741	1037999	2196038
	1,1,2-Trichloroethane	4538	9602	220	465
	Trichloroethylene	1965	4159	95.1	201
	Vinyl Chloride	451	954	21.8	46.2

Appendix B 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. **Please note that the calculated technology-based effluent limitations are from the existing Fact Sheet for the permit issued on July 8, 2021.**

			Technology-Based				Water Qua	ality-Based		Existing Permit			
Outfall	Pollutant	Daily	/ Avg	Daily	Max	Daily	/ Avg	Daily	Max	Daily	′ Avg	Daily	Max
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
001-	Flow	5.80	MGD	Report	, MGD	N	/A	N/	'A	5.80	MGD	Report	t, MGD
Interim	Biochemical Oxygen												
	Demand, 5-day (BOD ₅)	1,203	N/A	3,152	N/A	N/A	34.8	N/A	N/A	1,187	34.8	3,106	100
	Total Suspended Solids (TSS)	1,980	N/A	6,419	N/A	N/A	N/A	N/A	N/A	1,966	Report	6,375	280
	Total Organic Carbon (TOC)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Report	N/A	Report
	Dissolved Oxygen	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Report (min)	N/A	Report
	Total Residual Chlorine	N/A	N/A	N/A	0.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Enterococci	N/A	N/A	N/A	N/A	3!	51	104	4 ¹	35	5 1	10	4 ¹
	Acenaphthene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	Acenaphthylene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/a	1.87	N/A
	Acrylonitrile	3.35	N/A	8.44	N/A	190	N/A	402	N/A	3.04	N/A	7.67	N/A
	Anthracene	0.77	N/A	2.06	N/A	2179	N/A	4609	N/A	0.70	N/A	1.87	N/A
	Benzene	1.29	N/A	8.44	N/A	961	N/A	2033	N/A	1.17	N/A	4.31	N/A
	Benzo(a)anthracene	0.77	N/A	2.06	N/A	0.041	N/A	0.087	N/A	0.041	N/A	0.087	N/A
	3,4-Benzofluoranthene	0.80	N/A	2.13	N/A	N/A	N/A	N/A	N/A	0.73	N/A	1.93	N/A
	Benzo(k)fluoranthene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	Benzo(a)pyrene	0.80	N/A	2.13	N/A	0.0041	N/A	0.0087	N/A	0.0041	N/A	0.0087	N/A
	Bis(2-ethylhexyl) phthalate	3.59	N/A	9.73	N/A	12.4	N/A	26.3	N/A	3.27	N/A	8.85	N/A
	Carbon Tetrachloride	0.63	N/A	1.33	N/A	76.0	N/A	161	N/A	0.57	N/A	1.21	N/A
	Chlorobenzene	0.52	N/A	0.98	N/A	4527	N/A	9578	N/A	0.48	N/A	0.89	N/A
	Chloroethane	3.63	N/A	9.35	N/A	N/A	N/A	N/A	N/A	3.30	N/A	8.50	N/A
	Chloroform	0.73	N/A	1.60	N/A	12732	N/A	26937	N/A	0.67	N/A	1.46	N/A
	2-Chlorophenol	1.08	N/A	3.42	N/A	N/A	N/A	N/A	N/A	0.98	N/A	3.11	N/A

¹ Bacteria measured as colony forming units (cfu) or most probable number (MPN) per 100 mL.

		Technology-Based			Water Quality-Based				Existing Permit				
Outfall	Pollutant	Daily	/ Avg	Daily	Max	Daily	/ Avg	Daily	Max	Daily	Avg	Daily	Max
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
001 -	Chrysene	0.77	N/A	2.06	N/A	4.16	N/A	8.80	N/A	0.70		1.87	
Interim	Di-n-butyl phthalate	0.94	N/A	1.99	N/A	152	N/A	323	N/A	0.86		1.81	
	1,2-Dichlorobenzene	2.69	N/A	5.69	N/A	5457	N/A	11545	N/A	2.44		5.17	
	1,3-Dichlorobenzene	1.08	N/A	1.53	N/A	984	N/A	2082	N/A	0.98		1.40	
	1,4-Dichlorobenzene	0.52	N/A	0.98	N/A	N/A	N/A	N/A	N/A	0.48		0.89	
	1,1-Dichloroethane	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70		1.87	
	1,2-Dichloroethane	2.37	N/A	7.36	N/A	602	N/A	1273	N/A	2.16		6.69	
	1,1-Dichloroethylene	0.56	N/A	0.87	N/A	91170	N/A	192885	N/A	0.51		0.79	
	1,2-trans-Dichloroethylene	0.73	N/A	1.88	N/A	N/A	N/A	N/A	N/A	0.67		1.71	
	2,4-Dichlorophenol	1.36	N/A	3.91	N/A	N/A	N/A	N/A	N/A	1.24		3.55	
	1,2-Dichloroprane	5.34	N/A	8.02	N/A	428	N/A	906	N/A	4.85		7.29	
	1,3-Dichloropropylene	1.01	N/A	0.044	N/A	196	N/A	416	N/A	0.92		1.40	
	Diethyl phthalate	2.83	N/A	7.08	N/A	N/A	N/A	N/A	N/A	2.57		6.44	
	2,4-Dimethylphenol	0.63	N/A	1.26	N/A	13955	N/A	29523	N/A	0.57		1.14	
	Dimethyl phthalate	0.66	N/A	1.64	N/A	N/A	N/A	N/A	N/A	0.60		1.49	
	4,6-Dinitro-o-Cresol	2.72	N/A	9.66	N/A	N/A	N/A	N/A	N/A	2.47		8.78	
	2,4-Dinitrophenol	2.48	N/A	4.29	N/A	N/A	N/A	N/A	N/A	2.25		3.90	
	2,4-Dinitrotoluene	3.94	N/A	9.94	N/A	N/A	N/A	N/A	N/A	3.58		9.04	
	2,6-Dinitrotoluene	8.89	N/A	22.36	N/A	N/A	N/A	N/A	N/A	8.09		20.3	
	Ethylbenzene	1.12	N/A	3.77	N/A	3088	N/A	6534	N/A	1.01		3.42	
	Fluoranthene	0.87	N/A	2.37	N/A	N/A	N/A	N/A	N/A	0.79		2.16	
	Fluorene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70		1.87	
	Hexachlorobenzene	0.52	N/A	0.98	N/A	0.0011	N/A	0.0023	N/A	0.0011		0.0023	
-	Hexachlorobutadiene	0.70	N/A	1.71	N/A	0.363	N/A	0.769	N/A	0.63		1.55	
	Hexachloroethane	0.73	N/A	1.88	N/A	3.85	N/A	8.13	N/A	0.67		1.71	
	Methyl Chloride	3.00	N/A	6.63	N/A	N/A	N/A	N/A	N/A	2.73		6.03	
	Methylene Chloride	1.40	N/A	3.10	N/A	22055	N/A	46662	N/A	1.27		2.82	

	Comparison of Technology-Based Effluent Limits and Water Quality-Based Effluent Limits												
			Technolog	gy-Based			Water Qua	ality-Based			Existing	Permit	
Outfall	Pollutant	Daily	′ Avg	Daily	Max	Daily	' Avg	Daily	Max	Daily	′ Avg	Daily	Max
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
001-	Naphthalene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
Interim	Nitrobenzene	0.94	N/A	2.37	N/A	3098	N/A	6554	N/A	0.86	N/A	2.16	N/A
	2-Nitrophenol	1.43	N/A	2.41	N/A	N/A	N/A	N/A	N/A	1.30	N/A	2.19	N/A
	4-Nitrophenol	2.51	N/A	4.33	N/A	N/A	N/A	N/A	N/A	2.28	N/A	3.93	N/A
	Phenanthrene	0.77	N/A	2.06	N/A	10.3	N/A	21.8	N/A	0.33	N/A	0.69	N/A
	Phenol	0.52	N/A	0.91	N/A	N/A	N/A	N/A	N/A	0.48	N/A	0.82	N/A
	Pyrene	0.87	N/A	2.34	N/A	N/A	N/A	N/A	N/A	0.79	N/A	2.12	N/A
	Tetrachloroethylene	0.77	N/A	1.95	N/A	463	N/A	979	N/A	0.70	N/A	1.78	N/A
	Toluene	0.91	N/A	2.79	N/A	N/A	N/A	N/A	N/A	0.82	N/A	2.54	N/A
	1,2,4-Trichlorobenzene	2.37	N/A	4.88	N/A	N/A	N/A	N/A	N/A	2.16	N/A	4.44	N/A
	1,1,1-Trichloroethane	0.73	N/A	1.88	N/A	1297498	N/A	2745047	N/A	0.67	N/A	1.71	N/A
	1,1,2-Trichloroethane	0.73	N/A	1.88	N/A	274	N/A	580	N/A	0.67	N/A	1.71	N/A
	Trichloroethylene	0.73	N/A	1.88	N/A	118	N/A	251	N/A	0.67	N/A	1.71	N/A
	Vinyl Chloride	3.63	N/A	9.35	N/A	27.2	N/A	57.7	N/A	3.30	N/A	8.50	N/A
	pH	6.0 SU	(min)	9.0 SU	(max)	N/	/A	N/	Ά	6.0 SU	(min)	9.0 SU	(max)
001- Final	Flow	5.80	MGD	Report	, MGD	N/	/Α	N/	Ά	5.80	MGD	Report	, MGD
i mai	Biochemical Oxygen												
	Demand, 5-day (BOD ₅)	1,203	N/A	3,152	N/A	N/A	34.8	N/A	N/A	1,187	34.8	3,106	100
	Total Suspended Solids (TSS)	1,980	N/A	6,419	N/A	, N/A	N/A	, N/A	, N/A	1,966	Report	6,375	280
	Total Organic Carbon (TOC)	, N/A	N/A	, N/A	N/A	N/A	N/A	N/A	N/A	, N/A	Report	, N/A	Report
	Dissolved Oxygen	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Report (min)	N/A	Report
	Total Residual Chlorine	N/A	N/A	N/A	0.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Enterococci	N/A	N/A	N/A	N/A	35	2	104	4 1	35	5 ¹	10	4 ¹
	Acenaphthene	0.77	N/A	2.06	0.77	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	Acenaphthylene	0.77	N/A	2.06	0.77	N/A	N/A	N/A	N/A	0.70	N/a	1.87	N/A
	Acrylonitrile	3.35	N/A	8.44	3.35	152	N/A	321	N/A	3.04	N/A	7.67	N/A
	Anthracene	0.77	N/A	2.06	0.77	1743	N/A	3687	N/A	0.70	N/A	1.87	N/A

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

² Bacteria measured as colony forming units (cfu) or most probable number (MPN) per 100 mL.

		Technology-Based			Water Quality-Based				Existing Permit				
Outfall	Pollutant	Daily	/ Avg	Daily	∕ Max	Daily	/ Avg	Daily	' Max	Daily	Avg	Daily	' Max
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
001-	Benzene	1.29	N/A	4.74	1.29	769	N/A	1627	N/A	1.17	N/A	4.31	N/A
Final	Benzo(a)anthracene	0.77	N/A	2.06	N/A	0.033	N/A	0.0697	N/A	0.041	N/A	0.087	N/A
	3,4-Benzofluoranthene	0.80	N/A	2.13	N/A	N/A	N/A	N/A	N/A	0.73	N/A	1.93	N/A
	Benzo(k)fluoranthene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	Benzo(a)pyrene	0.80	N/A	2.13	N/A	0.0033	N/A	0.00697	N/A	0.0041	N/A	0.0087	N/A
	Bis(2-ethylhexyl) phthalate	3.59	N/A	9.73	N/A	9.97	N/A	21.1	N/A	3.27	N/A	8.85	N/A
	Carbon Tetrachloride	0.63	N/A	1.33	N/A	60.8	N/A	129	N/A	0.57	N/A	1.21	N/A
	Chlorobenzene	0.52	N/A	0.98	N/A	3622	N/A	7663	N/A	0.48	N/A	0.89	N/A
	Chloroethane	3.63	N/A	9.35	N/A	N/A	N/A	N/A	N/A	3.30	N/A	8.50	N/A
	Chloroform	0.73	N/A	1.60	N/A	10186	N/A	21550	N/A	0.67	N/A	1.46	N/A
	2-Chlorophenol	1.08	N/A	3.42	N/A	N/A	N/A	N/A	N/A	0.98	N/A	3.11	N/A
	Chrysene	0.77	N/A	2.06	N/A	3.33	N/A	7.02	N/A	0.70	N/A	1.87	N/A
	Di-n-butyl phthalate	0.94	N/A	1.99	N/A	122	N/A	259	N/A	0.86	N/A	1.81	N/A
	1,2-Dichlorobenzene	2.69	N/A	5.69	N/A	4365	N/A	9237	N/A	2.44	N/A	5.17	N/A
	1,3-Dichlorobenzene	1.08	N/A	1.53	N/A	787	N/A	1666	N/A	0.98	N/A	1.40	N/A
	1,4-Dichlorobenzene	0.52	N/A	0.98	N/A	N/A	N/A	N/A	N/A	0.48	N/A	0.89	N/A
	1,1-Dichloroethane	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	1,2-Dichloroethane	2.37	N/A	7.36	N/A	482	N/A	1019	N/A	2.16	N/A	6.69	N/A
	1,1-Dichloroethylene	0.56	N/A	0.87	N/A	72937	N/A	154308	N/A	0.51	N/A	0.79	N/A
	1,2-trans-Dichloroethylene	0.73	N/A	1.88	N/A	N/A	N/A	N/A	N/A	0.67	N/A	1.71	N/A
	2,4-Dichlorophenol	1.36	N/A	3.91	N/A	N/A	N/A	N/A	N/A	1.24	N/A	3.55	N/A
	1,2-Dichloroprane	5.34	N/A	8.02	N/A	343	N/A	725	N/A	4.85	N/A	7.29	N/A
	1,3-Dichloropropylene	1.01	N/A	0.044	N/A	157	N/A	333	N/A	0.92	N/A	1.40	N/A
	Diethyl phthalate	2.83	N/A	7.08	N/A	N/A	N/A	N/A	N/A	2.57	N/A	6.44	N/A
	2,4-Dimethylphenol	0.63	N/A	1.26	N/A	11164	N/A	23619	N/A	0.57	N/A	1.14	N/A
	Dimethyl phthalate	0.66	N/A	1.64	N/A	N/A	N/A	N/A	N/A	0.60	N/A	1.49	N/A
	4,6-Dinitro-o-Cresol	2.72	N/A	9.66	N/A	N/A	N/A	N/A	N/A	2.47	N/A	8.78	N/A
	2,4-Dinitrophenol	2.48	N/A	4.29	N/A	N/A	N/A	N/A	N/A	2.25	N/A	3.90	N/A
	2,4-Dinitrotoluene	3.94	N/A	9.94	N/A	N/A	N/A	N/A	N/A	3.58	N/A	9.04	N/A

		Technology-Based			Water Qua	ality-Based		Existing Permit					
Outfall	Pollutant	Daily	′ Avg	Daily	Max	Daily	′ Avg	Daily	Max	Daily	Avg	Daily	Max
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
001-	2,6-Dinitrotoluene	8.89	N/A	22.36	N/A	N/A	N/A	N/A	N/A	8.09	N/A	20.3	N/A
Final	Ethylbenzene	1.12	N/A	3.77	N/A	2471	N/A	5227	N/A	1.01	N/A	3.42	N/A
	Fluoranthene	0.87	N/A	2.37	N/A	N/A	N/A	N/A	N/A	0.79	N/A	2.16	N/A
	Fluorene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	Hexachlorobenzene	0.52	N/A	0.98	N/A	0.000895	N/A	0.0019	N/A	0.0011	N/A	0.0023	N/A
	Hexachlorobutadiene	0.70	N/A	1.71	N/A	0.291	N/A	0.615	N/A	0.63	N/A	1.55	N/A
	Hexachloroethane	0.73	N/A	1.88	N/A	3.08	N/A	6.49	N/A	0.67	N/A	1.71	N/A
	Methyl Chloride	3.00	N/A	6.63	N/A	N/A	N/A	N/A	N/A	2.73	N/A	6.03	N/A
	Methylene Chloride	1.40	N/A	3.10	N/A	17645	N/A	37330	N/A	1.27	N/A	2.82	N/A
	Naphthalene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	Nitrobenzene	0.94	N/A	2.37	N/A	2479	N/A	5244	N/A	0.86	N/A	2.16	N/A
	2-Nitrophenol	1.43	N/A	2.41	N/A	N/A	N/A	N/A	N/A	1.30	N/A	2.19	N/A
	4-Nitrophenol	2.51	N/A	4.33	N/A	N/A	N/A	N/A	N/A	2.28	N/A	3.93	N/A
	Phenanthrene	0.77	N/A	2.06	N/A	10.3	N/A	21.8	N/A	0.33	N/A	0.69	N/A
	Phenol	0.52	N/A	0.91	N/A	N/A	N/A	N/A	N/A	0.48	N/A	0.82	N/A
	Pyrene	0.87	N/A	2.34	N/A	N/A	N/A	N/A	N/A	0.79	N/A	2.12	N/A
	Tetrachloroethylene	0.77	N/A	1.95	N/A	371	N/A	784	N/A	0.70	N/A	1.78	N/A
	Toluene	0.91	N/A	2.79	N/A	N/A	N/A	N/A	N/A	0.82	N/A	2.54	N/A
	1,2,4-Trichlorobenzene	2.37	N/A	4.88	N/A	N/A	N/A	N/A	N/A	2.16	N/A	4.44	N/A
	1,1,1-Trichloroethane	0.73	N/A	1.88	N/A	1037999	N/A	2196038	N/A	0.67	N/A	1.71	N/A
	1,1,2-Trichloroethane	0.73	N/A	1.88	N/A	220	N/A	465	N/A	0.67	N/A	1.71	N/A
	Trichloroethylene	0.73	N/A	1.88	N/A	95.1	N/A	201	N/A	0.67	N/A	1.71	N/A
	Vinyl Chloride	3.63	N/A	9.35	N/A	21.8	N/A	46.2	N/A	3.30	N/A	8.50	N/A
	pH	6.0 SU	l (min)	9.0 SU	(max)					6.0 SU	(min)	9.0 SU	(max)

	Comparison o	of Technology-Bas	ed Effluent Limit	s and Water	Quality-Base	ed Effluent I	imits
		Technolog	gy-Based	Water Qua	lity-Based	Existing	Permit
Outfall	Pollutant	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 (dry weather)	12.0 MGD	17.0 MGD	N/A	N/A	12.0 MGD	17.0 MGD
Interim	Temperature	N/A	N/A	N/A	100 °F	N/A	100 °F
	Total Organic Carbon	N/A	N/A	N/A	N/A	N/A	50
	Total Copper	N/A	N/A	0.0381	0.081	0.0365	0.0773
	Total Residual Chlorine	N/A	2.0	N/A	N/A	N/A	0.2
	Acenaphthene	0.022	0.059	N/A	N/A	0.022	0.059
	Acenaphthylene	0.022	0.059	N/A	N/A	0.022	0.059
	Acrylonitrile	0.096	0.242	N/A	N/A	0.096	0.242
	Anthracene	0.022	0.059	N/A	N/A	0.022	0.059
	Benzene	0.037	0.136	N/A	N/A	0.037	0.136
	Benzo(a)anthracene	0.022	0.059	N/A	N/A	0.022	0.059
	3,4-Benzofluoranthene	0.023	0.061	N/A	N/A	0.023	0.061
	Benzo(k)fluoranthene	0.022	0.059	N/A	N/A	0.022	0.059
	Benzo(a)pyrene	0.023	0.061	N/A	N/A	0.023	0.061
	Bis(2-ethylhexyl) phthalate	0.103	0.279	N/A	N/A	0.103	0.279
	Carbon Tetrachloride	0.018	0.038	N/A	N/A	0.018	0.038
	Chlorobenzene	0.015	0.028	N/A	N/A	0.015	0.028
	Chloroethane	0.104	0.268	N/A	N/A	0.104	0.268
	Chloroform	0.021	0.046	N/A	N/A	0.021	0.046
	2-Chlorophenol	0.031	0.098	N/A	N/A	0.031	0.098
	Chrysene	0.022	0.059	N/A	N/A	0.022	0.059
	Di-n-butyl phthalate	0.027	0.057	N/A	N/A	0.027	0.057
	1,2-Dichlorobenzene	0.077	0.163	N/A	N/A	0.077	0.163
	1,3-Dichlorobenzene	0.031	0.044	N/A	N/A	0.031	0.044
	1,4-Dichlorobenzene	0.015	0.028	N/A	N/A	0.015	0.028
	1,1-Dichloroethane	0.022	0.059	N/A	N/A	0.022	0.059
	1,2-Dichloroethane	0.068	0.211	N/A	N/A	0.068	0.211
	1,1-Dichloroethylene	0.016	0.025	N/A	N/A	0.016	0.025
	1,2-trans Dichloroethylene	0.021	0.054	N/A	N/A	0.021	0.054
	2,4-Dichlorophenol	0.039	0.112	N/A	N/A	0.039	0.112

Comparison of Technology-Based Effluent Limits and Water Quality-Based Effluent Limits							imits
		Technolo	gy-Based	Water Qua	lity-Based	Existing	g Permit
Outfall	Pollutant	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-	1,2-Dichloropropane	0.153	0.230	N/A	N/A	0.153	0.230
Interim	1,3-Dichloropylene	0.029	0.044	N/A	N/A	0.029	0.044
	Diethyl phthalate	0.081	0.203	N/A	N/A	0.081	0.203
	2,4-Dimethylphenol	0.018	0.036	N/A	N/A	0.018	0.036
	Dimethyl phthalate	0.019	0.047	N/A	N/A	0.019	0.047
	4,6-Dinitro-o-cresol	0.078	0.277	N/A	N/A	0.078	0.277
	2,4-Dinitrophenol	0.071	0.123	N/A	N/A	0.071	0.123
	2,4-Dinitrotoluene	0.113	0.285	N/A	N/A	0.113	0.285
	2,6-Dinitrotoluene	0.255	0.641	N/A	N/A	0.255	0.641
	Ethylbenzene	0.032	0.108	N/A	N/A	0.032	0.108
	Fluoranthene	0.025	0.068	N/A	N/A	0.025	0.068
	Fluorene	0.022	0.059	N/A	N/A	0.022	0.059
	Hexachlorobenzene	0.015	0.028	N/A	N/A	0.015	0.028
	Hexachlorobutadiene	0.020	0.049	N/A	N/A	0.020	0.049
	Hexachloroethane	0.021	0.054	N/A	N/A	0.021	0.054
	Methyl Chloride	0.086	0.190	N/A	N/A	0.086	0.190
	Methylene Chloride	0.040	0.089	N/A	N/A	0.040	0.089
	Naphthalene	0.022	0.059	N/A	N/A	0.022	0.059
	Nitrobenzene	0.027	0.068	N/A	N/A	0.027	0.068
	2-Nitrophenol	0.041	0.069	N/A	N/A	0.041	0.069
	4-Nitrophenol	0.072	0.124	N/A	N/A	0.072	0.124
	Phenanthrene	0.022	0.059	N/A	N/A	0.022	0.059
	Phenol	0.015	0.026	N/A	N/A	0.015	0.026
	Pyrene	0.025	0.067	N/A	N/A	0.015	0.067
	Tetrachloroethylene	0.022	0.056	N/A	N/A	0.022	0.056
	Toluene	0.026	0.080	N/A	N/A	0.026	0.080
	1,2,4-Trichlorethane	0.068	0.140	N/A	N/A	0.068	0.140
	1,1,1-Trichloroethane	0.021	0.054	N/A	N/A	0.021	0.054
	1,1,2-Trichloroethylene	0.021	0.054	N/A	N/A	0.021	0.054
	Trichloroethylene	0.021	0.054	N/A	N/A	0.021	0.054

Comparison of Technology-Based Effluent Limits and Water Quality-Based Effluent Limits							imits
		Technolo	gy-Based	Water Quality-Based		Existing	Permit
Outfall	Pollutant	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-	Vinyl Chloride	0.104	0.268	N/A	N/A	0.104	0.268
Intorim	27	6.0 SU (min)	0.0.511 (max			6.0 SU	9.0 SU
Interim		0.0 30 (1111)	9.0 30 (IIIax			(min)	(max)
002-	Flow	17	43	N/A	N/A	12.0 MGD	17.0 MGD
Final	Temperature	N/A	N/A	N/A	100 °F	N/A	100 °F
	Total Organic Carbon	N/A	N/A	N/A	N/A	N/A	50
	Total Copper	N/A	N/A	0.0325	0.0689	0.0365	0.0773
	Total Residual Chlorine	N/A	2.0	N/A	N/A	N/A	0.2
	Acenaphthene	0.022	0.059	N/A	N/A	0.022	0.059
	Acenaphthylene	0.022	0.059	N/A	N/A	0.022	0.059
	Acrylonitrile	0.096	0.242	N/A	N/A	0.096	0.242
	Anthracene	0.022	0.059	N/A	N/A	0.022	0.059
	Benzene	0.037	0.136	N/A	N/A	0.037	0.136
	Benzo(a)anthracene	0.022	0.059	N/A	N/A	0.022	0.059
	3,4-Benzofluoranthene	0.023	0.061	N/A	N/A	0.023	0.061
	Benzo(k)fluoranthene	0.022	0.059	N/A	N/A	0.022	0.059
	Benzo(a)pyrene	0.023	0.061	N/A	N/A	0.023	0.061
	Bis(2-ethylhexyl) phthalate	0.103	0.279	N/A	N/A	0.103	0.279
	Carbon Tetrachloride	0.018	0.038	N/A	N/A	0.018	0.038
	Chlorobenzene	0.015	0.028	N/A	N/A	0.015	0.028
	Chloroethane	0.104	0.268	N/A	N/A	0.104	0.268
	Chloroform	0.021	0.046	N/A	N/A	0.021	0.046
	2-Chlorophenol	0.031	0.098	N/A	N/A	0.031	0.098
	Chrysene	0.022	0.059	N/A	N/A	0.022	0.059
	Di-n-butyl phthalate	0.027	0.057	N/A	N/A	0.027	0.057
	1,2-Dichlorobenzene	0.077	0.163	N/A	N/A	0.077	0.163
	1,3-Dichlorobenzene	0.031	0.044	N/A	N/A	0.031	0.044
	1,4-Dichlorobenzene	0.015	0.028	N/A	N/A	0.015	0.028
	1,1-Dichloroethane	0.022	0.059	N/A	N/A	0.022	0.059
	1,2-Dichloroethane	0.068	0.211	N/A	N/A	0.068	0.211
	1,1-Dichloroethylene	0.016	0.025	N/A	N/A	0.016	0.025

	Comparison of Technology-Based Effluent Limits and Water Quality-Based Effluent Limits						
		Technology-Based Wat		Water Qua	lity-Based	Existing	Permit
Outfall	Pollutant	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-	1,2-trans Dichloroethylene	0.021	0.054	N/A	N/A	0.021	0.054
Final	2,4-Dichlorophenol	0.039	0.112	N/A	N/A	0.039	0.112
	1,2-Dichloropropane	0.153	0.230	N/A	N/A	0.153	0.230
	1,3-Dichloropylene	0.029	0.044	N/A	N/A	0.029	0.044
	Diethyl phthalate	0.081	0.203	N/A	N/A	0.081	0.203
	2,4-Dimethylphenol	0.018	0.036	N/A	N/A	0.018	0.036
	Dimethyl phthalate	0.019	0.047	N/A	N/A	0.019	0.047
	4,6-Dinitro-o-cresol	0.078	0.277	N/A	N/A	0.078	0.277
	2,4-Dinitrophenol	0.071	0.123	N/A	N/A	0.071	0.123
	2,4-Dinitrotoluene	0.113	0.285	N/A	N/A	0.113	0.285
	2,6-Dinitrotoluene	0.255	0.641	N/A	N/A	0.255	0.641
	Ethylbenzene	0.032	0.108	N/A	N/A	0.032	0.108
	Fluoranthene	0.025	0.068	N/A	N/A	0.025	0.068
	Fluorene	0.022	0.059	N/A	N/A	0.022	0.059
	Hexachlorobenzene	0.015	0.028	N/A	N/A	0.015	0.028
	Hexachlorobutadiene	0.020	0.049	N/A	N/A	0.020	0.049
	Hexachloroethane	0.021	0.054	N/A	N/A	0.021	0.054
	Methyl Chloride	0.086	0.190	N/A	N/A	0.086	0.190
	Methylene Chloride	0.040	0.089	N/A	N/A	0.040	0.089
	Naphthalene	0.022	0.059	N/A	N/A	0.022	0.059
	Nitrobenzene	0.027	0.068	N/A	N/A	0.027	0.068
	2-Nitrophenol	0.041	0.069	N/A	N/A	0.041	0.069
	4-Nitrophenol	0.072	0.124	N/A	N/A	0.072	0.124
	Phenanthrene	0.022	0.059	N/A	N/A	0.022	0.059
	Phenol	0.015	0.026	N/A	N/A	0.015	0.026
	Pyrene	0.025	0.067	N/A	N/A	0.015	0.067
	Tetrachloroethylene	0.022	0.056	N/A	N/A	0.022	0.056
	Toluene	0.026	0.080	N/A	N/A	0.026	0.080
	1,2,4-Trichlorethane	0.068	0.140	N/A	N/A	0.068	0.140
	1,1,1-Trichloroethane	0.021	0.054	N/A	N/A	0.021	0.054

		Technology-Based		Water Quality-Based		Existing Permit	
Outfall	Pollutant	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-	1,1,2-Trichloroethylene	0.021	0.054	N/A	N/A	0.021	0.054
Final	Trichloroethylene	0.021	0.054	N/A	N/A	0.021	0.054
	Vinyl Chloride	0.104	0.268	N/A	N/A	0.104	0.268
	рН	6.0 SU (min)	9.0 SU (max)			6.0 SU (min)	9.0 SU (max)

		Technology-Based		Water Quality-Based		Existing Permit	
Outfall	Pollutant	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	Report, MGD	Report, MGD	N/A	N/A	Report, MGD	Report, MGD
004,	Total Organic Carbon	N/A	75	N/A	N/A	N/A	75
005,	Oil and Grease	N/A	15	N/A	N/A	N/A	15
006,	рН	6.0 SU (min)	9.0 SU (max)	N/A	N/A	6.0 SU (min)	9.0 SU (max)
014,							
015,\$							
016							

For draft Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0000447000, U.S. Environmental Protection Agency (EPA) ID No. TX0002844, to discharge to water in the state

Issuing Office:	Texas Commission on Environmental Quality (TCEQ) P.O. Box 13087 Austin, Texas 78711-3087
Applicant:	Union Carbide Corporation P.O. Box 186 Port Lavaca, Texas 77979
Prepared By:	Mónica Vallin-Báez Wastewater Permitting Section Water Quality Division (512) 239-5784
Date:	December 4, 2019 (Revised January 29, 2020, July 21, 2020, November 19, 2020, and March 8, 2021)
Permit Action:	Major amendment with renewal; TPDES Permit No. WQ0000447000

I. <u>EXECUTIVE DIRECTOR RECOMMENDATION</u>

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

II. <u>APPLICANT ACTIVITY</u>

The applicant currently operates the Seadrift Operations Plant, a chemical facility that manufactures plastics (polyethylene and polypropylene), glycols, oxide derivatives, and catalyst. The site also includes Braskem America Inc., a polypropylene production facility.

III. DISCHARGE LOCATION

As described in the application, the facility is located at 7501 State Highway 185 North, near the City of Seadrift in Calhoun County, Texas 77983. Discharge is via Outfalls 001, 002, 005, 006, 007, 008, 009, 010, and 012 directly to Victoria Barge Canal Tidal in Segment No. 1701 of the Lavaca-Guadalupe River Basin; via Outfall 003 to a ditch, thence to West Coloma Creek, thence to Coloma Creek; via Outfalls 014 and 015 to West Coloma Creek, thence to Coloma Creek, thence to Matagorda Bay/Powderhorn Lake in Segment No. 2451 of the Bays and Estuaries; via Outfall 004 to an unnamed ditch, thence to San Antonio Bay/Hynes Bay/Guadalupe Bay in Segment No. 2462 of the Bays and Estuaries; via Outfall 016 to West Coloma Creek Lateral No. 17, thence to West Coloma Creek, thence to Coloma Creek, thence to San Antonio Bay/Powderhorn Lake in Segment No. 2451 of the Bays and Estuaries Bay/Powderhorn Lake in Coloma Creek, thence to Matagorda Bay/Powderhorn Creek to Coloma Creek, thence to Matagorda Bay/Powderhorn Creek thence to San Antonio Bay/Hynes Bay/Guadalupe Bay in Segment No. 2462 of the Bays and Estuaries; via Outfall 016 to West Coloma Creek Lateral No. 17, thence to West Coloma Creek, thence to Coloma Creek, thence to Matagorda Bay/Powderhorn Lake in Segment No. 2451 of the Bays and Estuaries.

IV. <u>RECEIVING STREAM USES</u>

The designated uses for Segment No. 1701 are non-contact recreation and high aquatic life use. The designated uses for Segment Nos. 2451 and 2462 are primary contact recreation, oyster waters, and exceptional aquatic life use.

ATTACHMENT A

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION For Permit Issued on July 8, 2021

V. <u>STREAM STANDARDS</u>

A. Flow

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

VI. <u>DISCHARGE DESCRIPTION</u>

The following is a quantitative description of the discharge described in the monthly effluent report data for the period April 2015 through July 2019. 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). Bacteria levels are expressed in colony forming units (cfu) or most probable number (MPN) per 100 mL.

	-		
Outfall	Frequency	Average of Daily Average, MGD	Maximum of Daily Maximum, MGD
001	Continuous	3.78	11.8
002	Continuous	3.022	15.75
003	Intermittent	0.0373	3.638
004	Intermittent	0.0082	0.805
005	Intermittent	0.0200	1.974
006	Intermittent	0.0011	0.094
007	Intermittent	0.0047	0.468
008	Intermittent	0.0123	1.204
009	Intermittent	0.0175	1.721
010	Intermittent	0.0161	1.573
011	Intermittent	No	Discharge
012	Intermittent	0.0088	0.861
014	Intermittent	0.0064	0.632
015	Intermittent	0.0073	0.93
016	Intermittent	0.0041	0.403

R Temperature

Dittin		
Outfall	Average of Daily Average, °F	Maximum of Daily Maximum, °F
002	N/A	103

C. Effluent Characteristics

Outfall	Dollutant	Average of Daily	Maximum of Daily
Outiali	Pollutalit	Average	Maximum
001	Total Suspended Solids ¹	19.0 mg/L	131 mg/L
		540 lbs/day	4359 lbs/day
	Total Suspended Solids ²	N/A	52 mg/L
	Biochemical Oxygen Demand, 5-day ¹	6.32 mg/L	29 mg/L
		194 lbs/day	1577 lbs/day

¹ Monitored/reported when the daily discharge was less than or equal to 5.8 MGD.

² Monitored/reported when the daily discharge was greater than 5.8 MGD.

C. Effluent Characteristics

Outfall	Dellutent	Average of Daily	Maximum of Daily
Outian	Pollutalit	Average	Maximum
001	Biochemical Oxygen Demand, 5-day ²	N/A	15 mg/L
	Total Organic Carbon	37.7 mg/L	1223 mg/L
	Enterococci	96.4 cfu/100 mL	>2419 cfu/100 mL
	Acenaphthene	o lbs/day	o lbs/day
	Acenaphthylene	o lbs/day	o lbs/day
	Acrylonitrile	o lbs/day	o lbs/day
	Anthracene	o lbs/day	o lbs/day
	Benzene	o lbs/day	o lbs/day
	Benzo(a)anthracene	o lbs/day	o lbs/day
	3,4-Benzofluoranthene	o lbs/day	o lbs/day
	Benzo(k)fluoranthene	o lbs/day	o lbs/day
	Benzo(a)pyrene	o lbs/day	o lbs/day
	Bis(2-ethylhexyl) phthalate	0.205 lbs/day	0.58 lbs/day
	Carbon Tetrachloride	o lbs/day	o lbs/day
	Chlorobenzene	o lbs/day	o lbs/day
	Chloroethane	o lbs/day	o lbs/day
	Chloroform	o lbs/dav	o lbs/dav
	2-Chlorophenol	o lbs/dav	o lbs/dav
	Chrysene	o lbs/dav	o lbs/dav
	Di-n-butyl phthalate	o lbs/day	o lbs/day
	1.2-Dichlorobenzene	o lbs/day	o lbs/day
	1.3-Dichlorobenzene	o lbs/day	o lbs/day
	1,4-Dichlorobenzene	o lbs/day	o lbs/day
	1.1-Dichloroethane	o lbs/dav	o lbs/dav
	1,2-Dichloroethane	o lbs/day	o lbs/day
	1,1-Dichloroethylene	o lbs/day	o lbs/day
	1,2-trans-Dichloroethylene	o lbs/day	o lbs/day
	2,4-Dichlorophenol	o lbs/day	o lbs/day
	1,2-Dichloropropane	o lbs/day	o lbs/day
	1,3-Dichloropropylene	o lbs/day	o lbs/day
	Diethyl phthalate	o lbs/day	o lbs/day
	2,4-Dimethylphenol	o lbs/day	o lbs/day
	Dimethyl phthalate	o lbs/day	o lbs/day
	4,6-Dinitro-o-cresol	o lbs/day	o lbs/day
	2,4-Dinitrophenol	o lbs/day	o lbs/day
	2,4-Dinitrotoluene	o lbs/day	o lbs/day
	2,6-Dinitrotoluene	o lbs/day	o lbs/day
	Ethylbenzene	o lbs/day	o lbs/day
	Fluoranthene	o lbs/day	o lbs/day
	Fluorene	o lbs/day	o lbs/day
	Hexachlorobenzene	o lbs/day	o lbs/day
	Hexachlorobutadiene	o lbs/day	o lbs/day
	Hexachloroethane	o lbs/dav	o lbs/dav
	Methyl Chloride	o lbs/day	o lbs/day
	Methylene Chloride	o lbs/day	o lbs/day
	Naphthalene	o lbs/day	o lbs/day

C. Effluent Characteristics

Outfall	Pollutant	Average of Daily	Maximum of Daily
Outlail	Follutalit	Average	Maximum
001	Nitrobenzene	o lbs/day	o lbs/day
	2-Nitrophenol	o lbs/day	o lbs/day
	4-Nitrophenol	o lbs/day	o lbs/day
	Phenanthrene	o lbs/day	o lbs/day
	Phenol	o lbs/day	o lbs/day
	Pyrene	o lbs/day	o lbs/day
	Tetrachloroethylene	o lbs/dav	o lbs/day
	Toluene	o lbs/dav	o lbs/dav
	1.2.4-Trichlorobenzene	o lbs/day	o lbs/day
	1.1.1-Trichloroethane	o lbs/dav	o lbs/dav
	1.1.2-Trichloroethane	o lbs/day	o lbs/day
	Trichloroethylene	o lbs/day	o lbs/day
	Vinyl Chloride	o lbs/day	0 lbs/day
	nH	6.2 SU (min)	0.58 SU (max)
002	Total Organic Carbon	N/A	18 mg/L
002	Total Copper	0.0085 mg/L	0.026 mg/L
	Total Residual Chlorine	N/A	0.030 mg/L
	nH	5.1 SU (min)	10.21 SU (Max)
002	Total Organic Carbon	N/A	16.21 50 (Max)
003	Oil and Grease	N/Λ	40 mg/L
	pH	$6 \in SU(min)$	$\frac{5 \text{ mg/L}}{8 \text{ subscript{SU}}}$
004	Total Organic Carbon	N/A	8.2 mg/I
004	Oil and Grease	N/Λ	$\sim 5 \text{ mg/L}$
	nH	71 SU (min)	SII (max)
005	Total Organic Carbon	7.1 SU (IIIII)	41 mg/I
005	Oil and Grease	N/A N/A	41 mg/L
	pH	$\frac{N/A}{7.0 \text{ SU}(\min)}$	$\frac{5 \text{ mg/L}}{8 \text{ su}(\text{max})}$
006	Total Organia Carbon	/.3 SU (IIIII)	10.6 mg/I
000	Oil and Croase	N/A N/A	13.0 IIIg/L
		$\pi_0 \operatorname{SU}(\min)$	$\sim 5 \text{ IIIg/L}$
0.05	μπ Total Organia Carbon	7.2 SU (IIIII)	$\frac{0.150 \text{ (IIIaX)}}{41 \text{ mg/I}}$
007	Oil and Crosse	N/A N/A	41 mg/L
	Oll and Grease	N/A	<5 mg/L
0		7.4 SU (min)	8.8 SU (max)
008	Total Organic Carbon	N/A N/A	33 mg/L
	Oil and Grease	N/A	<5 mg/L
	pH	7.2 SU (min)	8.9 SU (max)
009	Total Organic Carbon	N/A	6.8 mg/L
	Oil and Grease	N/A	<5 mg/L
	pH	7.1 SU (min)	8.8 SU (max)
010	Total Organic Carbon	N/A	25 mg/L
010	Oil and Grease	N/A	<5 mg/L
	pH	7.3 SU (min)	8.3 SU (max)
012	Total Organic Carbon	N/A	50 mg/L
	Oil and Grease	N/A	<5 mg/L
	pH	7.3 SU (min)	8.3 SU (max)
014	Total Organic Carbon	N/A	15 mg/L

Outfoll	Dollutont	Average of Daily	Maximum of Daily
Outiali	ronutant	Average	Maximum
014	Oil and Grease	N/A	<5 mg/L
	pH	7.2 SU (min)	8.2 SU (max)
015	Total Organic Carbon	N/A	12 mg/L
	Oil and Grease	N/A	<5 mg/L
	pH	7.1 SU (min)	8 SU (max)
016	Total Organic Carbon	N/A	10 mg/L
	Oil and Grease	N/A	<5 mg/L
	pH	7.3 SU (min)	8.2 SU (max)

C. Effluent Characteristics

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

Outfall	Pollutant (units)	Month/	Daily Average		Daily Maximum	
Outfall		Year	Limit	Reported	Limit	Reported
001	Flow (MGD)	11/2018	5.80	6.7	N/A	N/A
		12/2018		6.8		
	Enterococci	1/2018	N/A	N/A	104	1553
	(cfu/100 mL)	6/2018	N/A	N/A		686
		8/2018	N/A	N/A		357
		10/2018	N/A	N/A		330
		1/2019	N/A	N/A		316
		5/2019	N/A	N/A		2419
		6/2019	35	96		>2419
002	Temperature (°F)	8/2017	N/A	N/A	100	103

D. Effluent Limitation Violations

One major amendment request is to define the term dry-weather flow, which will allow the permittee to report the flow during wet-weather events in a tiered fashion (see Other Requirement No. 1 in the draft permit). This should resolve the exceedances for flow at Outfall 001.

The permittee has proposed the addition of holding tanks to ensure the adequate contact time and mixing of the disinfectant (currently bleach) will occur for the domestic wastewater. Therefore, no changes have been made to the draft permit based on the bacteria exceedances.

The temperature exceedance does not show a trend of non-compliance. Therefore, no changes were made to the draft permit based on the temperature exceedance.

VII. DRAFT EFFLUENT LIMITATIONS

See Appendix D for a comparison of technology-based effluent limitations, water quality-based effluent limitations, existing effluent limitations, and effluent limitations established in the draft permit.

OUTFALL LOCATIONS

Outfall	Latitude	Longitude
001	28.498759 N	96.795547 W
002	28.498759 N	96.795547 W
003	28.521723 N	96.763832 W
004	28.49146 N	96.764657 W
005	28.49126 N	96.777994 W
006	28.508003 N	96.77901 W
007	28.490989 N	96.776781 W
008	28.489859 N	96.776711 W
009	28.489231 N	96.776667 W
010	28.489093 N	96.776121 W
012	28.503705 N	96.78663 W
014	28.536935 N	96.772386 W
015	28.53697 N	96.772322 W
016	28.537007 N	96.75799 W

VIII. SUMMARY OF CHANGES FROM APPLICATION

The applicant requested the following amendments that the executive director did not grant:

1. To be allowed to continue using synthetic laboratory water without having to redemonstrate instream toxicity of the receiving water when the permit is renewed. After biomonitoring tests conducted in April 2018 for Mysidopsis bahia demonstrated instream toxicity of the receiving water, synthetic laboratory water has been used in the biomonitoring test instead of receiving water for both the control and dilution water.

In accordance with the *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), the permittee may substitute synthetic dilution water for the receiving water as the control and as the dilution water in all subsequent tests for that permit term. However, the permittee is required to use the receiving water unaffected by the discharge as the control and as the dilution water for at least the first series of whole effluent toxicity (WET) tests performed after a new permit is issued. Therefore, the executive director has denied the permittee's request.

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

- 1. The daily average and daily maximum water quality-based effluent limits have been made more stringent at Outfall 001 for the following pollutants for the protection of human health: benzo(a)anthracene, benzo(a)pyrene, and hexachlorobenzene. A one-year compliance period has been included in the draft permit to allow the permittee time to comply with the final effluent limits.
- 2. The single grab value for benzo(a)anthracene for the final effluent limits at Outfall 001 has been set to the updated minimum analytical level (MAL) of 0.005 mg/L because the MAL is higher than the calculated single grab value of 0.0036 mg/L.

- 3. The single grab value for benzo(a)pyrene for the final effluent limits at Outfall 001 has been set to the updated MAL of 0.005 mg/L because the MAL is higher than the calculated single grab value of 0.00036 mg/L.
- 4. The single grab value for hexachlorobenzene for the final effluent limits at Outfall 001 has been set to the updated MAL of 0.005 mg/L because the MAL is higher than the calculated single grab value of 0.000098 mg/L.
- 5. A monitoring and reporting requirement for dissolved oxygen was included in the draft permit at Outfall 001 per a recommendation from the Water Quality Assessment Team. The monitoring and reporting requirement will self-expire.
- 6. The effluent dilution series for the chronic saltwater biomonitoring testing for Outfall 001 and 002 has been revised from 4%, 5%, 7%, 9%, and 12% to 3%, 5%, 6%, 8%, and 11% in the draft permit based on recommendations from the Standards Implementation Team, Water Quality Assessment Section, in an Interoffice Memorandum dated November 7, 2019. The critical dilution was revised from 9% to 8%.

IX. <u>SUMMARY OF CHANGES FROM EXISTING PERMIT</u>

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

- 1. To identify utility wastewater and hydrostatic test water as wastestreams discharged via *Outfall 001 separate from process wastewater*. Utility wastewater and hydrostatic test water have been added as authorized wastestreams to Outfall 001.
- 2. To add allowable sources of non-stormwater wastestreams that qualify for coverage under the Multi-Sector General Permit for Industrial Stormwater to the authorized discharges via Outfalls 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 015, and 016. Other Requirement No. 16 was included in the draft permit to authorize the discharge of the non-stormwater wastestreams via Outfalls 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 015, and 016 with stormwater.
- 3. To add hydrostatic test water, firewater, and de minimis quantities of process wastewater to the authorized discharge via Outfall 002. Hydrostatic test water, firewater, and de minimis quantities of process wastewater have been added as authorized wastestreams to Outfall 002.
- 4. To revise Other Requirement No. 13 related to third party wastewaters. Specifically, the permittee has requested that the names of the third parties (e.g., Braskem) not be listed in the provision because they may change with company ownership (whereas the operations and wastewaters may not) and require unnecessary revisions to the permit or modifications to TCEQ.

Other Requirement No. 13 has been revised in the draft permit, which reads as follow:

"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 similar wastes that are similar in character, classification, and origin to wastewaters authorized and generated on-site.

ATTACHMENT A

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION For Permit Issued on July 8, 2021

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."

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

- 1. The facility location description has been revised on page 1 to include only the physical address.
- 2. New footnote on pages 2, 2d, and 2g have been added to the draft permit referencing New Other Requirement No. 16 regarding the allowable non-stormwater wastestreams authorized for discharge.
- 3. Outfall 011 has been removed and is not continued as a permitted outfall in the draft permit per permittee's request.
- 4. Pages 3-13 were updated (October 2020 version).
- 5. The Other Requirements section (beginning on page 14) was rearranged to assist with compliance monitoring.
- 6. Other Requirement No. 3 was added to the draft permit to address cooling water intake structure requirements under Clean Water Act (CWA) §316(b). Although CWA §316(b) does not currently apply to this facility, the applicant would be required to notify the TCEQ if there is a change in how the facility obtains cooling water.
- 7. The three-year compliance schedule for the attainment of water quality-based effluent limitations for Enterococci at Outfall 001 is not continued in the draft permit because the compliance period reached its end.
- 8. Other Requirement No. 12 from the existing permit has been removed because this provision is covered under 30 TAC §305.62(d), which authorizes the TCEQ to reopen and issued permit when necessary.
- 9. Other Requirement No. 15 (now No. 14) has been revised to remove the thermal plume characterization study plan submittal requirement, as it has been satisfied, and to include notification to the permittee that the executive director of the TCEQ will be initiating changes to evaluation procedures and/or rulemaking that may affect thermal requirements for this facility. Temperature limitations may be revised at a future date.
- 10. Other Requirement No. 16 has been added in the draft permit, which includes the allowable non-stormwater wastestreams authorize for discharge with stormwater.
- 11. Other Requirement No. 18 has been added in the draft permit, which reads as follow:

The permittee is hereby notified that this permit may be reviewed by the Texas Commission on Environmental Quality after the development of any new requirements concerning plastics in order to determine if the limitations and conditions contained herein are consistent with any new requirements. As a result of this review, the permit may be amended, pursuant to 30 TAC Section 305.62, to include additional requirements as necessary to protect human health and the environment.

The monitoring location to demonstrate compliance with any new requirements concerning visible plastic pellets for Outfalls 001, 002, 006, and 012 will be at the discharge structure where Outfalls 001 and 002 commingle (combined outfall)

prior to discharge to the Victoria Barge Canal and at the discharge structures for Outfalls 003, 004, 005, 007, 008, 009, 010, and 014, 015, and 016.

X. <u>DRAFT PERMIT RATIONALE</u>

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. <u>REASON FOR PERMIT ISSUANCE</u>

The applicant applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment to Permit No. WQ0000447000 to identify utility wastewater and hydrostatic test water as wastestreams discharged via Outfall 001 separate from process wastewater; to define "dry-weather flow" at Outfall 001; to authorize the discharge of hydrostatic test water, firewater, and *de minimis* quantities of process wastewater via permitted Outfall 002; to revise Other Requirement No. 13 related to third party wastewaters; to add a provision authorizing the reuse of wastewater in the cooling water system; to authorize the discharge of allowable sources of non-stormwater wastestreams that qualify for coverage under the *Multi-Sector General Permit for Industrial Stormwater* to Outfalls 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 015, and 016; to remove Outfall 011; to revise the description of the bacteria monitoring point for Enterococci for Outfall 001; and to retain the use of synthetic dilution water for biomonitoring.

The existing permit authorizes the discharge of process wastewater from Union Carbide Corporation, remediated ground water, domestic wastewater, and stormwater at a daily average dry-weather flow not to exceed 5.80 MGD via Outfall 001; the discharge of cooling water blowdown, water treatment wastewater, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, and stormwater from Union Carbide and ISP Technologies, Inc. at a daily average dry-weather flow not to exceed 12.0 MGD via Outfall 002; and the discharge of stormwater on an intermittent and flow-variable basis via Outfalls 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 014, 015, and 016.

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. <u>WATER QUALITY SUMMARY</u>

Discharge Route(s)

The discharge route is via Outfalls 001, 002, 005. 006, 007, 008, 009, 010, and 012 directly to Victoria Barge Canal Tidal in Segment No. 1701 of the Lavaca-Guadalupe Coastal Basin; via Outfall 003 to a ditch, thence to West Coloma Creek, thence to Coloma Creek; via Outfalls 014 and 015 to West Coloma Creek, thence to Coloma Creek, thence to Matagorda Bay/Powderhorn Lake in Segment No. 2451 of the Bays and Estuaries; via Outfall 004 to an unnamed ditch, thence to San Antonio Bay/Hynes Bay/Guadalupe Bay in Segment No. 2462 of the Bays and Estuaries; and via Outfall 016 to West Coloma

Creek Lateal No. 17, thence to West Coloma Creek, thence to Coloma Creek, thence to Matagorda Bay/Powderhorn Lake in Segment No. 2451 of the Bays and Estuaries. The designated uses for Segment No. 1701 are non-contact recreation and high aquatic life use. The designated uses for Segment Nos. 2451 and 2462 are primary contact recreation, oyster waters, and exceptional 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 30 TAC § 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 Segment No. 1701, which has been identified as having high aquatic life use. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in Segment Nos. 2451 and 2462, which have been identified as having exceptional 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 the U.S. Environmental Protection Agency (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. Though the piping plover, *Charadrius melodus* Ord, can occur in Segment Nos. 2451 and 2462 as well as Calhoun County, the county is north of Copano Bay and is not a watershed of high priority per Appendix A of the 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.

The Whooping Crane (*Grus Americana*), an endangered aquatic-dependent species, has been determined to occur in Calhoun County in Segment No. 2462 of the Bays and Estuaries. However, this is not a watershed of critical concern for the Whooping Crane. This determination is based on the USFWS biological opinion on the State of TPDES (September 14, 1998; October 21, 1998 update). To make this determination for TPDES permits, TCEQ and EPA only considered aquatic or aquatic-dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. The permit does not require EPA review with respect to the presence of endangered or threatened species.

ATTACHMENT A

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION For Permit Issued on July 8, 2021

Impaired Water Bodies

Segment No. 1701 is not currently listed on the state's inventory of impaired and threatened waters, the 2014 Clean Water Act Section 303(d) list.

Segment No. 2451 is not currently on the State's inventory of impaired and threatened waters, the 2014 Clean Water Act Section 303(d) list.

Segment No. 2462 is currently listed on the State's inventory of impaired and threatened waters, the 2014 Clean Water Act Section 303(d) list. The listing is for elevated bacteria levels in Guadalupe Bay (2462OW_01). The issuance of this permit is not anticipated to cause any additional adverse impact to the receiving waters with respect to the listed impairment because no potential sources for bacteria (i.e., domestic wastewater) are authorized in this permit to be discharged to this segment.

C. <u>TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS</u>

1. <u>GENERAL COMMENTS</u>

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 from Union Carbide Corporation, remediated ground water, utility wastewater, hydrostatic test water, domestic wastewater, and stormwater via Outfall 001 at a daily average dry-weather flow not to exceed 5.80 million gallons per day; cooling water blowdown, water treatment waste, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, hydrostatic test water, firewater, *de minimis* quantities of process wastewater, and stormwater from Union Carbide via Outfall 002 at a daily average dry-weather flow not to exceed 12.0 MGD; and the intermittent and flow-variable discharge of stormwater via Outfalls 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 015 and 016.

The discharge of process wastewater via Outfall 001 and de minimis quantities of process wastewater via Outfall 002 is subject to federal effluent limitation guidelines at 40 CFR Part 414. A new source determination was performed, and the discharge of process wastewater and de minimis quantities of process wastewater is not a new source as defined at 40 CFR §122.2. Therefore, new source performance standards (NSPS) are not required for this discharge.

The discharge of remediated groundwater, utility wastewater, hydrostatic test water, domestic wastewater, and stormwater via Outfall 001; cooling water blowdown, water treatment waste, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, hydrostatic test water, firewater, and stormwater via Outfall 002; and stormwater via Outfalls 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 015, and 016 is not subject to federal effluent limitation guidelines and any technology-based effluent limitations are based on best professional judgment.

The wastewater generated at the Seadrift Operations Plant is managed by three separate sewer systems: High Strength Sewer (HSS) System, Low Strength Sewer
(LSS) System, and sanitary sewer system. The wastewater from these systems joins at various points in a combined system for additional treatment.

HSS System

The HSS System receives wastewaters that have total organic carbon (TOC) concentrations greater than 500 mg/L. These wastewaters are routed to the Wastewater Treatment Reactor (WWTR). The WWTR is a covered anaerobic treatment lagoon that is designed to provide primary treatment for the process wastewater before it is routed to the Secondary Wastewater Treatment System (Secondary Pond). The WWTR is heated (as needed) and recirculation of the effluent to the head of the lagoon is provided in order to increase treatment efficiency and process reliability.

The system includes a 4.7 million-gallon off-line storage tank (Tank 911). When TOC and pH are out of range, the system is designed to route the wastewater to Tank 911. The tank 911 wastewater is then routed to the WWTR at a controlled rate.

The HSS System has several designed alternative routes to the Low Strength System. These systems are designed to contain wastewater in the wastewater treatment system during high stormwater runoff, when equipment requires maintenance or repair, or during emergencies.

LSS System

The main plant area discharges wastewater to the LSS System. Although this wastewater typically has TOC concentrations less than 500 mg/L, the LSS System can receive wastewater that has TOC concentrations greater than 500 mg/L.

Wastewater can enter the LSS System through the process sewer. Wastewater entering the process sewer is directed to two clarifiers operating in parallel for preliminary treatment and then pumped via a pipeline transfer line to the Secondary Pond. There is a third clarifier that may be used if needed. Solids and scum with other floatables collected from the clarifiers are dried on sand drying beds and then are disposed of in an on-site landfill. Caustic is used in the process sewer for pH adjustment.

The Wastewater Transfer Ditch collects wastewater and stormwater for further processing in the Wastewater Stabilization Pond System. In addition to the wastewater that enters the process sewer from the clarifiers, the Wastewater Transfer Ditch also receives wastewater from immediate process areas. In some cases, the wastewater is first routed through resin recovery systems. The recovered material is landfilled, sold as scrap material, or sold as product.

Sanitary Wastewater Treatment System

The sanitary wastewater is routed via its own separate conveyance system to Tank 1820. Caustic is added to the sanitary wastewater as the primary treatment system, and, if needed for additional disinfection, bleach is added to the secondary treatment system. The effluent from Tank 1820 is routed to the WWTR, an anaerobic reactor.

Effluent from the WWTR is routed through Tank 1870, 1883, 1890, and 1884, then to the Wastewater Stabilization Pond System, and then discharged via Outfall 001.

Due to peak flows in the system causing contact time issues in the current treatment system, the following modifications have been proposed with this permit action for the sanitary wastewater treatment system.

Several tanks are to be added to ensure adequate contact time and mixing of the chlorine (currently bleach) and the sanitary wastewater. Septic sewage will be added to the treatment system via an approximate 4,000 gallon holding/contact transfer tank. The purpose of this tank is solely to facilitate the unloading of vacuum trucks that collect septic sewage from areas within the facility that are not connected to the dedicated sanitary wastewater collection system. The vacuum truck holding/contact transfer tank will be fitted with grinder pumps to ensure thorough mixing and contact time with the disinfectant. Sanitary wastewater from the sanitary sewer and the vacuum truck tank will be commingled in an approximately 15,000-gallon chlorine contact tank. The chlorine contact tank will be fitted with a chlorine feed system and mixing/grinder recirculation pumps to constantly bring the sewage and disinfectant in contact for the necessary residence time to ensure complete disinfection. The treated wastewater will then be routed to Tank 1106. Domestic wastewater will be monitored at this location prior to continuing with its previous routing to Tank 1820, then to the WWTR.

Routing of the treated sanitary wastewater through Tank 1820 is the normal operations pathway for this stream; however, there may be times where the treated sanitary wastewater is routed to the wastewater stabilization pond system via the wastewater transfer ditch or Low Strength Process Wastewater Pipeline. The transfer of the stream to the WWTR or wastewater stabilization pond system will only occur after complete treatment of the sanitary wastewater.

2. CALCULATIONS

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

3. 316(B) COOLING WATER INTAKE STRUCTURES

a. <u>SCREENING</u>

The facility obtains water from Guadalupe-Blanco River Authority Port Lavaca, a public water system (PWS No. TX0290005), 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. <u>PERMIT ACTION</u>

The draft permit, in Other Requirement No. 3, requires the permittee to notify the TCEQ in the event of a change in procedure or a facility modification which alters 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 necessary.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. <u>GENERAL COMMENTS</u>

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. <u>AQUATIC LIFE CRITERIA</u>

a. <u>SCREENING</u>

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

Outfalls 001 and 002

Acute saltwater criteria are applied at the edge of the zone of initial dilution (ZID), and chronic saltwater criteria are applied at the edge of the aquatic life mixing zone. The ZID for this discharge is defined as a volume within a radius of 48.8 feet from the point where the discharge enters Victoria Barge Canal Tidal. The aquatic life mixing zone for this discharge is defined as a volume within a radius of 195 feet from the point where the discharge enters Victoria Barge enters Victoria Barge Canal Tidal.

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, or wide tidal rivers that are at least 400 feet wide. These critical effluent percentages are as follows:

8%

ATTACHMENT A

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

For Permit Issued on July 8, 2021

Acute Effluent %34%Chronic Effluent %

Outfalls 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 015, & 016

Stormwater is authorized to discharge via these outfalls. Typically, critical conditions are not developed for stormwater outfalls, as this is standard TCEQ practice. Therefore, no water quality criteria screening was performed for these outfalls.

General Screening Procedures

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

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

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

Assumptions used in deriving the effluent limitations include the segment-specific value for TSS according to the IPs. The segment value is 27 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.

b. <u>PERMIT ACTION</u>

Analytical data for Outfalls 001 and 002 reported in the application were screened against calculated water quality-based effluent limitations for the protection of aquatic life. Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitation for aquatic life protection. No additional limits or monitoring and reporting requirements have been added to the draft permit.

The effluent limits in the existing permit for total copper at Outfall 002 were compared to the calculated water quality-based effluent limits to determine whether the existing limits are still protective. The existing effluent limitations for total copper at Outfall 002 are more protective than the newly calculated water quality-based effluent limitations (see Appendix B) and are continued in the draft permit for the protection of aquatic life.

Outfall	Parameter	Daily Average	Daily Maximum
002	Total Copper	0.0365 mg/L	0.0773 mg/L

3. <u>WHOLE EFFLUENT TOXICITY (BIOMONITORING) CRITERIA (7-DAY</u> <u>CHRONIC)</u>

a. <u>SCREENING AND REASONABLE POTENTIAL ANALYSIS</u>

The existing permit includes chronic marine biomonitoring requirements at Outfalls 001 and 002 combined. In the past three-years, the permittee performed twenty-three chronic tests, with no demonstration of significant toxicity (i.e., zero failures) by either species.

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 zero failures a determination of no reasonable potential was made.

All test data results were used for this determination.

b. <u>PERMIT ACTION</u>

The provisions of this section apply to Outfalls 001 and 002 combined.

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 or Americamysis 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 *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. 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 to continue quarterly testing for that species until the permit is reissued.

c. <u>DILUTION SERIES</u>

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. <u>AQUATIC ORGANISM TOXICITY CRITERIA (24-HOUR ACUTE)</u>

a. <u>SCREENING</u>

The existing permit includes 24-hour acute marine biomonitoring requirements for Outfalls 001 and 002. In the past three-years, the permittee has performed twenty 24-hour acute marine biomonitoring tests with Outfalls 001 and 002, with zero demonstrations of significant mortality (i.e., zero failures).

b. <u>PERMIT ACTION</u>

Twenty-four-hour 100% acute biomonitoring tests are required at Outfalls 001 and 002 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:

- Acute 24-hour static toxicity test using the mysid shrimp (*Mysidopsis bahia or Americamysis 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. <u>SCREENING</u>

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

Fish tissue bioaccumulation criteria are applied at the edge of the human health mixing zone for discharges into bays, estuaries and wide tidal rivers. The human health mixing zone for this discharge is defined as a volume within a radius of 390 feet from the point where the discharge enters Victoria Barge Canal Tidal. TCEQ practice is to establish a minimum estimated effluent percentage at the edge of the human health mixing zone for discharges that are 10 MGD or less into bays, estuaries,

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION For Permit Issued on July 8, 2021

and wide tidal rivers that are at least 400 feet wide. This critical effluent percentage is:

Human Health Effluent %: 4%

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

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

b. <u>PERMIT ACTION</u>

Analytical data for Outfalls 001 and 002 reported in the application was screened against calculated water quality-based effluent limitations for the protection of human health. Reported analytical data does not exceed 70 percent of the calculated daily average water quality-based effluent limitations for human health protection. No additional limits or monitoring and reporting requirements have been added to the draft permit.

The effluent limits in the existing permit for Benzo(a)anthracene, Benzo(a)pyrene, and Hexachlorobenzene at Outfall 001 were compared to the calculated water quality-based effluent limits to determine whether the existing limits are still protective. The newly calculated water qualitybased effluent limitations for Benzo(a)anthracene, Benzo(a)pyrene, and Hexachlorobenzene at Outfall 001 are more protective than the existing effluent limits. The following water quality-based effluent limits are proposed in the draft permit at Outfall 001 for the protection of human health.

Outfall	Parameter	Daily Average	Daily Maximum
001	Benzo(a)anthracene ¹	0.55 lbs/day	1.16 lbs/day
	Benzo(a)anthracene ²	0.041 lbs/day	0.087 lbs/day
	Benzo(a)pyrene ¹	0.55 lbs/day	1.16 lbs/day
	Benzo(a)pyrene ²	0.0041 lbs/day	0.0087 lbs/day
	Hexachlorobenzene ¹	0.0075 lbs/day	0.016 lbs/day
	Hexachlorobenzene ²	0.0011 lbs/day	0.0023 lbs/day

An interim one-year compliance period is being established for Benzo(a)anthracene, Benzo(a)pyrene, and Hexachlorobenzene in accordance with 30 TAC §307.2(f).

¹ Beginning on the date of permit issuance and lasting 364 days.

² Beginning 365 days from the date of permit issuance and lasting until the permit expiration date.

6. <u>DRINKING WATER SUPPLY PROTECTION</u>

a. <u>SCREENING</u>

Segment Nos. 1701, 2451, and 2462, which receive the discharges from this facility, are 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. <u>PERMIT ACTION</u>

None.

7. <u>TOTAL DISSOLVED SOLIDS (TDS), CHLORIDE, AND SULFATE</u> <u>STANDARDS PROTECTION</u>

a. <u>SCREENING</u>

Segment Nos. 1701, 2451, and 2462, which receive the discharges from this facility, do not have criteria established for TDS, chloride, or sulfate in 30 TAC Chapter 307; therefore, no screening was performed for TDS, chloride, or sulfate in the effluent.

b. <u>PERMIT ACTION</u>

None.

8. <u>PROTECTION OF pH STANDARDS</u>

a. <u>SCREENING</u>

Outfalls 001 and 002

The existing permit includes pH limits of 6.0 - 9.0 SU at Outfalls 001 and 002, which discharge directly into Victoria Barge Canal Tidal, Segment No. 1701. Screening was performed to ensure that these existing pH limits would not cause a violation of the 6.5 - 9.0 SU pH criteria for Victoria Barge Canal Tidal (see Appendix C).

Outfalls 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 015, and 016

Discharges from Outfalls 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 015, and 016 were not screened against pH criteria, consistent with the TCEQ practice for outfalls which predominately discharge stormwater.

b. <u>PERMIT ACTION</u>

Outfalls 001 and 002

The existing effluent limits of 6.0 - 9.0 SU are adequate to ensure that the discharge will not violate the pH criteria in Victoria Barge Canal Tidal.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

For Permit Issued on July 8, 2021

Outfalls 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 015, and 016

pH effluent limits between 6.0 - 9.0 SU are continued in the draft permit from the existing permit.

9. DISSOLVED OXYGEN PROTECTION

a. <u>SCREENING</u>

An analysis of the discharge from Outfall 001 was conducted using an uncalibrated QUAL-TX model at an effluent flow of 5.8 MGD (dryweather flow).

b. <u>PERMIT ACTION</u>

Based on model results, the dry weather draft permit limit of 34.8 mg/L biochemical oxygen demand, 5-day (BOD₅), modeled with 2.3 mg/L ammonia nitrogen (NH₃-N) and 0.7 mg/L dissolved oxygen (DO), is predicted to be adequate to ensure that the dissolved oxygen level will be maintained above the criterion for the Victoria Barge Canal Tidal (4 mg/L).

The draft permit also contains provisions authorizing a discharge under wet weather conditions from outfall 001 with a BOD_5 daily max of 100 mg/L. It is unclear what the dissolved oxygen implications of this wet weather authorization are on Segment No. 1701. Therefore, a monitoring and reporting requirement was added to the draft permit for dissolved oxygen at Outfall 001 when the daily average flow is greater than 5.8 MGD. The monitoring and reporting requirement for dissolved oxygen will self-expire.

10. <u>BACTERIA STANDARDS PROTECTION</u>

a. <u>SCREENING</u>

Outfall 001 is authorized to discharge domestic wastewater to Segment No. 1701. Current TCEQ practice is to impose effluent limitations and monitoring requirements for the appropriate indicator bacteria for the discharge of domestic wastewater. Enterococci is the indicator bacteria designated for the saltwater portion of Segment No. 1701 in 30 TAC §307.10 (Appendix A).

b. <u>PERMIT ACTION</u>

The following effluent limitations for Enterococci are continued in the draft permit from the existing permit.

Outfall	Parameter	Daily Avg.	Daily Max.
001	Enterococci (CFU or MPN/100 mL)	(35)	(104)

11. <u>THERMAL STANDARDS PROTECTION</u>

a. <u>SCREENING</u>

The existing permit includes limits for temperature as follows:

Outfall	Parameter	Daily Maximum
002	Temperature	100 °F

b. <u>PERMIT ACTION</u>

Existing temperature limits have been continued in the draft permit. Other Requirement No. 14 has been revised to remove the thermal plume characterization study plan submittal requirement as it has been satisfied. In addition, Other Requirement No. 14 has been revised to include notification to the permittee that the executive director of the TCEQ will be initiating changes to evaluation procedures and/or rulemaking that may affect thermal requirements for this facility. Temperature limitations may be revised at a future date.

XI. <u>PRETREATMENT REQUIREMENTS</u>

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

XII. <u>VARIANCE REQUESTS</u>

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 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 Mónica Vallin-Báez at (512) 239-5784.

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. <u>PERMIT(S)</u>

TPDES Permit No. WQ0000447000 issued on December 3, 2014.

B. <u>APPLICATION</u>

TPDES wastewater permit application received on April 1, 2019.

C. <u>40 CFR CITATION(S)</u>

40 CFR Part 414 (BPT, BCT, & BAT).

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION For Permit Issued on July 8, 2021

D. <u>LETTERS/MEMORANDA/RECORDS OF COMMUNICATION</u>

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

Letter dated May 12, 2014, from William K. Honker, P.E., Director, Water Quality Protection Division, EPA, to L'Oreal W. Stepney, P.E., Deputy Director, Office of Water, TCEQ (Approval of TCEQ proposed development strategy for thermal evaluation procedures).

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

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

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

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

TCEQ Interoffice Memorandum dated June 3, 2019, from Brittany M. Lee of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Standards Memo).

TCEQ Interoffice Memorandum dated June 5, 2019 (superseded on November 7, 2019), from Katie Cunningham of the Water Quality Assessment Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Critical Conditions Memo).

TCEQ Interoffice Memorandum dated June 12, 2019, from Xing Lu, P.E. (superseded on December 3, 2019 by Mark A. Rudolph, 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 26, 2019 (superseded on November 7, 2019) from Brittany M. Lee of the Standards Implementation Team, Water Quality Assessment Section, to the Industrial Permits Team, Wastewater Permitting Section (Biomonitoring Memo).

Letter dated April 12, 2019, from Pauline Cantu of the Applications Review and Processing Team, Water Quality Division, to Miguel Salazar, Environmental Specialist, Dow – Seadrift Operations (Regarding verification of payment and notice review).

Letter dated May 9, 2019, from Miguel Salazar, Environmental Specialist, Dow – Seadrift Operations, to Pauline Cantu of the Applications Review and Processing Team, Water Quality Division (Response to the letter dated April 12, 2019).

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION For Permit Issued on July 8, 2021

Electronic mail dated October 11, 2019, from Mónica Báez of the Industrial Permits Team, Wastewater Permitting Section, to Miguel Salazar, Environmental Specialist, Dow – Seadrift Operations (Clarification on the wastewater treatment plant and additional information on the *de-minimis* process wastewater via Outfall 002).

Electronic mail dated October 25, 2019, from Mónica Báez of the Industrial Permits Team, Wastewater Permitting Section, to Miguel Salazar, Environmental Specialist, Dow – Seadrift Operations (Potential addition of pollutants to the draft permit based on the screening against the calculated water quality-based effluent limitations and Worksheet 2.0 of the Industrial Application).

Electronic mail dated November 4, 2019, from Miguel Salazar, Environmental Specialist, Dow – Seadrift Operations to Mónica Báez of the Industrial Permits Team, Wastewater Permitting Section (Process Sewer Flow and proposed language for Dry Weather-Flow).

Electronic mail dated November 4, 2019, from Miguel Salazar, Environmental Specialist, Dow – Seadrift Operations to Mónica Báez of the Industrial Permits Team, Wastewater Permitting Section (Laboratory Analytical Reports for Outfalls 001 and 002).

Electronic mail dated November 7, 2019, from Miguel Salazar, Environmental Specialist, Dow – Seadrift Operations to Mónica Báez of the Industrial Permits Team, Wastewater Permitting Section (Notification to move forward with the dry-weather definition instead of the requested flow limit increase for Outfall 001).

Electronic mail dated November 8, 2019, from Miguel Salazar, Environmental Specialist, Dow – Seadrift Operations to Mónica Báez of the Industrial Permits Team, Wastewater Permitting Section (Water Treatment System Update (Enterococci)).

E. <u>MISCELLANEOUS</u>

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

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

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

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

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

Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to 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.

FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION For Permit Issued on July 8, 2021

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

Calculations – Outfall 001

Wastestream Contribution

Wastestream	Volume
Process Wastewater	4.18 MGD
Miscellaneous Wastewater	1.03 MGD
Domestic Wastewater	0.168 MGD
Stormwater (process area)	0.429 MGD

A. <u>OCPSF - Conventional Pollutant Allocations</u>

Bulk Organic Chemicals (40 CFR §414.70 – Subpart G)

Commodity Organic Chemicals (40 CFR §414.60 – Subpart F)

Subcategory Thermoplastic Resins (40 CFR §414.40 – Subpart D)

Percent of Total Production¹ 46% 30% 24%

100%

BOD₅

40 CFR Subcategory	Production	ELGs Daily Average mg/L	ELGs Daily Maximum mg/L	Calc. Daily Average mg/L	Calc. Daily Maximum mg/L
Subpart D	0.46	24	64	11.04	29.44
Subpart F	0.30	30	80	9	24
Subpart G	0.24	34	92	8.16	22.08
				28.2	75.52

TSS

40 CFR Subcategory	Production	ELGs Daily Average mg/L	ELGs Daily Maximum mg/L	Calc. Daily Average mg/L	Calc. Daily Maximum mg/L
Subpart D	0.46	40	130	18.4	59.8
Subpart F	0.30	46	149	13.8	44.7
Subpart G	0.24	49	159	11.76	38.16
				43.96	142.66

The mass allocations for these waste streams are calculated as follows:

Daily Average (lbs/day) = [Daily Average (mg/L)] \times [wastewater flow (MGD)] \times 8.345

Daily Maximum (lbs/day) = [Daily Maximum (mg/L)] × [wastewater flow (MGD)] × 8.345

where 8.345 is a conversion factor

BOD ₅ Daily Average	28.2 mg/L × 4.18 MGD × 8.345	=	983.67 lbs/day
BOD ₅ Daily Maximum	75.52 mg/L × 4.18 MGD × 8.345	=	2634.29 lbs/day
TSS Daily Average	43.96 mg/L × 4.18 MGD × 8.345	=	1533.41 lbs/day
TSS Daily Maximum	142.66 mg/L × 4.18 MGD × 8.345	=	4976.28 lbs/day

¹ TCEQ-10055(05/31/2017) Industrial Wastewater Application Technical Report (Page 18 of 82)

Appendix A Calculated Technology-Based Effluent Limits

B. DOMESTIC WASTEWATER - CONVENTIONAL POLLUTANT ALLOCATIONS

BOD ₅ Daily Average	20 mg/L × 0.168 MGD × 8.345	=	28.03 lbs/day
BOD ₅ Daily Maximum	45 mg/L × 0.168 MGD × 8.345		63.08 lbs/day
TSS Daily Average	20 mg/L × 0.168 MGD × 8.345	=	28.3 lbs/day
TSS Daily Maximum	45 mg/L × 0.168 MGD × 8.345	=	63.08 lbs/day

C. <u>MISCELLANEOUS WASTEWATER – CONVENTIONAL ALLOCATIONS</u>

BOD ₅ Daily Average	10 mg/L × 1.03 MGD × 8.345	=	85.95 lbs/day
BOD ₅ Daily Maximum	20 mg/L × 1.03 MGD × 8.345	=	171.90 lbs/day
TSS Daily Average	30 mg/L × 1.03 MGD × 8.345	=	257.86 lbs/day
TSS Daily Maximum	100 mg/L × 1.03 MGD × 8.345	=	859.53 lbs/day

D. STORMWATER (PROCESS AREA) - CONVENTIONAL POLLUTANT ALLOCATIONS

BOD ₅ Daily Average BOD ₅ Daily Maximum	$\begin{array}{llllllllllllllllllllllllllllllllllll$	106.34 lbs/day 283.59 lbs/day
TSS Daily Average	$44.922 \text{ mg/L} \times 0.429 \text{ MGD} \times 8.345 =$	160.82 lbs/day
TSS Daily Maximum	145.423 mg/L × 0.429 MGD × 8.345 =	520.61 lbs/day

E. <u>ALLOCATION SUMMATIONS – CONVENTIONAL POLLUTANTS</u>

BOD ₌	
$\mathbf{D}\mathbf{O}\mathbf{D}_{5}$	

Wastestream	Daily Average, lbs/day	Daily Maximum, lbs/day
Process Wastewater	983.67	2634.29
Domestic Wastewater	28.033	63.08
Miscellaneous Wastewater	85.95	171.90
Stormwater	106.34	283.59
Total =	1,203.99	3,152.86

TSS

Wastestream	Daily Average, lbs/day	Daily Maximum, lbs/day
Process Wastewater	1533.41	4976.28
Domestic Wastewater	28.3	63.08
Miscellaneous Wastewater	257.86	859.53
Stormwater	160.82	520.61
Total =	1,980.39	6,419.50

Union Carbide Corporation

ATTACHMENT A FACT SHEET AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION For Permit Issued on July 8, 2021

Appendix A Calculated Technology-Based Effluent Limits

Priority Pollutants

The total flow used to develop mass allocations under 40 CFR Part 414, Subpart I is 4.18 MGD.

Total Permitted Daily Average Flow from Outfall 001:	5.8 MGD
Subpart I Process Wastewater Flow:	4.18 MGD
Metal Bearing Wastewater Flow:	o MGD
Cyanide Bearing Wastewater Flow:	o MGD

Mass allocations for the toxic pollutants limited in Subpart I were calculated as follows:

Daily Average (lbs/day) = [Daily Average (μ g/L)/1000] × [Flow, MGD] × 8.345 Daily Maximum (lbs/day) = [Daily Maximum (μ g/L/1000] × [Flow, MGD] × 8.345

	Daily Avg	Daily Max	Daily Avg	Daily Max
Parameter	(ug/L)	(ug/L)	(lb/day)	(lb/day)
Chromium	1110	2770	0.00	0.00
Copper	1450	3380	0.00	0.00
Cyanide	420	1200	0.00	0.00
Lead	320	690	0.00	0.00
Nickel	1690	3980	0.00	0.00
Zinc	1050	2610	0.00	0.00
Acenaphthene	22	59	0.77	2.06
Acenaphthylene	22	59	0.77	2.06
Acrylonitrile	96	242	3.35	8.44
Anthracene	22	59	0.77	2.06
Benzene	37	136	1.29	4.74
Benzo(a)anthracene	22	59	0.77	2.06
3,4-Benzofluoranthene	23	61	0.80	2.13
Benzo(k)fluoranthene	22	59	0.77	2.06
Benzo(a)pyrene	23	61	0.80	2.13
Bis(2-ethylhexyl) phthalate	103	279	3.59	9.73
Carbon Tetrachloride	18	38	0.63	1.33
Chlorobenzene	15	28	0.52	0.98
Chloroethane	104	268	3.63	9.35
Chloroform	21	46	0.73	1.60
2-Chlorophenol	31	98	1.08	3.42
Chrysene	22	59	0.77	2.06
Di-n-butyl phthalate	27	57	0.94	1.99
1,2-Dichlorobenzene	77	163	2.69	5.69
1,3-Dichlorobenzene	31	44	1.08	1.53
1,4-Dichlorobenzene	15	28	0.52	0.98
1,1-Dichloroethane	22	59	0.77	2.06
1,2-Dichloroethane	68	211	2.37	7.36
1,1-Dichloroethylene	16	25	0.56	0.87
1,2-trans Dichloroethylene	21	54	0.73	1.88
2,4-Dichlorophenol	39	112	1.36	3.91
1,2-Dichloropropane	153	230	5.34	8.02
1,3-Dichloropropylene	29	44	1.01	1.53

	Daily Avg	Daily Max	Daily Avg	Daily Max
Parameter	(ug/L)	(ug/L)	(lb/day)	(lb/day)
Diethyl phthalate	81	203	2.83	7.08
2,4-Dimethylphenol	18	36	0.63	1.26
Dimethyl phthalate	19	47	0.66	1.64
4,6-Dinitro-o-cresol	78	277	2.72	9.66
2,4-Dinitrophenol	71	123	2.48	4.29
2,4-Dinitrotoluene	113	285	3.94	9.94
2,6-Dinitrotoluene	255	641	8.89	22.36
Ethylbenzene	32	108	1.12	3.77
Fluoranthene	25	68	0.87	2.37
Fluorene	22	59	0.77	2.06
Hexachlorobenzene	15	28	0.52	0.98
Hexachlorobutadiene	20	49	0.70	1.71
Hexachloroethane	21	54	0.73	1.88
Methyl Chloride	86	190	3.00	6.63
Methylene Chloride	40	89	1.40	3.10
Naphthalene	22	59	0.77	2.06
Nitrobenzene	27	68	0.94	2.37
2-Nitrophenol	41	69	1.43	2.41
4-Nitrophenol	72	124	2.51	4.33
Phenanthrene	22	59	0.77	2.06
Phenol	15	26	0.52	0.91
Pyrene	25	67	0.87	2.34
Tetrachloroethylene	22	56	0.77	1.95
Toluene	26	80	0.91	2.79
1,2,4-Trichlorobenzene	68	140	2.37	4.88
1,1,1-Trichloroethane	21	54	0.73	1.88
1,1,2-Trichloroethane	21	54	0.73	1.88
Trichloroethylene	21	54	0.73	1.88
Vinyl Chloride	104	268	3.63	9.35

Appendix A Calculated Technology-Based Effluent Limits

Appendix B Calculated Water Quality-Based Effluent Limits Outfalls 001 and 002

TEXTOX MENU #5 - BA	Y OR WIDE TIE	DAL RIVER		
The water quality-based effluent limitations develo	ped below a	re calculated	using:	
Table 1, 2014 Texas Surface Water Quality Standard	ds (30 TAC 30	7) for Saltwate	er Aquatic Life	e
Table 2, 2018 Texas Surface Water Quality Standard	ds for Human	Health		
"Procedures to Implement the Texas Surface Water	Quality Stan	dards," TCEQ,	June 2010	
PERMITINFORMATION				
Permittee Name:				
TPDES Permit No:				
Outfall No:				
Prepared by:				
Date:				

DISCHARGE INFORMATION												
Receiving Waterbody:	Victoria Bar	ge Canal Tida	l									
Segment No:	1701											
TSS (mg/L):	27											
Effluent Flow for Aquatic Life (MGD)	12.8	(Sum of perm	nitted flow fro	om Outfall 00	1(5.8 MGD and	d the 2-yr ma	ximum daily	/ average flow	w from Outfall	002 (7 MGD) b	ased on self-r	eported data.
% Effluent for Chronic Aquatic Life (Mixing Zone):	8											
% Effluent for Acute Aquatic Life (ZID):	34											
Oyster Waters?	no											
Effluent Flow for Human Health (MGD):	7	(Sum of 2-yea	ar average flo	w from Outfa	II 001(3.88 M	GD and the 2-	yr average t	flow from Out	tfall 002 (3.11	MGD) based o	n self-reporte	ed data.)
% Effluent for Human Health:	4											

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

	Intercept		Partition Coefficient	Dissolved Fraction		Water Effect Ratio	
Estuarine Metal	(b)	Slope (m)	(Кр)	(Cd/Ct)	Source	(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	6598.09	0.849		1.81	*
Lead	6.06	-0.85	69717.34	0.347		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	63210.73	0.369		1.00	Assumed
Zinc	5.36	-0.52	41275.36	0.473		1.00	Assumed
*30 TAC Chapter 307 - Appendix E - Site-specific Toxic	Criteria						

AQUATIC LIFE CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:									
	SW Acute Criterion	SW Chronic Criterion	WLAa	WLAc	LTAa	LTAc	Daily Ava.	Daily Max.	
Parameter	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(μg/L)	(µg/L)	(μg/L)	(μg/L)	
Acrolein	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Aldrin	1.3	N/A	3.82	N/A	1.22	N/A	1.79	3.80	
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Arsenic	149	78	438	975	140	595	206	436	
Cadmium	40.0	8.75	118	109	37.6	66.7	55.3	117	
Carbaryl	613	N/A	1803	N/A	577	N/A	848	1794	
Chlordane	0.09	0.004	0.265	0.0500	0.0847	0.0305	0.0448	0.0948	
Chlorpyrifos	0.011	0.006	0.0324	0.0750	0.0104	0.0458	0.0152	0.0321	
Chromium (trivalent)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Chromium (hexavalent)	1090	49.6	3206	620	1026	378	555	1176	
Copper	24.435	6.516	84.7	96.0	27.1	58.5	39.8	84.2	
Copper (oyster waters)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Cyanide (free)	5.6	5.6	16.5	70.0	5.27	42.7	7.74	16.3	
4,4'-DDT	0.13	0.001	0.382	0.0125	0.122	0.00763	0.0112	0.0237	
Demeton	N/A	0.1	N/A	1.25	N/A	0.763	1.12	2.37	
Diazinon	0.819	0.819	2.41	10.2	0.771	6.24	1.13	2.39	
Dicofol [Kelthane]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Dieldrin	0.71	0.002	2.09	0.0250	0.668	0.0153	0.0224	0.0474	
Diuron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Endosulfan I (<i>alpha</i>)	0.034	0.009	0.100	0.113	0.0320	0.0686	0.0470	0.0995	
Endosulfan II (<i>beta</i>)	0.034	0.009	0.100	0.113	0.0320	0.0686	0.0470	0.0995	
Endosulfan sulfate	0.034	0.009	0.100	0.113	0.0320	0.0686	0.0470	0.0995	
Endrin	0.037	0.002	0.109	0.0250	0.0348	0.0153	0.0224	0.0474	
Guthion [Azinphos Methyl]	N/A	0.01	N/A	0.125	N/A	0.0763	0.112	0.237	
Heptachlor	0.053	0.004	0.156	0.0500	0.0499	0.0305	0.0448	0.0948	
Hexachlorocyclohexane (gamma) [Lindane]	0.16	N/A	0.471	N/A	0.151	N/A	0.221	0.468	
Lead	133	5.3	1128	191	361	116	171	362	
Malathion	N/A	0.01	N/A	0.125	N/A	0.0763	0.112	0.237	
Mercury	2.1	1.1	6.18	13.8	1.98	8.39	2.90	6.14	
Methoxychlor	N/A	0.03	N/A	0.375	N/A	0.229	0.336	0.711	
Mirex	N/A	0.001	N/A	0.0125	N/A	0.00763	0.0112	0.0237	
Nickel	118	13.1	347	164	111	99.9	146	310	
Nonylphenol	7	1.7	20.6	21.3	6.59	13.0	9.68	20.4	
Parathion (ethyl)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Pentachlorophenol	15.1	9.6	44.4	120	14.2	73.2	20.8	44.1	
Phenanthrene	7.7	4.6	22.6	57.5	7.25	35.1	10.6	22.5	
Polychlorinated Biphenyls [PCBs]	10	0.03	29.4	0.375	9.41	0.229	0.336	0.711	
Selenium	564	136	1659	1700	531	1037	780	1650	
Silver	2	N/A	15.9	N/A	5.09	N/A	7.48	15.8	
Toxaphene	0.21	0.0002	0.618	0.00250	0.198	0.00153	0.00224	0.00474	
Tributyltin [TBT]	0.24	0.0074	0.706	0.0925	0.226	0.0564	0.0829	0.175	
2,4,5 Trichlorophenol	259	12	762	150	244	91.5	134	284	
Zinc	92.7	84.2	576	2225	184	1358	271	573	

Parameter	Fish Only Criterion (µg/L)	WLAh (µg/L)	LTAh (µg/L)	Daily Avg. (μg/L)	Daily Max. (μg/L)
Acrylonitrile	115	2875	2674	3930	8315
Aldrin	1.147E-05	0.000287	0.000267	0.000392	0.000829
Anthracene	1317	32925	30620	45011	95228
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	42010
Benzidine	0.107	2.68	2.49	3.65	7.73
Benzo(<i>a</i>)anthracene	0.025	0.625	0.581	0.854	1.80
Benzo(<i>a</i>)pyrene	0.0025	0.0625	0.0581	0.0854	0.180
Bis(chloromethyl)ether	0.2745	6.86	6.38	9.38	19.8
Bis(2-chloroethyl)ether	42.83	1071	996	1463	3096
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthala	7.55	189	176	258	545
Bromodichloromethane [Dichlorobromomethane]	275	6875	6394	9398	19884
Bromoform [Tribromomethane]	1060	26500	24645	36228	76645
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	46	1150	1070	1572	3326
Chlordane	0.0025	0.0625	0.0581	0.0854	0.180
Chlorobenzene	2737	68425	63635	93543	197905
Chlorodibromomethane [Dibromochloromethane]	183	4575	4255	6254	13232
Chloroform [Trichloromethane]	7697	192425	178955	263064	556550
Chromium (hexavalent)	502	12550	11672	17157	36298
Chrysene	2.52	63.0	58.6	86.1	182
Cresols [Methylphenols]	9301	232525	216248	317884	672532
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.0500	0.0465	0.0683	0.144
4,4'-DDE	0.00013	0.00325	0.00302	0.00444	0.00939
4,4'-DDT	0.0004	0.0100	0.00930	0.0136	0.0289
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	473	11825	10997	16165	34201
1,2-Dibromoethane [Ethylene Dibromide]	4.24	106	98.6	144	306
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	595	14875	13834	20335	43022
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	3299	82475	76702	112751	238542
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	2.24	56.0	52.1	76.5	161
1,2-Dichloroethane	364	9100	8463	12440	26319
1,1-Dichloroethylene [1,1-Dichloroethene]	55114	1377850	1281401	1883658	3985155
Dichloromethane [Methylene Chloride]	13333	333325	309992	455688	964075
1,2-Dichloropropane	259	6475	6022	8851	18727
1,3-Dichloropropene [1,3-Dichloropropylene]	119	2975	2767	4067	8604
Dicofol [Kelthane]	0.30	7.50	6.98	10.2	21.6
Dieldrin	2.0E-05	0.000500	0.000465	0.000683	0.00144
2,4-Dimethylphenol	8436	210900	196137	288321	609986
Di-n -Butyl Phthalate	92.4	2310	2148	3158	6681
Dioxins/Furans [TCDD Equivalents]	7.97E-08	0.0000020	0.0000019	0.0000027	0.0000058

ALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS: Fish Only (ritreion (rg/L) URA/ (rg/L) LTA/ (rg/L) Daily Ag. (rg/L) Daily	HUMAN HEALTH - cont.						
Isia Only Iarameter Fish Only (Ig/L) WLAh (Ig/L) LTAh (Ig/L) Daily Agx. (Ig/L) Indrin 0.02 0.500 0.465 0.633 1.4 Indrin 0.02 0.500 0.465 0.633 1.4 Ipchlorohydrin 2013 50325 45802 63793 1.4555 thylene Glycol 1.68E-07 420000000 390600000 574182001 121475600 uoride N/A N/A N/A N/A N/A N/A texachlorobanzene 0.00025 0.00233 0.00341 0.0072 texachlorobanzene 0.00068 0.0170 0.0158 0.0232 0.049 texachlorocyclohexane (<i>alpha</i>) 0.0464 0.210 0.195 0.2232 0.60 texachlorocyclohexane (<i>alpha</i>) 0.0084 0.210 0.195 0.233 0.63 texachlorocyclohexane (<i>alpha</i>) 0.0084 0.210 0.195 0.284 0.83 texachlorocyclohexane (<i>alpha</i>) 0.236 6.51 6.51 6.51	CALCULATE DAILY AVERAGE AND DAILY MAXIMU	M EFFLUENT LIM	ITATIONS:			-	
Criterion WLAh TLAH Daily Aug. Daily Aug. Ugr/L arameter (ug/L) (ug/		Fish Only					
transmeter (µg/L) (µg		Criterion	WLAh	LTAh	Daily Avg.	Daily Max.	
ndrin 0.02 0.500 0.465 0.683 1.4. pichlorohydrin 2013 50325 46802 68799 14555 thylene Glycol 1.68E+07 42000000 39060000 574182000 121475600 luoride N/A N/A N/A N/A N/A N/A leptachlor Epoxide 0.0001 0.0025 0.0023 0.00341 0.0072 lexachlorobutadiene 0.22 5.50 5.51 7.51 15. lexachlorocyclohexane (<i>beta</i>) 0.26 6.50 6.88 18. lexachlorocyclohexane (<i>beta</i>) 0.26 6.50 6.88 18. lexachlorocyclohexane (<i>beta</i>) 0.231 58.3 54.2 79.6 16. lexachlorocyclopentadiene 1.16 290 72.5 67.4 99.1 200 reachlorocyclopentadiene 2.33 58.3 277 377 799 derachlorocyclopentadiene 2.30 75.5 67.4 99.1 200	Parameter	(μg/L)	(µg/L)	(μg/L)	(µg/L)	(μg/L)	
pichlorohydrin 2013 50325 46802 68799 114555 thylene Glycol 1.6867 4000000 39060000 574182000 121476600 luoride N/A N/A N/A N/A N/A N/A leptachlor Epoxide 0.0002 0.00275 0.00674 0.00991 0.022 lexachlorochlorobenzene 0.00068 0.0170 0.0158 0.0232 0.049 lexachlorocyclohexane (<i>lapha</i>) 0.026 6.50 5.12 7.51 151 lexachlorocyclohexane (<i>lapha</i>) 0.026 6.50 6.65 8.88 18 lexachlorocyclohexane (<i>lapha</i>) 0.266 6.50 6.65 8.88 18 lexachlorocyclopentadiene 1.16 220 270 366 32 lexachlorocyclopentadiene 2.33 58.3 54.2 79.6 166 lexachlorocyclopentadiene 2.90 72.5 67.4 99.1 200 lexachlorocyclopentadiene 9.92 0.0525 0.581 <	Endrin	0.02	0.500	0.465	0.683	1.44	
thylenene 1867 46675 43408 63809 114899 thylene Glycol 1.68E+07 42000000 57418200 121476600 luoride N/A N/A N/A N/A N/A leptachlor 0.0001 0.00250 0.00233 0.00341 0.0022 leptachlor Epoxide 0.00068 0.0170 0.0158 0.0222 0.049 lexachlorobexane (a/pha) 0.0084 0.210 0.135 0.022 0.640 lexachlorocyclohexane (a/pha) 0.026 6.50 6.60 8.88 18 lexachlorocyclohexane (a/pha) 0.341 8.53 7.93 11.6 24.4 lexachlorocyclohexane (a/pha) 0.341 8.53 7.93 11.6 24.4 lexachlorocyclohexane (a/pha) 15982 39550 371582 54624 11561 lexachlorocyclopentadiene 2.90 7.5.5 67.4 99.1 200 lexachlorocyclopentadiene 2.90 7.5.5 67.4 99.1 200	Epichlorohydrin	2013	50325	46802	68799	145554	
thylene Glycol 1.68E+07 420000000 39060000 574182000 121476600 luoride N/A N/A N/A N/A N/A leptachlor 0.0001 0.00250 0.000231 0.00341 0.0022 leptachlorbobazene 0.000068 0.0170 0.0158 0.0232 0.0049 lexachlorboutadiene 0.22 5.50 5.512 7.51 1.55. lexachlorocyclohexane (<i>alpha</i>) 0.0084 0.210 0.195 0.287 0.60 lexachlorocyclohexane (<i>beta</i>) 0.266 6.50 6.58 8.88 18. lexachlorocyclohexane (<i>beta</i>) 0.231 8.53 7.93 11.6 244 lexachlorocyclopentadiene 2.30 77.5 67.4 99.1 200 /4^4sopropylidenediphenol [Bisphenol A] 15982 399550 371582 546224 115561 ead 3.83 276 257 377 799 dercury 0.0250 0.581 0.854 1.88	Ethylbenzene	1867	46675	43408	63809	134998	
Iuoride N/A N/A N/A N/A N/A leptachlor fpoxide 0.00029 0.00235 0.00674 0.00072 lexachlorobenzene 0.00068 0.0170 0.00575 0.00674 0.00929 lexachlorobutadiene 0.22 5.50 5.12 7.51 15.5 lexachlorocyclohexane (<i>apha</i>) 0.026 6.50 6.05 8.88 18.8 lexachlorocyclohexane (<i>beta</i>) 0.26 6.50 6.72 7.97 6.060 lexachlorocyclohexane (<i>beta</i>) 0.26 72.5 67.4 99.1 200 lexachlorocyclohexane (<i>beta</i>) 1582 399550 371582 542.2 79.6 16.6 lexachlorochane 2.30 77.5 67.4 99.1 200 /4'lsopropylidenediphenol [Bisphenol A] 15982 399550 371582 546224 11561 lexachlorochane 9.30 7172044 60400 33904080 7172944 dethyl fethyl Ketone 9.92E+05 2480000 2364000 <	Ethylene Glycol	1.68E+07	42000000	390600000	574182000	1214766000	
leptachlor 0.0001 0.00225 0.00231 0.00072 leptachlor Epoxide 0.00029 0.00725 0.00674 0.00991 0.00209 lexachlorobenzene 0.00068 0.0170 0.00158 0.0232 0.049 lexachlorocyclohexane (alpha) 0.026 6.50 5.12 7.51 15.5 lexachlorocyclohexane (agamma) [Lindane] 0.344 8.53 7.93 11.6 244 lexachlorocyclopentadiene 11.6 290 270 396 833 lexachlorocyclopentadiene 2.33 583 54.2 79.6 166 lexachlorocyclopentadiene 2.39 39950 371582 546224 115561 ead 3.83 2.76 2.37 77 79 dercury 0.0250 0.625 0.625 304600 712904 derthy tetri fWt Ketone 9.92405 24800000 2306400 3904080 712904 dethy tetri fWtgen (MTBE] 10482 26505 38962 82431	Fluoride	N/A	N/A	N/A	N/A	N/A	
leptachlor Epoxide 0.00029 0.00725 0.00674 0.00991 0.020 lexachlorobutadiene 0.022 5.50 5.12 7.51 15.51 lexachlorobutadiene 0.22 5.50 5.12 7.51 15.51 lexachlorocyclohexane (<i>lapha</i>) 0.084 0.210 0.195 0.287 0.60 lexachlorocyclohexane (<i>lapma</i>) 0.0341 8.53 7.93 11.6 24 lexachlorocyclohexane (<i>lagma</i>) 1.16 290 270 396 833 lexachlorocyclopentadiene 1.16 290 72.5 67.4 9.9.1 200 ekachlorocyclopentadiene 2.90 72.5 67.4 9.9.1 200 ekachlorocyclopentadiene 2.90 72.5 67.4 9.9.2 201 201 215 2424 115561 ead 3.83 276 25.5 387080 312 221 ead 3.83 276 25.5 3848 75.92 dethyl Ethyl Ketone	Heptachlor	0.0001	0.00250	0.00233	0.00341	0.00723	
lexachlorobenzene 0.00068 0.0170 0.0158 0.0232 0.049 lexachlorocyclohexane (alpha) 0.0084 0.210 0.195 0.287 0.60 lexachlorocyclohexane (beta) 0.26 6.50 6.605 8.88 18. lexachlorocyclohexane (beta) 0.241 8.53 7.93 11.6 244 lexachlorocyclohexane (beta) 0.341 8.53 7.93 11.6 244 lexachlorocyclohexane (beta) 2.33 58.3 54.2 79.6 166 lexachlorocyclohentale 2.30 72.5 67.4 99.1 200 lexachlorochtane 2.30 72.5 67.4 99.1 200 lexachlorochtane 2.30 72.5 67.4 99.1 200 detruschlorophene 2.90 72.5 67.4 99.1 200 detruschlorophene 9.925405 2480000 23064000 33904080 7172904 detruschlorophene 9.925405 248000 26505 38962 8	Heptachlor Epoxide	0.00029	0.00725	0.00674	0.00991	0.0209	
lexachlorobutadiene 0.22 5.50 5.12 7.51 15. lexachlorocyclohexane (alpha) 0.0084 0.210 0.195 0.287 0.60 lexachlorocyclohexane (gamma) [Lindane] 0.341 8.53 7.93 11.6 24.4 lexachlorocyclopentadiene 11.6 290 270 396 833 lexachlorocyclopentadiene 2.33 58.3 54.2 79.6 166 lexachlorophene 2.90 72.5 67.4 99.1 200 ,4'Isopropylidenediphenol [Biphenol A] 15982 399550 371582 546224 115561 ead 3.83 276 257 377 79 Aercury 0.0250 0.581 0.854 1.88 dethoxychlor 3.0 75.0 69.8 102 21 Aethoxychlor 3.0 75.0 69.8 102 21 Aethoxychlor 3.0 75.0 69.8 102 21 lickel 1140 28	Hexachlorobenzene	0.00068	0.0170	0.0158	0.0232	0.0491	
lexachlorocyclohexane (<i>lapha</i>) 0.0084 0.210 0.195 0.287 0.60 lexachlorocyclohexane (<i>gamma</i>) [Lindane] 0.341 8.53 7.93 11.6 24.0 lexachlorocyclopentadiene 11.6 290 270 396 833 lexachlorocyclopentadiene 2.03 58.3 54.2 79.6 166 lexachlorophene 2.90 371582 546224 115561 ead 3.83 276 257 3777 79.9 Arlsopropylidenediphenol [Bisphenol A] 15982 399550 371582 546224 115561 ead 3.83 276 257 3777 79.9 Aetnoxychlor 3.0 0.625 0.581 0.854 1.8 Aethyler 0.0250 2430000 23064000 33904080 712904 Aethyler (MTBE] 10482 26050 243707 358248 75722 lickel 1140 28500 26505 38962 82433 litrate-hitylether [Hexachlorobutadiene	0.22	5.50	5.12	7.51	15.9	
lexachlorocyclohexane (gamma) [Lindane] 0.26 6.50 6.05 8.88 18. lexachlorocyclohexane (gamma) [Lindane] 0.341 8.53 7.93 11.6 24. lexachlorocyclopentadiene 1.6 290 270 396 83. lexachlorochhane 2.33 58.3 54.2 79.6 16. lexachlorophene 2.90 72.5 67.4 99.1 200 .4'Isopropylidenediphenol [Bisphenol A] 15582 399550 371582 546224 115561 ead 3.83 276 257 377 79 Aertny 0.0250 0.625 0.581 0.854 1.8 Aertoxychlor 3.0 75.0 69.8 02 21 Aertoy Itert - butyl ether [MTBE] 10482 262050 243707 358248 75792 lickel 1140 28500 243547 64014 13543 Ivrate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A Nitrosodi	Hexachlorocyclohexane (alpha)	0.0084	0.210	0.195	0.287	0.607	
iexachlorocyclohexane (gamma) [Lindane] 0.341 8.53 7.93 11.6 24.4 iexachlorocyclopentadiene 11.6 290 270 396 833 iexachlorocyclopentadiene 2.33 58.3 54.2 79.6 166 iexachlorophene 2.90 72.5 67.4 99.1 200 ,4'-Isopropylidenediphenol [Bisphenol A] 15982 399550 371582 546224 115561 ead 3.83 276 257 377 799 Aercury 0.0250 0.625 0.581 0.854 1.83 Aethoxychlor 3.0 75.0 69.8 102 211 Aethoxychlor 3.0 75.0 69.8 102 211 Aethoxychlor 3.0 75.0 69.8 102 211 Irate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A N/A Iritrobenzene 1873 46825 43547 64014 13543 Iritrobenzene	Hexachlorocyclohexane (beta)	0.26	6.50	6.05	8.88	18.7	
lexachlorocyclopentadiene 11.6 290 270 396 833 lexachlorocthane 2.33 58.3 54.2 79.6 166 lexachlorophene 2.90 72.5 67.4 99.1 200 A'Isopropylidenediphenol [Bisphenol A] 15982 399550 371582 546224 115561 ead 3.83 276 257 377 799 Aercury 0.0250 0.625 0.581 0.854 1.80 Aethyl Ketone 9.92E+05 24800000 23064000 33904080 7172904 Aethyl Ketone 9.92E+05 24800000 23064000 33904080 7172904 Aethyl Ketone 9.92E+05 24800000 23064000 33904080 7172904 Aethyl Ketone 9.92E+05 24800000 26505 38962 82431 litrate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A N/A Nitrosodiethylamine 2.1 52.5 48.8 71.7 15 <	Hexachlorocyclohexane (gamma) [Lindane]	0.341	8.53	7.93	11.6	24.6	
lexachloropthane 2.33 58.3 54.2 79.6 166 lexachlorophene 2.90 77.5 67.4 99.1 200 A'-Isopropylidenediphenol [Bisphenol A] 15982 399550 371582 546224 115561 ead 3.83 276 257 377 79 Aercury 0.0250 0.625 0.581 0.854 1.88 Aethoxychlor 3.0 75.0 69.8 102 211 Aethyl Ethyl Ketone 9.92F+05 24800000 2306400 3390480 7172904 Aethyl Ethyl Ketone (as Total Nitrogen) N/A N/A N/A N/A N/A Nitrosodiethylamine 2.1 52.5 43547 64014 13543 I-Nitrosodierhylamine 4.2 105 97.7 143 300 entachlorobenzene 0.325 8.88 8.25 12.1 25.1 entachlorobenzene 0.325 8.88 8.25 12.1 25.1 entachlorobenzene </td <td>Hexachlorocyclopentadiene</td> <td>11.6</td> <td>290</td> <td>270</td> <td>396</td> <td>838</td>	Hexachlorocyclopentadiene	11.6	290	270	396	838	
lexachlorophene 2.90 72.5 67.4 99.1 200 ,4'Isopropylidenediphenol [Bisphenol A] 15982 399550 371582 546224 115561 ead 3.83 276 257 377 79 Aercury 0.0250 0.625 0.581 0.854 1.88 Aethoxychlor 3.0 75.0 69.8 102 211 Aethyl Ethyl Ketone 9.92E+05 2480000 23064000 33904080 7172904 Aethyl tert -butyl ether [MTBE] 10482 262050 243707 358248 75792 likrate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A N/A Ivitrosodiethylamine 2.1 52.5 48.8 71.7 15 I-Nitrosodiethylamine 0.29 7.25 6.74 9.91 20.0 olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.0466 y1dine 947 23675 22018 32366 68472	Hexachloroethane	2.33	58.3	54.2	79.6	168	
A'-Isopropylidenediphenol [Bisphenol A] 15982 399550 371582 546224 115561. ead 3.83 276 257 377 79. Aercury 0.0250 0.625 0.581 0.854 1.8. Aethoxychlor 3.0 75.0 69.8 102 211 Aethyl Ethyl Ketone 9.92E+05 24800000 23064000 33994080 7172904 Aethyl tert-butyl ether [MTBE] 10482 262050 243707 358248 75792 lickel 1140 28500 26505 38962 82433 litrate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A Nitrosodiethylamine 2.1 52.5 48.8 71.7 15 Initrosodiethylamine 4.2 105 97.7 143 30 entachlorobenzene 0.355 8.88 8.25 12.1 25.5 entachlorobenzene 0.23 7.25 6.74 9.91 20.5 olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.046 <	Hexachlorophene	2.90	72.5	67.4	99.1	209	
ead 3.83 276 257 377 79 Aercury 0.0250 0.625 0.581 0.854 1.8 Aethoxychlor 3.0 75.0 69.8 102 211 Aethyl Ethyl Ketone 9.92E+05 2480000 23064000 33904080 7172904 Aethyl tert -butyl ether [MTBE] 10482 262050 243707 358248 75792 lickel 1140 28500 26505 38962 82431 litrate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A Introsodiethylamine 2.1 52.5 48.8 71.7 15 entachlorophenol 0.29 7.25 6.74 9.91 20. olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.0466 yridine 947 23675 22018 32366 6847 elenium N/A N/A <t< td=""><td>4,4'-Isopropylidenediphenol [Bisphenol A]</td><td>15982</td><td>399550</td><td>371582</td><td>546224</td><td>1155618</td></t<>	4,4'-Isopropylidenediphenol [Bisphenol A]	15982	399550	371582	546224	1155618	
Alercury 0.0250 0.625 0.581 0.854 1.80 Aethoxychlor 3.0 75.0 69.8 102 211 Aethyl Ethyl Ketone 9.92E+05 24800000 23064000 33904080 71729044 Aethyl Ethyl Ketone 9.92E+05 2480000 23064000 33904080 7172904 Methyl Ethyl Ketone 10482 262050 243707 358248 75792 Bitrate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A N/A N/A N/A Ivitrosodiethylamine 2.1 52.5 43847 64014 13543 Ivitroso-di-n-Butylamine 0.29 7.25 6.74 9.91 20. olychlorinated Biphenyls [PCBs] <	Lead	3.83	276	257	377	798	
Aethoxychlor 3.0 75.0 69.8 102 211 Aethyl Ethyl Ketone 9.92E+05 24800000 23064000 33904080 7172904 Aethyl tert -butyl ether [MTBE] 10482 262050 243707 358248 75792 lickel 1140 28500 26505 38962 82433 litrate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A litrobenzene 1873 46825 43547 64014 13543 l-Nitrosodiethylamine 2.1 52.5 4.8.8 71.7 15 l-Nitroso-di-n-Butylamine 4.2 105 97.7 143 300 entachlorobenzene 0.355 8.88 8.25 12.1 25.5 entachlorophenol 0.29 7.25 6.74 9.91 20.0 olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.046 yridine 26.35 659 613 900 1900 etenium	Mercury	0.0250	0.625	0.581	0.854	1.80	
Arethyl Ethyl Ketone 9.92E+05 24800000 23064000 33904080 71729044 Arethyl tert -butyl ether [MTBE] 10482 262050 243707 358248 75792 lickel 1140 28500 26505 38962 82430 litrate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A N/A litrate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A N/A litrate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A N/A litrosodiethylamine 2.1 52.5 48.8 71.7 15 entachlorobenzene 0.355 8.88 8.25 12.1 25.5 entachlorophenol 0.29 7.25 6.74 9.91 20.7 olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.0466 yridine 947 23675 22018 32366 68477 elenium N/A N/A N/A N/A N/A	Methoxychlor	3.0	75.0	69.8	102	216	
Intervite Intervite <thintervite< th=""> Intervite <thintervite< th=""> Intervite <thintervite< th=""> <thintervite< th=""> <thint< td=""><td>Methyl Ethyl Ketone</td><td>9.92E+05</td><td>24800000</td><td>23064000</td><td>33904080</td><td>71729040</td></thint<></thintervite<></thintervite<></thintervite<></thintervite<>	Methyl Ethyl Ketone	9.92E+05	24800000	23064000	33904080	71729040	
lickel 1140 28500 26505 38962 82433 litrate-Nitrogen (as Total Nitrogen) N/A N/A N/A N/A N/A litrobenzene 1873 46825 43547 64014 13543 l-Nitrosodiethylamine 2.1 52.5 48.8 71.7 15 l-Nitroso-di-n-Butylamine 4.2 105 97.7 143 30 entachlorobenzene 0.355 8.88 8.25 12.1 25.5 entachlorophenol 0.29 7.25 6.74 9.91 20. olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.0466 yridine 947 23675 22018 32366 6887 elenium N/A N/A N/A N/A N/A ,2,4,5-Tetrachlorobenzene 0.24 6.00 5.58 8.20 17. ,1,2,2-Tetrachloroethane 26.35 659 613 900 1900 etrachloroethylene[Tetrachloroethylene] 280 7000 6510 9569 2024	Methyl <i>tert</i> -butyl ether [MTBE]	10482	262050	243707	358248	757927	
N/A N/A N/A N/A N/A N/A N/A Nitrobenzene 1873 46825 43547 64014 13543 I-Nitrosodiethylamine 2.1 52.5 48.8 71.7 15 I-Nitroso-di-n -Butylamine 4.2 105 97.7 143 300 entachlorobenzene 0.355 8.88 8.25 12.1 25.1 entachlorophenol 0.29 7.25 6.74 9.91 20.1 olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.0460 yridine 947 23675 22018 32366 6847 elenium N/A N/A N/A N/A N/A ,2,4,5-Tetrachlorobenzene 0.24 6.00 5.58 8.20 17.7 ,1,2,2-Tetrachloroethylene [Tetrachloroethylene] 280 7000 6510 9569 2024 hallium 0.23 5.75 5.35 7.86 16.5 oluene	Nickel	1140	28500	26505	38962	82430	
litrobenzene 1873 46825 43547 64014 13543 I-Nitrosodiethylamine 2.1 52.5 48.8 71.7 15 I-Nitroso-di-n -Butylamine 4.2 105 97.7 143 300 entachlorobenzene 0.355 8.88 8.25 12.1 25.1 entachlorophenol 0.29 7.25 6.74 9.91 20.1 olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.0460 yridine 947 23675 22018 32366 6847 elenium N/A N/A N/A N/A N/A ,2,4,5-Tetrachlorobenzene 0.24 6.00 5.58 8.20 17. ,1,2,2-Tetrachloroethylene [Tetrachloroethylene] 280 7000 6510 9569 2024 hallium 0.23 5.75 5.35 7.86 16.5 oluene N/A N/A N/A N/A N/A ,1,1-Trichloroethane <td< td=""><td>Nitrate-Nitrogen (as Total Nitrogen)</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td></td<>	Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A	
I-Nitrosodiethylamine 2.1 52.5 48.8 71.7 15 I-Nitroso-di-n-Butylamine 4.2 105 97.7 143 300 entachlorobenzene 0.355 8.88 8.25 12.1 25.1 entachlorophenol 0.29 7.25 6.74 9.91 20.0 olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.0466 yridine 947 23675 22018 32366 6847 elenium N/A N/A N/A N/A N/A ,2,4,5-Tetrachlorobenzene 0.24 6.00 5.58 8.20 17. ,1,2,2-Tetrachloroethane 26.35 659 613 900 1900 etrachloroethylene [Tetrachloroethylene] 280 7000 6510 9559 2024 hallium 0.23 5.75 5.35 7.86 16. oluene N/A N/A N/A N/A N/A ,1,1-Trichloroethane 784	Nitrobenzene	1873	46825	43547	64014	135431	
I-Nitroso-di-n -Butylamine 4.2 105 97.7 143 300 entachlorobenzene 0.355 8.88 8.25 12.1 25.1 entachlorophenol 0.29 7.25 6.74 9.91 20.1 olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.0466 yridine 947 23675 22018 32366 6847 elenium N/A N/A N/A N/A N/A ,2,4,5-Tetrachlorobenzene 0.24 6.00 5.58 8.20 17.2 ,1,2,2-Tetrachloroethane 26.35 659 613 900 1900 etrachloroethylene [Tetrachloroethylene] 280 7000 6510 9569 2024 hallium 0.23 5.75 5.35 7.86 16. oluene N/A N/A N/A N/A N/A ,1,1-Trichloroethane 784354 19608850 18236231 26807258 5671467 ,1,2-Trichloroethane	N-Nitrosodiethylamine	2.1	52.5	48.8	71.7	151	
entachlorobenzene 0.355 8.88 8.25 12.1 25.1 entachlorophenol 0.29 7.25 6.74 9.91 20.1 olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.046 yridine 947 23675 22018 32366 6847 elenium N/A N/A N/A N/A N/A N/A ,2,4,5-Tetrachlorobenzene 0.24 6.00 5.58 8.20 17.1 ,1,2,2-Tetrachloroethane 26.35 659 613 900 1900 etrachloroethylene [Tetrachloroethylene] 280 7000 6510 9569 2024 hallium 0.23 5.75 5.35 7.86 16.5 oluene N/A N/A N/A N/A N/A ,4,5-TP [Silvex] 369 9225 8579 12611 2668 ,1,1-Trichloroethane 7166 4150 3860 5673 1200 richloroethane	N-Nitroso-di-n -Butylamine	4.2	105	97.7	143	303	
entachlorophenol 0.29 7.25 6.74 9.91 20.0 olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.0466 yridine 947 23675 22018 32366 6847 elenium N/A N/A N/A N/A N/A N/A ,2,4,5-Tetrachlorobenzene 0.24 6.00 5.58 8.20 17. ,1,2,2-Tetrachloroethane 26.35 659 613 900 1900 etarachloroethylene [Tetrachloroethylene] 280 7000 6510 9569 2024 hallium 0.23 5.75 5.35 7.86 16.1 oluene N/A N/A N/A N/A N/A ,4,5-TP [Silvex] 369 9225 8579 12611 2668 ,1,2-Trichloroethane 784354 1960850 18236231 26807258 5671467 ,1,2-Trichloroethane 71.9 17.9 1798 1672 2457 5199	Pentachlorobenzene	0.355	8.88	8.25	12.1	25.6	
olychlorinated Biphenyls [PCBs] 6.4E-04 0.0160 0.0149 0.0218 0.0466 yridine 947 23675 22018 32366 6847 elenium N/A N/A N/A N/A N/A N/A ,2,4,5-Tetrachlorobenzene 0.24 6.00 5.58 8.20 17. ,1,2,2-Tetrachloroethane 26.35 659 613 900 1900 etarachloroethylene [Tetrachloroethylene] 280 7000 6510 9569 2024 hallium 0.23 5.75 5.35 7.86 16.1 oluene N/A N/A N/A N/A N/A oxaphene 0.011 0.275 0.256 0.375 0.799 ,4,5-TP [Silvex] 369 9225 8579 12611 2668 ,1,1-Trichloroethane 784354 19608850 18236231 26807258 5671467 ,4,5-Trichlorophenol 1867 46675 43408 63809 13499 ,	Pentachlorophenol	0.29	7.25	6.74	9.91	20.9	
yridine 947 23675 22018 32366 6847 elenium N/A 1909	Polychlorinated Biphenyls [PCBs]	6.4E-04	0.0160	0.0149	0.0218	0.0462	
elenium N/A N/A N/A N/A N/A N/A ,2,4,5-Tetrachlorobenzene 0.24 6.00 5.58 8.20 17 ,1,2,2-Tetrachloroethane 26.35 659 613 900 190 etrachloroethylene [Tetrachloroethylene] 280 7000 6510 9569 2024 hallium 0.23 5.75 5.35 7.86 16. oluene N/A N/A N/A N/A N/A oxaphene 0.011 0.275 0.256 0.375 0.79 ,4,5-TP [Silvex] 369 9225 8579 12611 2668 ,1,1-Trichloroethane 784354 19608850 18236231 26807258 5671467 ,1,2-Trichloroethane 166 4150 3860 5673 1200 richloroethane 71.9 1798 1672 2457 519 ,4,5-Trichlorophenol 1867 46675 43408 63809 13499 THM [Sum of Total Trih	Pyridine	947	23675	22018	32366	68475	
,2,4,5-Tetrachlorobenzene 0.24 6.00 5.58 8.20 17 ,1,2,2-Tetrachloroethane 26.35 659 613 900 1900 etrachloroethylene [Tetrachloroethylene] 280 7000 6510 9569 2024 hallium 0.23 5.75 5.35 7.86 16. oluene N/A N/A N/A N/A N/A oxaphene 0.011 0.275 0.256 0.375 0.79 ,4,5-TP [Silvex] 369 9225 8579 12611 2668 ,1,1-Trichloroethane 784354 19608850 18236231 26807258 5671467 ,1,2-Trichloroethane 166 4150 3860 5673 1200 richloroethylene [Trichloroethene] 71.9 1798 1672 2457 519 ,4,5-Trichlorophenol 1867 46675 43408 63809 13499 ,4,5-Trichlorophenol 1867 46675 43408 63809 13499 ,4,5-Trichlorophenol 1867 46675 43408 63809 13499 </td <td>Selenium</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td>	Selenium	N/A	N/A	N/A	N/A	N/A	
1,2,2-Tetrachloroethane 26.35 659 613 900 1900 etrachloroethylene [Tetrachloroethylene] 280 7000 6510 9569 2024 hallium 0.23 5.75 5.35 7.86 16. oluene N/A N/A N/A N/A N/A oxaphene 0.011 0.275 0.256 0.375 0.799 ,4,5-TP [Silvex] 369 9225 8579 12611 2668 ,1,1-Trichloroethane 784354 19608850 18236231 26807258 5671467 ,1,2-Trichloroethane 166 4150 3860 5673 1200 richloroethylene [Trichloroethene] 71.9 1798 1672 2457 519 ,4,5-Trichlorophenol 1867 46675 43408 63809 13499 THM [Sum of Total Trihalomethanes] N/A N/A N/A N/A N/A	1,2,4,5-Tetrachlorobenzene	0.24	6.00	5.58	8.20	17.3	
etrachloroethylene [Tetrachloroethylene] 280 7000 6510 9569 2024 hallium 0.23 5.75 5.35 7.86 16.1 oluene N/A N/A N/A N/A N/A oxaphene 0.011 0.275 0.256 0.375 0.79 ,4,5-TP [Silvex] 369 9225 8579 12611 2668 ,1,1-Trichloroethane 784354 19608850 18236231 26807258 5671467 ,1,2-Trichloroethane 166 4150 3860 5673 1200 richloroethylene [Trichloroethene] 71.9 1798 1672 2457 519 ,4,5-Trichlorophenol 1867 46675 43408 63809 13499 THM [Sum of Total Trihalomethanes] N/A N/A N/A N/A N/A	1,1,2,2-Tetrachloroethane	26.35	659	613	900	1905	
hallium 0.23 5.75 5.35 7.86 16.4 oluene N/A Statistical statistrestatistical statistical statistical statistical statis	Tetrachloroethylene [Tetrachloroethylene]	280	7000	6510	9569	20246	
N/A N/A <td>Thallium</td> <td>0.23</td> <td>5.75</td> <td>5.35</td> <td>7.86</td> <td>16.6</td>	Thallium	0.23	5.75	5.35	7.86	16.6	
oxaphene 0.011 0.275 0.256 0.375 0.79 ,4,5-TP [Silvex] 369 9225 8579 12611 2668 ,1,1-Trichloroethane 784354 19608850 18236231 26807258 5671467 ,1,2-Trichloroethane 166 4150 3860 5673 1200 richloroethylene [Trichloroethene] 71.9 1798 1672 2457 519 ,4,5-Trichlorophenol 1867 46675 43408 63809 13499 THM [Sum of Total Trihalomethanes] N/A N/A N/A N/A N/A Invl Chloride 16.5 413 384 563 119	Toluene	N/A	N/A	N/A	N/A	N/A	
,4,5-TP [Silvex]36992258579126112668,1,1-Trichloroethane7843541960885018236231268072585671467,1,2-Trichloroethane1664150386056731200richloroethylene [Trichloroethene]71.9179816722457519,4,5-Trichlorophenol186746675434086380913499THM [Sum of Total Trihalomethanes]N/AN/AN/AN/A(inv) Chloride16.5413384563119	Toxaphene	0.011	0.275	0.256	0.375	0.795	
,1,1-Trichloroethane7843541960885018236231268072585671467,1,2-Trichloroethane1664150386056731200richloroethylene [Trichloroethene]71.9179816722457519,4,5-Trichlorophenol186746675434086380913499THM [Sum of Total Trihalomethanes]N/AN/AN/AN/A(inv) Chloride16.5413384563119	2,4,5-TP [Silvex]	369	9225	8579	12611	26681	
,1,2-Trichloroethane 166 4150 3860 5673 1200 richloroethylene [Trichloroethene] 71.9 1798 1672 2457 5194 ,4,5-Trichlorophenol 1867 46675 43408 63809 13499 THM [Sum of Total Trihalomethanes] N/A N/A N/A N/A	1,1,1-Trichloroethane	784354	19608850	18236231	26807258	56714676	
richloroethylene [Trichloroethene] 71.9 1798 1672 2457 519 ,4,5-Trichlorophenol 1867 46675 43408 63809 13499 THM [Sum of Total Trihalomethanes] N/A N/A N/A N/A N/A Vinyl Chloride 16.5 413 384 563 119	1,1,2-Trichloroethane	166	4150	3860	5673	12003	
,4,5-Trichlorophenol 1867 46675 43408 63809 13499 THM [Sum of Total Trihalomethanes] N/A N/A N/A N/A N/A Vinvl Chloride 16.5 413 384 563 119	Trichloroethylene [Trichloroethene]	71.9	1798	1672	2457	5198	
THM [Sum of Total Trihalomethanes]N/AN/AN/AN/AVinvl Chloride16.5413384563119	2,4,5-Trichlorophenol	1867	46675	43408	63809	134998	
invl Chloride 16.5 413 384 563 119	TTHM [Sum of Total Trihalomethanes]	N/A	N/A	N/A	N/A	N/A	
	Vinyl Chloride	16.5	413	384	563	1193	

	70% of	85% of
Aquatic Life	Daily Ava.	Dailv Ava.
Parameter	(µa/L)	(ua/L)
Acrolein	N/A	N/A
Aldrin	1.25	1.52
Aluminum	N/A	N/A
Arsenic	144	175
Cadmium	38.7	47.0
Carbaryl	593	720
Chlordane	0.0313	0.0381
Chlorpyrifos	0.0106	0.0129
Chromium (trivalent)	N/A	N/A
Chromium (hexavalent)	389	472
Copper	27.8	33.8
Copper (oyster waters)	N/A	N/A
Cyanide (free)	5.42	6.58
4,4'-DDT	0.00784	0.00952
Demeton	0.784	0.952
Diazinon	0.793	0.963
Dicofol [Kelthane]	N/A	N/A
Dieldrin	0.0156	0.0190
Diuron	N/A	N/A
Endosulfan I (<i>alpha</i>)	0.0329	0.0399
Endosulfan II (<i>beta</i>)	0.0329	0.0399
Endosulfan sulfate	0.0329	0.0399
Endrin	0.0156	0.0190
Guthion [Azinphos Methyl]	0.0784	0.0952
Heptachlor	0.0313	0.0381
Hexachlorocyclohexane (gamma) [Lindane]	0.154	0.188
Lead	119	145
Malathion	0.0784	0.0952
Mercury	2.03	2.46
Methoxychlor	0.235	0.285
Mirex	0.00784	0.00952
Nickel	102	124
Nonylphenol	6.77	8.23
Parathion (ethyl)	N/A	N/A
Pentachlorophenol	14.6	17.7
Phenanthrene	7.45	9.05
Polychlorinated Biphenyls [PCBs]	0.235	0.285
Selenium	546	663
Silver	5.24	6.36
Toxaphene	0.00156	0.00190
Tributyltin [TBT]	0.0580	0.0705
2,4,5 Trichlorophenol	94.1	114
Zinc	189	230

	70% of	85% of
Human Health	Daily Avg.	Daily Avg.
Parameter	(µg/L)	(µg/L)
Acrylonitrile	2751	3340
Aldrin	0.000274	0.000333
Anthracene	31508	38260
Antimony	25622	31113
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	13899	16878
Benzidine	2.55	3.10
Benzo(a) anthracene	0.598	0.726
Benzo(a)pyrene	0.0598	0.0726
Bis(chloromethyl)ether	6.56	7.97
Bis(2-chloroethyl)ether	1024	1244
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthala	180	219
Bromodichloromethane [Dichlorobromomethane]	6579	7988
Bromoform [Tribromomethane]	25359	30793
Cadmium	N/A	N/A
Carbon Tetrachloride	1100	1336
Chlordane	0.0598	0.0726
Chlorobenzene	65480	79512
Chlorodibromomethane [Dibromochloromethane]	4378	5316
Chloroform [Trichloromethane]	184144	223604
Chromium (hexavalent)	12009	14583
Chrysene	60.2	73.2
Cresols [Methylphenols]	222519	270202
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0478	0.0581
4,4'-DDE	0.00311	0.00377
4,4'-DDT	0.00956	0.0116
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	11316	13741
1,2-Dibromoethane [Ethylene Dibromide]	101	123
<i>m</i> -Dichlorobenzene [1.3-Dichlorobenzene]	14234	17285
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	78926	95838
<i>p</i> -Dichlorobenzene [1.4-Dichlorobenzene]	N/A	N/A
3.3'-Dichlorobenzidine	53.5	65.0
1.2-Dichloroethane	8708	10574
1.1-Dichloroethylene [1.1-Dichloroethene]	1318561	1601109
Dichloromethane [Methylene Chloride]	318982	387335
1.2-Dichloropropane	6196	7524
1.3-Dichloropropene [1.3-Dichloropropylene]	2846	3457
Dicofol [Kelthane]	7.17	8.71
Dieldrin	0.000478	0.000581
2.4-Dimethylphenol	201824	245073
Di- <i>n</i> -Butyl Phthalate	2210	2684
Dioxins/Furans [TCDD Equivalents]	0.0000019	0.0000023

	70% of	85% of
Human Health	Daily Avg.	Daily Avg.
Parameter	(μg/L)	(μg/L)
Endrin	0.478	0.581
Epichlorohydrin	48159	58479
Ethylbenzene	44666	54237
Ethylene Glycol	401927400	488054700
Fluoride	N/A	N/A
Heptachlor	0.00239	0.00290
Heptachlor Epoxide	0.00693	0.00842
Hexachlorobenzene	0.0162	0.0197
Hexachlorobutadiene	5.26	6.39
Hexachlorocyclohexane (alpha)	0.200	0.244
Hexachlorocyclohexane (beta)	6.22	7.55
Hexachlorocyclohexane (gamma) [Lindane]	8.15	9.90
Hexachlorocyclopentadiene	277	336
Hexachloroethane	55.7	67.6
Hexachlorophene	69.3	84.2
4,4'-Isopropylidenediphenol [Bisphenol A]	382357	464291
Lead	264	320
Mercury	0.598	0.726
Methoxychlor	71.7	87.1
Methyl Ethyl Ketone	23732856	28818468
Methyl tert -butyl ether [MTBE]	250773	304511
Nickel	27273	33117
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	6.93	8.42
Polychlorinated Biphenyls [PCBs]	0.0153	0.0185
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]	6698	8134
Thallium	5.50	6.68
Toluene	N/A	N/A
Toxaphene	0.263	0.319
2,4,5-TP [Silvex]	8828	10719
1,1,1-Trichloroethane	18765081	22786170
1,1,2-Trichloroethane	3971	4822
Trichloroethylene [Trichloroethene]	1720	2088
2,4,5-Trichlorophenol	44666	54237
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	394	479

Appendix B Calculated Mass Limits from the Calculated Water Quality-Based Effluent Limits Outfalls 001 and 002

Aquatic Life

Outfall	Parameter	Dly Avg µg/L	Dly Max µg/L	Dly Avg. lbs/day	Dly Max lbs/day
001	Phenanthrene	10.6	22.5	0.513	1.08
				mg/L	mg/L
002	Copper, Total	39.8	84.2	0.039	0.084

Human Health Mass limit (lbs/day) = [concentration (mg/L)/1000) × Flow (MGD)] × 8.345 Flow = 5.8 MGD

Outfall	Parameter	Dly Avg	Dly Max	Dly Avg	Dly Max
001		μg/L	μg/L	lbs/day	lbs/day
	Acrylonitrile	3930	8315	190	402
	Anthracene	45011	95228	2178	4609
	Benzene	19857	42010	961	2033
	Benzo(a)anthracene	0.854	1.80	0.041	0.087
	Benzo(a)pyrene	0.0854	0.180	0.0041	0.0087
	Bis(2-ethylhexyl) phthalate	258	545	12.4	26.3
	Carbon Tetrachloride	1572	3326	76.0	160.9
	Chlorobenzene	93543	197905	4527	9578
	Chloroform	263064	556550	12732	26937
	Chrysene	86.1	182	4.16	8.80
	Di-n-Butyl Phathalate	3158	6681	152	323
	1,2-Dichlorobenzene	112751	238542	5457	11545
	1,3-Dichlorobenzene	20335	43022	984	2082
	1,2-Dichloroethane	12440	26319	602	1273
	1,1-Dichloroethylene	1883658	3985155	91170	192885
	1,2-Dichloropropane	8851	18727	428	906
	1,3- Dichloropropylene	4067	8604	196	416
	2,4-Dimethylphenol	288321	609986	13955	29523
	Ethylbenzene	63809	134998	3088	6534
	Hexachlorobenzene	0.0232	0.0491	0.0011	0.0023
	Hexachlorobutadiene	7.51	15.9	0.363	0.769
	Hexachloroethane	79.6	168	3.85	8.13
	Methylene Chloride (Dichloromethane)	455688	964075	22055	46662
	Nitrobenzene	64014	135431	3098	6554
	Tetrachloroethylene	9569	20246	463	979
	1,1,1-Trichloroethane	26807258	56714676	1297498	2745047
	1,1,2-Trichloroethane	5673	12003	274	580
	Trichloroethylene	2457	5198	118	251
	Vinyl Chloride	563	1193	27.2	57.7

Appendix C pH Screening

Outfall 001

Calculation of pH of a mixture in seawate Based on the CO2SYS program (Lewis and Walla			
http://cdiac.esd.ornl.gov/oceans/co2rprt.l	html		
TNDUT			Notas on Data Sourcas
INFOI			Notes on Data Sources
1. MIXING ZONE BOUNDARY CHARACTERISTICS			
Dilution factor at mixing zone boundary	11.111	11.111	Calculated from values in March 25, 2013 critical conditions memo: Effluent % at edge of mixing zone = 9%
Depth at plume trapping level (m)	3.000	5.000	Default value. Various depths tested.
2. BACKGROUND RECEIVING WATER CHARACTERISTICS			
Temperature (deg C):	33.00	33.00	Assumed. Various temperatures tested.
pH:	7.80	7.80	Ambient pH for Segment 1701 from 2011 Ips.
Salinity (psu):	10.00	15.00	Various salinities tested (2-20)
Total alkalinity (meq/L)	1.70	1.70	Calculated from 15th percentile alkalinity 85, 2011 IP
3. EFFLUENT CHARACTERISTICS			
Temperature (deg C):	33.00	33.00	Assumed. Various temperatures tested.
pH:	6.00	9.00	Proposed permit limit. Sequentially modified until predicted pH met segment criteria (6.5 to 9.0).
Salinity (psu)	1.00	1.00	Minimum salinity assumed because discharge is freshwater. However, values up to 5 ppt tested.
Total alkalinity (meq/L):	0.40	10.37	used the effluent average from Outfall 002 in application.
4. CLICK THE 'calculate" BUTTON TO UPDATE OUTPUT RESULTS >>>			
OUTPUT			
CONDITIONS AT THE MIXING ZONE BOUNDARY	22.65		
Temperature (deg C):	33.00	33.00	
Salinity (psu)	9.19	13.74	
Density (kg/m^3)	1001.53	1004.91	
Alkalinity (mmol/kg-SW):	1.58	2.47	
I otal Inorganic Carbon (mmol/kg-SW):	1.55	2.15	
ph at Mixing Zone Boundary:	7.64	8.24	
Notes:			
To convert from units of mgCaCO3/L to meq/L divide by 50.044 mg/med	q		

PSU refers to the Practical Salinity Scale (PSS) and is approximately equivalent to parts per thousand (ppt)

Outfall 002

Calculation of pH of a mixture in seawater	. 1998)		
http://cdiac.esd.ornl.gov/oceans/co2rprt.ht	ml		
INPUT			Notes on Data Sources
1. MIXING ZONE BOUNDARY CHARACTERISTICS			
Dilution factor at mixing zone boundary	11.111	11.111	Calculated from values in March 25, 2013 critical conditions memo: Effluent % at edge of mixing zone = 9%
Depth at plume trapping level (m)	2.000	2.000	Default value. Various depths tested.
2. BACKGROUND RECEIVING WATER CHARACTERISTICS			
Temperature (deg C):	33.00	33.00	Assumed. Various temperatures tested.
pH:	7.80	7.80	Ambient pH for Segment 2421 from 2011 Ips.
Salinity (psu):	15.00	15.00	Various salinities tested (2-20)
Total alkalinity (meq/L)	1.70	1.70	Calculated from 15th percentile alkalinity 85, 2011 IP
3. EFFLUENT CHARACTERISTICS			
Temperature (deg C):	33.00	33.00	Assumed, various temperatures tested.
pH:	6.00	9.00	segment criteria (6.5 to 9.0).
Salinity (psu)	1.00	1.00	Minimum salinity assumed because discharge is freshwater. However, values up to 5 ppt tested.
Total alkalinity (meq/L):	2.62	2.62	used the effluent average from Outfall 002 in application.
4. CLICK THE 'calculate" BUTTON TO UPDATE OUTPUT RESULTS >>>			
OUTPUT			
CONDITIONS AT THE MIXING ZONE BOUNDART	22.00	22.00	
Temperature (deg C):	33.00	33.00	
Sdillilly (psu)	1004.80	1004.00	
Density (kg/m^3)	1004.89	1004.89	
Aikdiinity (mmol/kg-SW):	1.//	1.//	
notal inorganic CdfD011 (111107/Kg-SW):	1.91	1.63	
	0.97	7.99	
Notes:			
To convert from units of mgCaCO3/L to meg/L divide by 50.044 mg/meg			
PSU refers to the Practical Salinity Scale (PSS) and is approximately equival	ent to parts per th	ousand (ppt)	

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.

		Technology-Based					Water Qua	lity-Based		Existing Permit			
Outfall	Pollutant	Daily Avg		Daily	Max	Daily	/ Avg	Daily Max		Daily	′ Avg	Daily	' Max
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
001	Flow (dry-weather)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.80	MGD	Report, MGD	
	Total Suspended Solids ¹	1,980	N/A	6,419	N/A	N/A	N/A	N/A	N/A	1,966	Report	6,375	Report
	Total Suspended Solids ²	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	280
	Biochemical Oxygen Demand, 5-day ¹	1,203	N/A	3,152	N/A	N/A	N/A	N/A	N/A	1,187	34.8	3,106	Report
	Biochemical Oxygen Demand, 5-day ²	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	100
	Dissolved Oxygen ^{2,3}	N/A	N/A	N/A	N/A	N/A	Report (min)	N/A	N/A	N/A	N/A	N/A	N/A
-	Acenaphthene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	Acenaphthylene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	Acrylonitrile	3.35	N/A	8.44	N/A	190	N/A	402	N/A	3.04	N/A	7.67	N/A
	Anthracene	0.77	N/A	2.06	N/A	2178	N/A	4609	N/A	0.70	N/A	1.87	N/A
	Benzene	1.29	N/A	4.74	N/A	961	N/A	2033	N/A	1.17	N/A	4.31	N/A
	Benzo(a)anthracene4	0.77	N/A	2.06	N/A	0.041	N/A	0.087	N/A	0.55	N/A	1.16	N/A
	Benzo(a)anthracene5	0.77	N/A	2.06	N/A	0.041	N/A	0.087	N/A	0.55	N/A	1.16	N/A
	3,4-Benzofluoranthene	0.80	N/A	2.13	N/A	N/A	N/A	N/A	N/A	0.73	N/A	1.93	N/A
	Benzo(k)fluoranthene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	Benzo(a)pyrene ³	0.80	N/A	2.13	N/A	0.0041	N/A	0.0087	N/A	0.55	N/A	1.16	N/A
	Benzo(a)pyrene ⁴	0.80	N/A	2.13	N/A	0.0041	N/A	0.0087	N/A	0.55	N/A	1.16	N/A

¹ Effluent limits are applicable when the daily discharge is less than or equal to 5.8 MGD. See Other Requirement No. 1.

² Effluent limits are applicable when the daily discharge is greater than 5.8 MGD. For self-reporting purposes, report as wet weather.

³ Monitoring and reporting requirements will expire one week prior to the permit expiration date.

⁴ Beginning on the date of permit issuance and lasting for 364 days.

⁵ Beginning 365 days from the date of permit issuance and lasting until the permit expiration date.

	Comparis	son of Te	chnolog	y-Based I	Effluent	: Limits a	nd Wate	er Quality	-Based	Effluent			
		Technology-Based					Water Qua	ality-Based			Existing	Permit	
Dutfall	Pollutant	Daily	/ Avg	Daily	Max	Daily	/ Avg	Daily	Max	Daily	' Avg	Daily	Max
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
001	Bis(2-ethylhexyl) phthalate	3.59	N/A	9.73	N/A	12.4	N/A	26.3	N/A	3.27	N/A	8.85	N/A
	Carbon Tetrachloride	0.63	N/A	1.33	N/A	76	N/A	160	N/A	0.57	N/A	1.21	N/A
	Chlorobenzene	0.52	N/A	0.98	N/A	4527	N/A	9578	N/A	0.48	N/A	0.89	N/A
	Chloroethane	3.63	N/A	9.35	N/A	N/A	N/A	N/A	N/A	3.30	N/A	8.50	N/A
	Chloroform	0.73	N/A	1.60	N/A	12732	N/A	26937	N/A	0.67	N/A	1.46	N/A
	2-Chlorophenol	1.08	N/A	3.42	N/A	N/A	N/A	N/A	N/A	0.98	N/A	3.11	N/A
	Chrysene	0.77	N/A	2.06	N/A	4.16	N/A	8.80	N/A	0.70	N/A	1.87	N/A
	Di-n-butyl phthalate	0.94	N/A	1.99	N/A	152	N/A	323	N/A	0.86	N/A	1.81	N/A
	1,2-Dichlorobenzene	2.69	N/A	5.69	N/A	5457	N/A	11545	N/A	2.44	N/A	5.17	N/A
	1,3-Dichlorobenzene	1.08	N/A	1.53	N/A	984	N/A	2082	N/A	0.98	N/A	1.40	N/A
	1,4-Dichlorobenzene	0.52	N/A	0.98	N/A	N/A	N/A	N/A	N/A	0.48	N/A	0.89	N/A
	1,1-Dichloroethane	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	1,2-Dichloroethane	2.37	N/A	7.36	N/A	602	N/A	1273	N/A	2.16	N/A	6.69	N/A
	1,1-Dichloroethylene	0.56	N/A	0.87	N/A	91170	N/A	192885	N/A	0.51	N/A	0.79	N/A
	1,2-trans-Dichloroethylene	0.73	N/A	1.88	N/A	N/A	N/A	N/A	N/A	0.67	N/A	1.71	N/A
	2,4-Dichlorophenol	1.36	N/A	3.91	N/A	N/A	N/A	N/A	N/A	1.24	N/A	3.55	N/A
	1,2-Dichloropropane	5.34	N/A	8.02	N/A	428	N/A	906	N/A	4.85	N/A	7.29	N/A
	1,3-Dichloropropylene	1.01	N/A	0.044	N/A	196	N/A	416	N/A	0.92	N/A	1.40	N/A
	Diethyl phthalate	2.83	N/A	7.08	N/A	N/A	N/A	N/A	N/A	2.57	N/A	6.44	N/A
	2,4-Dimethylphenol	0.63	N/A	1.26	N/A	13955	N/A	19523	N/A	0.57	N/A	1.14	N/A
	Dimethyl phthalate	0.66	N/A	1.64	N/A	N/A	N/A	N/A	N/A	0.60	N/A	1.49	N/A
	4,6-Dinitro-o-cresol	2.72	N/A	9.66	N/A	N/A	N/A	N/A	N/A	2.47	N/A	8.78	N/A
	2,4-Dinitrophenol	2.48	N/A	4.29	N/A	N/A	N/A	N/A	N/A	2.25	N/A	3.90	N/A
	2,4-Dinitrotoluene	3.94	N/A	9.94	N/A	N/A	N/A	N/A	N/A	3.58	N/A	9.04	N/A
	2,6-Dinitrotoluene	8.89	N/A	22.36	N/A	N/A	N/A	N/A	N/A	8.09	N/A	20.3	N/A
	Ethylbenzene	1.12	N/A	3.77	N/A	3088	N/A	6534	N/A	1.01	N/A	3.42	N/A
	Fluoranthene	0.87	N/A	2.37	N/A	N/A	N/A	N/A	N/A	0.79	N/A	2.16	N/A
	Fluorene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	Hexachlorobenzene ³	0.52	N/A	0.98	N/A	0.0011	N/A	0.0023	N/A	0.0075	N/A	0.016	N/A
	Hexachlorobenzene ⁴	0.52	N/A	0.98	N/A	0.0011	N/A	0.0023	N/A	0.0075	N/A	0.016	N/A
	Hexachlorobutadiene	0.70	, N/A	1.71	, N/A	0.363	, N/A	0.769	, N/A	0.63	, N/A	1.55	, N/A

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

	Compar	ison of Te	chnolog	y-Based	Effluent	t Limits a	nd Wate	er Quality	-Based l	Effluent			
			Technolo	gy-Based			Water Qua	ality-Based		Existing Permit			
Outfall	Pollutant	Daily	/ Avg	Daily	Max	Daily	/ Avg	Daily	Max	Daily	' Avg	Daily	Max
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
001	Hexachloroethane	0.73	N/A	1.88	N/A	3.85	N/A	8.13	N/A	0.67	N/A	1.71	N/A
	Methyl Chloride	3.00	N/A	6.63	N/A	N/A	N/A	N/A	N/A	2.73	N/A	6.03	N/A
	Methylene Chloride	1.40	N/A	3.10	N/A	22055	N/A	46662	N/A	1.27	N/A	2.82	N/A
	Naphthalene	0.77	N/A	2.06	N/A	N/A	N/A	N/A	N/A	0.70	N/A	1.87	N/A
	Nitrobenzene	0.94	N/A	2.37	N/A	3098	N/A	6554	N/A	0.86	N/A	2.16	N/A
	2-Nitrophenol	1.43	N/A	2.41	N/A	N/A	N/A	N/A	N/A	1.30	N/A	2.19	N/A
	4-Nitrophenol	2.51	N/A	4.33	N/A	N/A	N/A	N/A	N/A	2.28	N/A	3.93	N/A
	Phenanthrene	0.77	N/A	2.06	N/A	0.513	N/A	1.08	N/A	0.33	N/A	0.69	N/A
	Phenol	0.52	N/A	0.91	N/A	N/A	N/A	N/A	N/A	0.48	N/A	0.82	N/A
	Pyrene	0.87	N/A	2.34	N/A	N/A	N/A	N/A	N/A	0.79	N/A	2.12	N/A
	Tetrachloroethylene	0.77	N/A	1.95	N/A	463	N/A	979	N/A	0.70	N/A	1.78	N/A
	Toluene	0.91	N/A	2.79	N/A	N/A	N/A	N/A	N/A	0.82	N/A	2.54	N/A
	1,2,4-Trichlorobenzene	2.37	N/A	4.88	N/A	N/A	N/A	N/A	N/A	2.16	N/A	4.44	N/A
	1,1,1-Trichloroethane	0.73	N/A	1.88	N/A	1297498	N/A	2745047	N/A	0.67	N/A	1.71	N/A
	1,1,2-Trichloroethane	0.73	N/A	1.88	N/A	274	N/A	580	N/A	0.67	N/A	1.71	N/A
	Trichloroethylene	0.73	N/A	1.88	N/A	118	N/A	251	N/A	0.67	N/A	1.71	N/A
	Vinyl Chloride	3.63	N/A	9.35	N/A	27.2	N/A	57.7	N/A	3.30	N/A	8.50	N/A
	рН	6.0 SL	J (min)	9.0 SU	(max)					6.0 SU	(min)	9.0 SU	(max)
002	Flow (dry-weather)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.0	MGD	17.0	MGD
	Total Organic Carbon	N/A	N/A	N/A	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50
	Temperature	N/A	N/A	N/A	N/A	95	°F	95	°F	N/	Ϋ́Α	100	°F
	Total Residual Chlorine	N/A	N/A	N/A	0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.2
	Total Copper	N/A	N/A	N/A	N/A	N/A	0.0398	N/A	0.0842	N/A	0.0365	N/A	0.0773
	Acenaphthene	N/A	0.022	N/A	0.059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Acenaphthylene	N/A	0.022	N/A	0.059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Acrylonitrile	N/A	0.096	N/A	0.242	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Anthracene	N/A	0.022	N/A	0.059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Benzene	N/A	0.037	N/A	0.136	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Benzo(a)anthracene	N/A	0.022	N/A	0.059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3,4-Benzofluoranthene	N/A	0.023	N/A	0.061	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Benzo(k)fluoranthene	N/A	0.022	N/A	0.059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Comparison of Technology-Based Effluent Limits and Water Ouality-Based Effluent	nt

	Comparis	son of Te	chnolog	y-Based 🛛	Effluent	Limits a	nd Wate	er Quality	-Based I	Effluent			
			Technolo	gy-Based			Water Qua	ality-Based		Existing Permit			
ıtfall	Pollutant	Daily	/ Avg	Daily	Max	Daily	/ Avg	Daily Max		Daily Avg		Daily	Max
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
02	Benzo(a)pyrene	N/A	0.023	N/A	0.061	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Bis(2-ethylhexyl) phthalate	N/A	0.103	N/A	0.279	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Carbon Tetrachloride	N/A	0.018	N/A	0.038	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Chlorobenzene	N/A	0.015	N/A	0.028	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Chloroethane	N/A	0.104	N/A	0.268	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Chloroform	N/A	0.021	N/A	0.046	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2-Chlorophenol	N/A	0.031	N/A	0.098	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Chrysene	N/A	0.022	N/A	0.059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Di-n-butyl phthalate	N/A	0.027	N/A	0.057	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,2-Dichlorobenzene	N/A	0.077	N/A	0.163	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,3-Dichlorobenzene	N/A	0.031	N/A	0.044	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,4-Dichlorobenzene	N/A	0.015	N/A	0.028	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,1-Dichloroethane	N/A	0.022	N/A	0.059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,2-Dichloroethane	N/A	0.068	N/A	0.211	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,1-Dichloroethylene	N/A	0.016	N/A	0.025	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,2-trans Dichloroethylene	N/A	0.021	N/A	0.054	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2,4-Dichlorophenol	N/A	0.039	N/A	0.112	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,2-Dichloropropane	N/A	0.153	N/A	0.230	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,3-Dichloropropylene	N/A	0.029	N/A	0.044	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Diethyl phthalate	N/A	0.081	N/A	0.203	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2,4-Dimethylphenol	N/A	0.018	N/A	0.036	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Dimethyl phthalate	N/A	0.019	N/A	0.047	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4,6-Dinitro-o-cresol	N/A	0.078	N/A	0.277	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2,4-Dinitrophenol	N/A	0.071	N/A	0.123	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2,4-Dinitrotoluene	N/A	0.113	N/A	0.285	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2,6-Dinitrotoluene	N/A	0.255	N/A	0.641	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Ethylbenzene	N/A	0.032	N/A	0.108	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Fluoranthene	N/A	0.025	N/A	0.068	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Fluorene	N/A	0.022	N/A	0.059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Hexachlorobenzene	N/A	0.015	N/A	0.028	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Hexachlorobutadiene	N/A	0.020	N/A	0.049	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix D	
Companison of Tachnology-Based Effluent Limits and Water (Juglity_Based Effluent
Comparison of recimology-based Endent Ennits and Water Q	Zuanty-Daseu Ennuent

	Comparison of Technology-Based Effluent Limits and Water Quality-Based Effluent												
		Technology-Based			Water Quality-Based				Existing Permit				
Outfall	Pollutant	Daily	Daily Avg		Daily Max		Daily Avg		Max	Daily Avg		Daily Max	
		lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L
002	Hexachloroethane	N/A	0.021	N/A	0.054	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Methyl Chloride	N/A	0.086	N/A	0.190	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Methylene Chloride	N/A	0.040	N/A	0.089	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Naphthalene	N/A	0.022	N/A	0.059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Nitrobenzene	N/A	0.027	N/A	0.068	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2-Nitrophenol	N/A	0.041	N/A	0.069	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4-Nitrophenol	N/A	0.072	N/A	0.124	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Phenanthrene	N/A	0.022	N/A	0.059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Phenol	N/A	0.015	N/A	0.026	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Pyrene	N/A	0.025	N/A	0.067	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Tetrachloroethylene	N/A	0.022	N/A	0.056	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Toluene	N/A	0.026	N/A	0.080	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,2,4-Trichlorobenzene	N/A	0.068	N/A	0.140	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,1,1-Trichloroethane	N/A	0.021	N/A	0.054	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1,1,2-Trichloroethane	N/A	0.021	N/A	0.054	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Trichloroethylene	N/A	0.021	N/A	0.054	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Vinyl Chloride	N/A	0.104	N/A	0.268	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	рН	6.0 SL	J (min)	9.0 SU (max)						6.0 SU (min)		9.0 SU (max)	
003,	Flow	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Report	Report, MGD		, MGD
004,	Total Organic Carbon	N/A	N/A	N/A	75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	75
005,	Oil and Grease	N/A	N/A	N/A	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15
006,	рН	6.0 SL	J (min)	in) 9.0 SU (max)						6.0 SU (min)		9.0 SU (max)	
007,													
008,													
009,													
010,													
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014,													
015, &													
016													

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



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY P.O. Box 13087 Austin, Texas 78711-3087 TPDES PERMIT NO. WQ0000447000 [For TCEQ office use only -EPA I.D. No. TX0002844]

This major amendment replaces TPDES Permit No. WQ0000447000 issued on July 8, 2021.

PERMIT TO DISCHARGE WASTES

under provisions of Section 402 of the Clean Water Act and Chapter 26 of the Texas Water Code

Dow Hydrocarbons and Resources LLC and Union Carbide Corporation

whose mailing address is

P.O. Box 186 Port Lavaca, Texas 77979

is authorized to treat and discharge wastes from UCC Seadrift Operations, a chemical facility that manufactures plastics (polyethylene and polypropylene), glycols, and oxide derivatives (SIC 2869, 2821, and 2813)

located at 7501 State Highway 185 North, near the City of Seadrift, Calhoun County, Texas 77983

via Outfalls 001, 002, 005, 006, and 012 directly to Victoria Barge Canal Tidal in Segment No. 1701 of the Lavaca-Guadalupe Coastal Basin; via Outfall 003 to a ditch, thence to West Coloma Creek, thence to Coloma Creek; via Outfalls 014 and 015 to West Coloma Creek, thence to Coloma Creek; via Outfall 016 to West Coloma Creek Lateral No. 17, thence to West Coloma Creek, thence to Coloma Creek, thence to Matagorda Bay/Powderhorn Lake in Segment No. 2451 of the Bays and Estauries; via Outfall 004 to an unnamed ditch, thence to San Antonio Bay/Hynes Bay/Guadalupe Bay/Mission Lake in Segment No. 2462 of the Bays and Estuaries

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 on **July 8**, **2026**.

ISSUED DATE:

For the Commission
EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - INTERIM PHASE

- Outfall Number 001
- 1. During the period beginning upon the date of permit issuance and lasting until completion of modifications for Outfall 002, the permittee is authorized to discharge process wastewater from Seadrift Operations, remediated ground water, domestic wastewater, utility wastewater ¹, hydrostatic test water, and stormwater ² subject to the following effluent limitations:

The daily average dry-weather flow ³ of effluent shall not exceed 5.80 million gallons per day (MGD).

	Discharge Limitations					Minimum Self-Monitoring Requirements	
Effluent Characteristics	Daily Average		Daily Maximum		Single Grab	Report Daily Average and Daily Maxir	
	lbs/day	mg/L	lbs/day	mg/L	mg/L	Measurement Frequency	Sample Type
					_	_	_
Flow (dry-weather) ³	5.80	MGD	Report	, MGD	N/A	Continuous	Record
Biochemical Oxygen							
Demand (5-day)	1187	34.8	3106	100	200	3/week	Composite
Total Suspended Solids	1966	Report	6375	280	560	3/week	Composite
Dissolved Oxygen (DO) 4, 5	Report, m	g/L (min)	N/A	N/A	N/A	1/day 6	Grab
Enterococci 7	3	5	104		104	1/week	Grab
Total Residual Chlorine	N/A	N/A	N/A	0.1 8	0.1	1/day 9	Grab
Total Organic Carbon	N/A	Report	N/A	Report	N/A	3/week	Composite
Acenaphthene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Acenaphthylene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Acrylonitrile	3.04	N/A	7.67	N/A	0.246	1/year	Composite
Anthracene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Benzene	1.17	N/A	4.31	N/A	0.138	1/year	Composite
Benzo(a)anthracene	0.041	N/A	0.087	N/A	0.005	1/year	Composite
3,4-Benzofluoranthene	0.73	N/A	1.93	N/A	0.062	1/year	Composite
Benzo(k)fluoranthene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Benzo(a)pyrene	0.0041	N/A	0.0087	N/A	0.005	1/year	Composite
Bis(2-ethylhexyl) phthalate	3.27	N/A	8.85	N/A	0.284	1/year	Composite

Page 2 of TPDES Permit No. WQ0000447000

¹ See Other Requirement No. 15.

² Stormwater includes stormwater associated with industrial activities and allowable non-stormwater wastestreams. See Other Requirement No. 16.

³ See Other Requirement No. 1.

⁴ Monitoring and reporting requirements for DO are applicable when the daily discharge is greater than 5.8 MGD. For self-reporting purposes, report as wet-weather discharge.

⁵ The monitoring and reporting requirements expire one week prior to the permit expiration date.

⁶ Samples must be collected 1/day as long as the daily discharge is greater than 5.8 MGD.

⁷ Bacteria measured as colony forming units (CFU) or most probable number (MPN) per 100 mL.

⁸ The daily maximum effluent limitation for Total Residual Chlorine (TRC) is applicable when the TRC samples at Outfall 002 is greater than 0.2 mg/L.

⁹ Samples must be collected 1/day when the TRC samples at Outfall 002 is greater than 0.2 mg/L.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS-INTERIM PHASE - continued

Outfall Number 001

	Discharge Limitations					Minimum Self-Monitoring Requirements	
Effluent Characteristics	Daily A	verage	Daily Ma	aximum	Single Grab	Report Daily Average and	Daily Maximum
	lbs/day	mg/L	lbs/day	mg/L	mg/L	Measurement Frequency	Sample Type
Carbon Tetrachloride	0.57	N/A	1.21	N/A	0.039	1/year	Composite
Chlorobenzene	0.48	N/A	0.89	N/A	0.029	1/year	Composite
Chloroethane	3.30	N/A	8.50	N/A	0.273	1/year	Composite
Chloroform	0.67	N/A	1.46	N/A	0.047	1/year	Composite
2-Chlorophenol	0.98	N/A	3.11	N/A	0.100	1/year	Composite
Chrysene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Di-n-butyl phthalate	0.86	N/A	1.81	N/A	0.058	1/year	Composite
1,2-Dichlorobenzene	2.44	N/A	5.17	N/A	0.166	1/year	Composite
1,3-Dichlorobenzene	0.98	N/A	1.40	N/A	0.045	1/year	Composite
1,4-Dichlorobenzene	0.48	N/A	0.89	N/A	0.029	1/year	Composite
1,1-Dichloroethane	0.70	N/A	1.87	N/A	0.060	1/year	Composite
1,2-Dichloroethane	2.16	N/A	6.69	N/A	0.215	1/year	Composite
1,1-Dichloroethylene	0.51	N/A	0.79	N/A	0.025	1/year	Composite
1,2-trans-Dichloroethylene	0.67	N/A	1.71	N/A	0.055	1/year	Composite
2,4-Dichlorophenol	1.24	N/A	3.55	N/A	0.114	1/year	Composite
1,2-Dichloropropane	4.85	N/A	7.29	N/A	0.234	1/year	Composite
1,3-Dichloropropylene	0.92	N/A	1.40	N/A	0.045	1/year	Composite
Diethyl phthalate	2.57	N/A	6.44	N/A	0.207	1/year	Composite
2,4-Dimethylphenol	0.57	N/A	1.14	N/A	0.037	1/year	Composite
Dimethyl phthalate	0.60	N/A	1.49	N/A	0.048	1/year	Composite
<u>4,6-Dinitro-o-Cresol</u>	2.47	N/A	8.78	N/A	0.282	1/year	Composite
2,4-Dinitrophenol	2.25	N/A	3.90	N/A	0.125	1/year	Composite
2,4-Dinitrotoluene	3.58	N/A	9.04	N/A	0.290	1/year	Composite
2,6-Dinitrotoluene	8.09	N/A	20.3	N/A	0.652	1/year	Composite
Ethylbenzene	1.01	N/A	3.42	N/A	0.110	1/year	Composite
Fluoranthene	0.79	N/A	2.16	N/A	0.069	1/year	Composite
Fluorene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Hexachlorobenzene	0.0011	N/A	0.0023	N/A	0.005	1/year	Composite
Hexachlorobutadiene	0.363	N/A	0.769	N/A	0.023	1/year	Composite

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS-INTERIM PHASE - continued

	Discharge Limitations					Minimum Self-Monitoring	g Requirements
Effluent Characteristics	Daily Average		Daily Ma	Daily Maximum		Report Daily Average and Daily Maximu	
	lbs/day	mg/L	lbs/day	mg/L	mg/L	Measurement Frequency	Sample Type
Hexachloroethane	0.67	N/A	1.71	N/A	0.055	1/year	Composite
Methyl Chloride	2.73	N/A	6.03	N/A	0.193	1/year	Composite
Methylene Chloride	1.27	N/A	2.82	N/A	0.091	1/year	Composite
Naphthalene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Nitrobenzene	0.86	N/A	2.16	N/A	0.069	1/year	Composite
2-Nitrophenol	1.30	N/A	2.19	N/A	0.070	1/year	Composite
4-Nitrophenol	2.28	N/A	3.93	N/A	0.126	1/year	Composite
Phenanthrene	0.33	N/A	0.69	N/A	0.030	1/year	Composite
Phenol	0.48	N/A	0.82	N/A	0.026	1/year	Composite
Pyrene	0.79	N/A	2.12	N/A	0.068	1/year	Composite
Tetrachloroethylene	0.70	N/A	1.78	N/A	0.057	1/year	Composite
Toluene	0.82	N/A	2.54	N/A	0.081	1/year	Composite
1,2,4-Trichlorobenzene	2.16	N/A	4.44	N/A	0.143	1/year	Composite
1,1,1-Trichloroethane	0.67	N/A	1.71	N/A	0.055	1/year	Composite
1,1,2-Trichloroethane	0.67	N/A	1.71	N/A	0.055	1/year	Composite
Trichloroethylene	0.67	N/A	1.71	N/A	0.055	1/year	Composite
Vinyl Chloride	3.30	N/A	8.50	N/A	0.273	1/year	Composite

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored continuously ¹.

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: At Outfall 001, after the final treatment pond and before discharging to the Victoria Barge Canal. Enterococci must be monitored downstream of Tank 1106 and all the sampling results from downstream of Tank 1106 shall be used in the calculations of the daily average (geometric mean for Enterococci) and daily maximum concentrations. Total Residual Chlorine must be sample after Outfall 001 and 002 is commingled and before discharging to the Victoria Barge Canal.

Page 2b of TPDES Permit No. WQ0000447000

¹ See Other Requirement No. 10.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS-FINAL PHASE

1. During the period beginning upon completion of modifications for Outfall 002 and initial discharge, and lasting until permit expiration, the permittee is authorized to discharge process wastewater from Seadrift Operations, remediated ground water, domestic wastewater, utility wastewater ¹, hydrostatic test water, and stormwater ² subject to the following effluent limitations:

The daily average dry-weather flow 3 of effluent shall not exceed 5.80 million gallons per day (MGD).

	Discharge Limitations					Minimum Self-Monitoring Requirements	
Effluent Characteristics	Daily Average		Daily Ma	aximum	Single Grab	Report Daily Average and Daily Maxi	
	lbs/day	mg/L	lbs/day	mg/L	mg/L	Measurement Frequency	Sample Type
Flow (dry-weather) 3	5.80	MGD	Report	, MGD	N/A	Continuous	Record
Biochemical Oxygen							
Demand (5-day)	1187	34.8	3106	100	200	3/week	Composite
Total Suspended Solids	1966	Report	6375	280	560	3/week	Composite
Dissolved Oxygen (DO) 4, 5	Report, m	g/L (min)	N/A	N/A	N/A	1/day 6	Grab
Enterococci 7	3	5	104		104	1/week	Grab
Total Residual Chlorine	N/A	N/A	N/A	$0.1^{\ 8}$	0.1	1/day 9	Grab
Total Organic Carbon	N/A	Report	N/A	Report	N/A	3/week	Composite
Acenaphthene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Acenaphthylene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Acrylonitrile	3.04	N/A	7.67	N/A	0.246	1/year	Composite
Anthracene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Benzene	1.17	N/A	4.31	N/A	0.138	1/year	Composite
Benzo(a)anthracene	0.033	N/A	0.0697	N/A	0.005	1/year	Composite
3,4-Benzofluoranthene	0.73	N/A	1.93	N/A	0.062	1/year	Composite
Benzo(k)fluoranthene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Benzo(a)pyrene	0.0033	N/A	0.00697	N/A	0.005	1/year	Composite
Bis(2-ethylhexyl) phthalate	3.27	N/A	8.85	N/A	0.284	1/year	Composite

Page 2c of TPDES Permit No. WQ0000447000

Dow Hydrocarbons and Resources LLC and Union Carbide Corporation

¹ See Other Requirement No. 15.

² Stormwater includes stormwater associated with industrial activities and allowable non-stormwater wastestreams. See Other Requirement No. 16.

³ See Other Requirement No. 1.

⁴ Monitoring and reporting requirements for DO are applicable when the daily discharge is greater than 5.8 MGD. For self-reporting purposes, report as wet-weather discharge.

9 Samples must be collected 1/day when the TRC at Outfall 002 is greater than 0.2 mg/L.

⁵ The monitoring and reporting requirements expire one week prior to the permit expiration date.

⁶ Samples must be collected 1/day as long as the daily discharge is greater than 5.8 MGD.

⁷ Bacteria measured as colony forming units (CFU) or most probable number (MPN) per 100 mL.

⁸ The daily maximum effluent limitation for Total Residual Chlorine (TRC) is applicable when the TRC samples at Outfall 002 is greater than 0.2 mg/L.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS-FINAL PHASE-continued

Outfall Number 001

		Dise	charge Limita	ations		Minimum Self-Monitoring Requirements	
Effluent Characteristics	Daily Av	verage	Daily Ma	aximum	Single Grab	Report Daily Average and	Daily Maximum
	lbs/day	mg/L	lbs/day	mg/L	mg/L	Measurement Frequency	Sample Type
Carbon Tetrachloride	0.57	N/A	1.21	N/A	0.039	1/year	Composite
Chlorobenzene	0.48	N/A	0.89	N/A	0.029	1/year	Composite
Chloroethane	3.30	N/A	8.50	N/A	0.273	1/year	Composite
Chloroform	0.67	N/A	1.46	N/A	0.047	1/year	Composite
2-Chlorophenol	0.98	N/A	3.11	N/A	0.100	1/year	Composite
Chrysene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Di-n-butyl phthalate	0.86	N/A	1.81	N/A	0.058	1/year	Composite
1,2-Dichlorobenzene	2.44	N/A	5.17	N/A	0.166	1/year	Composite
1,3-Dichlorobenzene	0.98	N/A	1.40	N/A	0.045	1/year	Composite
1,4-Dichlorobenzene	0.48	N/A	0.89	N/A	0.029	1/year	Composite
1,1-Dichloroethane	0.70	N/A	1.87	N/A	0.060	1/year	Composite
1,2-Dichloroethane	2.16	N/A	6.69	N/A	0.215	1/year	Composite
1,1-Dichloroethylene	0.51	N/A	0.79	N/A	0.025	1/year	Composite
1,2-trans-Dichloroethylene	0.67	N/A	1.71	N/A	0.055	1/year	Composite
2,4-Dichlorophenol	1.24	N/A	3.55	N/A	0.114	1/year	Composite
1,2-Dichloropropane	4.85	N/A	7.29	N/A	0.234	1/year	Composite
1,3-Dichloropropylene	0.92	N/A	1.40	N/A	0.045	1/year	Composite
Diethyl phthalate	2.57	N/A	6.44	N/A	0.207	1/year	Composite
2,4-Dimethylphenol	0.57	N/A	1.14	N/A	0.037	1/year	Composite
Dimethyl phthalate	0.60	N/A	1.49	N/A	0.048	1/year	Composite
4,6-Dinitro-o-Cresol	2.47	N/A	8.78	N/A	0.282	1/year	Composite
2,4-Dinitrophenol	2.25	N/A	3.90	N/A	0.125	1/year	Composite
2,4-Dinitrotoluene	3.58	N/A	9.04	N/A	0.290	1/year	Composite
2,6-Dinitrotoluene	8.09	N/A	20.3	N/A	0.652	1/year	Composite
Ethylbenzene	1.01	N/A	3.42	N/A	0.110	1/year	Composite
Fluoranthene	0.79	N/A	2.16	N/A	0.069	1/year	Composite
Fluorene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Hexachlorobenzene	0.000895	N/A	0.0019	N/A	0.005	1/year	Composite
Hexachlorobutadiene	0.291	N/A	0.615	N/A	0.010	1/year	Composite

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS-FINAL PHASE-continued

		Dise	charge Limita	Minimum Self-Monitoring	g Requirements		
Effluent Characteristics	Daily Average		Daily Ma	Daily Maximum		Report Daily Average and Daily Maximu	
	lbs/day	mg/L	lbs/day	mg/L	mg/L	Measurement Frequency	Sample Type
Hexachloroethane	0.67	N/A	1.71	N/A	0.055	1/year	Composite
Methyl Chloride	2.73	N/A	6.03	N/A	0.193	1/year	Composite
Methylene Chloride	1.27	N/A	2.82	N/A	0.091	1/year	Composite
Naphthalene	0.70	N/A	1.87	N/A	0.060	1/year	Composite
Nitrobenzene	0.86	N/A	2.16	N/A	0.069	1/year	Composite
2-Nitrophenol	1.30	N/A	2.19	N/A	0.070	1/year	Composite
4-Nitrophenol	2.28	N/A	3.93	N/A	0.126	1/year	Composite
Phenanthrene	0.33	N/A	0.69	N/A	0.030	1/year	Composite
Phenol	0.48	N/A	0.82	N/A	0.026	1/year	Composite
Pyrene	0.79	N/A	2.12	N/A	0.068	1/year	Composite
Tetrachloroethylene	0.70	N/A	1.78	N/A	0.057	1/year	Composite
Toluene	0.82	N/A	2.54	N/A	0.081	1/year	Composite
1,2,4-Trichlorobenzene	2.16	N/A	4.44	N/A	0.143	1/year	Composite
1,1,1-Trichloroethane	0.67	N/A	1.71	N/A	0.055	1/year	Composite
1,1,2-Trichloroethane	0.67	N/A	1.71	N/A	0.055	1/year	Composite
Trichloroethylene	0.67	N/A	1.71	N/A	0.055	1/year	Composite
Vinyl Chloride	3.30	N/A	8.50	N/A	0.273	1/year	Composite

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored continuously ¹.

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: At Outfall 001, after the final treatment pond and before discharging to the Victoria Barge Canal. Enterococci must be monitored downstream of Tank 1106 and all the sampling results from downstream of Tank 1106 shall be used in the calculations of the daily average (geometric mean for Enterococci) and daily maximum concentrations. Total Residual Chlorine must be sample after Outfall 001 and 002 is commingled and before discharging to the Victoria Barge Canal.

Page 2e of TPDES Permit No. WQ0000447000

¹ See Other Requirement No. 10.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS-INTERIM PHASE

1. During the period beginning upon the date of permit issuance and lasting through the completion of modifications and initial discharge of Outfall 002, the permittee is authorized to discharge cooling water blowdown, water treatment waste ¹, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, stormwater from Seadrift Operations ², hydrostatic test water, firewater, and *de minimis* quantities of process wastewater subject to the following effluent limitations:

The daily average dry-weather flow of effluent shall not exceed 12.0 million gallons per day (MGD). The daily maximum dry-weather flow shall not exceed 17.0 MGD

	Disc	charge Limitations	Minimum Self-Monitoring Requirements		
Effluent Characteristics	Daily Average	Daily Maximum	Single Grab	Report Daily Average and	Daily Maximum
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow (dry-weather)	12 MGD	17 MGD	N/A	Continuous	Record
Temperature ³	N/A	100 °F	100 °F	Continuous 4	Record
Total Organic Carbon	N/A	50	75	1/week	Composite
Total Copper	0.0365	0.0773	0.159	1/week	Composite
Total Residual Chlorine	N/A	2.0	2.0	1/day 5	Grab
Acenaphthene	0.022	0.059	0.059	1/year 6	Grab
Acenaphthylene	0.022	0.059	0.059	1/year 6	Grab
Acrylonitrile	0.096	0.242	0.242	1/year 6	Grab
Anthracene	0.022	0.059	0.059	1/year 6	Grab
Benzene	0.037	0.136	0.136	1/year 6	Grab
Benzo(a)anthracene	0.022	0.059	0.059	1/year 6	Grab
3,4-Benzofluoranthene	0.023	0.061	0.061	1/year 6	Grab
Benzo(k)fluoranthene	0.022	0.059	0.059	1/year 6	Grab
Benzo(a)pyrene	0.023	0.061	0.061	1/year 6	Grab
Bis(2-ethylhexyl) phthalate	0.103	0.279	0.279	1/year 6	Grab
Carbon Tetrachloride	0.018	0.038	0.038	1/year 6	Grab

Page 2f of TPDES Permit No. WQ0000447000

¹ See Other Requirement No. 15.

² Stormwater includes stormwater associated with industrial activities and allowable non-stormwater wastestreams. See Other Requirement No. 16.

³ See Other Requirement No. 14.

⁴ See Other Requirement No. 6.

⁵ Monitor during periods of chlorination, such as the addition of sodium hypochlorite.

⁶ When discharging *de minimis* quantities of process wastewater.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS-INTERIM PHASE - continued

Outfall Number 002

	Dis	charge Limitations	Minimum Self-Monitoring Requirements		
Effluent Characteristics	Daily Average	Daily Maximum	Single Grab	Report Daily Average and	Daily Maximum
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Chlorobenzene	0.015	0.028	0.028	1/year 6	Grab
Chloroethane	0.104	0.268	0.268	1/year ⁶	Grab
Chloroform	0.021	0.046	0.046	1/year 6	Grab
2-Chlorophenol	0.031	0.098	0.098	1/year ⁶	Grab
Chrysene	0.022	0.059	0.059	1/year ⁶	Grab
Di-n-butyl phthalate	0.027	0.057	0.057	1/year ⁶	Grab
1,2-Dichlorobenzene	0.077	0.163	0.163	1/year ⁶	Grab
1,3-Dichlorobenzene	0.031	0.044	0.044	1/year ⁶	Grab
1,4-Dichlorobenzene	0.015	0.028	0.028	1/year ⁶	Grab
1,1-Dichloroethane	0.022	0.059	0.059	1/year 6	Grab
1,2-Dichloroethane	0.068	0.211	0.211	1/year ⁶	Grab
1,1-Dichloroethylene	0.016	0.025	0.025	1/year ⁶	Grab
1,2-trans Dichloroethylene	0.021	0.054	0.054	1/year 6	Grab
2,4-Dichlorophenol	0.039	0.112	0.112	1/year ⁶	Grab
1,2-Dichloropropane	0.153	0.230	0.230	1/year ⁶	Grab
1,3-Dichloropropylene	0.029	0.044	0.044	1/year 6	Grab
Diethyl phthalate	0.081	0.203	0.203	1/year 6	Grab
2,4-Dimethylphenol	0.018	0.036	0.036	1/year ⁶	Grab
Dimethyl phthalate	0.019	0.047	0.047	1/year ⁶	Grab
4,6-Dinitro-o-cresol	0.078	0.277	0.277	1/year ⁶	Grab
2,4-Dinitrophenol	0.071	0.123	0.123	1/year ⁶	Grab
2,4-Dinitrotoluene	0.113	0.285	0.285	1/year ⁶	Grab
2,6-Dinitrotoluene	0.255	0.641	0.641	1/year 6	Grab
Ethylbenzene	0.032	0.108	0.108	1/year ⁶	Grab
Fluoranthene	0.025	0.068	0.068	1/year ⁶	Grab
Fluorene	0.022	0.059	0.059	1/year ⁶	Grab
Hexachlorobenzene	0.015	0.028	0.028	1/year 6	Grab
Hexachlorobutadiene	0.020	0.049	0.049	1/year 6	Grab
Hexachloroethane	0.021	0.054	0.054	1/year ⁶	Grab
Methyl Chloride	0.086	0.190	0.190	1/year ⁶	Grab
Methylene Chloride	0.040	0.089	0.089	1/year 6	Grab
Naphthalene	0.022	0.059	0.059	1/year 6	Grab

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - INTERIM PHASE - continued

	Disc	charge Limitations	Minimum Self-Monitorin	g Requirements	
Effluent Characteristics	Daily Average	Daily Maximum	Single Grab	Report Daily Average and	Daily Maximum
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Nitrobenzene	0.027	0.068	0.068	1/year 6	Grab
2-Nitrophenol	0.041	0.069	0.069	1/year 6	Grab
4-Nitrophenol	0.072	0.124	0.124	1/year 6	Grab
Phenanthrene	0.022	0.059	0.059	1/year 6	Grab
Phenol	0.015	0.026	0.026	1/year 6	Grab
Pyrene	0.015	0.067	0.067	1/year 6	Grab
Tetrachloroethylene	0.022	0.056	0.056	1/year 6	Grab
Toluene	0.026	0.080	0.080	1/year 6	Grab
1,2,4-Trichlorobenzene	0.068	0.140	0.140	1/year 6	Grab
1,1,1-Trichloroethane	0.021	0.054	0.054	1/year 6	Grab
1,1,2-Trichloroethane	0.021	0.054	0.054	1/year 6	Grab
Trichloroethylene	0.021	0.054	0.054	1/year 6	Grab
Vinyl Chloride	0.104	0.268	0.268	1/year 6	Grab

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored continuously ¹.

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

4. Effluent monitoring samples shall be taken at the following location: At Outfall 002, at the clean water discharge monitoring station.

Page 2h of TPDES Permit No. WQ0000447000

Dow Hydrocarbons and Resources LLC and Union Carbide Corporation

¹ See Other Requirement No. 10.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS-FINAL PHASE

1. During the period beginning upon the completion of modifications and initial discharge via Outfall 002 and lasting until date of permit expiration, the permittee is authorized to discharge cooling water blowdown, water treatment waste ¹, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, stormwater from Seadrift Operations ², hydrostatic test water, firewater, and *de minimis* quantities of process wastewater subject to the following effluent limitations:

The daily average flow of effluent shall not exceed 17.0 million gallons per day (MGD). The daily maximum flow shall not exceed 43 MGD.

	Disc	harge Limitations	Minimum Self-Monitoring Requirements		
Effluent Characteristics	Daily Average	Daily Maximum	Single Grab	Report Daily Average and	Daily Maximum
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Flow	17 MGD	42 MGD	N/A	Continuous	Record
Temperature ³	N/A	100 °F	100 °F	Continuous 4	Record
Total Organic Carbon	N/A	50	75	1/week	Composite
Total Copper	0.0325	0.0689	0.098	1/week	Composite
Total Residual Chlorine	N/A	2.0	2.0	1/day 5	Grab
Acenaphthene	0.022	0.059	0.059	1/year ⁶	Grab
Acenaphthylene	0.022	0.059	0.059	1/year ⁶	Grab
Acrylonitrile	0.096	0.242	0.242	1/year ⁶	Grab
Anthracene	0.022	0.059	0.059	1/year ⁶	Grab
Benzene	0.037	0.136	0.136	1/year ⁶	Grab
Benzo(a)anthracene	0.022	0.059	0.059	1/year ⁶	Grab
3,4-Benzofluoranthene	0.023	0.061	0.061	1/year ⁶	Grab
Benzo(k)fluoranthene	0.022	0.059	0.059	1/year ⁶	Grab
Benzo(a)pyrene	0.023	0.061	0.061	1/year ⁶	Grab
Bis(2-ethylhexyl) phthalate	0.103	0.279	0.279	1/year 6	Grab
Carbon Tetrachloride	0.018	0.038	0.038	1/year ⁶	Grab

Page 2i of TPDES Permit No. WQ0000447000

¹ See Other Requirement No. 15.

² Stormwater includes stormwater associated with industrial activities and allowable non-stormwater wastestreams. See Other Requirement No. 16.

³ See Other Requirement No. 14.

⁴ See Other Requirement No. 6.

⁵ Monitor during periods of chlorination, such as the addition of sodium hypochlorite.

⁶ When discharging *de minimis* quantities of process wastewater.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS-FINAL PHASE - continued

Outfall Number 002

	Disc	charge Limitations	Minimum Self-Monitoring Requirements		
Effluent Characteristics	Daily Average	Daily Maximum	Single Grab	Report Daily Average and	Daily Maximum
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Chlorobenzene	0.015	0.028	0.028	1/year 6	Grab
Chloroethane	0.104	0.268	0.268	1/year ⁶	Grab
Chloroform	0.021	0.046	0.046	1/year 6	Grab
2-Chlorophenol	0.031	0.098	0.098	1/year 6	Grab
Chrysene	0.022	0.059	0.059	1/year 6	Grab
Di-n-butyl phthalate	0.027	0.057	0.057	1/year ⁶	Grab
1,2-Dichlorobenzene	0.077	0.163	0.163	1/year 6	Grab
1,3-Dichlorobenzene	0.031	0.044	0.044	1/year ⁶	Grab
1,4-Dichlorobenzene	0.015	0.028	0.028	1/year ⁶	Grab
1,1-Dichloroethane	0.022	0.059	0.059	1/year ⁶	Grab
1,2-Dichloroethane	0.068	0.211	0.211	1/year 6	Grab
1,1-Dichloroethylene	0.016	0.025	0.025	1/year ⁶	Grab
<u>1,2-trans Dichloroethylene</u>	0.021	0.054	0.054	1/year 6	Grab
2,4-Dichlorophenol	0.039	0.112	0.112	1/year ⁶	Grab
1,2-Dichloropropane	0.153	0.230	0.230	1/year ⁶	Grab
1,3-Dichloropropylene	0.029	0.044	0.044	1/year 6	Grab
Diethyl phthalate	0.081	0.203	0.203	1/year ⁶	Grab
2,4-Dimethylphenol	0.018	0.036	0.036	1/year ⁶	Grab
Dimethyl phthalate	0.019	0.047	0.047	1/year ⁶	Grab
4,6-Dinitro-o-cresol	0.078	0.277	0.277	1/year ⁶	Grab
2,4-Dinitrophenol	0.071	0.123	0.123	1/year ⁶	Grab
2,4-Dinitrotoluene	0.113	0.285	0.285	1/year 6	Grab
2,6-Dinitrotoluene	0.255	0.641	0.641	1/year ⁶	Grab
Ethylbenzene	0.032	0.108	0.108	1/year ⁶	Grab
Fluoranthene	0.025	0.068	0.068	1/year 6	Grab
Fluorene	0.022	0.059	0.059	1/year ⁶	Grab
Hexachlorobenzene	0.015	0.028	0.028	1/year ⁶	Grab
Hexachlorobutadiene	0.020	0.049	0.049	1/year 6	Grab
Hexachloroethane	0.021	0.054	0.054	1/year ⁶	Grab
Methyl Chloride	0.086	0.190	0.190	1/year 6	Grab
Methylene Chloride	0.040	0.089	0.089	1/year 6	Grab
Naphthalene	0.022	0.059	0.059	1/year ⁶	Grab

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS -FINAL PHASE - continued

	Disc	charge Limitations	Minimum Self-Monitorin	g Requirements	
Effluent Characteristics	Daily Average	Daily Maximum	Single Grab	Report Daily Average and	Daily Maximum
	mg/L	mg/L	mg/L	Measurement Frequency	Sample Type
Nitrobenzene	0.027	0.068	0.068	1/year 6	Grab
2-Nitrophenol	0.041	0.069	0.069	1/year ⁶	Grab
4-Nitrophenol	0.072	0.124	0.124	1/year ⁶	Grab
Phenanthrene	0.022	0.059	0.059	1/year 6	Grab
Phenol	0.015	0.026	0.026	1/year ⁶	Grab
Pyrene	0.015	0.067	0.067	1/year ⁶	Grab
Tetrachloroethylene	0.022	0.056	0.056	1/year 6	Grab
Toluene	0.026	0.080	0.080	1/year ⁶	Grab
1,2,4-Trichlorobenzene	0.068	0.140	0.140	1/year ⁶	Grab
1,1,1-Trichloroethane	0.021	0.054	0.054	1/year ⁶	Grab
1,1,2-Trichloroethane	0.021	0.054	0.054	1/year ⁶	Grab
Trichloroethylene	0.021	0.054	0.054	1/year ⁶	Grab
Vinyl Chloride	0.104	0.268	0.268	1/year 6	Grab

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored continuously ¹.

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

4. Effluent monitoring samples shall be taken at the following location: At Outfall 002, at the box culvert downstream of the Stormwater Surge Basin.

Page 2k of TPDES Permit No. WQ0000447000

Dow Hydrocarbons and Resources LLC and Union Carbide Corporation

¹ See Other Requirement No. 10.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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

Volume: Intermittent and flow-variable.

	Discharge Limitations			Minimum Self-Monitorin	g Requirements
Effluent Characteristics	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/day 2	Estimate
Total Organic Carbon	N/A	75	75	1/6 months ²	Grab
Oil and Grease	N/A	15	15	1/6 months ²	Grab

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/6 months 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 locations:
 - Outfall 003: At the ditch to West Coloma Creek in the northeast section of the company property
 - Outfalloo4: Following the detention pond where stormwater is discharged from the South Rail Storage Y and to the ditch on the east side of Highway 185
 - Outfall 005: Where stormwater is discharged to the west side of the Union Carbide Barge Dock area and east of the secondary treatment pond.
 - Outfall 006: Where stormwater is discharged on the west side of Highway 185 near the Seadrift Pipeline Corporation building.
 - Outfall 012: Where stormwater is discharged from the northwest section of the Union Carbide property and the west landfill area to the stormwater ditch on the west side of Highway 185
 - Outfall 014: Where stormwater is discharged from the North Rail Storage Yard on the west side of West Coloma Creek
 - Outfall 015: Where stormwater is discharged from the North Rail Storage Yard on the east side of West Coloma Creek
 - Outfall 016: Where stormwater is discharged from the North Rail Storage Yard on the northeast section of Union Carbide property, south of Jessie Riggby on the east side of West Coloma Creek Lateral #17

Page 2L of TPDES Permit No. WQ0000447000

¹ Stormwater - includes stormwater associated with industrial activities and allowable non-stormwater wastestreams. See Other Requirement No. 16.

² When discharging, samples must be taken within one hour after discharge begins.

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 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.
 - In addition to the above, any effluent violation that deviates from the permitted effluent c. 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:

That any activity has occurred or will occur that would result in the discharge, on a routine or a. 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 μ g/L);

- ii. two hundred micrograms per liter (200 μ g/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 μ g/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 μ g/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 TCEO.
- 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;
 - 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; b. 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
 - When the permittee becomes aware that it failed to submit any relevant facts in a permit a. 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.
 - The permittee shall furnish to the Executive Director, upon request and within a reasonable c. 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 REOUIREMENTS

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, 1. 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.

- 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 f. 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. Dry-WEATHER CONDITONS

The permittee shall continuously record flow via a flow meter at Outfall 001. Compliance with the flow effluent limitations established at Outfall 001 on page 2 of this permit will be based upon days when there is dry-weather flow only. For the purpose of this permit, dry weather flow only occurs on days when the total flow at Outfall 001 consists of any of the following sources: process wastewater, remediated groundwater, domestic wastewater, utility wastewater (cooling tower blowdown, water treatment wastes, boiler blowdown, wash/rinse water, and condensate), and hydrostatic test water, and stormwater runoff resulting from rainfall less than 0.1 inch in a 24-hour period. The permittee shall install a permanent rain gauge at the plant site and keep daily records of rainfall and the resulting flows at Outfall 001. Flow at Outfall 001 during days when the rainfall exceeds 0.1 inch during any 24-hour period must not be used in calculating the daily average or daily maximum flows to be submitted on the monthly effluent report forms.

2. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 14 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 14 and Compliance Monitoring Team (MC 224):

Pollutant	MAL^{1} (mg/L)				
Copper (Total)	0.002				
40 CFR PART 414, SUBPART I					
(end-of-pipe biological treatment)					
Pollutant	MAL (mg/L)				
Acenaphthene	0.010				
Acenaphthylene	0.010				
Acrylonitrile	0.050				
Anthracene	0.010				
Benzene	0.010				
Benzo(<i>a</i>)anthracene	0.005				
3,4-Benzofluoranthene	0.010				
(Benzo(b)fluoranthene)	0.010				
Benzo(k)fluoranthene	0.005				
Benzo(<i>a</i>)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	0.010				
1,3-Dichlorobenzene	0.010				
1,4-Dichlorobenzene	0.010				
1,1-Dichloroethane	0.010				
1,2-Dichloroethane	0.010				
1,1-Dichloroethylene	0.010				

¹ Minimum analytical level.

(end-of-pipe biological treatment)				
Pollutant	MAL (mg/L)			
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			
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			
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			

40 CFR PART 414, SUBPART I (end-of-pipe biological treatment)

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

Pollutant	MAL (mg/L)
Oil and Grease (O&G)	1.5 to 5.0
[EPA Method 1664 HEM,	
MQL of 5.0 mg/L &	
MDL of 1.5 mg/L]	

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

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

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

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

3. COOLING WATER INTAKE STRUCTURE REQUIREMENTS

The permittee shall provide written notification to the TCEQ Industrial Permits Team (MC 148) and Region 14 Office of any change 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.

4. The Executive Director 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 determined that the action is consistent with the applicable CMP goals and policies.

5. <u>POND REQUIREMENTS</u>

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

- A. N/A.
- 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 <u>process wastewater</u> as defined in 40 CFR §122.2. The executive director will review ponds that will contain only <u>non-process wastewater</u> 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 Compliance Monitoring Team (MC-224). 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 <u>only contains domestic wastewater</u> 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) <u>Soil liner</u>: 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 (\leq 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) <u>Synthetic membrane</u>: 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) <u>Alternate liner</u>: The permittee shall submit plans signed and sealed by a Texas-licensed professional engineer for any other equivalently protective pond lining method to the Industrial Permits Team (MC-148) and copy the Compliance Monitoring Team (MC-224).
- 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), Compliance Monitoring Team (MC-224) 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 Texaslicensed professional engineer or Texas-licensed professional geoscientist within 30 days. The permittee is not required to drain an operating pond or to inspect below the waterline during these routine inspections.
 - a. A Texas-licensed professional engineer or Texas-licensed professional geoscientist must evaluate damage to a pond liner, including evidence of an unauthorized discharge without visible damage.
 - b. Pond liner damage must be repaired at the recommendation of a Texas-licensed professional engineer or Texas-licensed professional geoscientist. If the damage is significant or could result in an unauthorized discharge, then the repair must be documented and certified by a Texas-licensed professional engineer. Within 60 days after a repair is completed, the liner certification must be provided to the TCEQ Water Quality Assessment Team (MC-150), Compliance Monitoring Section (MC-224), 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.
- 6. For continuous temperature measurements taken in accordance with pages 2f and 2i of this permit, the reporting requirements on page 6 of this permit in MONITROING AND REPORTING REQUIREMENTS, Item 7, may be omitted if the continuously recorded temperature does not exceed the Daily Maximum temperature for more than 30 minutes for any single exceedance and not more than a total of 7 hours and 26 minutes in any calendar month.
- 7. The chronic aquatic life mixing zone for Outfalls 001 and 002 is defined as a volume of water within a radius of 199.5 feet extending over the receiving water from the point where the discharge reaches the Victoria Barge Canal Tidal. Chronic toxic criteria apply at the edge of the chronic aquatic life mixing zone.
- 8. Copper sulfate may not be added to the final stabilization pond.
- 9. For the composite sampling of volatile organics using EPA Method 601, 602, 603, 624, or 1624 (or any other 40 CFR Part 136 method approved after the effective date of this permit), the permittee shall manually collect four aliquots (grab samples) in clean zero-head-space containers at regular intervals during the actual hours of discharge during the 24-hour sampling period using sample collection, preservation, and handling techniques specified in the appropriate test method. These aliquots must be combined in the laboratory immediately before analysis to represent the composite sample of the discharge. One of the following alternative methods must be used to composite these aliquots.
 - A. Each aliquot is poured into a syringe. The plunger is added, and the volume is adjusted to 1-1/4 mL. Each aliquot (1-1/4 mL) is injected into the purging chamber (total 5 mL) of the purge and trap system. After four injections (total of 5 mL), the chamber is purged. Alternatively, equal volumes (1¹/₄ mL) of the individual grab samples are added to the purge device to a total volume of 5 mL, and the sample is then analyzed. Only one analysis or run is required since the aliquots are combined prior to analysis.
 - B. Chill the four aliquots to ≤6°C. These aliquots must be of equal volume. Carefully pour the contents of each of the 4 aliquots into a 250-500 mL flask which is chilled in a wet ice bath. Stir the mixture gently with a clean glass rod while in the wet ice bath. Carefully fill two or more clean 40-mL zero-head-space vials from the flask and dispose of the remainder of the mixture. Analyze one of the aliquots to determine the concentrations of the composite sample. The remaining aliquot(s) are replicate composite samples that can be analyzed if desired or necessary.
 - C. Alternative sample compositing methods may be used following written approval by the TCEQ. The individual samples resulting from the application of these compositing methods shall be analyzed following the procedures specified for the selected test method. The resulting analysis shall be reported as the daily composite concentration. As an alternative to the above compositing methods, the permittee may manually collect four aliquots (grab samples) in clean zero head-spaced containers at regular intervals during the actual hours of discharge during the 24-hour sampling period using sample collection, preservation, and handling techniques specified in the appropriate test method. A separate analysis must be conducted for each discrete aliquot or grab sample following approved test procedures. The determination of daily composite concentration shall be the arithmetic average (weighted by flow) of all grab samples collected during the 24-hour sampling period.
- 10. The permittee shall maintain the pH within the range specified on pages 2b, 2e, 2h, and 2k 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 pages 2b, 2e, 2h, and 2k. 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.
- 11. The permittee submitted a study entitled "Total Recoverable and Dissolved Copper Water-Effect Ratio, Dow Chemical Company, Seadrift, Texas" dated February 2006, to the TCEQ's Water Quality Assessment Team analyzing the water-effect ratio (WER) for discharges of copper from the Seadrift Plant via Outfall 002 into Victoria Barge Canal Tidal in Segment No. 1701 of the Lavaca-Guadalupe Coastal Basin, for review. The United States Environmental Protection Agency (EPA) and the TCEQ's Water Quality Assessment Team have reviewed the study and agree with the calculated and proposed final WER value of 1.806 (approved by EPA letter dated August 31, 2006) to be applied to the saltwater acute and chronic aquatic life criteria when calculating copper limits at Outfall 001 and 002.
- 12. Monitoring results must be provided at the intervals specified in this permit. For pollutants which are monitored annually, effluent reports must be submitted in September of each year. For pollutants which are monitored twice per year, the first effluent report must be submitted six months after the date of permit issuance and subsequent reports every six months thereafter. For pollutants which are monitored four times per year, the first effluent report must be submitted three months after the date of permit issuance and subsequent reports every three months thereafter.
- 13. 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 wastes that are similar in character, classification, and origin to wastewaters authorized and generated on-site. 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.

14. THERMAL PLUME STUDY FOR OUTFALL 002

The permittee submitted a thermal plume characterization study to the TCEQ for approval and implementation in accordance with the agreement reached by the TCEQ and the EPA in their letters dated April 29, 2014 and May 12, 2014, respectively. The permittee is hereby placed on notice that the executive director of the TCEQ will be initiating changes to evaluation procedures and/or rulemaking that may affect thermal requirements for this facility.

15. The term *utility wastewater* includes, but is not limited to: cooling tower blowdown, boiler blowdown, wash/rinse water, water treatment wastes (ion exchange water treatment systems wastes, demineralizer backwash, reverse osmosis waste, and water treatment systems filter backwash), firewater (which has not come into direct contact with raw material, intermediate product, finished product, by-product, or waste product and is not the result of a fire), steam condensate, and air conditioner condensate. Air conditioning condensate is the water condensed from water vapor in the air, which is in contact with air conditioning equipment.

- 16. Stormwater includes any non-stormwater waste streams that qualify for coverage under the *Multi-Sector General Permit for Industrial Stormwater* (TXR050000, Part II, Section A, Item 6) as follows:
 - A. discharges from emergency firefighting activities (including fire prevention action taken to control other dangerous highheat conditions such as smoldering and emergency cooling of equipment) and 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);
 - B. potable water sources (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life);
 - C. lawn watering and similar irrigation drainage, provided that all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
 - D. water from the routine external washing of buildings, conducted without the use of detergents or other chemicals;
 - E. 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);
 - F. uncontaminated air conditioner condensate, compressor condensate, and steam condensate, and condensate from the outside storage of refrigerated gases or liquids;
 - G. water from foundation or footing drains where flows are not contaminated with pollutants (e.g., process materials, solvents, and other pollutants);
 - H. uncontaminated water used for dust suppression;
 - I. springs and other uncontaminated groundwater; and
 - J. incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but excluding intentional discharges from cooling tower (e.g., "piped" cooling tower blowdown or drains).
- 17. This permit authorizes the re-use of treated effluent from Outfalls 001 and 002. Treated effluent from Outfalls 001 and 002 may be re-used as make-up water in the cooling water system and throughout the plant.
- 18. The permittee is hereby notified that this permit may be reviewed by the Texas Commission on Environmental Quality after the development of any new requirements concerning plastics in order to determine if the limitations and conditions contained herein are consistent with any new requirements. As a result of this review, the permit may be amended, pursuant to 30 TAC Section 305.62, to include additional requirements as necessary to protect human health and the environment.

The monitoring location to demonstrate compliance with any new requirements concerning visible plastic pellets for Outfalls 001, 002, 006, and 012 will be at the discharge structure where Outfalls 001 and 002 commingle (combined outfall) prior to discharge to the Victoria Barge Canal and at the discharge structures for Outfalls 003, 004, 005, and 014, 015, and 016.

19. The permittee shall monitor continuously for flow and pH at Outfall 001 in accordance with pages 2b and 2e and for flow, temperature, and pH at Outfall 002 in accordance with pages 2f, 2h, 2i and 2k when the continuous monitoring devices are in operation. When pH is monitored continuously, the exemption in Other Requirement No. 10 applies. If a continuous monitoring device for flow, pH or temperature is down for planned maintenance and/or repair, the permittee shall provide written

notification 24-hours prior to the alternate monitoring to the TCEQ Region 14 Office and provide for a monitoring frequency of at least once a day until the continuous monitoring device is back in operation. In the event of an unplanned outage (e.g., power outage) of any continuous monitoring device, the notification shall be made within 24-hours of becoming aware of the outage. The permittee must notify the TCEQ Region 14 Office in writing within 24-hours when the continuous meters are back in normal operations.

- 20. Reporting requirements according to 30 TAC §§ 319.1-319.12 and any additional effluent reporting requirements contained in the permit for Outfalls 001 and 002 for the Final Phase are suspended from the effective date of the permit until the completion of re-location or initial discharge via Outfall 002 (Final Phase), whichever occurs first, from the facility described by this permit. The permittee shall provide written notice to the TCEQ Region 14 Office, Applications Review and Processing Team (MC 148) of the Water Quality Division, and Compliance Monitoring Team (MC 224) at least forty-five days prior to the completion of the Outfall 002 re-location or anticipated discharge from the Outfall 002 (Final Phase), whichever occurs first, on Notification of Completion Form 20007.
- 21. The process sewer clarifiers are only used on an as-needed basis as determined by operations personal based on variable wastewater conditions. The continuous use of this treatment unit is not a requirement of this permit and suspension of its use is not considered to be a by-pass of treatment.

CHRONIC BIOMONITORING REQUIREMENTS: MARINE

The provisions of this section apply to combined effluent of Outfalls 001 and 002 for whole effluent toxicity (WET) testing.

- 1. <u>Scope, Frequency and Methodology</u>
 - 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 (*Americamysis bahia* or *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 4%, 5%, 7%, 9%, and 12% effluent. The critical dilution, defined as 9% 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

Any frequency reductions granted after July 8, 2021, and in effect at the time of permit issuance, are continued upon permit issuance.

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.
 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. <u>Required Toxicity Testing Conditions</u>

- 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 to the point of discharge as possible 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 Part 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:
 - a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of Part 2.a;
 - b) the test indicating receiving water toxicity was carried out to completion (i.e., 7 days); and
 - c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3.
 - 3) The synthetic dilution water shall consist of standard, 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 or Outfall 002 cease 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. <u>Reporting</u>

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 TLP6J, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."
 - 8) For the inland silverside, Parameter TOP6J, report the NOEC for survival.
 - 9) For the inland silverside, Parameter TXP6J, report the LOEC for survival.
 - 10) For the inland silverside, Parameter TWP6J, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."
 - 11) For the inland silverside, Parameter TPP6J, report the NOEC for growth.
 - 12) For the inland silverside, Parameter TYP6J, 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. <u>Persistent Toxicity</u>

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. <u>Toxicity Reduction Evaluation</u>

- 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:
 - 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 chemicalspecific 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, chemicalspecific 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	No. 1	I FROM:	Date	Time	TO:	Date	Time	
Composites Collected	No. 2 FROM:				TO:			
	No. 3	FROM:			TO:			
Test initiated:		am/pm _			_date			
Dilution water used:		_ Receiving wat	er	Syn	thetic d	ilution	water	

MYSID SHRIMP SURVIVAL

Percent	Perc	cent S	Survi	val in I	Repli	cate	Cham	bers	Mean	Percent	Survival	CV%*		
Effluent	Α	В	C	D	E	F	G	Н	24h	48h	7 day	0170		
0%														
4%														
5%														
7%														
9%														
12%														

* 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%	4%	5%	7%	9%	12%		
А								
В								
С								
D								
E								

TABLE 1 (SHEET 2 OF 4)

MYSID SHRIMP SURVIVAL AND GROWTH

DATA TABLE FOR GROWTH OF MYSID SHRIMP (Continued)

Replicate	М	Mean dry weight in milligrams in replicate chambers							
	0%	4%	5%	7%	9%	12%			
F									
G									
Н									
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 (12%): _____ 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 (12%): _____ 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

Dates and Times	No 1	Date EPOM:	Time	Date	Time
Composites	NO. 1	ГКОМ		10	
Collected	No. 2	FROM:		TO:	
	No. 3	FROM:		TO:	
Test initiated:		am/pm	da	te	
Dilution water used:		_ Receiving water	Synthe	tic Dilutio	on water

INLAND SILVERSIDE SURVIVAL

Percent	I	Percer Replica	nt Surv ate Cha	vival in amber	l S	Mean	Percent S	urvival	CV%*
Effluent	Α	В	C	D	E	24h	48h	7 days	
0%									
4%									
5%									
7%									
9%									
12%									

* Coefficient of Variation = standard deviation x 100/mean

TABLE 1 (SHEET 4 OF 4)

INLAND SILVERSIDE LARVAL SURVIVAL AND GROWTH TEST

Percent Effluent	Averag	e Dry Weig	cht in millig chambers	grams in re	plicate	Mean Dry Weight	CV%*			
Lindent	A	В	C	D	E	(mg)	01/0			
0%										
4%										
5%										
7%										
9%										
12%										
PMSD										

INLAND SILVERSIDE GROWTH

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 (12%): _____ 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 (12%): _____ 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 Outfalls 001 and Outfall 002, individually and separately, for whole effluent toxicity (WET) testing.

- 1. <u>Scope, Frequency, and Methodology</u>
 - 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 (*Americamysis bahia 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. <u>Required Toxicity Testing Conditions</u>

- 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 and one composite sample from Outfall 002.
 - 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 or Outfall 002 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. <u>Reporting</u>

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 24hours 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 TII6J, 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 24hours 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 24hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."
- 4. <u>Persistent Mortality</u>

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. <u>Toxicity Reduction Evaluation</u>

- 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 chemicalspecific 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, chemicalspecific 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	Dop	Percent effluent							
	кер	0%	6%	13%	25%	50%	100%		
	A								
24h	В								
	C								
	D								
	Е								
	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	Dop	Percent effluent								
	кер	0%	6%	13%	25%	50%	100%			
	A									
24h	В									
	C									
	D									
	Е									
	MEAN									

Enter percent effluent corresponding to the LC50 below:

24-hour LC50 = ____% effluent

CMP THRESHOLD REVIEW SHEET

INDUSTRIAL WASTEWATER DISCHARGE PERMITS

Dow Hydrocarbons and Resources LLC and Union Carbide Corporation
WQ0000447000
Victoria Barge Canal Tidal; Matagorda Bay/Powderhorn Lake; and San Antonio Bay/Hynes Nay/Guadalupe Bay/Mission Lake
1701; 2451; & 2462
Calhoun

Is the facility located within the Coastal Zone? Yes \boxtimes No \square

If "Yes," complete Section A and, if directed to do so, Section B. If "No," this worksheet is not required.

SECTION A

Yes No □ ⋈ 1. This is a new permit application which would authorize the discharge of a wastewater subject to EPA Categorical Effluent Standards (40 CFR Parts 400-471) into a priority segment (see Appendix B). □ ⋈ 2. This is an amendment permit application which would authorize an increase in the mass loading of pollutants from the discharge of a wastewater subject to EPA Categorical Effluent Standards (40 CFR Parts 400-471) into a priority

Image: 3.3.This is an amendment permit application which would change the point of
discharge of a wastewater subject to EPA Categorical Effluent Standards (40
CFR Parts 400-471) into a priority segment (see Appendix B).

IF "YES" TO ANY OF THE ABOVE THEN THE PERMIT ACTION IS CONSIDERED ABOVE THRESHOLD, COMPLETE SECTION B.

segment (see Appendix B).

IF "NO" TO ALL OF THE ABOVE, THEN THE PERMIT ACTION IS CONSIDERED BELOW THRESHOLD, STOP HERE.

SECTION B

	1.	The IOM from standards states that "no significant degradation of high quality receiving waters is anticipated" (if receiving water has a designated high quality aquatic life use).
--	----	--

- □ 2. The IOM from standards states that "no loss of designated uses is anticipated."
- \Box 3. The draft permit complies with all applicable provisions of 30 TAC 307, 309, and 319.

<u>Mónica Báez</u> PERMIT WRITER October 18, 2023 DATE

30 TAC Chapter 281 APPENDIX B

TIDAL SEGMENTS DESIGNATED AS TCEQ PRIORITY WATERBODIES COASTAL MANAGEMENT PROGRAM

Segment Number

<u>Name</u>

2412	.Sabine Lake
2411	.Sabine Pass
2423	.East Bay
2439	Lower Galveston Bay
0801	.Trinity River Tidal
1113	Armand Bayou Tidal
2431	.Moses Lake
2424	.West Bay
2432	.Chocolate Bay
2433	.Bastrop Bay/Oyster Lake
2434	.Christmas Bay
2435	.Drum Bay
2442	.Cedar Lakes
2441	.East Matagorda Bay
2451	.Matagorda Bay/Powderhorn Lake
2452	.Tres Palacios Bay/Turtle Bay
2456	.Carancahua Bay
2455	.Keller Bay
2461	.Espiritu Santo Bay
2462	.San Antonio Bay/Hynes Bay/Guadalupe Bay
1801	.Guadalupe River Tidal
2463	.Mesquite Bay/Carlos Bay/Ayres Bay
2473	.St. Charles Bay
2471	Aransas Bay
2472	.Copano Bay/Port Bay/Mission Bay
2483	.Redfish Bay
2482	.Nueces Bay
2492	.Baffin Bay/Alazan Bay/Cayo Del Grullo/Laguna Salada
2491	.Laguna Madre
2493	.South Bay
	-

INDUSTRIAL EPA REVIEW CHECKLIST

Permittee Name:	Dow Hydrocarbons and Resources LLC and Union Carbide Corporation				

Permittee Number: WQ0000447000

IS THIS A MINOR AMENDMENT WITHOUT RENEWAL?

EPA review is waived per the MOA, because this is a minor amendment without renewal. SKIP TO THE END.

For all other application types, check all that apply:

Yes	No	
	\boxtimes	discharge to territorial seas (within 3 miles of the coastline) of the United States?
		discharge or sewage sludge management may affect another state or the Republic of Mexico? For sewage sludge management, "may affect" means accepts sewage sludge from another state or Mexico. For discharge, it means a discharge within 3 miles of a boundary with another state or Mexico.
	\boxtimes	discharge of uncontaminated cooling tower blowdown with a permitted daily average flow >500 MGD?
\boxtimes		discharge from a designated major facility?
\boxtimes		discharge from a categorical industry as listed in 40 CFR Part 122, Appendix A? (see Attachment A) <i>with wastestreams subject to federal ELGs?</i>
		discharge from source other than a categorical industry as listed in 40 CFR Part 122, Appendix A with a permitted daily average flow >0.5 MGD, except for facilities that discharge non-process wastewater? Non-process wastewater is water that (during manufacturing or processing) does not come into direct contact with, or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.
	\boxtimes	minor facility discharge to critical concern species watersheds (see WQ Standards review)
	\boxtimes	(Prior to a final TMDL) discharge from a new or expanding facility to a 303(d) listed segment which has the potential to discharge any pollutant which is causing or contributing to the impairment of the segment?
	\boxtimes	(After a final TMDL) discharge from a new or expanding discharge to a 303(d) listed segment where the TMDL does not allocate the loadings described in the draft permit?
	\boxtimes	(After a final TMDL) a permit with effluent limits which allow loadings in excess of those prescribed by the TMDL for the segment?
	\boxtimes	(After a final TMDL) permit allows a three-year compliance schedule for limits based on the TMDL allocations?
	\boxtimes	Is the main purpose of the facility to desalinate either seawater or salty ground water?
	\boxtimes	Other:

Per the screening above, choose one:

☑ Yes, EPA review is required.

 \Box No, EPA review is <u>not</u> required.

Mónica Báez

Permit Writer's Name

October 12, 2023

Date

ATTACHMENT A

PRIMARY INDUSTRIAL CATEGORIES

N/A
Part 467
N/A
Part 461
Part 434
Part 465
Part 468
Part 469
Part 413
Part 457
N/A
Part 454
Part 415
Part 420
Part 425
N/A
Part 421
Part 440
Part 414
Part 446
Part 455
Part 419
Part 439
Part 459
Part 463
Part 414
Part 466
N/A
Part 430
Part 428
Part 417
Part 423
Part 410
Part 429

TPDES PERMIT MAJOR/MINOR RATING WORK SHEET

TPDES No.: WQ0000447000	NPDES No.:	TX0002844					
Facility Name: Dow Hydrocarbons and Res	ources LLC and Union Ca	bide Corpora	tion				
City/County: <u>Seadrift / Calhoun</u>							
Receiving Water (Name/Segment No.):							
Victoria Barge Canal Tidal; Matagorda Bay/Powdehorn Lake; San Antonio Bay/Hynes Bay/Guadalupe Bay/Mission Lake	1701 2451 2462						
Is this facility a steam electric power plant (SIC with one or more of the following characteristi	=4911) cs?	Is this pe serving a	ermit for a municipal separat a population greater than 10	te storm se 10,000?	ewer		
 Power output 500 MW or greater (no cooling A nuclear power plant. Cooling water discharge greater than 25% of waters 7Q2 flow rate. 	g pond/lake). the receiving	☐ YE ⊠ NC	S (score is 700, stop here). (continue)				
YES (score is 600, stop here).NO (continue)							
FACTOR 1: Toxic Pollutant Potential							
Primary SIC Code:2869							
Other SIC Codes: 2821	2813						
Industrial Subcategory Code							
Determine the Toxicity potential from A toxicity potential column and check one	ppendix A of <u>Major-N</u> 2.	<u> Ainor Ratin</u>	g Instructions. Be sure t	o use the	e TOTAL		
Toxicity Group Code Points Toxic	city Group Code	e Points 15	Toxicity Group	Code 7	Points 35		
wastestreams 0 0	4. 4	20	8.	8	40		
		25	⊠ 9.	9	45		
□ 2. 2 10	□ 6. 6	30	□ 10.	10	50		
CODE NUMBER CHECKED							
		T	DTAL POINTS FACTOR 1:	_	45		
FACTOR 2: Flow/Stream Flow Volume	(Complete either Sect	ion A or B;	check only one)				

SECTION A - Wastewater Flow Only Considered

		Code	Points
Type I:	Flow < 5 MGD	11	0
	Flow 5 to 10 MGD	12	10
	Flow 10 to 50 MGD	13	20
	Flow > 50	14	30
Type II:	Flow <1 MGD	21	10
	Flow 1 to 5 MGD	22	20
	Flow 5 to 10 MGD	23	30
	Flow > 10 MGD	24	50
Type III	Flow < 1 MGD	31	0
	Flow 1 to 5 MGD	32	10
	Flow 5 to 10 MGD	33	20
	Flow > 10 MGD	34	30

SECTION B - Wastewater & Stream Flow Considered

	Percent	Code	Points
	Effluent @		
	Mixing Zone		
Type I/III:	< 10%	41	0
	10% to 50%	42	10
	> 50%	43	20
Type II:	< 10%	51	0
	10% to 50%	52	20
	> 50%	53	30

CODE NUMBER CHECKED TOTAL POINTS FACTOR 2:

TPDES PERMIT MAJOR/MINOR RATING WORK SHEET

TPDES No	D.: WQ0000447000												
FACTOF	R 3: Conventional Pollutants (Or	nly w	vhen limite	ed by t	he per	mi	t)						
Α.	Oxygen Demanding Pollutant: (check o	one)	BOD/CI	BOD [□ сор	[Other:						
	Permit Limits: (check one)		< 100 100 to 1000 > 3000	lbs/day 5 1000 lk to 3000 0 lbs/day	os/day lbs/day y	1	<u>Code</u> 1 2 3 4	<u>P</u> (0 0 5 15 20				
В.	Total Suspended Solids (TSS) Permit Limits: (check one)		< 100 100 to	lbs/day	os/day	_	Code 1 2	<u>P(</u>	<u>oints</u> 0 5				
C.	Nitrogen Pollutant: (check one)		> 5000 > 5000	0 lbs/da	ibs/day y r:	/	3 4		20				
	Permit Limits: (check one)		<u>Nitros</u> < 300 300 to 1000 ⁻ > 3000	g <u>en Equi</u> Ibs/day o 1000 lk to 3000 0 lbs/da [,]	valent os/day lbs/day y	1	<u>Code</u> 1 2 3 4	<u>P</u> (0 0 5 15 20				
	CODE NUMBER CHECKED POINTS FACTOR 3:		A A	3 15	+	B B	3 15	+	c	0	=_	30	Total

FACTOR 4: Public Health Impacts

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply.

☐ YES (If yes, check toxicity potential number below)

NO (If no, go to Factor 5)

Determine the human health toxicity potential from Appendix A. Use the same SIC code and subcategory reference as in Factor 1. (Be sure to use the <u>human health</u> toxicity group column - check one below.)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
No process			□ 3.	3	0	□ 7.	7	15
wastestreams	0	0	4.	4	0	8.	8	20
□ 1.	1	0	□ 5.	5	5	9.	9	25
2.	2	0	6.	6	10	□ 10.	10	30

CODE NUMBER CHECKED	
TOTAL POINTS FACTOR 4:	0

TPDES PERMIT MAJOR/MINOR RATING WORK SHEET

TPDES No.: WQ0000447000

FACTOR 5: Water Quality Factors

A. Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge?

	Code	Points
🖾 YES	1	10
🗆 NO	2	0

B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

	Code	Points
🗌 YES	1	0
🖾 NO	2	5

C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

CODE NUMBER CHECKED POINT FACTOR 5:

	Code	Points
🖾 YES	1	10
🗆 NO	2	0

Α	1		В	2		С	1				
Α	10	+	В	5	+	с_	10	=	25	Total	

FACTOR 6: Proximity to Near Coastal Waters

Base Score: Enter flow code here (from Factor 2): 23

Enter the multiplication factor that corresponds to the flow code: 0.60

Check appropriate facility HPRI Code (from PCS):

	<u>HPRI#</u>	CODE	HPRI Score	Flow Code	Multiplication Factor
	1	1	20	11, 31, or 41	0.00
	2 3	2 3	30	12, 32, or 42 13, 33, or 43	0.05
	4 5	4 5	0 0	14 or 34 21 or 51	0.15 0.10
				22 or 52	0.30
HPRI c	ode checked:			23 01 55	1.00
Base Score: (HI	PRI Score)	30 X (Multij	olication Factor)	0.60 = 18	(Total Points)

B. Additional Points -- NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions and <u>National Estuary Program Map viewer</u>)?

	Code	Points
🗌 YES	1	10
🖾 NO	2	0

C. Additional Points -- Great Lakes Area of Concern

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern?

	Code	Points
🗌 YES	1	10
🛛 NO	2	0

CODE NUMBER CHECKED	Α	3		В	2		С	2			
POINT FACTOR 6:	Α _	18	+	в	0	+	с _	0	=	18	Total

TPDES PERMIT RATING WORK SHEET

TPDES No.: WQ0000447000

SCORE SUMMARY

Factor	Description	Total Points
1	Toxic Pollutant Potential	45
2	Flow/Streamflow Volume	30
3	Conventional Pollutants	30
4	Public Health Impacts	0
5	Water Quality Factors	25
6	Proximity to Near Coastal Waters	18
	TOTAL (Factors 1 through 6)	148

S1. Is the total score equal to or greater than 80?

 $\label{eq:YES} \begin{array}{rcl} & \mathsf{YES} & \mathsf{-} & \mathsf{Facility} \text{ is a major, stop here.} \\ \hline & \mathsf{NO} & \mathsf{-} & \mathsf{Facility} \text{ is NOT a major, proceed to S2.} \end{array}$

S2. Do you want the facility to be designated a discretionary major?

 $\hfill\square$ YES $\hfill \$ - Add 500 points to the score above and provide justification below. $\hfill \$ NO $\hfill \$ - Stop here

Justification:

Check appropriate classification:

- \boxtimes Major
- Minor
- **Discretionary Major**

Mónica Báez Permit Reviewer

512-239-5784 Phone Number

October 18, 2023

Date Reviewed

NEW SOURCE DETERMINATION WORKSHEET

PERMITTEE:	Dow Hydrocarbons and Resources LLC and Union
	Carbide Corporation
TPDES PERMIT NUMBER:	WQ0000447000
NPDES PERMIT NUMBER:	TX0002844
TYPE OF INDUSTRIAL ACTIVITY:	Chemical facility that manufactures plastics
	(polyethylene and polypropylene), glycols, and oxide
	derivatives
SIC CODE:	2869, 2821, and 2813
CATEGORICAL GUIDELINES:	40 CFR Part 414

A. NEW SOURCE DETERMINATION - SCREENING

ANSWER EITHER "YES" OR "NO" TO THE FOLLOWING QUESTIONS AND PROCEED AS DIRECTED:

1. Is there an applicable new source performance standard for this facility?

Yes \boxtimes No \square If YES, proceed to Item No. 2. If NO proceed to Section B, the facility is not a new source.

2. Was the current production facility in existence prior to the promulgation of the applicable new source performance standard?

Yes \boxtimes No \square If NO, proceed to Item No. 3. If YES proceed to Section B, the facility is not a new source.

3. This facility <u>MAY</u> be classified as a new source. Additional information will be required to conduct an evaluation and make a final determination. Please refer to 40 CFR 122.29.

B. NEW SOURCE DETERMINATION - DETERMINATION

PLEASE CHECK THE APPROPRIATE DETERMINATION:

- Facility IS NOT a new source. Determination made via screening in Section A above.
- □ Facility IS NOT a new source. Determination made via evaluation. Please see evaluation in Appendix A of the Statement of Basis/Technical Summary.
- □ Facility IS a new source. Determination made via evaluation. Please see evaluation in Appendix A of the Statement of Basis/Technical Summary.

Mónica Báez REVIEWER October 18, 2023 DATE

ATTACHMENT 1

<u>EPA - REGION 6</u> NPDES PERMIT CERTIFICATION CHECKLIST

In accordance with the MOA established between the State of Texas and the United States Environmental Protection Agency, Region 6, the Texas Commission on Environmental Quality submits the following draft Texas Pollutant Discharge Elimination System (TPDES) permit for Agency review.

Major⊠Minor□POTW□Private Domestic□Non-POTW

Facility Name	Dow Hydrocarbons an	w Hydrocarbons and Resources LLC and Union Carbide Corporation					
SIC Code	2869, 2821, and 2813	69, 2821, and 2813					
Type of operation	Chemical facility that r glycols, and oxide deriv	emical facility that manufactures plastics (polyethylene and polypropylene), <i>v</i> cols, and oxide derivatives					
NPDES Permit No.	TX0002844	TPDES Permit No.	WQ0000447000				
Segment No.	1701, 2451, & 2462	Basin	Lavaca-Guadalupe River Basin, and Bays and Estuaries				
Receiving Water	Victoria Barge Canal T	Victoria Barge Canal Tidal; Matagorda Bay/Powderhorn Lake; & San Antonio					
	Bay/Hynes Bay/Guada	alupe Bay/Mission Lak	e				

New	New	
	Renewal WITH changes	
Permit	Renewal w/out changes (permit and WQS)	
Action.	Major Amendment with Renewal	
	Amendment/Modification WITHOUT renewal, proceed directly to question 26 below	\boxtimes

Answer the following:	Ye	s	No	N/A
1. Are there known or potential interstate water issues associated with permit?	this			
2. Is there known or potential third-party interest/environmental con- regarding this permit action?	cern			
3. Does this facility discharge to a 303(d)-listed waterbody/segment?				
If YES , does the facility discharge any of the pollutant(s) of con- identified in the 303(d) listing?	cern 🗆			
4. Is this permit consistent with the approved WQMP?				
5. Are discharges continuous?				
6. Does the facility discharge or propose to discharge process wastewa	ters?			
7. Are discharges DIRECTLY to a classified waterbody segment?				
8. Does the facility discharge to a water body segment which has a fina TMDL?	alized			
If YES , does the permit implement the TMDL consistent with the WLAs?	ne 🗆			
9. Does the Fact Sheet document the rationale for the inclusion/omiss permit conditions for each 303(d)-listed pollutant of concern or TM pollutant?	ion of DL □			
10. Has a priority watershed of critical concern been identified by the U and Wildlife Service for this segment?	J. S. Fish			

Answer the following:	Yes	No	N/A
11. Is there a thermal component to discharges from this facility?			
12. Does this permit authorize ammonia discharges > 4.0 mg/L at the edge of the mixing zone?			
13. Does this permit require testing for Whole Effluent Toxicity in accordance with the state's standard practices and implementation plan?			
If YES , were there any toxicity failures within the previous three years?			
14. If this facility has completed and implemented a Toxicity Reduction Evaluation (TRE), has any subsequent toxicity been identified?			
15. Does this permit propose to grant a variance request (<i>WQS</i> , <i>FDF</i> , <i>etc.</i>) or does it incorporate a proposed or final approval of a variance request?			
16. If a POTW is \geq 5 MGD, does it have an approved Pretreatment Program?			
17. Since the last permit issuance, has the POTW had a new Pretreatment Program approved or a Pretreatment Program modification approved?			
18. Does this permit contain authorization for wet weather-related peak-flow discharges?			
19. Does this permit include a bypass of any treatment unit or authorize overflows in the system?			
20. Does this permit include provisions for effluent trading?			
21. Does this permit contain specific issues on which EPA and the state are not in agreement regarding the permitting approach?			
22. Is this facility subject to a national effluent limitations guideline? Please specify: XXX, YYY, ZZZ			
23. Does this permit contain "first-time" implementation of a new federal guideline, policy, regulation, etc.? Please specify:			
24. Is this a new facility or an expansion of an existing facility?			
For an EXISTING facility, if any limits have been removed or are less stringent than those in the previous permit, is it in accordance with the anti-backsliding regulations?			
25. Does this permit incorporate any exceptions to the standards or regulations?			
26. Is this is a permit modification/amendment?			
Please specify:to identify the current flow from "Flow" to "Flow (dry weather)" at Outfall 001; to add and identify flow as "total flow" at Outfall 001; to add monitoring and reporting requirements for the daily average and daily maximum for "total flow" at Outfall 001; to apply the mass loading effluent limitations and concentration effluent limitations for biochemical oxygen demand, 5-day (BOD ₅) and total suspended solids (TSS) to the "total flow" at Outfall 001; to change the monitoring frequency for BOD ₅ and TSS from "once per day" to "three per week" at Outfall 001; to change the Sample Type from "Grab" to "Composite" at Outfall 001; to revise Other Requirement No. 1 so that it will be consistent with requested changes for flow, BOD ₅ , and TSS for Outfall 001; to revise the sampling point for Enterococci at Outfall 001; to add a Final Phase for Outfall 002 to authorize the discharge of cooling tower blowdown, water treatment waste, boiler blowdown, resin pad wash water, resin container rinse water, steam condensate, stormwater from Union Carbide, hydrostatic test water, firewater, and <i>de minimis</i> quantities of process wastewater at a daily average flow not to exceed			

17,000,000 gallons per day (gpd) and a daily maximum flow not to exceed 43,000,000 gpd; to move the sampling point for flow at Outfall 002 in the Final Phase; to remove "dry-weather" from flow for Outfall 002 in the Final Phase; to authorize an increase in the daily maximum effluent limitation for total residual chlorine from 0.2 mg/L to 2.0 mg/Lat Outfall 002; to move compliance point for floating solids, visible foam and visible oil for Outfalls 001. 002. 006. and 012: to add a provision in the Other Requirement Section for alternate monitoring for continuous meters for flow, pH, and temperature for Outfalls 001 and 002; to add a minimum analytical level of 5 mg/L for oil and grease in Item No. 2 of the Other Requirement Section: to change the method for submitting biomonitoring reports; and to remove Outfalls 007, 008, 009, and 010. The following amendment requests were not granted: add and identify flow as "total flow" at Outfall 001; add monitoring and reporting requirements for the daily average and daily maximum for "total flow" at Outfall 001; apply the mass loading effluent limitations and concentration effluent limitations for biochemical oxygen demand, 5-day (BOD₅) and total suspended solids (TSS) to the "total flow" at Outfall 001; revise Other Requirement No. 1 so that it will be consistent with requested changes for flow, BOD₅, and TSS for Outfall 001; and to move compliance point for floating solids, visible foam and visible oil for Outfalls 001, 002, 006, and 012.

Name:Mónica BáezDate:October 18, 2023

TOXIC RATING WORKSHEET

TPDES Permit No.:	WQ000044	47000		
NPDES Permit No.:	TX000284	4		
Permittee:	Dow Hydro	carbons and	Resources LLC ar	nd_Union Carbide
	Corporation	n		
Facility:	UCC Seadri	ift Operations	•	
SIC Codes:	1. 2869	2.2812	3.2813	4.
40 CFR Section:	414			
Toxic Rating for Facility:	III			
Permit Writer:	Mónica Báe	ez	Date: O	ctober 18, 2023

CALCULATE TOXIC RATING FOR THE FACILITY

For each outfall listed below, list the percent contribution to the total wastewater flow from the facility and the toxic rating for the outfall.

OUTFALL No.	% Contribution	Toxic Ra	ating	Rating × Percent
001	33	5		165
002	67	2		134
003, 004, 005,	variable	2		
006, 012, 014,				
015, & 016				
			Total:	299
Toxic Rating for Faci	lity = Total/100 =	<u>3</u> (ro	und to nea	arest whole #)

OUTFALL NO.: 001

List waste streams in order of percent contribution to outfall and toxic rating for each waste stream:

Description of Waste Stream	%	Toxic Rating	Rating × Percent
Process Wastewater	78	6	468
Domestic Wastewater	3	3	9
Utility Wastewater	19	2	38
Stormwater	variable	2	
	Total <u>100</u>		Total: _ 515
Toxic Rating for Outfall = Total/100	0 <u>= 5</u> (rou	nd to nearest whole	#)

OUTFALL NO. 002

List waste streams in order of percent contribution to outfall and toxic rating for each waste stream:

Description of Waste Stream	%	Toxic Rating	Rating × Percent
Utility Wastewater Stormwater	100	2	200
	Total <u>100</u>		Total: _ 2
Foxic Rating for Outfall = Total/100	= (round	l to nearest whole #)	•
OUTFALL NO. <u>003, 004, 005, 006</u> ,	012, 014, 015, & 0	16	
List waste streams in order of percer	nt contribution to c	outfall and toxic ratio	ng for each waste stream:
Description of Waste Stream	%	Toxic Rating	Rating × Percent
Stormwater	variable	2	
	Total <u>100</u>		Total:
Foxic Rating for Outfall = Total/100	= (round	d to nearest whole #)
OUTFALL NO			
List waste streams in order of percer	at contribution to c	outfall and toxic ratio	ng for each waste stream:
Description of Waste Stream	%	Toxic Rating	Rating × Percent

OUTFALL CONTAMINATION DETERMINATION

Permittee Name:	Dow Hydrocarbons and Resources LLC and Union Carbide Corporation		
Permittee Number:	WQ0000447000		

Use this worksheet to make a determination for each internal and external Outfall. Enter the determination (i.e., contaminated or uncontaminated) into the space provided for each outfall.

If any box is checked "YES", the outfall is classified as "CONTAMINATED" for billing and PARIS. If no boxes are checked "YES", the outfall is classified as "UNCONTAMINATED" for billing and PARIS.

Outfall No.: 001

Yes	No	
\boxtimes		toxic rating is greater than or equal to three
\boxtimes		discharge requires limits based on water quality factors of the receiving stream
	\boxtimes	discharge is greater than 10% (or more than 1 MGD) process wastewater
	\boxtimes	discharge requires monitoring and reporting or limits for radioactive materials
		other: (provide explanation)

Outfall Determination: Contaminated

Outfall No.: <u>002</u>

Yes	No	
	\boxtimes	toxic rating is greater than or equal to three
\boxtimes		discharge requires limits based on water quality factors of the receiving stream
	\boxtimes	discharge is greater than 10% (or more than 1 MGD) process wastewater
	\boxtimes	discharge requires monitoring and reporting or limits for radioactive materials
		other: (provide explanation)

Outfall Determination: Contaminated

Outfal	l No.:	003, 004, 005, 006, 012, 014, 015, & 016
Yes	No	
	\boxtimes	toxic rating is greater than or equal to three
	\boxtimes	discharge requires limits based on water quality factors of the receiving stream
	\boxtimes	discharge is greater than 10% (or more than 1 MGD) process wastewater
	\boxtimes	discharge requires monitoring and reporting or limits for radioactive materials
		other: (provide explanation)

Outfall Determination: <u>Uncontaminated</u>



Compliance History Report

Compliance History Report for CN601688781, RN102181526, Rating Year 2023 which includes Compliance History (CH) components from September 1, 2018, through August 31, 2023.

Customer, Respondent, or Owner/Operator:	CN601688781, Union Carbide Corp	oration Classification: SATISFACTORY	Rating: 6.36
Regulated Entity:	RN102181526, UCC SEADRIFT OPERATIONS	Classification: SATISFACTORY	Rating: 12.51
Complexity Points:	51	Repeat Violator: YES	
CH Group:	05 - Chemical Manufacturing		
Location:	7501 STATE HIGHWAY 185 N SEAD	DRIFT, TX 77983, CALHOUN COUNTY	
TCEQ Region:	REGION 14 - CORPUS CHRISTI		
ID Number(s):			
AIR OPERATING PERMITS	PERMIT 1613	AIR OPERATING PERMITS PERMIT 2026	
AIR OPERATING PERMITS	PERMIT 2027	AIR OPERATING PERMITS PERMIT 2028	
AIR OPERATING PERMITS	PERMIT 2029	AIR OPERATING PERMITS PERMIT 2030	
AIR OPERATING PERMITS	PERMIT 2031	AIR OPERATING PERMITS PERMIT 2032	
AIR OPERATING PERMITS	PERMIT 2035	AIR OPERATING PERMITS ACCOUNT NUME	BER CB0028T
AIR OPERATING PERMITS	PERMIT 2025	PUBLIC WATER SYSTEM/SUPPLY REGISTE	RATION
AIR NEW SOURCE PERMITS	REGISTRATION 38028	AIR NEW SOURCE PERMITS REGISTRATION	N 38500
AIR NEW SOURCE PERMITS	REGISTRATION 39318	AIR NEW SOURCE PERMITS REGISTRATION	N 40045
AIR NEW SOURCE PERMITS	REGISTRATION 40183	AIR NEW SOURCE PERMITS REGISTRATION	N 40873
AIR NEW SOURCE PERMITS	REGISTRATION 41497	AIR NEW SOURCE PERMITS REGISTRATION	N 42294
AIR NEW SOURCE PERMITS	REGISTRATION 42305	AIR NEW SOURCE PERMITS REGISTRATION	N 42530
AIR NEW SOURCE PERMITS	REGISTRATION 42461	AIR NEW SOURCE PERMITS REGISTRATION	N 42767
AIR NEW SOURCE PERMITS	REGISTRATION 42787	AIR NEW SOURCE PERMITS REGISTRATION	N 42462
AIR NEW SOURCE PERMITS	REGISTRATION 42531	AIR NEW SOURCE PERMITS REGISTRATION	N 42083
AIR NEW SOURCE PERMITS	REGISTRATION 22398	AIR NEW SOURCE PERMITS REGISTRATION	N 22397
AIR NEW SOURCE PERMITS	REGISTRATION 22426	AIR NEW SOURCE PERMITS REGISTRATION	N 23070
AIR NEW SOURCE PERMITS	REGISTRATION 23191	AIR NEW SOURCE PERMITS REGISTRATION	N 21471
AIR NEW SOURCE PERMITS	REGISTRATION 22452	AIR NEW SOURCE PERMITS REGISTRATION	N 22453
AIR NEW SOURCE PERMITS	REGISTRATION 24043	AIR NEW SOURCE PERMITS REGISTRATION	N 24514
AIR NEW SOURCE PERMITS	REGISTRATION 26738	AIR NEW SOURCE PERMITS REGISTRATION	N 28514
AIR NEW SOURCE PERMITS	REGISTRATION 28647	AIR NEW SOURCE PERMITS REGISTRATION	N 30181
AIR NEW SOURCE PERMITS	REGISTRATION 31160	AIR NEW SOURCE PERMITS REGISTRATION	N 31386
AIR NEW SOURCE PERMITS	REGISTRATION 31855	AIR NEW SOURCE PERMITS REGISTRATION	N 31991
AIR NEW SOURCE PERMITS	REGISTRATION 32345	AIR NEW SOURCE PERMITS REGISTRATION	N 32964
AIR NEW SOURCE PERMITS	REGISTRATION 36631	AIR NEW SOURCE PERMITS REGISTRATION	N 43986
AIR NEW SOURCE PERMITS	REGISTRATION 45276	AIR NEW SOURCE PERMITS REGISTRATION	N 45338
AIR NEW SOURCE PERMITS	REGISTRATION 45441	AIR NEW SOURCE PERMITS REGISTRATION	N 45492
AIR NEW SOURCE PERMITS	REGISTRATION 45719	AIR NEW SOURCE PERMITS REGISTRATION	N 46016
AIR NEW SOURCE PERMITS	REGISTRATION 46163	AIR NEW SOURCE PERMITS REGISTRATION	N 46441
AIR NEW SOURCE PERMITS	REGISTRATION 46454	AIR NEW SOURCE PERMITS REGISTRATION	N 46611
AIR NEW SOURCE PERMITS	REGISTRATION 46804	AIR NEW SOURCE PERMITS PERMIT 4/091	
AIR NEW SOURCE PERMITS	REGISTRATION 47264		N 46967
AIK NEW SOURCE PERMITS	• REGISTRATION 4/8/5	AIR NEW SOURCE PERMITS REGISTRATION	N 48826
AIK NEW SOURCE PERMITS	PERMII 48/UY	AIR NEW SOURCE PERMITS REGISTRATION	N 490U9
AIK NEW SOURCE PERMITS	REGISTRATION 49/20	AIR NEW SOURCE PERMITS REGISTRATION	N 494UI
AIK NEW SOURCE PERMITS	PERMIT 3/8	AIR NEW SOURCE PERMITS REGISTRATION	N 401
AIR NEW SOURCE PERMITS	PERMII 803	AIR NEW SOURCE PERMITS REGISTRATIO	N 1755
AIR NEW SOURCE PERMITS	REGISTRATION 1158	AIR NEW SOURCE PERMITS REGISTRATION	N 1722
AIR NEW SOURCE PERMITS	REGISTRATION 1442	AIK NEW SOURCE PERMITS PERMIT 156/	

AIR NEW SOURCE PERMITS PERMIT 1567A AIR NEW SOURCE PERMITS PERMIT 1570A AIR NEW SOURCE PERMITS PERMIT 2023 AIR NEW SOURCE PERMITS PERMIT 2027 **AIR NEW SOURCE PERMITS PERMIT 2556** AIR NEW SOURCE PERMITS PERMIT 2731 AIR NEW SOURCE PERMITS PERMIT 3639 **AIR NEW SOURCE PERMITS PERMIT 6361 AIR NEW SOURCE PERMITS PERMIT 7405** AIR NEW SOURCE PERMITS PERMIT 9537 AIR NEW SOURCE PERMITS REGISTRATION 11257 AIR NEW SOURCE PERMITS REGISTRATION 11446 AIR NEW SOURCE PERMITS REGISTRATION 11549 AIR NEW SOURCE PERMITS REGISTRATION 15764 **AIR NEW SOURCE PERMITS REGISTRATION 16644** AIR NEW SOURCE PERMITS PERMIT 19073 AIR NEW SOURCE PERMITS PERMIT 38481 **AIR NEW SOURCE PERMITS PERMIT 18773** AIR NEW SOURCE PERMITS REGISTRATION 146155 AIR NEW SOURCE PERMITS REGISTRATION 169847 AIR NEW SOURCE PERMITS REGISTRATION 75724 AIR NEW SOURCE PERMITS AFS NUM 4805700003 AIR NEW SOURCE PERMITS REGISTRATION 145087 **AIR NEW SOURCE PERMITS PERMIT 48645** AIR NEW SOURCE PERMITS REGISTRATION 70525 AIR NEW SOURCE PERMITS EPA PERMIT PSDTX921 AIR NEW SOURCE PERMITS REGISTRATION 51164 AIR NEW SOURCE PERMITS REGISTRATION 41504 AIR NEW SOURCE PERMITS REGISTRATION 74444 AIR NEW SOURCE PERMITS EPA PERMIT PSDTX118M4 AIR NEW SOURCE PERMITS REGISTRATION 77766 AIR NEW SOURCE PERMITS REGISTRATION 78214 AIR NEW SOURCE PERMITS REGISTRATION 80204 AIR NEW SOURCE PERMITS REGISTRATION 83878 AIR NEW SOURCE PERMITS EPA PERMIT PSDTX118M2 AIR NEW SOURCE PERMITS REGISTRATION 106356 AIR NEW SOURCE PERMITS REGISTRATION 106357 AIR NEW SOURCE PERMITS REGISTRATION 106362 AIR NEW SOURCE PERMITS REGISTRATION 106111 AIR NEW SOURCE PERMITS REGISTRATION 106355 AIR NEW SOURCE PERMITS REGISTRATION 106360 AIR NEW SOURCE PERMITS REGISTRATION 106346 AIR NEW SOURCE PERMITS REGISTRATION 114503 AIR NEW SOURCE PERMITS REGISTRATION 106363 AIR NEW SOURCE PERMITS REGISTRATION 106162 AIR NEW SOURCE PERMITS REGISTRATION 105923 AIR NEW SOURCE PERMITS REGISTRATION 105911 AIR NEW SOURCE PERMITS REGISTRATION 106107 AIR NEW SOURCE PERMITS REGISTRATION 106101 AIR NEW SOURCE PERMITS REGISTRATION 106167 AIR NEW SOURCE PERMITS REGISTRATION 105914 AIR NEW SOURCE PERMITS REGISTRATION 106370 AIR NEW SOURCE PERMITS REGISTRATION 112829 AIR NEW SOURCE PERMITS REGISTRATION 106349 AIR NEW SOURCE PERMITS REGISTRATION 106361 AIR NEW SOURCE PERMITS REGISTRATION 106165 AIR NEW SOURCE PERMITS REGISTRATION 106368 AIR NEW SOURCE PERMITS REGISTRATION 105925

AIR NEW SOURCE PERMITS PERMIT 1567B AIR NEW SOURCE PERMITS REGISTRATION 1616 AIR NEW SOURCE PERMITS PERMIT 2025A **AIR NEW SOURCE PERMITS PERMIT 2301 AIR NEW SOURCE PERMITS PERMIT 2607** AIR NEW SOURCE PERMITS PERMIT 3513A AIR NEW SOURCE PERMITS PERMIT 6141A AIR NEW SOURCE PERMITS REGISTRATION 7404 **AIR NEW SOURCE PERMITS PERMIT 7924** AIR NEW SOURCE PERMITS REGISTRATION 10541 AIR NEW SOURCE PERMITS REGISTRATION 11441 AIR NEW SOURCE PERMITS REGISTRATION 11448 AIR NEW SOURCE PERMITS REGISTRATION 14682 AIR NEW SOURCE PERMITS REGISTRATION 16330 AIR NEW SOURCE PERMITS PERMIT 9609A AIR NEW SOURCE PERMITS PERMIT 22321 AIR NEW SOURCE PERMITS ACCOUNT NUMBER CB0028T AIR NEW SOURCE PERMITS REGISTRATION 146257 AIR NEW SOURCE PERMITS REGISTRATION 55168 AIR NEW SOURCE PERMITS REGISTRATION 75395 AIR NEW SOURCE PERMITS REGISTRATION 42529 AIR NEW SOURCE PERMITS REGISTRATION 145327 AIR NEW SOURCE PERMITS PERMIT 48643 AIR NEW SOURCE PERMITS PERMIT 48653 AIR NEW SOURCE PERMITS EPA PERMIT PSDTX118M1 AIR NEW SOURCE PERMITS REGISTRATION 52527 AIR NEW SOURCE PERMITS REGISTRATION 72928 AIR NEW SOURCE PERMITS REGISTRATION 74204 AIR NEW SOURCE PERMITS REGISTRATION 74360 AIR NEW SOURCE PERMITS REGISTRATION 77224 AIR NEW SOURCE PERMITS REGISTRATION 78664 AIR NEW SOURCE PERMITS REGISTRATION 79798 AIR NEW SOURCE PERMITS REGISTRATION 82006 AIR NEW SOURCE PERMITS REGISTRATION 84497 AIR NEW SOURCE PERMITS REGISTRATION 90957 AIR NEW SOURCE PERMITS REGISTRATION 106116 AIR NEW SOURCE PERMITS REGISTRATION 106161 AIR NEW SOURCE PERMITS REGISTRATION 105920 AIR NEW SOURCE PERMITS REGISTRATION 106352 AIR NEW SOURCE PERMITS REGISTRATION 106105 AIR NEW SOURCE PERMITS REGISTRATION 105929 AIR NEW SOURCE PERMITS REGISTRATION 106113 AIR NEW SOURCE PERMITS REGISTRATION 106166 AIR NEW SOURCE PERMITS REGISTRATION 106359 AIR NEW SOURCE PERMITS REGISTRATION 136212 AIR NEW SOURCE PERMITS REGISTRATION 106372 AIR NEW SOURCE PERMITS REGISTRATION 106371 AIR NEW SOURCE PERMITS REGISTRATION 131385 AIR NEW SOURCE PERMITS REGISTRATION 111680 AIR NEW SOURCE PERMITS REGISTRATION 106348 AIR NEW SOURCE PERMITS REGISTRATION 106109 AIR NEW SOURCE PERMITS REGISTRATION 106123 AIR NEW SOURCE PERMITS REGISTRATION 106345 AIR NEW SOURCE PERMITS REGISTRATION 106119 AIR NEW SOURCE PERMITS REGISTRATION 113197 AIR NEW SOURCE PERMITS REGISTRATION 119294 AIR NEW SOURCE PERMITS REGISTRATION 106112 AIR NEW SOURCE PERMITS REGISTRATION 105905

Compliance History Report for CN601688781, RN102181526, Rating Year 2023 which includes Compliance History (CH) components from December 27, 2017, through December 27, 2022. Ratings are pending Mass Classification.

AIR NEW	/ SOURCE PERMITS REGISTRATION 104792	AIR NEW SOURCE PERMITS REGISTRATION 106122
AIR NEW	I SOURCE PERMITS REGISTRATION 105924	AIR NEW SOURCE PERMITS REGISTRATION 132097
AIR NEW	SOURCE PERMITS REGISTRATION 106160	AIR NEW SOURCE PERMITS REGISTRATION 105910
AIR NEW	SOURCE PERMITS REGISTRATION 105927	AIR NEW SOURCE PERMITS REGISTRATION 118024
AIR NEW	SOURCE PERMITS REGISTRATION 106110	AIR NEW SOURCE PERMITS REGISTRATION 106350
AIR NEW	SOURCE PERMITS REGISTRATION 106358	AIR NEW SOURCE PERMITS REGISTRATION 106366
	SOURCE PERMITS REGISTRATION 106367	AIR NEW SOURCE PERMITS REGISTRATION 108571
	SOURCE DEDMITS REGISTRATION 105012	ATO NEW SOURCE DEDMITS REGISTRATION 1059/1
	Source PERMITS REGISTRATION 103912	AIR NEW SOURCE PERMITS REGISTRATION 103900
	Source PERMITS REGISTRATION 152780	AIR NEW SOURCE PERMITS REGISTRATION 108900
	SOURCE PERMITS REGISTRATION 141001	AIR NEW SOURCE PERMITS REGISTRATION 147336
	SOURCE PERMITS REGISTRATION 141801	AIR NEW SOURCE PERMITS REGISTRATION 154933
	SOURCE PERMITS REGISTRATION 163239	AIR NEW SOURCE PERMITS REGISTRATION 159156
	SOURCE PERMITS PERMIT 170759	AIR NEW SOURCE PERMITS REGISTRATION 172657
AIR NEW	I SOURCE PERMITS REGISTRATION 169034	AIR NEW SOURCE PERMITS REGISTRATION 168899
	RRECTIVE ACTION SOLID WASTE REGISTRATION	N STORMWATER PERMIT TXR1537KD
# (SWR)	JUI29	
MACTEN	ATER PLAMIT TARISSILA	
WASIEW		
POLLUII	ON PREVENTION PLANNING ID NUMBER	INDUSTRIAL AND HAZARDOUS WASTE PERMIT 50190
INDUST	RIAL AND HAZARDOUS WASTE FPA ID	INDUSTRIAL AND HAZARDOUS WASTE SOLID WASTE
TXD0415	15420	REGISTRATION # (SWR) 30129
TAX REL	IEF ID NUMBER 16047	TAX RELIEF ID NUMBER 18739
Complia	nce History Period: September 01, 2018 to	August 31, 2023 Rating Year: 2023 Rating Date: 09/01/2023
Date Co	mpliance History Report Prepared: Octo	ober 06, 2023
Agonov	Decision Requiring Compliance History	Permit - Issuance renewal amendment modification denial suspension or
Agency	becision Requiring compliance mistory.	rentine issuance, renewal, amenament, mounication, actual, suspension, or
		revocation of a permit.
Compon	ent Period Selected: December 27, 2017 t	revocation of a permit. o December 27, 2022
Compon	ent Period Selected: December 27, 2017 t	revocation of a permit. o December 27, 2022
Compon TCEQ St	ent Period Selected: December 27, 2017 t	revocation of a permit. o December 27, 2022 Formation Regarding This Compliance History.
Compon TCEQ St Nai	ent Period Selected: December 27, 2017 t aff Member to Contact for Additional Inf me: Monica Baez	revocation of a permit. o December 27, 2022 Formation Regarding This Compliance History. Phone: (512) 239-5784
Compon TCEQ St Nat	ment Period Selected: December 27, 2017 t December 27, 2017 t December 27, 2017 t December 27, 2017 t	revocation of a permit. o December 27, 2022 Formation Regarding This Compliance History. Phone: (512) 239-5784
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Compon TCEQ St Nat Site an 1) Has the 2) Has the	ment Period Selected: December 27, 2017 t aff Member to Contact for Additional Informe: Monica Baez d Owner/Operator History: Monica Baez e site been in existence and/or operation for the fuere been a (known) change in ownership/operator	revocation of a permit. o December 27, 2022 Formation Regarding This Compliance History. Phone: (512) 239-5784 Ill five year compliance period? YES of the site during the compliance period? NO
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Compon TCEQ St Nar Site an 1) Has the 2) Has the Compo A. Fina	ment Period Selected: December 27, 2017 t maff Member to Contact for Additional Informe: Monica Baez d Owner/Operator History: Monica Baez e site been in existence and/or operation for the fuere been a (known) change in ownership/operator nents (Multimedia) for the Site Are I I Orders, court judgments, and consent	revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 Ill five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J decrees:
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Compon TCEQ St Nar Site an 1) Has the 2) Has the Compo A. Fina	ment Period Selected: December 27, 2017 t raff Member to Contact for Additional Informe: Monica Baez d Owner/Operator History: Monica Baez e site been in existence and/or operation for the fuere been a (known) change in ownership/operator Monica Baez I Orders, court judgments, and consent of Effective Date: 07/06/2020 ADMIN Classification:	revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 If five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J decrees: NORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial)
Compon TCEQ St Nar Site an 1) Has the 2) Has the 2) Has the Compo A. Fina	Image: Period Selected: December 27, 2017 t Image: Member to Contact for Additional Informe: Monica Baez Image: Monica Baez Image: Monica Baez	revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 If five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J decrees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116 115(c)
Compon TCEQ St Nat Site an 1) Has the 2) Has the 2) Has the Compo A. Fina	Inent Period Selected: December 27, 2017 t December 27, 2017 t December 27, 2017 t December 20, 2017 t December 2017 t December 20, 2017 t </th <th>revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 If five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J decrees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122 143(4)</th>	revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 If five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J decrees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122 143(4)
Compon TCEQ St Nau Site an 1) Has the 2) Has the Compo A. Fina	And the provided selected: December 27, 2017 to the aff Member to Contact for Additional Informe: Monica Baez December 27, 2017 to the selection of the Contact for Additional Informe: Monica Baez December 27, 2017 to the selection Baez December 20, 2017 to the selection Baez December	revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 If five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J decrees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122.143(4)
Compon TCEQ St Nar Site an 1) Has the 2) Has the Compo A. Fina	Inent Period Selected: December 27, 2017 t December 27, 2017 t December 27, 2017 t December 20, 2017 t December 2017 t December 2017 t December 2017	revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 If five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J decrees: NORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122.143(4)
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Compon TCEQ St Nat Site an 1) Has the 2) Has the Compo A. Fina	Inent Period Selected: December 27, 2017 t December 27, 2017 t December 27, 2017 t December 20 Additional Inf December 20 December 20 Description: March 13, 2018; TCEO/STEERS Incident No. 2	revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 Ill five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J Mecrees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122.143(4) PERMIT emissions to the atmosphere during an emissions event that occurred on 193911.
Compon TCEQ St Nar Site an 1) Has the 2) Has the Compo A. Fina 1	Inent Period Selected: December 27, 2017 t Traff Member to Contact for Additional Informe: Monica Baez Inents Monica Baez Inents Multimedia Intervent Mult	revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 Ill five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J Modernees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122.143(4) PERMIT emissions to the atmosphere during an emissions event that occurred on 193911.
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Compon TCEQ St Nar Site an 1) Has the 2) Has the 2) Has the Compo A. Fina 1	Inent Period Selected: December 27, 2017 t December 20, 2018 t <th>revocation of a permit. o December 27, 2022 Formation Regarding This Compliance History. Phone: (512) 239-5784 Ill five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J NO decrees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122.143(4) PERMIT emissions to the atmosphere during an emissions event that occurred on 193911. IORDER 2020-0062-IWD-E (1660 Order-Agreed Order With Denial)</th>	revocation of a permit. o December 27, 2022 Formation Regarding This Compliance History. Phone: (512) 239-5784 Ill five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J NO decrees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122.143(4) PERMIT emissions to the atmosphere during an emissions event that occurred on 193911. IORDER 2020-0062-IWD-E (1660 Order-Agreed Order With Denial)
Compon TCEQ St Nat Site an 1) Has the 2) Has the 2) Has the Compo A. Fina 1	Inent Period Selected: December 27, 2017 t December 27, 2017 t December 26, 2017 t December 20, 2017 t December 2017 t Description: Najor Classification: Major Citation: 30 TAC Chapter 116, SubChapter E 30 TAC Chapter 122, SubChapter E SC THSC Chapter 382 382.085(b) Rqmt Prov: NSR #48653, Special Condition 1 F Description: Failure to prevent unauthorized e March 13, 2018; TCEQ/STEERS Incident No. 2 Effective Date: 05/25/2021 Effective Date: 05/25/2021 ADMIN Classification: Moderate Citation: 2D TWC Chapter 26, SubChapter A	revocation of a permit. o December 27, 2022 Formation Regarding This Compliance History. Phone: (512) 239-5784 Ill five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J NO decrees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122.143(4) PERMIT emissions to the atmosphere during an emissions event that occurred on 193911. IORDER 2020-0062-IWD-E (1660 Order-Agreed Order With Denial) A 26.121(a)(1)
Compon TCEQ St Nat Site an 1) Has the 2) Has the Compo A. Fina 1	Inent Period Selected: December 27, 2017 t Comparison of the state o	revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 If five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J decrees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122.143(4) PERMIT emissions to the atmosphere during an emissions event that occurred on 193911. IORDER 2020-0062-IWD-E (1660 Order-Agreed Order With Denial) 4 26.121(a)(1) 5 305.125(1)
Compon TCEQ St Nat Site an 1) Has the 2) Has the Compo A. Fina 1	Inent Period Selected: December 27, 2017 t Aff Member to Contact for Additional Informe: Monica Baez Inents (Monica Baez Inents (Operator History: Ad Owner/Operator History: Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Multimedia) for the Site Are I Inents (Chapter 382 382.085(revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 If five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J decrees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122.143(4) PERMIT emissions to the atmosphere during an emissions event that occurred on 193911. IORDER 2020-0062-IWD-E (1660 Order-Agreed Order With Denial) 4 26.121(a)(1) 5 305.125(1) No. 3 PERMIT
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Component TCEQ St Name Site and 1) Has the 2) Has the Component A. Fina 1 2	ent Period Selected: December 27, 2017 t aff Member to Contact for Additional Inf me: Monica Baez d Owner/Operator History: a site been in existence and/or operation for the fue tere been a (known) change in ownership/operator nents (Multimedia) for the Site Are I 1 Orders, court judgments, and consent of Effective Date: 07/06/2020 ADMIN Classification: Major Citation: 30 TAC Chapter 116, SubChapter E 30 TAC Chapter 122, SubChapter E 5C THSC Chapter 132 382.085(b) Rqmt Prov: NSR #48653, Special Condition 1 F Description: Failure to prevent unauthorized e March 13, 2018; TCEQ/STEERS Incident No. 2 Effective Date: 05/25/2021 ADMIN Classification: Moderate Citation: 2D TWC Chapter 26, SubChapter F Rqmt Prov: Eff. Limits and Monitoring RQMTs; Description: Failed to prevent the discharge o (plastic pellets) that discharged through Outfa of the floating solids screen in the Victoria Bar	revocation of a permit. o December 27, 2022 formation Regarding This Compliance History. Phone: (512) 239-5784 All five year compliance period? YES of the site during the compliance period? NO Listed in Sections A - J decrees: IORDER 2019-1136-AIR-E (Findings Order-Agreed Order Without Denial) 3 116.115(c) 3 122.143(4) PERMIT emissions to the atmosphere during an emissions event that occurred on (93911. NORDER 2020-0062-IWD-E (1660 Order-Agreed Order With Denial) A 26.121(a)(1) 5 305.125(1) No. 3 PERMIT of solids into or adjacent to any water in the state. Specifically, floating solids II No. 002 were observed on the ground around the outfall and downstream ge Canal. KORDER 2022-0023-AIR-E (1660 Order-Agreed Order With Denial)

Compliance History Report for CN601688781, RN102181526, Rating Year 2023 which includes Compliance History (CH) components from December 27, 2017, through December 27, 2022. Ratings are pending Mass Classification.

Classification: Moderate 30 TAC Chapter 116, SubChapter B 116.115(c) Citation: 30 TAC Chapter 122, SubChapter B 122.143(4) 5C THSC Chapter 382 382.085(b) Rqmt Prov: GTC and STC No. 12 OP Special Condition 1 PERMIT Description: Failure to prevent unauthorized emissions to the atmosphere during an emissions event that was discovered on September 17, 2021, TCEQ/STEERS Incident No. 366827. Classification: Moderate 30 TAC Chapter 116, SubChapter B 116.115(c) Citation: 30 TAC Chapter 122, SubChapter B 122.143(4) 5C THSC Chapter 382 382.085(b) Rgmt Prov: O2028 OP Special Condition No. 1 PERMIT Special Term and Condition No. 10 OP Description: Failure to prevent unauthorized emissions to the atmosphere during a non-reportable emissions event which was discovered on August 6, 2021 at 0730 hours and lasted approximately 47 seconds. Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter F 101.201(a)(1)(B) 30 TAC Chapter 122, SubChapter B 122.143(4) 5C THSC Chapter 382 382.085(b) Rgmt Prov: GTC and STC No. 2.F OP Description: Failure to submit an Initial Notification for a reportable emissions event within 24 hours after the discovery of the event. 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: GTC and STC No. 17 OP Special Condition No. 1 PERMIT

Description: Failure to prevent unauthorized emissions to the atmosphere during an emissions event that was discovered on December 20, 2021, TCEQ/STEERS Incident No. 371859.

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 18, 2018	(1474471)
Item 2	February 15, 2018	(1467438)
Item 3	March 14, 2018	(1490376)
Item 4	April 17, 2018	(1493612)
Item 5	May 11, 2018	(1472203)
Item 6	May 15, 2018	(1500530)
Item 7	May 24, 2018	(1437746)
Item 8	June 14, 2018	(1507647)
Item 9	June 26, 2018	(1497938)
Item 10	August 13, 2018	(1483435)
Item 11	August 18, 2018	(1520026)
Item 12	August 31, 2018	(1506507)
Item 13	October 18, 2018	(1533549)
Item 14	February 07, 2019	(1533053)
Item 15	March 20, 2019	(1559477)
Item 16	April 17, 2019	(1571765)
Item 17	May 06, 2019	(1557185)
Item 18	May 20, 2019	(1583139)
Item 19	June 28, 2019	(1571491)

Compliance History Report for CN601688781, RN102181526, Rating Year 2023 which includes Compliance History (CH) components from December 27, 2017, through December 27, 2022. Ratings are pending Mass Classification.
Item 20	July 11, 2019	(1571614)
Item 21	July 12, 2019	(1571492)
Item 22	August 21, 2019	(1599424)
Item 23	September 19, 2019	(1580784)
Item 24	November 19, 2019	(1618989)
Item 25	November 22, 2019	(1604271)
Item 26	February 17, 2020	(1640601)
Item 27	February 20, 2020	(1623286)
Item 29	April 15, 2020	(1653457)
Item 31	May 18, 2020	(1660043)
Item 32	June 17, 2020	(1666546)
Item 33	July 16, 2020	(1673504)
Item 34	July 31, 2020	(1659768)
Item 35	August 20, 2020	(1680278)
Item 36	August 31, 2020	(1670039)
Item 37	October 05, 2020	(1678351)
Item 38	October 19, 2020	(1693195)
Item 39	December 18, 2020	(1712278)
Item 41	February 19, 2021	(1725333)
Item 42	March 26, 2021	(1701365)
Item 43	April 15, 2021	(1725335)
Item 44	May 17, 2021	(1739983)
Item 45	June 28, 2021	(1736558)
Item 46	July 06, 2021	(1737580)
Item 47	July 20, 2021	(1737613)
Item 48	July 21, 2021	(1737895)
Item 49	July 22, 2021	(1738482)
Item 50	August 18, 2021	(1755518)
Item 51	September 01, 2021	(1706968)
Item 52	September 16, 2021	(1766071)
Item 53	October 19, 2021	(1776591)
Item 54	November 18, 2021	(1783562)
Item 55	December 14, 2021	(1774011)
Item 56	December 15, 2021	(1790582)
Item 57	January 18, 2022	(1798379)
Item 58	February 15, 2022	(1806256)
Item 59	February 22, 2022	(1790537)
Item 60	March 07, 2022	(1795971)
Item 61	March 18, 2022	(1795840)
Item 62	April 20, 2022	(1819891)
Item 63	June 20, 2022	(1835018)
Item 64	July 15, 2022	(1842227)
Item 65	July 21, 2022	(1819144)
Item 66	August 03, 2022	(1833391)
Item 67	August 18, 2022	(1848363)
Item 69	September 20, 2022	(1856155)
Item 70	November 17, 2022	(1869431)
Item 71	December 06, 2022	(1854291)
Item 72	December 16, 2022	(1875275)

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: 02/09/2022 (1787408)

 Self Report?
 NO
 Classification: Moderate

 Citation:
 30 TAC Chapter 111, SubChapter A 111.111(a)(1)(B)

 30 TAC Chapter 116, SubChapter B 116.115(b)(2)(H)

 30 TAC Chapter 122, SubChapter B 122.143(4)

 5C THSC Chapter 382 382.085(b)

	Description:	General Condition No. 10 PERMIT Special Term and Condition No. 3A(i) OF Failure to comply with applicable opacity reported in the deviation report for the 2021 that Emission Point No. (EPN) 224 greater than 20% opacity averaged ove was noted on March 4, 2021 between 14	y requirements. Spec period of November , Screen Pack Cleane r a six-minute perioc 400 hours and 1500	cifically, it was 10, 2020 - May 9, er, was operated with I. This observation hours.
2	Date: 02,	/28/2022 (1813317)		
	Self Report?	YES	Classification:	Moderate
	Citation: Description:	2D TWC Chapter 26, SubChapter A 26.1 30 TAC Chapter 305, SubChapter F 305 Failure to meet the limit for one or more	.21(a) .125(1) e permit parameter	
3	Date: 03/02/2022 (1794174)			
	Self Report?	NO	Classification:	Moderate
	Citation:	30 TAC Chapter 122, SubChapter B 122 30 TAC Chapter 122, SubChapter B 122 5C THSC Chapter 382 382.085(b) General Terms and Conditions OP Special Term and Condition No. 11 OP	.143(4) .146(5)	
	Description:	Failure to report all instances of deviation (PCC) form.	ons in the Permit Con	npliance Certification
4	Date: 04,	/30/2022 (1828734)		
	Self Report?	YES	Classification:	Moderate
	Citation:	30 TAC Chapter 305, SubChapter F 305	.125(1)	
	Description:	Failure to meet the limit for one or more	e permit parameter	
5	Date: 05,	/04/2022 (1802569)		
	Self Report?	YES	Classification:	Moderate
C	Citation:	30 TAC Chapter 116, SubChapter B 116 30 TAC Chapter 122, SubChapter B 122 30 TAC Chapter 122, SubChapter B 122 40 CFR Chapter 63, SubChapter C, PT 6 40 CFR Chapter 63, SubChapter C, PT 6 5C THSC Chapter 382 382.085(b) SC 4D PERMIT SC 5F PERMIT STC 12 OP STC 1A OP	.115(c) .143(4) .143(6) 3, SubPT H 63.168(d 3, SubPT H 63.174(t	1)(2) 5)(3)(i)
	Description:	Failure to monitor as required.	Classifiantian	Madausta
	Self Report?	NU 30 TAC Chanter 122 SubChanter B 122	Classification:	Moderate
		30 TAC Chapter 122, SubChapter B 122 30 TAC Chapter 122, SubChapter B 122 5C THSC Chapter 382 382.085(b) GTC OP	.145(2)(A)	
	Description:	Failure to report all instances of deviation	ons.	
6	Date: 05,	/05/2022 (1763650)		
	Self Report?	YES	Classification:	Moderate
	Citation:	30 TAC Chapter 101, SubChapter A 101 30 TAC Chapter 116, SubChapter B 116 30 TAC Chapter 122, SubChapter B 122 40 CFR Chapter 60, SubChapter C, PT 6 5C THSC Chapter 382 382.085(b) SC 8(A) PERMIT STC 14 OP	.20(3) .115(c) .143(4) 0, SubPT A 60.18(c)	(3)(i)(B)(ii)
	Description:	Failure to maintain the net heating value of Federal Regulation (40 CFR) §60.18	e requirements conta	ained in Title 40 Code
	Self Report?	YES	Classification:	Moderate
	Citation:	30 TAC Chapter 101, SubChapter A 101 30 TAC Chapter 116, SubChapter B 116 30 TAC Chapter 122, SubChapter B 122 5C THSC Chapter 382 382.085(b) SC 12(A) PERMIT	.20(3) .115(c) .143(4)	
	Description:	Failure to maintain baghouse differentia	l pressure limits at o	r below the permitted

6

Self Penort?	limit. VES	Classification	Moderate
Citation:	30 TAC Chapter 101, SubChapter A 10 30 TAC Chapter 111, SubChapter A 11 30 TAC Chapter 116, SubChapter B 1	01.20(3) 11.111(a)(4)(A) 16.115(c)	moucrate
	30 TAC Chapter 122, SubChapter B 12 40 CFR Chapter 63, SubChapter C, PT 5C THSC Chapter 382 382.085(b) SC 13(C) PERMIT STC 14 OP	22.143(4) 63, SubPT A 63.11(b)	(4)
Description: Self Report?	Failure to prevent visible emissions. YES	Classification:	Moderate
Citation:	30 TAC Chapter 122, SubChapter B 1: 30 TAC Chapter 122, SubChapter B 1: 5C THSC Chapter 382 382.085(b) GTC OP	22.143(4) 22.145(2)(A)	
Description:	Failure to provide an accurate semi-ar	nnual deviation report ((SDR).
Date: 05/ Self Report?	27/2022 (1805316) NO	Classification:	Moderate
Citation:	30 TAC Chapter 116, SubChapter B 1: 30 TAC Chapter 122, SubChapter B 1: 48643 Special Condition 2(D) PERMIT 5C THSC Chapter 382 382.085(b)	16.115(c) 22.143(4)	
Description:	Failure to maintain H2S emissions wit	hin permitted limits.	
Date: 08/	22/2022 (1826094)	Classification	Madavata
Citation:	30 TAC Chapter 101, SubChapter A 10	01.20(3)	Moderate
	30 TAC Chapter 113, SubChapter C 1 40 CFR Chapter 63, SubChapter C, PT 5C THSC Chapter 382 382.085(b)	13.100 63, SubPT A 63.11(b)	(4)
Description:	Failure to prevent visible emissions. S April 21, 2021 through April 20, 2022 246) had visible emissions in excess of steam at the site.	pecifically, during the of , UCC Seadrift reported of 5 minutes in a 2 hour	compliance period of I that a flare (EPN r period due to loss of
	Refer to Deviation Item No. 19 on the 17, 2022.	e Semi-Annual Deviation	n Report dated May
Self Report? Citation:	NO 30 TAC Chapter 101, SubChapter A 10	Classification: 01.20(3)	Moderate
	30 TAC Chapter 111, SubChapter A 1 30 TAC Chapter 116, SubChapter B 1	11.111(a)(4)(A) 16.115(c)	
	30 TAC Chapter 122, SubChapter B 12 40 CFR Chapter 63, SubChapter C, PT 5C THSC Chapter 382 382.085(b) Special Condition No. 12(A) PERMIT	22.143(4) - 63, SubPT A 63.11(b)	(6)(ii)
Description:	Special Term & Condition No. 11 OP Failure to operate flare above the min Specifically, during the compliance pe 2022, UCC Seadrift reported one insta gas dropped below the minimum oper	imum net heating valu riod of April 21, 2021 t ance when the net heat rating requirement of 3	e for EPN 246. hrough April 20, ing value of the flare 00 BTU/scf.
	Refer to Deviation Item No. 1 on the S 2022.	Semi-Annual Deviation	Report dated May 17,
Date: 09/	30/2022 (1862515)		
Self Report? Citation:	YES 2D TWC Chapter 26, SubChapter A 26	Classification: 5.121(a)	Moderate
Description:	30 TAC Chapter 305, SubChapter F 30 Failure to meet the limit for one or mo	05.125(1) pre permit parameter	
Date: 11/	21/2022 (1854121)		
Self Report? Citation:	NU 30 TAC Chapter 122. SubChapter B 12	Classification: 22.143(4)	Moderate
	30 TAC Chapter 122, Subchapter B 12 5C THSC Chapter 382 382.085(b) STC 3(A)(iv)(3) OP STC 3(A)(vi)(1) OP	22.144(1)	

Compliance History Report for CN601688781, RN102181526, Rating Year 2023 which includes Compliance History (CH) components from December 27, 2017, through December 27, 2022. Ratings are pending Mass Classification.

Description: Failure to maintain required documentation. Specifically, UCC failed to maintain visible emission records for the second quarter of calendar year 2021.

Date: 12/	08/2022 (1852724)		
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 101, SubChapter A 30 TAC Chapter 116, SubChapter B 5C THSC Chapter 382 382.085(b) SC 2 OP STC 14 OP	101.20(3) 116.115(c)	
Description: Self Report?	Failure to operate filtered vents with NO	out visible emissions. Classification:	Moderate
Citation:	30 TAC Chapter 101, SubChapter A 30 TAC Chapter 116, SubChapter B 30 TAC Chapter 116, SubChapter B 5C THSC Chapter 382 382.085(b) SC 1 OP STC 14 OP	101.20(3) 116.115(b)(2)(F) 116.115(c)	
Description:	Failure to comply with the Maximum of 0.01 pounds per hour (lbs/hr) for Number (EPN) 479 (No. 2 Silica Acti	Allowable Emission Rate particulate matter (PM) vator).	e Table (MAERT) limit from Emission Point
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 101, SubChapter A 30 TAC Chapter 116, SubChapter B 30 TAC Chapter 122, SubChapter B 40 CFR Chapter 63, SubChapter C, F 5C THSC Chapter 382 382.085(b) SC 5(A) OP STC 14 OP	101.20(3) 116.115(c) 122.143(4) PT 63, SubPT A 63.11	
Description:	Failure to operate a flare without vis hour period.	ible emissions in excess	of 5 minutes in a 2
Self Report?	NO	Classification:	Moderate
Citation:	30 TAC Chapter 106, SubChapter A 30 TAC Chapter 116, SubChapter B 40 CFR Chapter 63, SubChapter C, F 5C THSC Chapter 382 382.085(b) PBR Registration No. 159156 OP STC 14 OP	106.4(c) 116.115(c) PT 63, SubPT FFFF 63.24	80(a)
Description: Self Report?	Failure to conduct fugitive emission NO	monitoring for applicable Classification:	e components. Moderate
Citation:	30 TAC Chapter 101, SubChapter A 30 TAC Chapter 116, SubChapter B 30 TAC Chapter 116, SubChapter B 5C THSC Chapter 382 382.085(b) SC 1 OP STC 14 OP	101.20(3) 116.115(b)(2)(F) 116.115(c)	
Description:	Failure to comply with the Maximum of 0.01 pounds per hour (lbs/hr) for Number (EPN) 535L (Bin 7117 Cylin	Allowable Emission Rate particulate matter (PM) der Loading Filter).	e Table (MAERT) limit from Emission Point

F. Environmental audits:

11

Notice of Inte	ent Date: 07/28/2017 (1431075)
Disclosure	e Date: 02/26/2018
Viol. Classif	fication: Moderate
Citation:	40 CFR Chapter 63, SubChapter C, PT 63, SubPT FFFF 63.2525(e)(1)
	40 CFR Chapter 63, SubChapter C, PT 63, SubPT FFFF 63.2525(e)(4)(i)
	40 CFR Chapter 63, SubChapter C, PT 63, SubPT FFFF 63.2525(e)(4)(ii)
	40 CFR Chapter 63, SubChapter C, PT 63, SubPT FFFF 63.2525(e)(4)(iii)
	40 CFR Chapter 63, SubChapter C, PT 63, SubPT FFFF 63.2525(e)(4)(iv)
Description:	Failure to maintain required records for five years for process vents that emit hydrogen halides for wo MCPUs: Catalyst Manufacturing Facilities and Gas Phase Polyethylene Facilities. Both of these MCPU's have process vents that emit <1000 lb/yr of hydrogen halide.

Notice of Intent Date: 10/18/2017 (1448834)

Disclosure Date: 05/02/2018

Viol. Classification: Moderate

Citation: 40 CFR Chapter 63, SubChapter C, PT 63, SubPT ZZZZ 63.6625(e)

40 CFR Chapter 63, SubChapter C, PT 63, SubPT ZZZZ 63.6625(f) Rgmt Prov: OP ST&C No. 1.A. Description: Failure to maintain maintenance records for several emergency engines. Notice of Intent Date: 01/04/2018 (1465719) Disclosure Date: 05/10/2018 Viol. Classification: Moderate Citation: 30 TAC Chapter 106, SubChapter S 106.433 Rgmt Prov: OP ST&C No. 14 Description: Failure to maintain the required record keeping for a PBR associated with external surface coating operations. Specifically, the VOC emissions record keeping was not being maintained. Viol. Classification: Minor 30 TAC Chapter 122, SubChapter B 122.143(1) Citation: Rqmt Prov: OP ST&C No. 3(A)(iv)(1) Description: Failure to perform quarterly visual emissions monitoring for an emergency generator. Specifically, records were missing for 2015 and one quarter for 2017. 11/08/2018 Disclosure Date: Viol. Classification: Moderate Citation: 30 TAC Chapter 106, SubChapter A 106.13 Rgmt Prov: OP ST&C No. 14 Description: Failure to comply with the pounds per hour limit specified in Standard Exemption 75 (less than 6.0 lb/hr, averaged over any 4-hour period, and 500 lbs per week). Notice of Intent Date: 01/12/2018 (1466929) Disclosure Date: 04/10/2018 Viol. Classification: Moderate Citation: 30 TAC Chapter 116, SubChapter B 116.115(c) Rqmt Prov: PERMIT SC No. 2 and 3 OP SC No. 3.A(iv)(4) PERMIT SC Nos. 5 and 6 Description: Failure to ensure that the guarterly Title V filtered vents inspection checklist and the instruction includes all information that is needed to demonstrate compliance. Viol. Classification: Moderate Citation: 30 TAC Chapter 111, SubChapter A 111.111 Description: Failure to include all information required by the Title V permit in the daily inspection log sheets. Viol. Classification: Moderate 40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(a) Citation: 40 CFR Chapter 63, SubChapter C, PT 63, SubPT A 63.11(b)(6)(ii) Rqmt Prov: PERMIT SC No. 12 PERMIT SC No. 3 Description: Failure to maintain a net heating value of gas being combusted at the Large Flare (EPN 246) of 300 BTU/scf for four hours from the time period of January 1, 2017 to April 1, 2018. Disclosure Date: 06/25/2018 Viol. Classification: Minor Citation: 30 TAC Chapter 116, SubChapter B 116.115(b)(2) Rgmt Prov: PERMIT SC No. 13 PERMIT SC No. 14 PERMIT SC No. 6 Description: Failure to ensure that some Delay of Repair components are closed out properly. Viol. Classification: Minor Citation: 30 TAC Chapter 116, SubChapter B 116.115(b)(2) Description: Failure to maintain a quarterly precision calibration documentation form for the fourth quarter of 2017 for the LDAR calibration records. Notice of Intent Date: 03/01/2018 (1478571) No DOV Associated Notice of Intent Date: 04/16/2018 (1479764) Disclosure Date: 06/25/2018 Viol. Classification: Minor Citation: 30 TAC Chapter 116, SubChapter B 116.115(b)(2) Rgmt Prov: OP SC No. 14

PERMIT SC No. 9.E. Description: Failure to prevent open ended lines on process equipment. Viol. Classification: Minor 30 TAC Chapter 116, SubChapter B 116.115(b)(2) Citation: Ramt Prov: PERMIT SC 6.A. OP SC No. 14 Description: Failure to complete all of the required quarterly bag house inspections. Viol. Classification: Moderate Citation: 30 TAC Chapter 116, SubChapter B 116.115(b)(2) Rqmt Prov: OP GT&C PERMIT SC No. 5 Description: Failure to maintain data for production/throughput rates that are used to determine compliance with limits specified in the MAERT Table. Specifically, the data for 2013 was not available. For 2014 to 2018, there was not a 12-month rolling average calculation performed. Notice of Intent Date: 05/01/2018 (1484858) Disclosure Date: 11/01/2018 Viol. Classification: Moderate Citation: 30 TAC Chapter 116, SubChapter B 116.115(c) Rqmt Prov: PERMIT SC No. 1 Description: Failure to authorized previously unauthorized atmospheric vents with the potential to emit. Notice of Intent Date: 06/20/2018 (1500176) No DOV Associated Notice of Intent Date: 08/06/2018 (1511519) No DOV Associated Notice of Intent Date: 08/14/2018 (1512446) No DOV Associated Notice of Intent Date: 08/23/2018 (1513720) No DOV Associated Notice of Intent Date: 09/25/2018 (1523536) No DOV Associated Notice of Intent Date: 10/10/2018 (1525725) No DOV Associated Notice of Intent Date: 10/10/2018 (1525734) No DOV Associated Notice of Intent Date: 03/28/2019 (1555738) No DOV Associated Notice of Intent Date: 04/11/2019 (1556978) Disclosure Date: 11/21/2019 Viol. Classification: Moderate Citation: 30 TAC Chapter 116, SubChapter B 116.110(a)(5) Rgmt Prov: OP ST&Cs Description: Failure to comply with the de minimis limit of puncturing no more than 40 aerosol can per day at the site. Notice of Intent Date: 04/11/2019 (1557000) No DOV Associated Notice of Intent Date: 05/03/2019 (1569142) No DOV Associated Notice of Intent Date: 05/10/2019 (1570079) No DOV Associated

Notice of Intent Date: 08/08/2019 (1590516)

No DOV Associated Notice of Intent Date: 08/15/2019 (1591980) No DOV Associated Notice of Intent Date: 09/04/2019 (1597683) No DOV Associated Notice of Intent Date: 09/26/2019 (1603152) No DOV Associated Notice of Intent Date: 09/24/2019 (1603284) Disclosure Date: 11/18/2019 Viol. Classification: Minor Citation: 30 TAC Chapter 122, SubChapter B 122.143(4) Rgmt Prov: OP ST&CS 3.A.(iv)(1) Description: Failure to conduct a second guarter visible emission observation. Viol. Classification: Moderate 40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.167(a)(1) Citation: Rgmt Prov: PERMIT SC 11.E. **OP ST&C 15** Description: Failure to prevent the open-ended connection that was found on the bottom outlet line of a filter assembly. Notice of Intent Date: 11/05/2019 (1611455) 11/09/2020 Disclosure Date: Viol. Classification: Minor Citation: 40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.482-7(c)(1)(i) 40 CFR Chapter 63, SubChapter C, PT 63, SubPT H 63.168(c) Description: Failure to perform quarterly monitoring for the valves and connectors as listed. Notice of Intent Date: 11/18/2019 (1613106) No DOV Associated Notice of Intent Date: 03/10/2020 (1639445) Disclosure Date: 03/11/2021 Viol. Classification: Moderate Citation: 30 TAC Chapter 305, SubChapter F 305.125(1) Rgmt Prov: PERMIT EL&MR Outfall 001 pg. 2 Description: Failure to comply with the daily average dry weather flow. Viol. Classification: Moderate Citation: 30 TAC Chapter 305, SubChapter F 305.125(17) 30 TAC Chapter 319, SubChapter A 319.11(a) 30 TAC Chapter 319, SubChapter A 319.11(b) 30 TAC Chapter 319, SubChapter A 319.11(c) 30 TAC Chapter 319, SubChapter A 319.11(d) 30 TAC Chapter 319, SubChapter A 319.4 Ramt Prov: PERMIT M&R Rea1 pg 4 Description: Failure to use the daily flow and not the totalizer to determine flow for Outfall 001. Viol. Classification: Moderate Citation: 30 TAC Chapter 305, SubChapter F 305.125(17) 30 TAC Chapter 319, SubChapter A 319.11(a) 30 TAC Chapter 319, SubChapter A 319.11(b) 30 TAC Chapter 319, SubChapter A 319.11(c) 30 TAC Chapter 319, SubChapter A 319.11(d) 30 TAC Chapter 319, SubChapter A 319.4 Rgmt Prov: PERMIT M&R Reg 1 pg. 6 Description: Failure to use the daily flow and not the totalizer for monitoring Outfall 002. Viol. Classification: Moderate 30 TAC Chapter 305, SubChapter F 305.125(17) Citation: Rgmt Prov: PERMIT M&R Reg 1 pg 6 Description: Failure to ensure that the Outfall 001 daily average flows are reported timely and not a day behind.

Viol. Classification: Moderate 30 TAC Chapter 305, SubChapter F 305.125(17) Citation: Rqmt Prov: PERMIT M&R Req 1 pg 6 Description: Failure to ensure the Outfall 002 daily average flows are reported timely and not a day behind. Viol. Classification: Moderate 30 TAC Chapter 305, SubChapter F 305.125(1) Citation: Description: Failure to ensure a minimum of 2 feet of free board in pond under normal operating levels. Viol. Classification: Moderate Citation: 30 TAC Chapter 305, SubChapter F 305.125(9)(B)(i) Rqmt Prov: PERMIT M&R Req 7(b)(i) pg 5 Description: Failure to prevent an overflow of combined outfall during a 10/19 event. Viol. Classification: Moderate Citation: 30 TAC Chapter 319, SubChapter A 319.11(a) 30 TAC Chapter 319, SubChapter A 319.11(b) 30 TAC Chapter 319, SubChapter A 319.11(c) 30 TAC Chapter 319, SubChapter A 319.11(d) Rqmt Prov: PERMIT M&R Req 5 pg 5 Description: Failure to ensure Outfall 002 flow is accurate. Viol. Classification: Moderate Citation 30 TAC Chapter 319, SubChapter A 319.11(b) Description: Failure to ensure SVOC/VOC samples are caught in glass bottles per method. Viol. Classification: Moderate 30 TAC Chapter 116, SubChapter B 116.115(c) Citation: Description: Failure to comply with the represented VOC emissions claimed with Standard Exemption 61. Notice of Intent Date: 04/21/2020 (1650617) No DOV Associated Notice of Intent Date: 05/15/2020 (1657588) Disclosure Date: 05/17/2021 Viol. Classification: Moderate 30 TAC Chapter 101, SubChapter A 101.10 Citation: Description: Failure ensure ethylene oxide emissions are not overestimated in the 2019 annual emissions inventory for EPN 334. Notice of Intent Date: 06/15/2020 (1657205) Disclosure Date: 05/17/2021 Viol. Classification: Moderate Citation: 30 TAC Chapter 101, SubChapter A 101.10 Rqmt Prov: OP ST&C 2.E. Description: Failure to include CO emissions associated with the HP2 return gas stream in the 2020 EI report. Notice of Intent Date: 08/25/2020 (1677313) No DOV Associated Notice of Intent Date: 11/13/2020 (1698048) No DOV Associated Notice of Intent Date: 11/19/2020 (1696830) No DOV Associated Notice of Intent Date: 01/12/2021 (1702249) Disclosure Date: 04/09/2021 Viol. Classification: Minor 40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.486(c)(2) Citation: 40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.486(c)(3) Description: Failure to maintain records of the date of the first attempt at repair and corrective actions taken for six leaking valves. Viol. Classification: Moderate 40 CFR Chapter 63, SubChapter C, PT 63, SubPT FFFF 63.2520(e)(5)(ii) Citation: Description: Failure to include all instances of flare deviations on the semi-annual MON report. Viol. Classification: Moderate Citation:

40 CFR Chapter 63, SubChapter C, PT 63, SubPT FFFF 63.2455(b) Description: Failure to properly designate continuous process vent in the MON NOCS. Viol. Classification: Moderate 40 CFR Chapter 60, SubChapter C, PT 60, SubPT VV 60.487(c)(2)(vii) Citation: Description: Failure to include all instance of delay of repair components on the semi-annual subpart VV report. Viol. Classification: Moderate 40 CFR Chapter 63, SubChapter C, PT 63, SubPT FFFF 63.2465 Citation: Description: Failure to maintain a record of the 365-day rolling summation of halogen HAP emissions. Viol. Classification: Moderate 30 TAC Chapter 116, SubChapter B 116.115(c) Citation: Description: Failure to maintain records demonstrating compliance with the calibration precision and linearity requirements in Section 13.2 of Performance Specification 9 within the guarterly multi-point calibration on the composition analyzer on the Small Flare. Notice of Intent Date: 01/12/2021 (1702298) 05/06/2021 Disclosure Date: Viol. Classification: Moderate 30 TAC Chapter 122, SubChapter B 122.143(1) Citation: Description: Failure to update leak rates and the inspection process in software. Notice of Intent Date: 04/01/2021 (1710051) No DOV Associated Notice of Intent Date: 04/16/2021 (1723333) No DOV Associated Notice of Intent Date: 11/04/2021 (1774291) No DOV Associated Notice of Intent Date: 11/18/2021 (1775625) No DOV Associated Notice of Intent Date: 02/18/2022 (1802021) No DOV Associated Notice of Intent Date: 04/11/2022 (1817182) No DOV Associated Notice of Intent Date: 07/07/2022 (1832805) No DOV Associated Notice of Intent Date: 07/25/2022 (1839882) Disclosure Date: 05/09/2023 Viol. Classification: Minor 30 TAC Chapter 122, SubChapter B 122.143(4) Citation: Rqmt Prov: OP SC 3A(iv)(4) Description: Failure to ensure all visible emissions observations are completed during the appropriate time and the time documented. Viol. Classification: Minor Citation: 30 TAC Chapter 122, SubChapter B 122.143(4) Rqmt Prov: OP SC 3A(iv)(4) Description: Failure to ensure visible emission observations times are documented. 08/09/2022 (1840841) Notice of Intent Date: Disclosure Date: 08/01/2023 Viol. Classification: Moderate 30 TAC Chapter 116, SubChapter B 116.115(c) Citation: Rgmt Prov: PERMIT SC 10 Description: Failure to conduct annual flow monitor calibration as required.

G. Type of environmental management systems (EMSs): N/A

- H. Voluntary on-site compliance assessment dates: $_{\mbox{N/A}}$
- I. Participation in a voluntary pollution reduction program: \$N/A\$
- J. Early compliance: N/A
- Sites Outside of Texas:

N/A