

STATEMENT OF BASIS/TECHNICAL SUMMARY AND
EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

DESCRIPTION OF APPLICATION

Applicant: EPCOR NR Holdings Inc.; Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005502000 (EPA I.D. No. TX0148580)

Regulated activity: Industrial wastewater permit

Type of application: New permit

Request: New permit

Authority: Federal Clean Water Act (CWA) §402; Texas Water Code (TWC) §26.027; 30 Texas Administrative Code (TAC) Chapter 305, Subchapters C-F, and Chapters 307 and 319; commission policies; and Environmental Protection Agency (EPA) guidelines

EXECUTIVE DIRECTOR RECOMMENDATION

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

REASON FOR PROJECT PROPOSED

The applicant has applied to the Texas Commission on Environmental Quality (TCEQ) for a new permit.

PROJECT DESCRIPTION AND LOCATION

The applicant proposes to operate Bayshore Desalination Facility, a seawater desalination water treatment facility.

Make-up water is raw seawater from Salt Bayou, which is fed from Galveston Bay. The raw water will flow from Salt Bayou through rotating screens and pumped to the pretreatment basins. The pretreatment process consists of rapid mixing, flocculation, an optional dissolved air flotation (DAF) step, and high-rate (HR) clarification. Then settled water from the HR clarification will be filtered through a low-pressure membrane filtration system, and optional gravity media filters, then transferred via high pressure feed pumps to seawater reverse osmosis (SWRO) membrane skids. SWRO permeate quality will be stabilized with carbon dioxide and calcite, followed by stabilization and disinfection with sodium hypochlorite and optionally, liquid ammonium sulfate, and stored in ground storage tanks (GSTs). The finished water will be pumped from the GSTs by a High Service Pump Station to the distribution system. Backwash water from the low-pressure membrane feed strainers, membrane racks, optional media filtration system, calcite contractors, along with supernatant from the sludge thickeners and centrate from the centrifuges will be collected in a residual liquid collection system and discharged via Outfall 001. Concentrate from reverse osmosis skids will be sent to Outfall 001 and blended with raw seawater before discharging via Outfall 001.

This permit does not authorize the discharge of domestic wastewater. All domestic wastewater, wastewater generated from the pretreatment process and SWRO membrane clean in-place (CIP) systems must be disposed of in an approved manner, such as routing to an approved on-site septic tank and drainfield system or to an authorized facility for treatment and disposal.

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The facility will be located at 5501 State Highway 146, approximately 1.15 miles southeast of the intersection of State Highway 146 and Farm-to-Market Road 646, near Bacliff, in Galveston County, Texas 77518.

Discharge Route and Designated Uses

The effluent will be discharged via Outfall 001 to the Houston Lighting and Power (HL&P) Canal, thence to Upper Galveston Bay in Segment No. 2421 of the Bays and Estuaries. The unclassified receiving water use is high aquatic life use for the HL&P cooling water canal. The designated uses for Segment No. 2421 are primary contact recreation, high aquatic life use, and oyster waters. The effluent limits in the draft permit will maintain and protect the existing instream uses. All determinations are preliminary and subject to additional review and revisions.

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 HL&P cooling water canal or Upper Galveston Bay, which have been identified as having high aquatic life use. Existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received.

Endangered Species Review

The discharge from this permit is not expected to have an effect on any federal endangered or threatened aquatic or aquatic-dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the TPDES Program (September 14, 1998; October 21, 1998 update). To make this determination for TPDES permits, TCEQ and the 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 No. 2421, the segment 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.

Impaired Water Bodies

Segment No. 2421 is currently listed on the state's inventory of impaired and threatened waters, the 2024 CWA §303(d) list. The listings are for dioxin and polychlorinated biphenyls (PCBs) in edible tissue from Red Bluff to Five mi Cut to Houston Point to Morgans Point (Assessment Unit (AU) 2421_01), Western portion of the bay (AU 2421_02), and to the main portion of the bay (AU 2421_03). A re-test requirement has been included in the draft permit because this facility has not been constructed and is not currently in operation. Once the analytical data is received it will be reviewed and the permit may be re-opened to include monitoring requirements or effluent limitations, if necessary. However, detectable levels of dioxin and PCBs are not expected to be present in discharges from water treatment waste. Therefore, it will not cause or contribute to the existing dioxin and PCBs impairment.

Completed Total Maximum Daily Loads (TMDLs)

One Finalized Total Maximum Daily Load (TMDL) is available for this segment: *Six Total Maximum Daily Loads for Bacteria in Waters of the Upper Gulf Coast Segments 2421, 2422, 2423, 2432, and 2439*. The draft permit does not authorize the discharge of domestic wastewater and has no other known sources of bacteria at the facility.

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Dissolved Oxygen

Wastewater from the proposed discharge is not expected to contain significant levels of oxygen-demanding substances. Therefore, no significant dissolved oxygen depletion is anticipated in the receiving waters as a result of this discharge.

SUMMARY OF EFFLUENT DATA

Self-reporting data is not available because the facility has not been constructed.

DRAFT PERMIT CONDITIONS

The draft permit authorizes the discharge of water treatment waste and raw water at a daily average flow not to exceed 59.93 million gallons per day (MGD) via Outfall 001.

Effluent limitations are established in the draft permit as follows:

Outfall	Pollutant	Daily Average	Daily Maximum
001	Flow	59.93 MGD	Report, MGD
	Total Suspended Solids	Report, mg/L	Report, mg/L
	pH, Standard Units	6.0 SU (min.)	9.0 SU

OUTFALL LOCATIONS

Outfall	Latitude	Longitude
001	29.48916 N	94.98076 W

Technology-Based Effluent Limitations

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 discharge of water treatment waste via Outfall 001 from this facility is not subject to federal effluent limitation guidelines and any technology-based effluent limitations are based on BPJ. The daily average flow limitation has been included in the draft permit based on information provided in the permit application and complies with the requirement in 40 CFR 122.44(i)(1)(ii). Monitoring requirements for total suspended solids have been included in the draft permit based on BPJ due to the potential for elevated levels to be present in the discharge.

Water Quality-Based Effluent Limitations

Calculations of water quality-based effluent limitations for the protection of aquatic life and human health are presented in Appendix A. Aquatic life criteria established in Table 1 and human health criteria established in Table 2 of 30 TAC Chapter 307 are incorporated into the calculations, as are recommendations in the Water Quality Assessment Team's memorandum dated June 5, 2026. TCEQ practice for determining significant potential is to compare the reported analytical data from the facility against percentages of the calculated daily average water quality-based effluent limitation. Permit limitations are required when analytical data reported in the application exceeds 85 percent of the calculated daily average water quality-based effluent limitation. Monitoring and reporting is required when analytical data reported in the application exceeds 70 percent of the calculated daily average water quality-based effluent limitation.

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No analytical data was submitted with the application because the facility has not been constructed. Other Requirement No. 9 has been added to the draft permit requiring sampling and analysis of the effluent upon commencement of discharge. Once the analytical data is submitted, it will be reviewed and screened against the calculated water quality-based effluent limitations (see Appendix A), based on the review of the analytical data, the permit may be reopened to add effluent limitations and/or monitoring requirements, if needed.

Total Dissolved Solids (TDS), Chloride, and Sulfate Screening

Segment No. 2421, which will receive the discharge 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. However, the Standards Implementation Team recommended in the Interoffice Memorandum dated June 23, 2026, a Salinity Monitoring Plan included in the Other Requirement Section as Item No. 8. In addition, a re-test requirement has been added in Other Requirement No. 9 of the draft permit requiring sampling and analysis of the effluent upon commencement of discharge. Once the analytical data is submitted, it will be reviewed, based on the review of the analytical data, the permit may be reopened to add effluent limitations and/or monitoring requirements, if needed.

pH Screening

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

Whole Effluent Toxicity Testing (Biomonitoring)

Biomonitoring requirements are not included in the draft permit.

The draft permit does not establish biomonitoring requirements and discharges authorized by this permit do not meet the threshold established in the *Procedures to Implement the Texas Surface Water Quality Standards* (RG-194) to impose biomonitoring requirements.

SUMMARY OF CHANGES FROM APPLICATION

The term “water treatment waste” is used in the draft permit based on standard Industrial Permits Team practice when a facility utilizes reverse osmosis water treatment systems that generate reverse osmosis reject water along with other periodic maintenance related wastewaters with these units.

The following changes have been made from the application, which make the draft permit more stringent.

No changes were made from the application.

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SUMMARY OF CHANGES FROM EXISTING PERMIT

N/A – New Permit.

BASIS FOR DRAFT PERMIT

The following items were considered in developing the draft permit:

1. Application received on October 3, 2025, and additional information received on October 24, 2025.
2. Existing permits: N/A-New Permit.
3. TCEQ Rules.
4. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective March 1, 2018, as approved by EPA Region 6.
5. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective March 6, 2014, as approved by EPA Region 6, for portions of the 2018 standards not approved by EPA Region 6.
6. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective July 22, 2010, as approved by EPA Region 6, for portions of the 2014 standards not approved by EPA Region 6.
7. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective August 17, 2000, and Appendix E, effective February 27, 2002, for portions of the 2010 standards not approved by EPA Region 6.
8. *Procedures to Implement the Texas Surface Water Quality Standards* (IPs), Texas Commission on Environmental Quality, June 2010, as approved by EPA Region 6.
9. *Procedures to Implement the Texas Surface Water Quality Standards*, Texas Commission on Environmental Quality, January 2003, for portions of the 2010 IPs not approved by EPA Region 6.
10. Memos from the Standards Implementation Team and Water Quality Assessment Team of the Water Quality Assessment Section of the TCEQ.
11. *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits*, TCEQ Document No. 98-001.000-OWR-WQ, May 1998.
12. EPA Effluent Guidelines: N/A.
13. Consistency with the Coastal Management Plan: 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.
14. 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).
15. 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).
16. *Six Total Maximum Daily Loads for Bacteria in Waters of the Upper Gulf Coast Segments 2421, 2422, 2423, 2432, and 2439*

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

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notice informs the public about the application and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent to the Chief Clerk, along with the Executive Director's preliminary decision contained in the technical summary or fact sheet. 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 hearing.

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director's response to comments and final decision to people who have filed comments, 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.

Mónica Vallin-Báez
Mónica Vallin-Báez

June 24, 2026

Date

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Appendix A
Calculated Water Quality-Based Effluent Limits

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:	EPCOR NR Holdings Inc.		
TPDES Permit No:	WQ0005502000		
Outfall No:	001		
Prepared by:	Mónica Vallin-Báez		
Date:	June 4, 2026		
DISCHARGE INFORMATION			
Receiving Waterbody:	man-made canal		
Segment No:	2421		
TSS (mg/L):	11		
Effluent Flow for Aquatic Life (MGD)	59.93		
% Effluent for Chronic Aquatic Life (Mixing Zone):	37		
% Effluent for Acute Aquatic Life (ZID):	100		
Oyster Waters?	yes		
Effluent Flow for Human Health (MGD):	59.93		
% Effluent for Human Health:	19		

CALCULATE DISSOLVED FRACTION (AND ENTER WATER EFFECT RATIO IF APPLICABLE):							
<i>Estuarine Metal</i>	<i>Intercept (b)</i>	<i>Slope (m)</i>	<i>Partition Coefficient (Kp)</i>	<i>Dissolved Fraction (Cd/Ct)</i>	<i>Source</i>	<i>Water Effect Ratio (WER)</i>	<i>Source</i>
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	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	12594.97	0.878		1.00	Assumed
Lead	6.06	-0.85	149560.26	0.378		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	122848.37	0.425		1.00	Assumed
Zinc	5.36	-0.52	65837.87	0.580		1.00	Assumed

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AQUATIC LIFE								
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:								
<i>Parameter</i>	<i>SW Acute Criterion (µg/L)</i>	<i>SW Chronic Criterion (µg/L)</i>	<i>WLAa (µg/L)</i>	<i>WLAc (µg/L)</i>	<i>LTAa (µg/L)</i>	<i>LTAc (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Acrolein	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aldrin	1.3	N/A	1.30	N/A	0.416	N/A	0.611	1.29
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	149	78	149	211	47.7	129	70.0	148
Cadmium	40.0	8.75	40.0	23.6	12.8	14.4	18.8	39.8
Carbaryl	613	N/A	613	N/A	196	N/A	288	610
Chlordane	0.09	0.004	0.0900	0.0108	0.0288	0.00659	0.00969	0.0205
Chlorpyrifos	0.011	0.006	0.0110	0.0162	0.00352	0.00989	0.00517	0.0109
Chromium (trivalent)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium (hexavalent)	1090	49.6	1090	134	349	81.8	120	254
Copper	13.5	3.6	15.4	11.1	4.92	6.76	7.23	15.2
Copper (oyster waters)	3.6	N/A	11.1	N/A	3.54	N/A	5.21	11.0
Cyanide (free)	5.6	5.6	5.60	15.1	1.79	9.23	2.63	5.57
4,4'-DDT	0.13	0.001	0.130	0.00270	0.0416	0.00165	0.00242	0.00512
Demeton	N/A	0.1	N/A	0.270	N/A	0.165	0.242	0.512
Diazinon	0.819	0.819	0.819	2.21	0.262	1.35	0.385	0.815
Dicofol [Kelthane]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	0.71	0.002	0.710	0.00541	0.227	0.00330	0.00484	0.0102
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	0.0340	0.0243	0.0109	0.0148	0.0159	0.0338
Endosulfan II (<i>beta</i>)	0.034	0.009	0.0340	0.0243	0.0109	0.0148	0.0159	0.0338
Endosulfan sulfate	0.034	0.009	0.0340	0.0243	0.0109	0.0148	0.0159	0.0338
Endrin	0.037	0.002	0.0370	0.00541	0.0118	0.00330	0.00484	0.0102
Guthion [Azinphos Methyl]	N/A	0.01	N/A	0.0270	N/A	0.0165	0.0242	0.0512
Heptachlor	0.053	0.004	0.0530	0.0108	0.0170	0.00659	0.00969	0.0205
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	0.16	N/A	0.160	N/A	0.0512	N/A	0.0752	0.159
Lead	133	5.3	352	37.9	113	23.1	33.9	71.8
Malathion	N/A	0.01	N/A	0.0270	N/A	0.0165	0.0242	0.0512
Mercury	2.1	1.1	2.10	2.97	0.672	1.81	0.987	2.08
Methoxychlor	N/A	0.03	N/A	0.0811	N/A	0.0495	0.0727	0.153
Mirex	N/A	0.001	N/A	0.00270	N/A	0.00165	0.00242	0.00512
Nickel	118	13.1	118	35.4	37.8	21.6	31.7	67.1
Nonylphenol	7	1.7	7.00	4.59	2.24	2.80	3.29	6.96
Parathion (ethyl)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pentachlorophenol	15.1	9.6	15.1	25.9	4.83	15.8	7.10	15.0
Phenanthrene	7.7	4.6	7.70	12.4	2.46	7.58	3.62	7.66
Polychlorinated Biphenyls [PCBs]	10	0.03	10.0	0.0811	3.20	0.0495	0.0727	0.153
Selenium	564	136	564	368	180	224	265	561
Silver	2	N/A	4.70	N/A	1.50	N/A	2.21	4.68
Toxaphene	0.21	0.0002	0.210	0.000541	0.0672	0.000330	0.000484	0.00102
Tributyltin [TBT]	0.24	0.0074	0.240	0.0200	0.0768	0.0122	0.0179	0.0379
2,4,5 Trichlorophenol	259	12	259	32.4	82.9	19.8	29.0	61.5
Zinc	92.7	84.2	160	392	51.1	239	75.1	159

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HUMAN HEALTH					
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:					
<i>Parameter</i>	<i>Fish Only Criterion (µg/L)</i>	<i>WLAh (µg/L)</i>	<i>LTAh (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Acrylonitrile	115	605	563	827	1750
Aldrin	1.147E-05	0.0000604	0.0000561	0.0000825	0.000174
Anthracene	1317	6932	6446	9476	20048
Antimony	1071	5637	5242	7706	16303
Arsenic	N/A	N/A	N/A	N/A	N/A
Barium	N/A	N/A	N/A	N/A	N/A
Benzene	581	3058	2844	4180	8844
Benzidine	0.107	0.563	0.524	0.769	1.62
Benzo(a)anthracene	0.025	0.132	0.122	0.179	0.380
Benzo(a)pyrene	0.0025	0.0132	0.0122	0.0179	0.0380
Bis(chloromethyl)ether	0.2745	1.44	1.34	1.97	4.17
Bis(2-chloroethyl)ether	42.83	225	210	308	651
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	7.55	39.7	37.0	54.3	114
Bromodichloromethane [Dichlorobromomethane]	275	1447	1346	1978	4186
Bromoform [Tribromomethane]	1060	5579	5188	7626	16135
Cadmium	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	46	242	225	330	700
Chlordane	0.0025	0.0132	0.0122	0.0179	0.0380
Chlorobenzene	2737	14405	13397	19693	41664
Chlorodibromomethane [Dibromochloromethane]	183	963	896	1316	2785
Chloroform [Trichloromethane]	7697	40511	37675	55381	117168
Chromium (hexavalent)	502	2642	2457	3612	7641
Chrysene	2.52	13.3	12.3	18.1	38.3
Cresols [Methylphenols]	9301	48953	45526	66923	141585
Cyanide (free)	N/A	N/A	N/A	N/A	N/A
4,4'-DDD	0.002	0.0105	0.00979	0.0143	0.0304
4,4'-DDE	0.00013	0.000684	0.000636	0.000935	0.00197
4,4'-DDT	0.0004	0.00211	0.00196	0.00287	0.00608
2,4'-D	N/A	N/A	N/A	N/A	N/A
Danitol [Fenpropathrin]	473	2489	2315	3403	7200
1,2-Dibromoethane [Ethylene Dibromide]	4.24	22.3	20.8	30.5	64.5
m -Dichlorobenzene [1,3-Dichlorobenzene]	595	3132	2912	4281	9057
o -Dichlorobenzene [1,2-Dichlorobenzene]	3299	17363	16148	23737	50219
p -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	2.24	11.8	11.0	16.1	34.0
1,2-Dichloroethane	364	1916	1782	2619	5541
1,1-Dichloroethylene [1,1-Dichloroethene]	55114	290074	269769	396559	838980
Dichloromethane [Methylene Chloride]	13333	70174	65262	95934	202963
1,2-Dichloropropane	259	1363	1268	1863	3942
1,3-Dichloropropene [1,3-Dichloropropylene]	119	626	582	856	1811
Dicofol [Kelthane]	0.30	1.58	1.47	2.15	4.56
Dieldrin	2.0E-05	0.000105	0.0000979	0.000143	0.000304
2,4-Dimethylphenol	8436	44400	41292	60699	128418
Di-n -Butyl Phthalate	92.4	486	452	664	1406
Dioxins/Furans [TCDD Equivalents]	7.97E-08	4.19E-07	3.90E-07	5.73E-07	0.0000012

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Appendix A
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HUMAN HEALTH - continued					
CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:					
<i>Parameter</i>	<i>Fish Only Criterion (µg/L)</i>	<i>WLAh (µg/L)</i>	<i>LTAh (µg/L)</i>	<i>Daily Avg. (µg/L)</i>	<i>Daily Max. (µg/L)</i>
Endrin	0.02	0.105	0.0979	0.143	0.304
Epichlorohydrin	2013	10595	9853	14484	30643
Ethylbenzene	1867	9826	9138	13433	28420
Ethylene Glycol	1.68E+07	88421053	82231579	120880421	255740210
Fluoride	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.0001	0.000526	0.000489	0.000719	0.00152
Heptachlor Epoxide	0.00029	0.00153	0.00142	0.00208	0.00441
Hexachlorobenzene	0.00068	0.00358	0.00333	0.00489	0.0103
Hexachlorobutadiene	0.22	1.16	1.08	1.58	3.34
Hexachlorocyclohexane (<i>alpha</i>)	0.0084	0.0442	0.0411	0.0604	0.127
Hexachlorocyclohexane (<i>beta</i>)	0.26	1.37	1.27	1.87	3.95
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	0.341	1.79	1.67	2.45	5.19
Hexachlorocyclopentadiene	11.6	61.1	56.8	83.4	176
Hexachloroethane	2.33	12.3	11.4	16.7	35.4
Hexachlorophene	2.90	15.3	14.2	20.8	44.1
4,4'-Isopropylidenediphenol [Bisphenol A]	15982	84116	78228	114994	243288
Lead	3.83	53.3	49.6	72.8	154
Mercury	0.0250	0.132	0.122	0.179	0.380
Methoxychlor	3.0	15.8	14.7	21.5	45.6
Methyl Ethyl Ketone	9.92E+05	5221053	4855579	7137701	15100850
Methyl <i>tert</i> -butyl ether [MTBE]	10482	55168	51307	75420	159563
Nickel	1140	6000	5580	8202	17353
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	1873	9858	9168	13476	28511
N-Nitrosodiethylamine	2.1	11.1	10.3	15.1	31.9
N-Nitroso-di- <i>n</i> -Butylamine	4.2	22.1	20.6	30.2	63.9
Pentachlorobenzene	0.355	1.87	1.74	2.55	5.40
Pentachlorophenol	0.29	1.53	1.42	2.08	4.41
Polychlorinated Biphenyls [PCBs]	6.4E-04	0.00337	0.00313	0.00460	0.00974
Pyridine	947	4984	4635	6813	14415
Selenium	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	0.24	1.26	1.17	1.72	3.65
1,1,2,2-Tetrachloroethane	26.35	139	129	189	401
Tetrachloroethylene [Tetrachloroethylene]	280	1474	1371	2014	4262
Thallium	0.23	1.21	1.13	1.65	3.50
Toluene	N/A	N/A	N/A	N/A	N/A
Toxaphene	0.011	0.0579	0.0538	0.0791	0.167
2,4,5-TP [Silvex]	369	1942	1806	2655	5617
1,1,1-Trichloroethane	784354	4128179	3839206	5643633	11939931
1,1,2-Trichloroethane	166	874	813	1194	2526
Trichloroethylene [Trichloroethene]	71.9	378	352	517	1094
2,4,5-Trichlorophenol	1867	9826	9138	13433	28420
THM [Sum of Total Trihalomethanes]	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	16.5	86.8	80.8	118	251

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Appendix A
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CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS:		
Aquatic Life	70% of Daily Avg.	85% of Daily Avg.
Parameter	(µg/L)	(µg/L)
Acrolein	N/A	N/A
Aldrin	0.428	0.519
Aluminum	N/A	N/A
Arsenic	49.0	59.5
Cadmium	13.1	15.9
Carbaryl	201	245
Chlordane	0.00678	0.00823
Chlorpyrifos	0.00362	0.00439
Chromium (trivalent)	N/A	N/A
Chromium (hexavalent)	84.1	102
Copper	5.06	6.14
Copper (oyster waters)	3.64	4.42
Cyanide (free)	1.84	2.23
4,4'-DDT	0.00169	0.00205
Demeton	0.169	0.205
Diazinon	0.269	0.327
Dicofol [Kelthane]	N/A	N/A
Dieldrin	0.00339	0.00411
Diuron	N/A	N/A
Endosulfan I (<i>alpha</i>)	0.0111	0.0135
Endosulfan II (<i>beta</i>)	0.0111	0.0135
Endosulfan sulfate	0.0111	0.0135
Endrin	0.00339	0.00411
Guthion [Azinphos Methyl]	0.0169	0.0205
Heptachlor	0.00678	0.00823
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	0.0526	0.0639
Lead	23.7	28.8
Malathion	0.0169	0.0205
Mercury	0.691	0.839
Methoxychlor	0.0508	0.0617
Mirex	0.00169	0.00205
Nickel	22.2	26.9
Nonylphenol	2.30	2.79
Parathion (ethyl)	N/A	N/A
Pentachlorophenol	4.97	6.03
Phenanthrene	2.53	3.07
Polychlorinated Biphenyls [PCBs]	0.0508	0.0617
Selenium	185	225
Silver	1.54	1.88
Toxaphene	0.000339	0.000411
Tributyltin [TBT]	0.0125	0.0152
2,4,5 Trichlorophenol	20.3	24.7
Zinc	52.6	63.9

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Appendix A
Calculated Water Quality-Based Effluent Limits

Human Health	70% of Daily Avg.	85% of Daily Avg.
Parameter	(µg/L)	(µg/L)
Acrylonitrile	579	703
Aldrin	0.0000577	0.0000701
Anthracene	6633	8054
Antimony	5394	6550
Arsenic	N/A	N/A
Barium	N/A	N/A
Benzene	2926	3553
Benzidine	0.538	0.654
Benzo(a)anthracene	0.125	0.152
Benzo(a)pyrene	0.0125	0.0152
Bis(chloromethyl)ether	1.38	1.67
Bis(2-chloroethyl)ether	215	261
Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthalate]	38.0	46.1
Bromodichloromethane [Dichlorobromomethane]	1385	1681
Bromoform [Tribromomethane]	5338	6482
Cadmium	N/A	N/A
Carbon Tetrachloride	231	281
Chlordane	0.0125	0.0152
Chlorobenzene	13785	16739
Chlorodibromomethane [Dibromochloromethane]	921	1119
Chloroform [Trichloromethane]	38767	47074
Chromium (hexavalent)	2528	3070
Chrysene	12.6	15.4
Cresols [Methylphenols]	46846	56884
Cyanide (free)	N/A	N/A
4,4'-DDD	0.0100	0.0122
4,4'-DDE	0.000654	0.000795
4,4'-DDT	0.00201	0.00244
2,4'-D	N/A	N/A
Danitol [Fenpropathrin]	2382	2892
1,2-Dibromoethane [Ethylene Dibromide]	21.3	25.9
<i>m</i> -Dichlorobenzene [1,3-Dichlorobenzene]	2996	3639
<i>o</i> -Dichlorobenzene [1,2-Dichlorobenzene]	16616	20176
<i>p</i> -Dichlorobenzene [1,4-Dichlorobenzene]	N/A	N/A
3,3'-Dichlorobenzidine	11.2	13.6
1,2-Dichloroethane	1833	2226
1,1-Dichloroethylene [1,1-Dichloroethene]	277591	337075
Dichloromethane [Methylene Chloride]	67154	81544
1,2-Dichloropropane	1304	1584
1,3-Dichloropropene [1,3-Dichloropropylene]	599	727
Dicofol [Kelthane]	1.51	1.83
Dieldrin	0.000100	0.000122
2,4-Dimethylphenol	42489	51594
Di- <i>n</i> -Butyl Phthalate	465	565
Dioxins/Furans [TCDD Equivalents]	4.01E-07	4.87E-07

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Appendix A
Calculated Water Quality-Based Effluent Limits

Human Health - continued	70% of Daily Avg.	85% of Daily Avg.
Parameter	(µg/L)	(µg/L)
Endrin	0.100	0.122
Epichlorohydrin	10138	12311
Ethylbenzene	9403	11418
Ethylene Glycol	84616294	102748357
Fluoride	N/A	N/A
Heptachlor	0.000503	0.000611
Heptachlor Epoxide	0.00146	0.00177
Hexachlorobenzene	0.00342	0.00415
Hexachlorobutadiene	1.10	1.34
Hexachlorocyclohexane (<i>alpha</i>)	0.0423	0.0513
Hexachlorocyclohexane (<i>beta</i>)	1.30	1.59
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]	1.71	2.08
Hexachlorocyclopentadiene	58.4	70.9
Hexachloroethane	11.7	14.2
Hexachlorophene	14.6	17.7
4,4'-Isopropylidenediphenol [Bisphenol A]	80496	97745
Lead	51.0	61.9
Mercury	0.125	0.152
Methoxychlor	15.1	18.3
Methyl Ethyl Ketone	4996390	6067045
Methyl <i>tert</i> -butyl ether [MTBE]	52794	64107
Nickel	5741	6972
Nitrate-Nitrogen (as Total Nitrogen)	N/A	N/A
Nitrobenzene	9433	11455
N-Nitrosodiethylamine	10.5	12.8
N-Nitroso-di- <i>n</i> -Butylamine	21.1	25.6
Pentachlorobenzene	1.78	2.17
Pentachlorophenol	1.46	1.77
Polychlorinated Biphenyls [PCBs]	0.00322	0.00391
Pyridine	4769	5791
Selenium	N/A	N/A
1,2,4,5-Tetrachlorobenzene	1.20	1.46
1,1,2,2-Tetrachloroethane	132	161
Tetrachloroethylene [Tetrachloroethylene]	1410	1712
Thallium	1.15	1.40
Toluene	N/A	N/A
Toxaphene	0.0554	0.0672
2,4,5-TP [Silvex]	1858	2256
1,1,1-Trichloroethane	3950543	4797088
1,1,2-Trichloroethane	836	1015
Trichloroethylene [Trichloroethene]	362	439
2,4,5-Trichlorophenol	9403	11418
TTHM [Sum of Total Trihalomethanes]	N/A	N/A
Vinyl Chloride	83.1	100

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Appendix B
Comparison of Effluent Limits

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

Outfall	Pollutant	Technology-Based		Water Quality-Based		Existing Permit	
		Daily Avg	Daily Max	Daily Avg	Daily Max	Daily Avg	Daily Max
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
001	Flow	59.93 MGD	Report, MGD	---	---	---	---
	Total Suspended Solids	Report	Report	---	---	---	---
	pH	6.0 SU (min.)	9.0 SU	6.0 SU (min.)	9.0 SU	---	---