Brooke T. Paup, *Chairwoman*
Catarina R. Gonzales, *Commissioner*
Tonya R. Miller, *Commissioner*
Kelly Keel, *Executive Director*

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

February 12, 2026

Ms. Sarah Garza, Director of Environmental Planning & Compliance
Port of Corpus Christi Authority of Nueces County
P.O. Box 1541
Corpus Christi, Texas 78403

RE: Notice of Preliminary Decision and Draft Permit
Applicant Name: Port of Corpus Christi Authority of Nueces County
Facility Name: Harbor Island Desalination Facility
Permit No.: WQ0005488000
Customer Reference Number: CN600885248
Regulated Entity Number: RN112186150
Type of Application: New permit

Dear Ms. Garza:

The executive director has completed the technical review of the above referenced application, received on April 1, 2025 and has prepared a preliminary decision and draft permit.

You are now required to publish another notice of your proposed activity. To help you meet the requirements associated with this notice, we have included the following items:

- Instructions for Public Notice
- Notice for Newspaper Publication
- Publisher's Affidavits
- Draft Permit
- Executive Director's Preliminary Decision
- Public Notice Verification Form

You must follow all the directions in the enclosed instructions. The most common mistakes are the unauthorized changing of notice, wording, or font. If you fail to follow these instructions, you may be required to republish the notices.

The following requirements are also described in the enclosed instructions. However, due to their importance, they are highlighted here as well.

1. You must publish the enclosed notice within as soon as possible, but no later than 45 days from the date on the cover letter. **You may be required to publish the notice in more than one newspaper, including a newspaper published in an alternative language, to satisfy all of the notice requirements.**

2. On or before the date you publish notice, you must place the following items in a public place in the county where the facility is or will be located.

   (a) a copy of your permit application, including any subsequent revisions;
   (b) the executive director's preliminary decision as contained in the technical summary; and
   (c) the draft permit, including any subsequent revisions.

   These items must be accessible to the public for review and copying, must be updated to reflect changes to the application, and must remain in place until the commission has taken action on the application or the commission refers issues to the State Office of Administrative Hearings.

3. For each publication, submit proof of publication of the notice that shows the publication date and newspaper name to the Office of the Chief Clerk within **30 calendar days** after notice is published in the newspaper.

4. Return the original enclosed Public Notice Verification and the Publisher's Affidavits to the Office of the Chief Clerk within **30 calendar days** after the notice is published in the newspaper.

If you do not comply with **all** the requirements described in the instructions, further processing of your application may be suspended or the agency may take other actions.

If you have any questions regarding publication requirements, please contact the Office of Legal Services at (512) 239-0600. If you have any questions regarding the content of the notice, please contact the individual in the permitting area assigned to your application.

Sincerely,

Laurie Gharis

Laurie Gharis
Chief Clerk
Office of the Chief Clerk

LG/TES/mdc

Enclosures

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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

**NEW**

**Permit No. WQ0005488000**

**APPLICATION AND PRELIMINARY DECISION.** Port of Corpus Christi Authority of Nueces County, P.O. Box 1541, Corpus Christi, Texas 78403, which proposes to operate Harbor Island Desalination Facility, a seawater desalination facility, has applied to the Texas Commission on Environmental Quality (TCEQ) for a new permit, Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005488000, to authorize the discharge of water treatment wastes at a daily average flow not to exceed 191,200,000 gallons per day (gpd) via Outfall 001. The TCEQ received this application on April 1, 2025.

The facility is located at 225 State Highway 361, approximately 0.8 miles south of the intersection of Harbor Island Road and State Highway 361, in the City of Port Aransas, Nueces County, Texas 78373. This link to an electronic map of the site or facility's general location is provided as a public courtesy and is not part of the application or notice. For the exact location, refer to the application.
https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.07277,27.848611&level=18

The effluent is discharged via pipe under the Aransas Pass Channel, the Lydia Ann Channel, and San Jose Island by a submerged multi-port diffuser approximately 9,800 feet (2,987 meters) from shore directly into the Gulf of America in Segment No. 2501 of the Gulf of America. The designated uses for Segment No. 2501 are primary contact recreation, exceptional aquatic life use, and oyster waters.

In accordance with Title 30 Texas Administrative Code Section 307.5 and TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect existing uses will be maintained. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in the Gulf of America, which has 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.

The TCEQ Executive Director reviewed this action for consistency with the Texas Coastal Management Program (CMP) goals and policies 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.

The TCEQ Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, Executive Director's preliminary decision, and draft permit are available for viewing and copying at La Retama Central Library, 805 Comanche Street, Corpus Christi, and at Ellis Memorial Library, 700 West Avenue A, Port Aransas, in Nueces County, Texas, and at Ed & Hazel Richmond Public Library, 110 North Lamont Street, Aransas Pass, in Aransas County, Texas. The application, including any updates, and associated notices are available electronically at the following webpage:
https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications

**ALTERNATIVE LANGUAGE NOTICE.** Alternative language notice in Spanish is available at https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications. El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications.

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

**OPPORTUNITY FOR A CONTESTED CASE HEARING.** After the deadline for public comments, the Executive Director will consider the comments and prepare a response to all relevant and material, or significant public comments. **The response to comments, along with the Executive Director's decision on the application, will be mailed to everyone who submitted public comments or who requested to be on a mailing list for this application. If comments are received, the mailing will also provide instructions for requesting a contested case hearing or reconsideration of the Executive Director's decision.** A contested case hearing is a legal proceeding similar to a civil trial in a state district court.

**TO REQUEST A CONTESTED CASE HEARING, YOU MUST INCLUDE THE FOLLOWING ITEMS IN YOUR REQUEST: your name, address, phone number; applicant's name and proposed permit number; the location and distance of your property/activities relative to the proposed facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; a list of all disputed issues of fact that you submit during the comment period; and the statement "[I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify by name and physical address an individual member of the group who would be adversely affected by the proposed facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are relevant to the group's purpose.**

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period.**

**EXECUTIVE DIRECTOR ACTION.** The Executive Director may issue final approval of the application unless a timely contested case hearing request or a timely request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the Executive Director will not issue final approval of the permit and will forward the application and requests to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

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

**All written public comments and public meeting requests must be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 or electronically at** https://www.tceq.texas.gov/goto/comment **within 30 days from the date of newspaper publication of this notice.**

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

**AGENCY CONTACTS AND INFORMATION.** Public comments and requests must be submitted either electronically at https://www.tceq.texas.gov/goto/comment, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address, and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, toll free, at 1-800-687-4040 or visit their website at https://www.tceq.texas.gov/agency/decisions/participation/permitting-participation. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Port of Corpus Christi Authority of Nueces County at the address stated above or by calling Ms. Sarah Garza, Director of Environmental Planning & Compliance, at 361-885-6163.

Issued: February 12, 2026

# Comisión De Calidad Ambiental Del Estado De Texas

**AVISO DE LA SOLICITUD Y DECISIÓN PRELIMINAR PARA EL PERMISO DEL SISTEMA DE ELIMINACION DE DESCARGAS DE CONTAMINANTES DE TEXAS (TPDES) PARA AGUAS RESIDUALES INDUSTRIALES**

**NUEVO**

**PERMISO PROPUESTO NO. WQ 0005488000**

**SOLICITUD Y DECISIÓN PRELIMINAR.** La Autoridad del Puerto de Corpus Christi del Condado de Nueces, P.O. Box 1541, Corpus Christi, Texas 78403, que propone operar la Instalación de Desalinización de Harbor Island, una instalación de desalinización de agua de mar, ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) un nuevo permiso, el Permiso del Sistema de Eliminación de Vertidos de Contaminantes de Texas (TPDES) No. WQ0005488000, autorizar la descarga de residuos de tratamiento de agua a un caudal medio diario no superior a 191.200.000 galones diarios (gpd) mediante la Salida 001. La TCEQ recibió esta solicitud el 1 de abril de 2025.

La instalación está situada en el 225 de la Carretera Estatal 361, aproximadamente a 0,8 millas al sur de la intersección de Harbor Island Road y la Carretera Estatal 361, en la ciudad de Port Aransas, condado de Nueces, Texas 78373. Este enlace a un mapa electrónico de la ubicación general del sitio o instalación se proporciona como cortesía pública y no forma parte de la solicitud ni del aviso. Para la ubicación exacta, consulta la solicitud.
https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.07277,27.848611&level=18

El efluente se descarga por tubería bajo el canal Aransas Pass, el canal Lydia Ann y la isla San José mediante un difusor sumergido multipuerto aproximadamente a 9.800 pies (2.987 metros) de la costa directamente hacia el Golfo de América, en el Segmento nº 2501 del Golfo de América. Los usos designados para el Segmento nº 2501 son recreación de contacto primario, uso excepcional de vida acuática y aguas de ostras.

De acuerdo con el Título 30 del Código Administrativo de Texas, Sección 307.5 y los Procedimientos para la Implementación de los Estándares de Calidad de Aguas Superficiales de Texas (junio de 2010), se realizó una revisión antidegradación de las aguas receptoras. Una revisión antidegradación de Nivel 1 ha determinado preliminarmente que los usos existentes de calidad del agua no se verán afectados por esta acción de permiso. Se mantendrán criterios numéricos y narrativos para proteger los usos existentes. Una revisión de Nivel 2 ha determinado preliminarmente que no se espera una degradación significativa de la calidad del agua en el Golfo de América, que ha sido identificado como un uso excepcional de la vida acuática. Los usos existentes se mantendrán y protegerán. La determinación preliminar puede ser reexaminada y modificada si se recibe nueva información.

El Director Ejecutivo de la TCEQ ha revisado esta medida para ver si está de acuerdo con los objetivos y las regulaciones del Programa de Administración Costero de Texas (CMP) de acuerdo con las regulaciones del Consejo Coordinador de la Costa (CCC) y ha determinado que la acción es conforme con las metas y regulaciones pertinentes de el CMP.

La solicitud de permiso, la decisión preliminar del Director Ejecutivo y el borrador del permiso están disponibles para consulta y copia en la Biblioteca Central La Retama, 805 Comanche Street, Corpus Christi, y en la Biblioteca Memorial Ellis, 700 West Avenue A, Port Aransas, en el condado de Nueces, Texas, y en la Biblioteca Pública Ed & Hazel Richmond, 110 North Lamont Street, Aransas Pass, en el condado de Aransas. Texas. La solicitud (cualquier actualización y aviso inclusive) está disponible electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications.

**AVISO DE IDIOMA ALTERNATIVO.** El aviso de idioma alternativo en español está disponible en: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications.

**COMENTARIO PUBLICO / REUNION PUBLICA. Usted puede presentar comentarios públicos o pedir una reunión pública sobre esta solicitud.**
El propósito de una reunión pública es dar la oportunidad de presentar comentarios o hacer preguntas acerca de la solicitud. La TCEQ realiza una reunión pública si el Director Ejecutivo determina que hay un grado de interés público suficiente en la solicitud o si un legislador local lo pide. Una reunión pública no es una audiencia administrativa de lo contencioso.

**OPORTUNIDAD DE UNA AUDIENCIA ADMINISTRATIVA DE LO CONTENCIOSO.**
Después del plazo para presentar comentarios públicos, el Director Ejecutivo considerará todos los comentarios apropiados y preparará una respuesta a todo los comentarios públicos esenciales, pertinentes, o significativos. **A menos que la solicitud haya sido referida directamente a una audiencia administrativa de lo contencioso, la respuesta a los comentarios y la decisión del Director Ejecutivo sobre la solicitud serán enviados por correo a todos los que presentaron un comentario público y a las personas que están en la lista para recibir avisos sobre esta solicitud. Si se reciben comentarios, el aviso también proveerá instrucciones para pedir una reconsideración de la decisión del Director Ejecutivo y para pedir una audiencia administrativa de lo contencioso.** Una audiencia administrativa de lo contencioso es un procedimiento legal similar a un procedimiento legal civil en un tribunal de distrito del estado.

**PARA SOLICITAR UNA AUDIENCIA DE CASO IMPUGNADO, USTED DEBE INCLUIR EN SU SOLICITUD LOS SIGUIENTES DATOS: su nombre, dirección, y número de teléfono; el nombre del solicitante y número del permiso; la ubicación y distancia de su propiedad/actividad con respecto a la instalación; una descripción específica de la forma cómo usted sería afectado adversamente por el sitio de una manera no común al público en general; una lista de todas las cuestiones de hecho en disputa que usted presente durante el período de comentarios; y la declaración "[Yo/nosotros] solicito/solicitamos una audiencia de caso impugnado". Si presenta la petición para una audiencia de caso impugnado de parte de un grupo o asociación, debe identificar una persona que representa al grupo para recibir correspondencia en el futuro; identificar el nombre y la dirección de un miembro del grupo que sería afectado adversamente por la planta o la actividad propuesta; proveer la información indicada anteriormente con respecto a la ubicación del miembro afectado y su distancia de la planta o actividad propuesta; explicar cómo y porqué el miembro sería afectado; y explicar cómo los intereses que el grupo desea proteger son pertinentes al propósito del grupo.**

Después del cierre de todos los períodos de comentarios y de petición que aplican, el Director Ejecutivo enviará la solicitud y cualquier petición para reconsideración o para una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración durante una reunión programada de la Comisión.

La Comisión sólo puede conceder una solicitud de una audiencia de caso impugnado sobre los temas que el solicitante haya presentado en sus comentarios oportunos que no fueron retirados posteriormente. **Si se concede una audiencia, el tema de la audiencia estará limitado a cuestiones de hecho en disputa o cuestiones mixtas de hecho y de derecho relacionadas a intereses pertinentes y materiales de calidad del agua que se hayan presentado durante el período de comentarios.**

**ACCIÓN DEL DIRECTOR EJECUTIVO.** El Director Ejecutivo puede emitir una aprobación final de la solicitud a menos que exista un pedido antes del plazo de vencimiento de una audiencia administrativa de lo contencioso o se ha presentado un pedido de reconsideración. Si un pedido ha llegado antes del plazo de vencimiento de la audiencia o el pedido de reconsideración ha sido presentado, el Director Ejecutivo no emitirá una aprobación final sobre el permiso y enviará la solicitud y el pedido a los Comisionados de la TECQ para consideración en una reunión programada de la Comisión.

**LISTA DE CORREO.** Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Ademas, puede pedir que la TCEQ ponga su nombre en una or mas de las listas correos siguientes (1) la lista de correo permanente para recibir los avisos de el solicitante indicado por nombre y número del permiso específico y/o (2) la lista de correo de todas las solicitudes en un condado especifico. Si desea que se agrega su nombre en una de las listas designe cual lista(s) y envia por correo su pedido a la Oficina del Secretario Principal de la TCEQ.

**Todos los comentarios escritos del público y los pedidos una reunión deben ser presentados durante los 30 días después de la publicación del aviso a la Oficina del Secretario Principal, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 or por el internet a www.tceq.texas.gov/about/comments.html.** Tenga en cuenta que cualquier información personal que usted proporcione, incluyendo su nombre, número de teléfono, dirección de correo electrónico y dirección física pasarán a formar parte del registro público de la Agencia.

**CONTACTOS E INFORMACIÓN DE LA AGENCIA.** Los comentarios y solicitudes públicas deben enviarse electrónicamente a https://www14.tceq.texas.gov/epic/eComment/, o por escrito a Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Cualquier información personal que envíe a al TCEQ pasará a formar parte del registro de la agencia; esto incluye las direcciones de correo electrónico. Para obtener más información sobre esta solicitud de permiso o el proceso de permisos, llame al Programa de Educación Pública de la TCEQ, sin cargo, al 1-800-687-4040 o visite su sitio web en www.tceq.texas.gov/goto/pep. Si desea información en español, puede llamar al 1-800-687-4040.

También se puede obtener más información en la Autoridad del Puerto de Corpus Christi del condado de Nueces en la dirección indicada anteriormente o llamando a la Sra. Sarah Garza, Directora de Planificación Ambiental y Cumplimiento, al 361-885-6163.

Fecha de emisión 12 de febrero de 2026

TPDES PERMIT NO.
WQ0005488000
*[For TCEQ office use only -*
*EPA I.D. No. TX0147681]*

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

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

Port of Corpus Christi Authority of Nueces County

whose mailing address is

P.O. Box 1541
Corpus Christi, Texas 78403

is authorized to treat and discharge wastes from Harbor Island Desalination Facility, a seawater desalination facility (SIC 4491)

located at 225 State Highway 361, approximately 0.8 miles south of the intersection of Harbor Island Road and State Highway 361, in the City of Port Aransas, Nueces County, Texas 78373

via pipe under the Aransas Pass Channel, the Lydia Ann Channel, and San Jose Island by a submerged multi-port diffuser approximately 9,800 feet (2,987 meters) from shore directly into the Gulf of America in Segment No. 2501 of the Gulf of America

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

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

ISSUED DATE:

_____
For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS — Outfall Number 001

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

   The daily average flow of effluent shall not exceed 191.2 million gallons per day (MGD). The daily maximum flow shall not exceed 191.2 MGD.

| Effluent Characteristics | Discharge Limitations | | | | | Minimum Self-Monitoring Requirements | |
|---|---|---|---|---|---|---|---|
| | Daily Average | | Daily Maximum | | Single Grab | Report Daily Average and Daily Maximum | |
| | lbs/day | mg/L | lbs/day | mg/L | mg/L | Measurement Frequency | Sample Type |
| Flow | 191.2 MGD | | 191.2 MGD | | N/A | Continuous | Totalizer |
| Total Suspended Solids | Report | Report | Report | Report | N/A | 1/week | Grab |
| Total Dissolved Solids | Report | Report | Report | Report | N/A | 1/week | Grab |
| Chloride | Report | Report | Report | Report | N/A | 1/week | Grab |
| Sulfate | Report | Report | Report | Report | N/A | 1/week | Grab |
| Salinity [2] | Report | Report, ppt | Report | Report, ppt | N/A | 1/week | Grab |

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

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

4. Effluent monitoring samples must be taken at the following location: At Outfall 001, following commingling of all wastewater and prior to the start-of-pipe to diffuser.



[1] See Other Requirement No. 3.
[2] See Other Requirement No. 8.

**DEFINITIONS AND STANDARD PERMIT CONDITIONS**

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

1. Flow Measurements

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

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

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

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

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

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

2. Concentration Measurements

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

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

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

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

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

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

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

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

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

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

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

3. Sample Type

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

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

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

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

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

**MONITORING AND REPORTING REQUIREMENTS**

1. Self-Reporting

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

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

2. Test Procedures

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

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

3. Records of Results

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

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

   c. Records of monitoring activities shall include the following:

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

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

4. Additional Monitoring by Permittee

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

5. Calibration of Instruments

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

6. Compliance Schedule Reports

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

7. Noncompliance Notification

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

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

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

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

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

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

9. Changes in Discharges of Toxic Substances

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

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

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

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

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

10. Signatories to Reports

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

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

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

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

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

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

**PERMIT CONDITIONS**

1. General

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

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

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

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

2. Compliance

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

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

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

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

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

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

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

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

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

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

3. Inspections and Entry

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

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

4. Permit Amendment or Renewal

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

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

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

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

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

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

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

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

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

5. Permit Transfer

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

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

6. Relationship to Hazardous Waste Activities

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

7. Relationship to Water Rights

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

8. Property Rights

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

9. Permit Enforceability

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

10. Relationship to Permit Application

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

11. Notice of Bankruptcy.

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

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

    b. This notification must indicate:

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

**OPERATIONAL REQUIREMENTS**

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

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

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

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

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

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

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

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

7. Documentation

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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**OTHER REQUIREMENTS**

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 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 Enforcement Division (MC 224): None.

2. 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.

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

4. MIXING ZONES

   The permittee shall maintain the diffuser at Outfall 001 to achieve a maximum effluent percentage of 73.66 percent at the edge of the zone of initial dilution (ZID). The ZID is defined as a 15.5-foot by 507.6-foot rectangle centered on the diffuser barrel with the longer edge oriented in the same direction as the diffuser barrel. This area is approximately equal to the area of a 50-foot radius circle.

   The permittee shall maintain the diffuser at Outfall 001 to achieve a maximum effluent percentage of 13.04 percent at the edge of the chronic aquatic life mixing zone. The chronic aquatic life mixing zone is defined as a 185.5-foot by 677.6-foot rectangle centered on the diffuser barrel with the longer edge oriented in the same direction as the diffuser barrel. This area is approximately equal to the area of a 200-foot radius circle. Chronic toxic criteria apply at the edge of the chronic aquatic life mixing zone.

   The permittee shall maintain the diffuser at Outfall 001 to achieve a maximum effluent percentage of 10.43 percent at the edge of the human health mixing zone. The human health mixing zone is defined as a 504.5-foot by 996.6-foot rectangle centered on the diffuser with the longer edge oriented in the same direction as the diffuser barrel. This area is approximately equal to the area of a 400-foot radius circle.

5. This permit does not authorize the discharge of domestic wastewater. All domestic wastewater 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.

6. The sludge from the treatment process must be dewatered, and disposed of in accordance with all the applicable rules of the TCEQ. The permittee shall ensure that the disposal of sludge does not cause any contamination of the ground or surface waters in the state. The permittee shall keep records of all sludge removed from the wastewater treatment plant site. Such records shall include the following information:

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

   B. date of disposal;

   C. identity and registration number of hauler;

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

E. method of final disposal.

The above records must be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the TCEQ for at least three (3) years.

7. Reporting requirements according to 30 TAC §§ 319.1-319.12 and any additional effluent reporting requirements contained in the permit are suspended from the effective date of the permit until plant startup or discharge, 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 Enforcement Division (MC 224) at least forty-five days prior to plant startup or anticipated discharge, whichever occurs first, on Notification of Completion Form 20007.

8. Within 180 days of permit issuance, the permittee shall submit a salinity monitoring plan for a three-year study to the TCEQ Enforcement Division (MC-224) and copy the Standards Implementation Team (MC 150). The TCEQ may disapprove or modify the work plan within 60 days of receipt, with no response being equivalent to approval. Upon approval, the applicant shall implement the monitoring plan. The monitoring shall include quarterly measurement of salinity concentrations at the edge of the aquatic life mixing zone and measurement of ambient salinity concentrations from the receiving waters not affected by the discharge. To the extent logistically possible, sampling at both locations shall occur concurrently. The duration of the study shall be three years from the date of implementation and annual progress reports shall be submitted by December 31st of each year to the TCEQ Enforcement Division (MC-224) and copied to the Standards Implementation Team (MC 150).

9. Wastewater discharged via Outfall 001 must be sampled and analyzed as directed below for those parameters listed in Tables 1, 2, and 3 of Attachment A of this permit. Analytical testing for Outfall 001 must be completed within 60 days of initial discharge. Results of the analytical testing must be submitted within 90 days of initial discharge to the TCEQ Industrial Permits Team (MC-148). Based on a technical review of the submitted analytical results, an amendment may be initiated by TCEQ staff to include additional effluent limitations, monitoring requirements, or both.

   Table 1: Analysis is required for all pollutants in Table 1. Wastewater must be sampled and analyzed for those parameters listed in Table 1 for a minimum of four sampling events that are each at least one week apart.

   Table 2: Analysis is required for all pollutants in Table 2. Sampling and analysis must be conducted for a minimum of four sampling events that are each at least one week apart.

   Table 3: For all pollutants listed in Table 3, the permittee shall indicate whether each pollutant is believed to be present or absent in the discharge. Sampling and analysis must be conducted for each pollutant believed present for a minimum of one sampling event.

   The permittee shall report the flow at Outfall 001 in MGD in the attachment. The permittee shall indicate on each table whether the samples are composite (C) or grab (G) by checking the appropriate box.

**Attachment A**

**Table 1 – Conventionals and Non-conventionals**

| Outfall No.: ☐C ☐G | Effluent Concentration (mg/L) | | | | | |
|---|---|---|---|---|---|---|
| **Pollutant** | **Samp.** | **Samp.** | **Samp.** | **Samp.** | **Average** | |
| Flow (MGD) | | | | | | |
| BOD (5-day) | | | | | | |
| CBOD (5-day) | | | | | | |
| Chemical Oxygen Demand | | | | | | |
| Total Organic Carbon | | | | | | |
| Dissolved Oxygen | | | | | | |
| Ammonia Nitrogen | | | | | | |
| Total Suspended Solids | | | | | | |
| Nitrate Nitrogen | | | | | | |
| Total Organic Nitrogen | | | | | | |
| Total Phosphorus | | | | | | |
| Oil and Grease | | | | | | |
| Total Residual Chlorine | | | | | | |
| Total Dissolved Solids | | | | | | |
| Sulfate | | | | | | |
| Chloride | | | | | | |
| Fluoride | | | | | | |
| Total Alkalinity (mg/L as $CaCO_3$) | | | | | | |
| Temperature (°F) | | | | | | |
| pH (Standard Units; min/max) | | | | | | |

**Table 2 – Metals**

| **Pollutant** | **Effluent Concentration (µg/L)[1]** | | | | | **MAL[2] (µg/L)** |
|---|---|---|---|---|---|---|
| | **Samp.** | **Samp.** | **Samp.** | **Samp.** | **Average** | |
| Aluminum, Total | | | | | | 2.5 |
| Antimony, Total | | | | | | 5 |
| Arsenic, Total | | | | | | 0.5 |
| Barium, Total | | | | | | 3 |
| Beryllium, Total | | | | | | 0.5 |
| Cadmium, Total | | | | | | 1 |
| Chromium, Total | | | | | | 3 |
| Chromium, Hexavalent | | | | | | 3 |
| Chromium, Trivalent | | | | | | N/A |
| Copper, Total | | | | | | 2 |
| Cyanide, Free | | | | | | 10 |
| Lead, Total | | | | | | 0.5 |

[1] Indicate units if different than µg/L.
[2] Minimum Analytical Level

| Pollutant | Effluent Concentration (µg/L)[1] | | | | | MAL[2] (µg/L) |
|---|---|---|---|---|---|---|
| | Samp. | Samp. | Samp. | Samp. | Average | |
| Mercury, Total | | | | | | 0.005 |
| Nickel, Total | | | | | | 2 |
| Selenium, Total | | | | | | 5 |
| Silver, Total | | | | | | 0.5 |
| Thallium, Total | | | | | | 0.5 |
| Zinc, Total | | | | | | 5.0 |

**Table 3 – Toxic Pollutants with Water Quality Criteria**

| Outfall No.: ☐C ☐G<br>Pollutant | Samp. 1 (µg/L) | Samp. 2 (µg/L) | Samp. 3 (µg/L) | Samp. 4 (µg/L) | Avg. (µg/L) | MAL (µg/L) |
|---|---|---|---|---|---|---|
| Acrolein | | | | | | 0.7 |
| Acrylonitrile | | | | | | 50 |
| Anthracene | | | | | | 10 |
| Benzene | | | | | | 10 |
| Benzidine | | | | | | 50 |
| Benzo(*a*)anthracene | | | | | | 5 |
| Benzo(*a*)pyrene | | | | | | 5 |
| Bis(2-chloroethyl)ether | | | | | | 10 |
| Bis(2-ethylhexyl) phthalate | | | | | | 10 |
| Bromodichloromethane | | | | | | 10 |
| Bromoform | | | | | | 10 |
| Carbon Tetrachloride | | | | | | 2 |
| Chlorobenzene | | | | | | 10 |
| Chlorodibromomethane | | | | | | 10 |
| Chloroform | | | | | | 10 |
| Chrysene | | | | | | 5 |
| Cresols | | | | | | 10 |
| 1,2-Dibromoethane | | | | | | 10 |
| *m*-Dichlorobenzene | | | | | | 10 |
| *o*-Dichlorobenzene | | | | | | 10 |
| *p*-Dichlorobenzene | | | | | | 10 |
| 3,3'-Dichlorobenzidine | | | | | | 5 |
| 1,2-Dichloroethane | | | | | | 10 |
| 1,1-Dichloroethylene | | | | | | 10 |
| Dichloromethane | | | | | | 20 |
| 1,2-Dichloropropane | | | | | | 10 |
| 1,3-Dichloropropylene | | | | | | 10 |
| 2,4-Dimethylphenol | | | | | | 10 |
| Di-*n*-Butyl Phthalate | | | | | | 10 |
| Epichlorohydrin | | | | | | 1,000 |
| Ethylbenzene | | | | | | 10 |
| Ethylene Glycol | | | | | | — |
| Fluoride | | | | | | 500 |

| Outfall No.: ☐C ☐G<br>Pollutant | Samp. 1 (µg/L) | Samp. 2 (µg/L) | Samp. 3 (µg/L) | Samp. 4 (µg/L) | Avg. (µg/L) | MAL (µg/L) |
|---|---|---|---|---|---|---|
| Hexachlorobenzene | | | | | | 5 |
| Hexachlorobutadiene | | | | | | 10 |
| Hexachlorocyclopentadiene | | | | | | 10 |
| Hexachloroethane | | | | | | 20 |
| 4,4′-Isopropylidenediphenol [bisphenol A] | | | | | | — |
| Methyl Ethyl Ketone | | | | | | 50 |
| Methyl *tert*-butyl ether [MTBE] | | | | | | — |
| Nitrobenzene | | | | | | 10 |
| *N*-Nitrosodiethylamine | | | | | | 20 |
| *N*-Nitroso-di-*n*-Butylamine | | | | | | 20 |
| Nonylphenol | | | | | | 333 |
| Pentachlorobenzene | | | | | | 20 |
| Pentachlorophenol | | | | | | 5 |
| Phenanthrene | | | | | | 10 |
| Polychlorinated Biphenyls (PCBs) [1] | | | | | | 0.2 |
| Pyridine | | | | | | 20 |
| 1,2,4,5-Tetrachlorobenzene | | | | | | 20 |
| 1,1,2,2-Tetrachloroethane | | | | | | 10 |
| Tetrachloroethylene | | | | | | 10 |
| Toluene | | | | | | 10 |
| 1,1,1-Trichloroethane | | | | | | 10 |
| 1,1,2-Trichloroethane | | | | | | 10 |
| Trichloroethylene | | | | | | 10 |
| 2,4,5-Trichlorophenol | | | | | | 50 |
| TTHM (Total Trihalomethanes) | | | | | | 10 |
| Vinyl Chloride | | | | | | 10 |

[1] Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, PCB-1016. If all values are non-detects, enter the highest non-detect preceded by a "<" symbol.

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

## DESCRIPTION OF APPLICATION

| | |
|---|---|
| Applicant: | Port of Corpus Christi Authority (PCCA) of Nueces County; Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005488000 (EPA I.D. No. TX0147681) |
| 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 Harbor Island Desalination Facility, a seawater desalination facility.

The proposed desalination facility is expected to operate with a desalination recovery rate from 40 to 50%, meaning that 40% to 50% of the pre-treated seawater that enters the reverse osmosis (RO) units becomes desalinated product water, with the balance of the water (called RO retentate or RO reject) as a higher salinity brine wastewater. Other wastewater flows are generated as reject from the pre-treatment system; they are combined with the RO retentate to produce the expected total of 191.2 MGD of wastewater at 40% recovery, or 132.9 MGD at 50% recovery. The salt content of the other wastewater flows is essentially the same as the source seawater; water treatment chemicals are dosed at concentrations in the low milligram per liter (mg/L) range and will not significantly impact salinity. Domestic wastewater is disposed of via an onsite septic tank and drainfield system.

The facility is located at 225 State Highway 361, approximately 0.8 miles south of the intersection of Harbor Island Road and State Highway 361, in the City of Port Aransas, Nueces County, Texas 78373.

### Discharge Route and Designated Uses

The effluent is discharged via pipe under the Aransas Pass Channel, the Lydia Ann Channel, and San Jose Island by a submerged multi-port diffuser approximately 9,800 feet (2,987 meters) from shore directly into the Gulf of America in Segment No. 2501 of the Gulf of America. The designated uses for Segment No. 2501 are primary contact recreation, exceptional 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 Gulf of America, which has 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**
A watershed of high priority has been identified in Segment 2501. The piping plover*, Charadrius melodus* Ord, a threatened aquatic dependent species, is found in the watershed of Segment 2501; however, the facility is not a petroleum facility, and its discharge is not expected to have an effect on the piping plover. This determination is based on the United States Fish and Wildlife Service's (USFWS) biological opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (TPDES; September 14, 1998, October 21, 1998, update). To make this determination for TPDES permits, TCEQ and EPA only considered aquatic or aquatic dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS biological opinion. The determination is subject to reevaluation due to subsequent updates or amendments to the biological opinion. The permit does not require EPA review with respect to the presence of endangered or threatened species.

**Impaired Water Bodies**
Segment No. 2501 is currently listed on the state's inventory of impaired and threatened waters, the 2022 CWA §303(d) list. The listing is for mercury in edible tissue in all of its designated Assessment Units: Sabine Pass to Sea Rim Park area (AU 2501_01); Jefferson-Chambers County line area (AU 2501_02); Bolivar Point to San Luis Pass area (AU 2501_03); Freeport area (AU 2501_04); area between Freeport and Port Aransas (AU 2501_05); Port Aransas area (AU 2501_06); area between Port Aransas and Port Mansfield (AU 2501_07); Port Mansfield area (AU 2501_08); area between Port Mansfield and Port Isabel (AU 2501_09); and Port Isabel area (AU 2501_10). The offshore extent of these AUs is described as "from the Gulf shoreline to the limit of Texas' jurisdiction between Sabine Pass and the mouth of the Rio Grande." The impairment designation is presumed to apply to this proposed outfall location. The processes described in the application will not add any additional mercury to the discharge.

A 2024 303(d) bacteria in water (recreational beaches) impairment listing in the segment is applicable only to Matagorda County Beaches (Recreational Beaches) (2501MC) (AU 2501MC_02), which is not relevant to this proposed discharge location.

**Completed Total Maximum Daily Loads (TMDLs)**
There are no completed TMDLs for Segment No. 2501.

**Diffuser Analysis**
The effluent is proposed to be discharged directly into the Gulf of America (Segment No. 2501) through a multi-port diffuser.

A single production capacity phase is proposed (100 MGD), which may be operated at RO recovery rates ranging from 40% to 50%. The different combinations of RO recovery rates with the single production capacity phase results in the following proposed discharge flows:

- 100 MGD production capacity at 40% RO recovery rate: 191.2 MGD effluent discharge;
- 100 MGD production capacity at 50% RO recovery rate: 132.9 MGD effluent discharge.

Both of these flow scenarios were included in the diffuser modeling analysis, since effluent density also varies with the different scenarios.

A mixing analysis of the discharge from Outfall 001 was conducted using the CORMIX 12.0GTD (Version 12.0.1.0) modeling software. This analysis relies, in part, on the document titled *High-Rate Diffuser Conceptual Design - Harbor Island Desalination Facility* (January 2025), (included as Attachment T-4 in the TPDES permit application (WQ0005488000)). Additional information is from Attachment T-1 (Technical Report) and Attachment T-2 (Facility Plot Plan) in the TPDES permit application. Information contained in those documents was used in the development of the TCEQ CORMIX analysis. Supplemental information concerning details of the diffuser design and CORMIX modeling setup was received from PCCA's representatives following an initial review of the materials provided in the application.

The applicant is proposing to discharge via a submerged multi-port diffuser (Outfall 001) into the Gulf of America. The discharge route will be tunneled approximately 65 feet under the seabed (under the Aransas Pass Channel, the Lydia Ann Channel, and San Jose Island), with the proposed outfall location (centerpoint of the diffuser barrel) approximately 9800 feet (2,987 meters) from shore (off of San Jose Island). The discharge location (centerpoint of the diffuser barrel) is approximately one-half mile from the source water intake for this facility (and in deeper water), to avoid entrainment of the diluted brine plume in the water intake.

The multi-port diffuser will consist of a 150-meter (492 feet) long diffuser pipe (barrel) with 25 risers (first riser to last riser distance = 150 meters). Each riser will contain two 6.3-inch (160-millimeter) diameter ports, for a total of 50 ports. The risers will be spaced at 6.25-meter intervals. The diffuser ports will be angled 60 degrees upwards above the horizontal (i.e. angled towards the water surface).

The diffuser barrel will be aligned perpendicular to the ambient (longshore) current direction. The paired ports on each riser will be oriented at 180° to each other and will point in the prevailing direction of the ambient current, with one port of each pair facing north-northeast and the other facing south-southwest. According to the applicant's Diffuser Conceptual Design Report, the prevailing longshore current is to the north-northeast most of the year, shifting to the south-southwest during summer months. Due to the proposed port orientation, a single model setup was used to represent both prevailing current direction scenarios.

The diffuser ports will discharge at a minimum centerline depth of 7.5 meters (24.6 feet) below the water surface at mean low water (MLW). The CORMIX model was set up with a water depth of 11 meters (36.1 feet) with the discharge located 3.5 meters (11.5 feet) above the bottom.

A range of ambient (longshore) current velocities was used in the analysis, based on information provided by the applicant from Buoy D of the Texas General Land Office's Texas Automated Buoy System (TABS). CORMIX modeling was performed at ambient current velocities of 0.18 meters/second ($25^{th}$ percentile velocity), 0.27 meters/second (median velocity), and 0.65 meters/second ($95^{th}$ percentile velocity).

Ambient density values for the TCEQ CORMIX modeling were derived using data from SWQM Station No. 13468. Effluent densities applicable to various different operational and seasonal discharge scenarios were calculated using effluent temperature and effluent salinity values provided by the

applicant, which were derived by the applicant from ambient salinity and ambient temperature data from TABS Buoy D. Under normal operating conditions, the effluent plume will be negatively buoyant.

The chronic aquatic life mixing zone (MZ) for this permit is defined as a 185.5-foot by 677.6-foot rectangle centered on the diffuser barrel with the longer edge oriented in the same direction as the diffuser barrel. This area is approximately equal to the area of a 200-foot radius circle. Chronic toxic criteria apply at the edge of the chronic aquatic life mixing zone.

The zone of initial dilution (ZID) for this permit is defined as a 15.5-foot by 507.6-foot rectangle centered on the diffuser barrel with the longer edge oriented in the same direction as the diffuser barrel. This area is approximately equal to the area of a 50-foot radius circle.

The human health mixing zone (HH) for this permit is defined as a 504.5-foot by 996.6-foot rectangle centered on the diffuser barrel with the longer edge oriented in the same direction as the diffuser barrel. This area is approximately equal to the area of a 400-foot radius circle.

Model results varied under the two different percent RO recovery rate scenarios, but the highest predicted percent effluent results should be used for the general assessment of permit effluent limits since the facility will operate within a range between these RO recovery rates. These percent effluent values are also predicted to be the maximum effluent percentages at the edges of the regulatory mixing zones for the assessment of potential concerns about salinity impacts related to this discharge. These percent effluent predictions for each regulatory mixing zone are used for screening purposes and for the derivation of effluent limits. It should be noted that future reviews, once discharge commences, will also include CORMIX model runs performed using two-year median discharge flows.

Highest Predicted Percent Effluent for Screening and for Permit Effluent Limits for 100 MGD production capacity:

ZID = 73.66%
MZ = 13.04%
HH = 10.43%

**Dissolved Oxygen**
The proposed discharge is not expected to contain significant levels of conventional oxygen-demanding constituents. Dissolved oxygen concentrations in the receiving waters are expected to consistently be protected and maintained above the criterion established for the Gulf of America (5.0 mg/L).

## 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 wastes at a daily average flow not to exceed 191.2 MGD via Outfall 001.

Effluent limitations are established in the draft permit as follows:

| Outfall | Pollutant | Daily Average | | Daily Maximum | |
|---|---|---|---|---|---|
| | | mg/L | lbs/day | mg/L | lbs/day |
| 001 | Flow | 191.2 MGD | | 191.2 MGD | |
| 001 | Total Suspended Solids (TSS) | Report | Report | Report | Report |
| | Total Dissolved Solids (TDS) | Report | Report | Report | Report |
| | Chloride | Report | Report | Report | Report |
| | Sulfate | Report | Report | Report | Report |
| | Salinity | Report ppt | Report | Report ppt | Report |
| | pH (Standard Units, SU) | 6.0 SU, minimum | | 9.0 SU | |

OUTFALL LOCATIONS

| Outfall | Latitude | Longitude |
|---|---|---|
| 001 | 27.848836 N | 97.009531 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 wastes resulting from desalination processes is not subject to any ELGs. Monitoring and reporting requirements for TSS have been included in the draft permit at Outfall 001 based upon BPJ due to the potential for elevated levels of suspended solids 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 December 5, 2025. 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.

No analytical data was submitted with the application because the facility has not been constructed. Estimated effluent data was provided but Other Requirement No. 9 has been added to the draft permit requiring sampling and analysis of the effluent upon commencement of discharge. Based on a review of the data, the permit may be reopened to add limitations or monitoring requirements, if needed.

**Total Dissolved Solids (TDS), Chloride, and Sulfate Screening**
Segment No. 2501, which receives 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 applicant performed extensive analyses and modeling to conclude that the discharge would not impact salinity gradients in the surrounding waters and that

survival, growth, and reproduction of aquatic life would not be significantly impacted and provided their report as part of their application. In addition, monitoring and reporting requirements for TDS, chloride, and sulfate have been included in the draft permit at Outfall 001 based on the presence of water treatment wastes which will include elevated levels of these constituents in the proposed discharge. Other Requirement No. 9 has been added to the draft permit requiring sampling and analysis of the effluent upon commencement of discharge. Due to the nature of water treatment wastes, TDS, chloride, and sulfate monitoring is initially placed in the draft. Based on a review of the data, the permit may be reopened to add limitations or other conditions requirements, if needed.

**pH Screening**
The permit includes pH limits of 6.0 – 9.0 SU at Outfall 001, which discharges directly into Gulf of America, Segment No. 2501. Screening was performed to ensure that these pH limits would not cause a violation of the 6.5 – 9.0 SU pH criteria for Gulf of America (see Appendix B). Screening indicates segment standards will not be exceeded with the proposed pH limits of 6.0 – 9.0 SU.

**Whole Effluent Toxicity Testing (Biomonitoring)**
Biomonitoring requirements are not included in the draft permit. 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

No changes were made from the application.

## BASIS FOR DRAFT PERMIT

The following items were considered in developing the draft permit:

1. Application received on April 1, 2025, and additional information received on May 16, 2025.
2. TCEQ Rules.
3. *Texas Surface Water Quality Standards* – 30 TAC §§307.1-307.10, effective March 1, 2018, as approved by EPA Region 6.
4. *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.
5. *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.
6. *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.
7. *Procedures to Implement the Texas Surface Water Quality Standards* (IPs), Texas Commission on Environmental Quality, June 2010, as approved by EPA Region 6.
8. *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.
9. Memos from the Standards Implementation Team and Water Quality Assessment Team of the Water Quality Assessment Section of the TCEQ, including the diffuser memo.
10. *Guidance Document for Establishing Monitoring Frequencies for Domestic and Industrial Wastewater Discharge Permits*, TCEQ Document No. 98-001.000-OWR-WQ, May 1998.
11. EPA Effluent Guidelines: N/A.
12. 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.

13. 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).
14. 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).

**PROCEDURES FOR FINAL DECISION**

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

Once a draft permit is completed, it is sent 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 Thomas E. Starr at (512) 239-4570.

*Thomas E. Starr*
Thomas E. Starr, P.E.

January 23, 2026
Date

# 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: | Port of Corpus Christi |
| TPDES Permit No: | WQ0005488000 |
| Outfall No: | 001 |
| Prepared by: | Thomas Starr |
| Date: | January 22, 2026 |

**DISCHARGE INFORMATION**

| | |
|---|---|
| Receiving Waterbody: | Gulf of America |
| Segment No: | 2501 |
| TSS (mg/L): | 11 |
| Effluent Flow for Aquatic Life (MGD) | N/A |
| % Effluent for Chronic Aquatic Life (Mixing Zone): | 13.04 |
| % Effluent for Acute Aquatic Life (ZID): | 73.66 |
| Oyster Waters? | **yes** |
| Effluent Flow for Human Health (MGD): | N/A |
| % Effluent for Human Health: | 10.43 |

**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 | 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 |

**AQUATIC LIFE**

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

| *Parameter* | *SW Acute Criterion (µg/L)* | *SW Chronic Criterion (µg/L)* | *WLAa (µg/L)* | *WLAc (µg/L)* | *LTAa (µg/L)* | *LTAc (µg/L)* | *Daily Avg. (µg/L)* | *Daily Max. (µg/L)* |
|---|---|---|---|---|---|---|---|---|
| Acrolein | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Aldrin | 1.3 | N/A | 1.76 | N/A | 0.565 | N/A | 0.830 | 1.75 |
| Aluminum | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Arsenic | 149 | 78 | 202 | 598 | 64.7 | 365 | 95.1 | 201 |
| Cadmium | 40.0 | 8.75 | 54.3 | 67.1 | 17.4 | 40.9 | 25.5 | 54.0 |
| Carbaryl | 613 | N/A | 832 | N/A | 266 | N/A | 391 | 828 |
| Chlordane | 0.09 | 0.004 | 0.122 | 0.0307 | 0.0391 | 0.0187 | 0.0275 | 0.0581 |
| Chlorpyrifos | 0.011 | 0.006 | 0.0149 | 0.0460 | 0.00478 | 0.0281 | 0.00702 | 0.0148 |
| Chromium (trivalent) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Chromium (hexavalent) | 1090 | 49.6 | 1480 | 380 | 474 | 232 | 341 | 721 |
| Copper | 13.5 | 3.6 | 20.9 | 31.4 | 6.68 | 19.2 | 9.81 | 20.7 |
| Copper (oyster waters) | 3.6 | N/A | 31.4 | N/A | 10.1 | N/A | 14.7 | 31.2 |
| Cyanide (free) | 5.6 | 5.6 | 7.60 | 42.9 | 2.43 | 26.2 | 3.57 | 7.56 |
| 4,4'-DDT | 0.13 | 0.001 | 0.176 | 0.00767 | 0.0565 | 0.00468 | 0.00687 | 0.0145 |
| Demeton | N/A | 0.1 | N/A | 0.767 | N/A | 0.468 | 0.687 | 1.45 |
| Diazinon | 0.819 | 0.819 | 1.11 | 6.28 | 0.356 | 3.83 | 0.523 | 1.10 |
| Dicofol [Kelthane] | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Dieldrin | 0.71 | 0.002 | 0.964 | 0.0153 | 0.308 | 0.00936 | 0.0137 | 0.0290 |
| Diuron | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Endosulfan I (*alpha* ) | 0.034 | 0.009 | 0.0462 | 0.0690 | 0.0148 | 0.0421 | 0.0217 | 0.0459 |
| Endosulfan II (*beta* ) | 0.034 | 0.009 | 0.0462 | 0.0690 | 0.0148 | 0.0421 | 0.0217 | 0.0459 |
| Endosulfan sulfate | 0.034 | 0.009 | 0.0462 | 0.0690 | 0.0148 | 0.0421 | 0.0217 | 0.0459 |
| Endrin | 0.037 | 0.002 | 0.0502 | 0.0153 | 0.0161 | 0.00936 | 0.0137 | 0.0290 |
| Guthion [Azinphos Methyl] | N/A | 0.01 | N/A | 0.0767 | N/A | 0.0468 | 0.0687 | 0.145 |
| Heptachlor | 0.053 | 0.004 | 0.0720 | 0.0307 | 0.0230 | 0.0187 | 0.0275 | 0.0581 |
| Hexachlorocyclohexane (*gamma* ) [Lindane] | 0.16 | N/A | 0.217 | N/A | 0.0695 | N/A | 0.102 | 0.216 |
| Lead | 133 | 5.3 | 478 | 108 | 153 | 65.6 | 96.4 | 203 |
| Malathion | N/A | 0.01 | N/A | 0.0767 | N/A | 0.0468 | 0.0687 | 0.145 |
| Mercury | 2.1 | 1.1 | 2.85 | 8.44 | 0.912 | 5.15 | 1.34 | 2.83 |
| Methoxychlor | N/A | 0.03 | N/A | 0.230 | N/A | 0.140 | 0.206 | 0.436 |
| Mirex | N/A | 0.001 | N/A | 0.00767 | N/A | 0.00468 | 0.00687 | 0.0145 |
| Nickel | 118 | 13.1 | 160 | 100 | 51.3 | 61.3 | 75.3 | 159 |
| Nonylphenol | 7 | 1.7 | 9.50 | 13.0 | 3.04 | 7.95 | 4.47 | 9.45 |
| Parathion (ethyl) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Pentachlorophenol | 15.1 | 9.6 | 20.5 | 73.6 | 6.56 | 44.9 | 9.64 | 20.4 |
| Phenanthrene | 7.7 | 4.6 | 10.5 | 35.3 | 3.35 | 21.5 | 4.91 | 10.4 |
| Polychlorinated Biphenyls [PCBs] | 10 | 0.03 | 13.6 | 0.230 | 4.34 | 0.140 | 0.206 | 0.436 |
| Selenium | 564 | 136 | 766 | 1043 | 245 | 636 | 360 | 762 |
| Silver | 2 | N/A | 6.38 | N/A | 2.04 | N/A | 3.00 | 6.35 |
| Toxaphene | 0.21 | 0.0002 | 0.285 | 0.00153 | 0.0912 | 0.000936 | 0.00137 | 0.00290 |
| Tributyltin [TBT] | 0.24 | 0.0074 | 0.326 | 0.0567 | 0.104 | 0.0346 | 0.0508 | 0.107 |
| 2,4,5 Trichlorophenol | 259 | 12 | 352 | 92.0 | 113 | 56.1 | 82.5 | 174 |
| Zinc | 92.7 | 84.2 | 217 | 1113 | 69.4 | 679 | 102 | 215 |

**HUMAN HEALTH**

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

| *Parameter* | *Fish Only Criterion (µg/L)* | *WLAh (µg/L)* | *LTAh (µg/L)* | *Daily Avg. (µg/L)* | *Daily Max. (µg/L)* |
|---|---|---|---|---|---|
| Acrylonitrile | 115 | 1103 | 1025 | 1507 | 3189 |
| Aldrin | 1.147E-05 | 0.000110 | 0.000102 | 0.000150 | 0.000318 |
| Anthracene | 1317 | 12627 | 11743 | 17262 | 36521 |
| Antimony | 1071 | 10268 | 9550 | 14038 | 29699 |
| Arsenic | N/A | N/A | N/A | N/A | N/A |
| Barium | N/A | N/A | N/A | N/A | N/A |
| Benzene | 581 | 5570 | 5181 | 7615 | 16111 |
| Benzidine | 0.107 | 1.03 | 0.954 | 1.40 | 2.96 |
| Benzo(*a*)anthracene | 0.025 | 0.240 | 0.223 | 0.327 | 0.693 |
| Benzo(*a*)pyrene | 0.0025 | 0.0240 | 0.0223 | 0.0327 | 0.0693 |
| Bis(chloromethyl)ether | 0.2745 | 2.63 | 2.45 | 3.59 | 7.61 |
| Bis(2-chloroethyl)ether | 42.83 | 411 | 382 | 561 | 1187 |
| Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthala | 7.55 | 72.4 | 67.3 | 98.9 | 209 |
| Bromodichloromethane [Dichlorobromomethane] | 275 | 2637 | 2452 | 3604 | 7625 |
| Bromoform [Tribromomethane] | 1060 | 10163 | 9452 | 13893 | 29394 |
| Cadmium | N/A | N/A | N/A | N/A | N/A |
| Carbon Tetrachloride | 46 | 441 | 410 | 602 | 1275 |
| Chlordane | 0.0025 | 0.0240 | 0.0223 | 0.0327 | 0.0693 |
| Chlorobenzene | 2737 | 26242 | 24405 | 35874 | 75898 |
| Chlorodibromomethane [Dibromochloromethane] | 183 | 1755 | 1632 | 2398 | 5074 |
| Chloroform [Trichloromethane] | 7697 | 73797 | 68631 | 100887 | 213442 |
| Chromium (hexavalent) | 502 | 4813 | 4476 | 6579 | 13920 |
| Chrysene | 2.52 | 24.2 | 22.5 | 33.0 | 69.8 |
| Cresols [Methylphenols] | 9301 | 89175 | 82933 | 121911 | 257922 |
| Cyanide (free) | N/A | N/A | N/A | N/A | N/A |
| 4,4'-DDD | 0.002 | 0.0192 | 0.0178 | 0.0262 | 0.0554 |
| 4,4'-DDE | 0.00013 | 0.00125 | 0.00116 | 0.00170 | 0.00360 |
| 4,4'-DDT | 0.0004 | 0.00384 | 0.00357 | 0.00524 | 0.0110 |
| 2,4'-D | N/A | N/A | N/A | N/A | N/A |
| Danitol [Fenpropathrin] | 473 | 4535 | 4218 | 6199 | 13116 |
| 1,2-Dibromoethane [Ethylene Dibromide] | 4.24 | 40.7 | 37.8 | 55.5 | 117 |
| *m*-Dichlorobenzene [1,3-Dichlorobenzene] | 595 | 5705 | 5305 | 7798 | 16499 |
| *o*-Dichlorobenzene [1,2-Dichlorobenzene] | 3299 | 31630 | 29416 | 43241 | 91483 |
| *p*-Dichlorobenzene [1,4-Dichlorobenzene] | N/A | N/A | N/A | N/A | N/A |
| 3,3'-Dichlorobenzidine | 2.24 | 21.5 | 20.0 | 29.3 | 62.1 |
| 1,2-Dichloroethane | 364 | 3490 | 3246 | 4771 | 10093 |
| 1,1-Dichloroethylene [1,1-Dichloroethene] | 55114 | 528418 | 491429 | 722400 | 1528343 |
| Dichloromethane [Methylene Chloride] | 13333 | 127833 | 118885 | 174760 | 369731 |
| 1,2-Dichloropropane | 259 | 2483 | 2309 | 3394 | 7182 |
| 1,3-Dichloropropene [1,3-Dichloropropylene] | 119 | 1141 | 1061 | 1559 | 3299 |
| Dicofol [Kelthane] | 0.30 | 2.88 | 2.67 | 3.93 | 8.31 |
| Dieldrin | 2.0E-05 | 0.000192 | 0.000178 | 0.000262 | 0.000554 |
| 2,4-Dimethylphenol | 8436 | 80882 | 75220 | 110573 | 233935 |
| Di-*n*-Butyl Phthalate | 92.4 | 886 | 824 | 1211 | 2562 |
| Dioxins/Furans [TCDD Equivalents] | 7.97E-08 | 7.64E-07 | 7.11E-07 | 0.0000010 | 0.0000022 |
| Endrin | 0.02 | 0.192 | 0.178 | 0.262 | 0.554 |
| Epichlorohydrin | 2013 | 19300 | 17949 | 26385 | 55821 |
| Ethylbenzene | 1867 | 17900 | 16647 | 24471 | 51773 |
| Ethylene Glycol | 1.68E+07 | 161073826 | 149798658 | 220204026 | 465873825 |
| Fluoride | N/A | N/A | N/A | N/A | N/A |
| Heptachlor | 0.0001 | 0.000959 | 0.000892 | 0.00131 | 0.00277 |
| Heptachlor Epoxide | 0.00029 | 0.00278 | 0.00259 | 0.00380 | 0.00804 |
| Hexachlorobenzene | 0.00068 | 0.00652 | 0.00606 | 0.00891 | 0.0188 |
| Hexachlorobutadiene | 0.22 | 2.11 | 1.96 | 2.88 | 6.10 |

| *Parameter* | *Fish Only Criterion (µg/L)* | *WLAh (µg/L)* | *LTAh (µg/L)* | *Daily Avg. (µg/L)* | *Daily Max. (µg/L)* |
|---|---|---|---|---|---|
| Hexachlorocyclohexane (*alpha* ) | 0.0084 | 0.0805 | 0.0749 | 0.110 | 0.232 |
| Hexachlorocyclohexane (*beta* ) | 0.26 | 2.49 | 2.32 | 3.40 | 7.20 |
| Hexachlorocyclohexane (*gamma* ) [Lindane] | 0.341 | 3.27 | 3.04 | 4.46 | 9.45 |
| Hexachlorocyclopentadiene | 11.6 | 111 | 103 | 152 | 321 |
| Hexachloroethane | 2.33 | 22.3 | 20.8 | 30.5 | 64.6 |
| Hexachlorophene | 2.90 | 27.8 | 25.9 | 38.0 | 80.4 |
| 4,4'-Isopropylidenediphenol [Bisphenol A] | 15982 | 153231 | 142505 | 209482 | 443190 |
| Lead | 3.83 | 97.1 | 90.3 | 132 | 280 |
| Mercury | 0.0250 | 0.240 | 0.223 | 0.327 | 0.693 |
| Methoxychlor | 3.0 | 28.8 | 26.7 | 39.3 | 83.1 |
| Methyl Ethyl Ketone | 9.92E+05 | 9511026 | 8845254 | 13002523 | 27508740 |
| Methyl *tert* -butyl ether [MTBE] | 10482 | 100499 | 93464 | 137391 | 290671 |
| Nickel | 1140 | 10930 | 10165 | 14942 | 31612 |
| Nitrate-Nitrogen (as Total Nitrogen) | N/A | N/A | N/A | N/A | N/A |
| Nitrobenzene | 1873 | 17958 | 16701 | 24550 | 51939 |
| N-Nitrosodiethylamine | 2.1 | 20.1 | 18.7 | 27.5 | 58.2 |
| N-Nitroso-di-*n* -Butylamine | 4.2 | 40.3 | 37.4 | 55.0 | 116 |
| Pentachlorobenzene | 0.355 | 3.40 | 3.17 | 4.65 | 9.84 |
| Pentachlorophenol | 0.29 | 2.78 | 2.59 | 3.80 | 8.04 |
| Polychlorinated Biphenyls [PCBs] | 6.4E-04 | 0.00614 | 0.00571 | 0.00838 | 0.0177 |
| Pyridine | 947 | 9080 | 8444 | 12412 | 26260 |
| Selenium | N/A | N/A | N/A | N/A | N/A |
| 1,2,4,5-Tetrachlorobenzene | 0.24 | 2.30 | 2.14 | 3.14 | 6.65 |
| 1,1,2,2-Tetrachloroethane | 26.35 | 253 | 235 | 345 | 730 |
| Tetrachloroethylene [Tetrachloroethylene] | 280 | 2685 | 2497 | 3670 | 7764 |
| Thallium | 0.23 | 2.21 | 2.05 | 3.01 | 6.37 |
| Toluene | N/A | N/A | N/A | N/A | N/A |
| Toxaphene | 0.011 | 0.105 | 0.0981 | 0.144 | 0.305 |
| 2,4,5-TP [Silvex] | 369 | 3538 | 3290 | 4836 | 10232 |
| 1,1,1-Trichloroethane | 784354 | 7520173 | 6993760 | 10280827 | 21750595 |
| 1,1,2-Trichloroethane | 166 | 1592 | 1480 | 2175 | 4603 |
| Trichloroethylene [Trichloroethene] | 71.9 | 689 | 641 | 942 | 1993 |
| 2,4,5-Trichlorophenol | 1867 | 17900 | 16647 | 24471 | 51773 |
| TTHM [Sum of Total Trihalomethanes] | N/A | N/A | N/A | N/A | N/A |
| Vinyl Chloride | 16.5 | 158 | 147 | 216 | 457 |

| **Aquatic Life** | ***70% of Daily Avg.*** | ***85% of Daily Avg.*** |
|---|---|---|
| ***Parameter*** | ***(µg/L)*** | ***(µg/L)*** |
| Acrolein | N/A | N/A |
| Aldrin | 0.581 | 0.705 |
| Aluminum | N/A | N/A |
| Arsenic | 66.6 | 80.8 |
| Cadmium | 17.8 | 21.7 |
| Carbaryl | 274 | 332 |
| Chlordane | 0.0192 | 0.0233 |
| Chlorpyrifos | 0.00491 | 0.00597 |
| Chromium (trivalent) | N/A | N/A |
| Chromium (hexavalent) | 238 | 289 |
| Copper | 6.87 | 8.34 |
| Copper (oyster waters) | 10.3 | 12.5 |
| Cyanide (free) | 2.50 | 3.03 |
| 4,4'-DDT | 0.00481 | 0.00584 |
| Demeton | 0.481 | 0.584 |
| Diazinon | 0.366 | 0.444 |
| Dicofol [Kelthane] | N/A | N/A |
| Dieldrin | 0.00962 | 0.0116 |
| Diuron | N/A | N/A |
| Endosulfan I (*alpha* ) | 0.0151 | 0.0184 |
| Endosulfan II (*beta* ) | 0.0151 | 0.0184 |
| Endosulfan sulfate | 0.0151 | 0.0184 |
| Endrin | 0.00962 | 0.0116 |
| Guthion [Azinphos Methyl] | 0.0481 | 0.0584 |
| Heptachlor | 0.0192 | 0.0233 |
| Hexachlorocyclohexane (*gamma* ) [Lindane] | 0.0715 | 0.0868 |
| Lead | 67.4 | 81.9 |
| Malathion | 0.0481 | 0.0584 |
| Mercury | 0.938 | 1.13 |
| Methoxychlor | 0.144 | 0.175 |
| Mirex | 0.00481 | 0.00584 |
| Nickel | 52.7 | 64.0 |
| Nonylphenol | 3.12 | 3.79 |
| Parathion (ethyl) | N/A | N/A |
| Pentachlorophenol | 6.75 | 8.19 |
| Phenanthrene | 3.44 | 4.17 |
| Polychlorinated Biphenyls [PCBs] | 0.144 | 0.175 |
| Selenium | 252 | 306 |
| Silver | 2.10 | 2.55 |
| Toxaphene | 0.000962 | 0.00116 |
| Tributyltin [TBT] | 0.0356 | 0.0432 |
| 2,4,5 Trichlorophenol | 57.7 | 70.1 |
| Zinc | 71.4 | 86.7 |

| **Human Health** *Parameter* | *70% of Daily Avg. (µg/L)* | *85% of Daily Avg. (µg/L)* |
|---|---|---|
| Acrylonitrile | 1055 | 1281 |
| Aldrin | 0.000105 | 0.000127 |
| Anthracene | 12083 | 14673 |
| Antimony | 9826 | 11932 |
| Arsenic | N/A | N/A |
| Barium | N/A | N/A |
| Benzene | 5330 | 6473 |
| Benzidine | 0.981 | 1.19 |
| Benzo(*a* )anthracene | 0.229 | 0.278 |
| Benzo(*a* )pyrene | 0.0229 | 0.0278 |
| Bis(chloromethyl)ether | 2.51 | 3.05 |
| Bis(2-chloroethyl)ether | 392 | 477 |
| Bis(2-ethylhexyl) phthalate [Di(2-ethylhexyl) phthala | 69.2 | 84.1 |
| Bromodichloromethane [Dichlorobromomethane] | 2523 | 3063 |
| Bromoform [Tribromomethane] | 9725 | 11809 |
| Cadmium | N/A | N/A |
| Carbon Tetrachloride | 422 | 512 |
| Chlordane | 0.0229 | 0.0278 |
| Chlorobenzene | 25112 | 30493 |
| Chlorodibromomethane [Dibromochloromethane] | 1679 | 2038 |
| Chloroform [Trichloromethane] | 70621 | 85754 |
| Chromium (hexavalent) | 4605 | 5592 |
| Chrysene | 23.1 | 28.0 |
| Cresols [Methylphenols] | 85338 | 103625 |
| Cyanide (free) | N/A | N/A |
| 4,4'-DDD | 0.0183 | 0.0222 |
| 4,4'-DDE | 0.00119 | 0.00144 |
| 4,4'-DDT | 0.00367 | 0.00445 |
| 2,4'-D | N/A | N/A |
| Danitol [Fenpropathrin] | 4339 | 5269 |
| 1,2-Dibromoethane [Ethylene Dibromide] | 38.9 | 47.2 |
| *m* -Dichlorobenzene [1,3-Dichlorobenzene] | 5459 | 6629 |
| *o* -Dichlorobenzene [1,2-Dichlorobenzene] | 30268 | 36755 |
| *p* -Dichlorobenzene [1,4-Dichlorobenzene] | N/A | N/A |
| 3,3'-Dichlorobenzidine | 20.5 | 24.9 |
| 1,2-Dichloroethane | 3339 | 4055 |
| 1,1-Dichloroethylene [1,1-Dichloroethene] | 505680 | 614040 |
| Dichloromethane [Methylene Chloride] | 122332 | 148546 |
| 1,2-Dichloropropane | 2376 | 2885 |
| 1,3-Dichloropropene [1,3-Dichloropropylene] | 1091 | 1325 |
| Dicofol [Kelthane] | 2.75 | 3.34 |
| Dieldrin | 0.000183 | 0.000222 |
| 2,4-Dimethylphenol | 77401 | 93987 |
| Di-*n* -Butyl Phthalate | 847 | 1029 |
| Dioxins/Furans [TCDD Equivalents] | 7.31E-07 | 8.87E-07 |
| Endrin | 0.183 | 0.222 |
| Epichlorohydrin | 18469 | 22427 |
| Ethylbenzene | 17130 | 20800 |
| Ethylene Glycol | 154142818 | 187173422 |
| Fluoride | N/A | N/A |
| Heptachlor | 0.000917 | 0.00111 |
| Heptachlor Epoxide | 0.00266 | 0.00323 |
| Hexachlorobenzene | 0.00623 | 0.00757 |
| Hexachlorobutadiene | 2.01 | 2.45 |

| **Human Health** *Parameter* | *70% of Daily Avg. (µg/L)* | *85% of Daily Avg. (µg/L)* |
|---|---|---|
| Hexachlorocyclohexane (*alpha* ) | 0.0770 | 0.0935 |
| Hexachlorocyclohexane (*beta* ) | 2.38 | 2.89 |
| Hexachlorocyclohexane (*gamma* ) [Lindane] | 3.12 | 3.79 |
| Hexachlorocyclopentadiene | 106 | 129 |
| Hexachloroethane | 21.3 | 25.9 |
| Hexachlorophene | 26.6 | 32.3 |
| 4,4'-Isopropylidenediphenol [Bisphenol A] | 146637 | 178059 |
| Lead | 92.9 | 112 |
| Mercury | 0.229 | 0.278 |
| Methoxychlor | 27.5 | 33.4 |
| Methyl Ethyl Ketone | 9101766 | 11052144 |
| Methyl *tert* -butyl ether [MTBE] | 96174 | 116782 |
| Nickel | 10459 | 12701 |
| Nitrate-Nitrogen (as Total Nitrogen) | N/A | N/A |
| Nitrobenzene | 17185 | 20867 |
| N-Nitrosodiethylamine | 19.2 | 23.3 |
| N-Nitroso-di-*n* -Butylamine | 38.5 | 46.7 |
| Pentachlorobenzene | 3.25 | 3.95 |
| Pentachlorophenol | 2.66 | 3.23 |
| Polychlorinated Biphenyls [PCBs] | 0.00587 | 0.00713 |
| Pyridine | 8688 | 10550 |
| Selenium | N/A | N/A |
| 1,2,4,5-Tetrachlorobenzene | 2.20 | 2.67 |
| 1,1,2,2-Tetrachloroethane | 241 | 293 |
| Tetrachloroethylene [Tetrachloroethylene] | 2569 | 3119 |
| Thallium | 2.11 | 2.56 |
| Toluene | N/A | N/A |
| Toxaphene | 0.100 | 0.122 |
| 2,4,5-TP [Silvex] | 3385 | 4111 |
| 1,1,1-Trichloroethane | 7196579 | 8738703 |
| 1,1,2-Trichloroethane | 1523 | 1849 |
| Trichloroethylene [Trichloroethene] | 659 | 801 |
| 2,4,5-Trichlorophenol | 17130 | 20800 |
| TTHM [Sum of Total Trihalomethanes] | N/A | N/A |
| Vinyl Chloride | 151 | 183 |

# Appendix B
# pH Screening

Calculation of pH of a mixture in seawater.
Based on the CO2SYS program (Lewis and Wallace, 1998)
http://cdiac.esd.ornl.gov/oceans/co2rprt.html

Port of Corpus Christi Authority
05488-000

| INPUT | | | Notes on Data Sources |
|---|---|---|---|
| 1. MIXING ZONE BOUNDARY CHARACTERISTICS | | | Calculated from chronic effluent % at edge of mixing zone given in critical conditions memo. Inverse of effluent fraction (1/0.093 = 11.9). |
| Dilution factor at mixing zone boundary | 12.50 | 12.50 | Default value. Range of depths tested. |
| Depth at plume trapping level (m) | 2.00 | 2.00 | |
| 2. BACKGROUND RECEIVING WATER CHARACTERISTICS | | | |
| Temperature (deg C): | 5.00 | 35.00 | Range of temperatures tested (5 to 35 degrees C) |
| pH: | 7.00 | 7.00 | Ambient pH for Segment 2501 from 2012 IPs. |
| Salinity (psu): | 36.50 | 36.50 | Salinity of Gulf of Mexico |
| Total alkalinity (meq/L) | 7.50 | 8.40 | Alkalinity of Gulf of Mexico |
| 3. EFFLUENT CHARACTERISTICS | | | |
| Temperature (deg C): | 5.00 | 35.00 | Range of temperatures tested (5 to 35 degrees C) |
| pH: | 6.00 | 9.00 | Proposed permit limit. |
| Salinity (psu) | 5.00 | 5.00 | Minimum salinity assumed because discharge is freshwater. However, values up to 5 ppt tested. |
| Total alkalinity (meq/L): | 0.40 | 4.00 | For high pH scenario, tested a range of values. For low pH scenarios, used default of 20 mg/L CaCO3 = 0.40 meq/L |
| 4. CLICK THE 'calculate" BUTTON TO UPDATE OUTPUT RESULTS >>> | | | |

| OUTPUT | | | |
|---|---|---|---|
| CONDITIONS AT THE MIXING ZONE BOUNDARY | | | |
| Temperature (deg C): | 20.80 | 20.00 | |
| Salinity (psu) | 4.68 | 4.76 | |
| Density (kg/m^3) | 1001.60 | 1001.83 | |
| Alkalinity (mmol/kg-SW): | 0.55 | 0.83 | |
| Total Inorganic Carbon (mmol/kg-SW): | 0.70 | 0.89 | |
| pH at Mixing Zone Boundary: | 6.99 | 7.09 | **Segment 2501 criteria: 6.5-9.0** |

Notes:
To convert from units of mgCaCO3/L to meq/L divide by 50.044 mg/meq
PSU refers to the Practical Salinity Scale (PSS) and is approximately equivalent to parts per thousand (ppt)

**Appendix C**
**Comparison of Effluent Limits**

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

| *Outfall* | *Pollutant* | *Technology-Based* | | | | *Water Quality-Based* | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | *Daily Avg* | | *Daily Max* | | *Daily Avg* | | *Daily Max* | |
| | | *lbs/day* | *mg/L* | *lbs/day* | *mg/L* | *lbs/day* | *mg/L* | *lbs/day* | *mg/L* |
| 001 | Flow | **191.2 MGD** | | **191.2 MGD** | | - | | - | |
| | Total Suspended Solids (TSS) | **Report** | **Report** | **Report** | **Report** | - | - | - | - |
| | Total Dissolved Solids (TDS) | - | - | - | - | **Report** | **Report** | **Report** | **Report** |
| | Chloride | - | - | - | - | **Report** | **Report** | **Report** | **Report** |
| | Sulfate | - | - | - | - | **Report** | **Report** | **Report** | **Report** |
| | Salinity | - | - | - | - | **Report** | **Report, ppt** | **Report** | **Report, ppt** |
| | pH | **-** | | **-** | | **6.0 SU, minimum** | | **9.0 SU** | |

# Administrative Package Cover Page

**This file contains the following documents:**

1. Summary of application (in plain language)
   - English
   - Alternative Language (Spanish)
2. First Notice (NORI-Notice of Receipt of Application and Intent to Obtain a Permit)
   - English
   - Alternative Language (Spanish)
3. Application materials

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# Portada de Paquete Administrativo

**Este archivo contiene los siguientes documentos:**

1. Resumen en lenguaje sencillo (PLS, por sus siglas en inglés) de la actividad propuesta
   - Inglés
   - Idioma alternativo (español)
2. Primer aviso (NORI, por sus siglas en inglés)
   - Inglés
   - Idioma alternativo (español)
3. Solicitud original

105622112

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# SUMMARY OF APPLICATION IN PLAIN LANGUAGE FOR TPDES OR TLAP PERMIT APPLICATIONS

## Summary of Application (in plain language) Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

Applicants should use this template to develop a plain language summary of your facility and application as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. You may modify the template as necessary to accurately describe your facility as long as the summary includes the following information: (1) the function of the proposed plant or facility; (2) the expected output of the proposed plant or facility; (3) the expected pollutants that may be emitted or discharged by the proposed plant or facility; and (4) how you will control those pollutants, so that the proposed plant will not have an adverse impact on human health or the environment.

Fill in the highlighted areas below to describe your facility and application in plain language. Instructions and examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements. After filling in the information for your facility delete these instructions.

If you are subject to the alternative language notice requirements in 30 TAC Section 39.426, **you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package**. For your convenience, a Spanish template has been provided below.

**ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS INDUSTRIAL WASTEWATER/STORMWATER**

*The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 TAC Chapter 39. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.*

Port of Corpus Christi Authority of Nueces County (CN600885248) proposes to operate the Harbor Island Desalination Facility (RN105622112), a Seawater Desalination Facility. The facility will be located at 225 Hwy 361, in Port Aransas, Nueces County, Texas 78373. This is an application to authorize the discharge of water from seawater pretreatment and reverse osmosis reject water (brine) to the Gulf of Mexico/America. Discharges from the facility are expected to contain suspended solids and seawater salts – primarily salts of sodium, calcium, magnesium, potassium, chloride, and sulfate . The influent seawater will be treated by clarification and filtration pretreatment followed by reverse osmosis treatment that produces freshwater for sale to customers.

**PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS DE TPDES o TLAP**

**AGUAS RESIDUALES** INDUSTRIALES **/AGUAS PLUVIALES**

*El siguiente resumen se proporciona para esta solicitud de permiso de calidad del agua pendiente que está siendo revisada por la Comisión de Calidad Ambiental de Texas según lo requerido por el Capítulo 39 del Código Administrativo de Texas 30. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no es una representación ejecutiva fedérale de la solicitud de permiso.*

La Autoridad del Puerto de Corpus Christi del condado de Nueces (CN600885248) propone operar Harbor Island Instalación de desalinización (RN105622112), una Instalación de desalinización de agua de mar. La instalación estará ubicada en 225 Hwy 361, en Port Aransas, Condado de Nueces, Texas 78373. Esta es una solicitud para autorizar la descarga de agua de mar pretratada y agua de rechazo de ósmosis inversa (salmuera) al Golfo de México/América. Se espera que las descargas de la instalación contengan sólidos en suspensión y sales de agua de mar, principalmente sales de sodio, calcio, magnesio, potasio, cloruro y sulfato. Salmuera de agua de mar . estará tratado por pretratamientos de clarificación y filtración, y ósmosis inversa que produce agua dulce para la venta a los clientes.

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN WATER QUALITY PERMIT

## PROPOSED PERMIT NO. WQ0005488000

**APPLICATION.** Port of Corpus Christi Authority of Nueces County, P.O. Box 1541, Corpus Christi, Texas 78403, which will own a seawater desalination facility, has applied to the Texas Commission on Environmental Quality (TCEQ) for proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005488000 (EPA I.D. No. TX0147681) to authorize the discharge of treated wastewater at a volume not to exceed a daily average flow of 191,200,000 gallons per day. The facility will be located at 225 State Highway 361, approximately 0.8 miles south of the intersection of Harbor Island Road and State Highway 361, in the city of Port Aransas, Nueces County, Texas 78373. The discharge route will be from the plant site directly to Gulf of Mexico. TCEQ received this application on April 1, 2025. The permit application will be available for viewing and copying at La Retama Central Library, 805 Comanche Street, Corpus Christi, and at Ellis Memorial Library, 700 West Avenue A, Port Aransas, in Nueces County, Texas, and at Ed & Hazel Richmond Public Library, 110 North Lamont Street, Aransas Pass, in Aransas County, Texas prior to the date this notice is published in the newspaper. The application, including any updates, and associated notices are available electronically at the following webpage: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.07277,27.848611&level=18

The application is subject to the goals and policies of the Texas Coastal Management Program and must be consistent with the applicable Coastal Management Program goals and policies.

**ALTERNATIVE LANGUAGE NOTICE.** Alternative language notice in Spanish is available at: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications. El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications.

**ADDITIONAL NOTICE.** TCEQ's Executive Director has determined the application is administratively complete and will conduct a technical review of the application. After technical review of the application is complete, the Executive Director may prepare a draft permit and will issue a preliminary decision on the application. **Notice of the Application and Preliminary Decision will be published and mailed to those who are on the county-wide mailing list and to those who are on the mailing list for this application. That notice will contain the deadline for submitting public comments.**

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

OPPORTUNITY FOR A CONTESTED CASE HEARING. After the deadline for submitting public comments, the Executive Director will consider all timely comments and prepare a response to all relevant and material, or significant public comments. **Unless the application is directly referred for a contested case hearing, the response to comments, and the Executive Director's decision on the application, will be mailed to everyone who submitted public comments and to those persons who are on the mailing list for this application. If comments are received, the mailing will also provide instructions for requesting reconsideration of the Executive Director's decision and for requesting a contested case hearing.** A contested case hearing is a legal proceeding similar to a civil trial in state district court.

TO REQUEST A CONTESTED CASE HEARING, YOU MUST INCLUDE THE FOLLOWING ITEMS IN YOUR REQUEST: **your name, address, phone number; applicant's name and proposed permit number; the location and distance of your property/activities relative to the proposed facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; a list of all disputed issues of fact that you submit during the comment period and, the statement "[I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify by name and physical address an individual member of the group who would be adversely affected by the proposed facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are relevant to the group's purpose.**

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period.**

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

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

**AGENCY CONTACTS AND INFORMATION.** All public comments and requests must be submitted either electronically at **https://www14.tceq.texas.gov/epic/eComment/**, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Port Of Corpus Christi Authority Of Nueces County at the address stated above or by calling Ms. Sarah Garza, Director of Environmental Planning & Compliance, at 361-885-6163.

Issuance Date: May 21, 2025

# Comisión de Calidad Ambiental del Estado de Texas

**AVISO DE RECIBO DE LA SOLICITUD Y**
**EL INTENTO DE OBTENER PERMISO PARA LA CALIDAD DEL AGUA PERMISO**

**PERMISO PROPUESTO NO. WQ0005488000**

**SOLICITUD.** Port of Corpus Christi Authority of Nueces County, P.O. Box 1541, Corpus Christi, Texas, 78403, que poseerá una planta de desalinización de agua de mar, ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) para el propuesto Permiso No. WQ0005488000 (EPA I.D. No. TX0147681) del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES) para autorizar la descarga de aguas residuales tratadas en un volumen que no sobrepasa un flujo promedio diario de 191,2000,000 galones por día. La planta estará ubicada en 225 State Highway 361, aproximadamente 0.8 millas al sur de la intersección de Harbor Island Road y State Highway 361, en la ciudad de Port Aransas, en el Condado de Nueces, Texas 78373. La ruta de descarga estará del sitio de la planta directamente al Golfo de México. La TCEQ recibió esta solicitud el día 1 de abril de 2025. La solicitud para el permiso estará disponible para leerla y copiarla en la Biblioteca central La Retama, 1.er piso, recepción, 805 Comanche Street, Corpus Christi, Condado de Nueces, Texas, en La Biblioteca Ellis Memorial Library, 700 West Avenue A, Port Aransas, Texas 78373 en el Condado de Nueces, Texas, y en la Biblioteca publica Ed and Hazel Richmond, 110 North Lamont Street, Aransas Pass, Texas en el Condado de Aransas, Texas antes de la fecha de publicación de este aviso en el periódico. La solicitud (cualquier actualización y aviso inclusive) está disponible electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications. Este enlace a un mapa electrónico de la ubicación general del sitio o de la instalación es proporcionado como una cortesía y no es parte de la solicitud o del aviso. Para la ubicación exacta, consulte la solicitud. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.07277,27.848611&level=18

El Director Ejecutivo de la TCEQ ha revisado esta medida para ver si está de acuerdo con los objetivos y las regulaciones del Programa de Administración Costero de Texas (CMP) de acuerdo con las regulaciones del Consejo Coordinador de la Costa (CCC) y ha determinado que la acción es conforme con las metas y regulaciones pertinentes del CMP.

**AVISO DE IDIOMA ALTERNATIVO.** El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications.

**AVISO ADICIONAL.** El Director Ejecutivo de la TCEQ ha determinado que la solicitud es administrativamente completa y conducirá una revisión técnica de la solicitud. Después de completar la revisión técnica, el Director Ejecutivo puede preparar un borrador del permiso y emitirá una Decisión Preliminar sobre la solicitud. **El aviso de la solicitud y la decisión preliminar serán publicados y enviado a los que están en la lista de correo de las personas**

**a lo largo del condado que desean recibir los avisos y los que están en la lista de correo que desean recibir avisos de esta solicitud. El aviso dará la fecha límite para someter comentarios públicos.**

**COMENTARIO PUBLICO / REUNION PUBLICA. Usted puede presentar comentarios públicos o pedir una reunión pública sobre esta solicitud.** El propósito de una reunión pública es dar la oportunidad de presentar comentarios o hacer preguntas acerca de la solicitud. La TCEQ realiza una reunión pública si el Director Ejecutivo determina que hay un grado de interés público suficiente en la solicitud o si un legislador local lo pide. Una reunión pública no es una audiencia administrativa de lo contencioso.

**OPORTUNIDAD DE UNA AUDIENCIA ADMINISTRATIVA DE LO CONTENCIOSO.** Después del plazo para presentar comentarios públicos, el Director Ejecutivo considerará todos los comentarios apropiados y preparará una respuesta a todo los comentarios públicos esenciales, pertinentes, o significativos. **A menos que la solicitud haya sido referida directamente a una audiencia administrativa de lo contencioso, la respuesta a los comentarios y la decisión del Director Ejecutivo sobre la solicitud serán enviados por correo a todos los que presentaron un comentario público y a las personas que están en la lista para recibir avisos sobre esta solicitud. Si se reciben comentarios, el aviso también proveerá instrucciones para pedir una reconsideración de la decisión del Director Ejecutivo y para pedir una audiencia administrativa de lo contencioso.** Una audiencia administrativa de lo contencioso es un procedimiento legal similar a un procedimiento legal civil en un tribunal de distrito del estado.

**PARA SOLICITAR UNA AUDIENCIA DE CASO IMPUGNADO, USTED DEBE INCLUIR EN SU SOLICITUD LOS SIGUIENTES DATOS: su nombre, dirección, y número de teléfono; el nombre del solicitante y número del permiso; la ubicación y distancia de su propiedad/actividad con respecto a la instalación; una descripción específica de la forma cómo usted sería afectado adversamente por el sitio de una manera no común al público en general; una lista de todas las cuestiones de hecho en disputa que usted presente durante el período de comentarios; y la declaración "[Yo/nosotros] solicito/solicitamos una audiencia de caso impugnado". Si presenta la petición para una audiencia de caso impugnado de parte de un grupo o asociación, debe identificar una persona que representa al grupo para recibir correspondencia en el futuro; identificar el nombre y la dirección de un miembro del grupo que sería afectado adversamente por la planta o la actividad propuesta; proveer la información indicada anteriormente con respecto a la ubicación del miembro afectado y su distancia de la planta o actividad propuesta; explicar cómo y porqué el miembro sería afectado; y explicar cómo los intereses que el grupo desea proteger son pertinentes al propósito del grupo.**

Después del cierre de todos los períodos de comentarios y de petición que aplican, el Director Ejecutivo enviará la solicitud y cualquier petición para reconsideración o para una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración durante una reunión programada de la Comisión.
La Comisión sólo puede conceder una solicitud de una audiencia de caso impugnado sobre los temas que el solicitante haya presentado en sus comentarios oportunos que no fueron retirados posteriormente. **Si se concede una audiencia, el tema de la audiencia estará limitado a cuestiones de hecho en disputa o cuestiones mixtas de hecho y de derecho**

**relacionadas a intereses pertinentes y materiales de calidad del agua que se hayan presentado durante el período de comentarios.**

**LISTA DE CORREO.** Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Además, puede pedir que la TCEQ ponga su nombre en una o más de las listas correos siguientes (1) la lista de correo permanente para recibir los avisos del solicitante indicado por nombre y número del permiso específico y/o (2) la lista de correo de todas las solicitudes en un condado especifico. Si desea que se agrega su nombre en una de las listas designe cual lista(s) y envía por correo su pedido a la Oficina del Secretario Principal de la TCEQ.

**INFORMACIÓN DISPONIBLE EN LÍNEA.** Para detalles sobre el estado de la solicitud, favor de visitar la Base de Datos Integrada de los Comisionados en www.tceq.texas.gov/goto/cid. Para buscar en la base de datos, utilizar el número de permiso para esta solicitud que aparece en la parte superior de este aviso.

**CONTACTOS E INFORMACIÓN A LA AGENCIA. Todos los comentarios públicos y solicitudes deben ser presentadas electrónicamente vía http://www14.tceq.texas.gov/epic/eComment/ o por escrito dirigidos a la Comisión de Texas de Calidad Ambiental, Oficial de la Secretaría (Office of Chief Clerk), MC-105, P.O. Box 13087, Austin, Texas 78711-3087.** Tenga en cuenta que cualquier información personal que usted proporcione, incluyendo su nombre, número de teléfono, dirección de correo electrónico y dirección física pasarán a formar parte del registro público de la Agencia. Para obtener más información acerca de esta solicitud de permiso o el proceso de permisos, llame al programa de educación pública de la TCEQ, gratis, al 1-800-687-4040. Si desea información en español, puede llamar al 1-800-687-4040.

Tambien puede obtener más información de Port of Corpus Christi Authority of Nueces County, en la dirección indicada anteriormente, o llamando a la Sra. Sarah Garza, Directora de Permisos y Cumplimiento Ambiental, al 361-885-6163.

Fecha de emisión: el 21 de mayo de 2025

## Leah Whallon

**From:** Dives-Gomez, Yvonne <ydives-gomez@pocca.com>
**Sent:** Friday, May 16, 2025 2:40 PM
**To:** Leah Whallon
**Cc:** Sarah Garza - POCCA
**Subject:** RE: Application for Proposed Permit No. WQ0005488000; Port Of Corpus Christi Authority Of Nueces County; Harbor Island Desalination Facility; Notice of Deficiency 30-Day Will Return Letter
**Attachments:** PCCA_WQ0005488000 PCCA NOD RESPONSE+ATTACH_executed.pdf; Industrial Discharge New Spanish NORI.docx; PCCA_WQ0005488000_Mailing Labels-5-3 Avery5160EasyPeelAddressLabels Word doc.doc

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

Good afternoon, Leah,

I have attached the Port of Corpus Christi Authority of Nueces County's response to TCEQ's NOD letter. The PDF includes PCCA's response letter and attachments. Also attached are Word documents of the Spanish NORI and adjacent landowners' mailing labels. Please feel free to call me if you have any questions.

Thank you again for meeting with me yesterday. I appreciate your guidance on the adjacent landowner's map and the Spanish NORI!

Have a blessed weekend,
Yvonne

PORT CORPUS CHRISTI

Yvonne Dives-Gomez
*Environmental Permitting Coordinator*
**Port of Corpus Christi Authority**
w: (361) 885-6606

**From:** Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
**Sent:** Monday, April 21, 2025 12:28 PM
**To:** Dives-Gomez, Yvonne <ydives-gomez@pocca.com>; Garza, Sarah <Sarah@pocca.com>
**Subject:** Application for Proposed Permit No. WQ0005488000; Port Of Corpus Christi Authority Of Nueces County; Harbor Island Desalination Facility; Notice of Deficiency 30-Day Will Return Letter

**[EXTERNAL EMAIL]** CAUTION: This email originated from outside Port of Corpus. Exercise caution when opening attachments or clicking links. Please forward any suspicious content to IT Helpdesk.

Good Afternoon,

Please see the attached Notice of Deficiency 30-Day Will Return Letter dated April 21, 2025 requesting the response needed to declare the application administratively complete. The original will be sent by certified mail. Please send the complete response by May 21, 2025.

Thank you,

**Leah Whallon**
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

PORT CORPUS CHRISTI®

May 16, 2025

Ms. Leah Whallon
Applications Review and Processing Team (MC148)
Water Quality Division
Texas Commission of Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

**Subject:** Port of Corpus Christi Authority of Nueces County
Harbor Island Desalination Facility
TPDES Permit Number WQ0005488000

Dear Ms. Whallon,

The Port of Corpus Christi Authority of Nueces County (PCCA) is pleased to provide the following responses to your Notice of Deficiency dated April 4, 2025, for its TPDES permit application for the proposed Harbor Island Desalination Facility. Our responses follow the organization of your letter.

1. Core Data Form Section II, Item 15

The mailing address at 400 Charles Zahn Jr. Drive could not be verified with USPS as a valid mailing address. Please provide a revised core data form to list a valid mailing address for the customer.

**Response:**

The address in multiple locations in the Core Data Form (CDF) is updated to reflect PO Box 1541, Corpus Christi, Texas, 78403. Please see **Attachment A - Revised CDF**.

2. Administrative Report 1.0, Items 5-10

Please also provide revised pages to update the contact mailing addresses in items 5-10.

**Response:**

The mailing address for the contacts in the Administrative Report 1.0 items 5-10 is updated to reflect PO Box 1541, Corpus Christi, Texas, 78403. Please see **Attachment B - Updated Administrative Report Items 5 - 10**.

3. Administrative Report 1.0, Item 9.d

The USGS map in the application shows the outfall is located in Aransas County. If the facility or outfall is located in more than one county, a public viewing location for each county is needed. Please provide a revised page to include a second viewing location in Aransas County.

**Response:**

The outfall is in Aransas County, and the facility is in Nueces County. Therefore, multiple locations for viewing have been identified. A viewing location for Aransas County will be at the Ed & Hazel Richmond Public Library. The address is 110 N Lamont St, Aransas Pass, TX 78336. In addition to the previously provided Nueces County viewing location at La Retama Central Library, 805 Comanche Street, Corpus Christi, Texas, a second Nueces County viewing location will be at Ellis Memorial Library, 700 W. Avenue A, Port Aransas, Texas, 78373. The Administrative Report 1.0 form did not allow space for multiple locations. Please see **Attachment C – Additional Public Viewing Locations.**

4. Administrative Report 1.0, Item 11.b

The USGS map does not show the applicant's property boundaries, treatment facility boundaries, or one mile radius information from the facility. Please provide an updated or separate USGS quadrangle map that shows and labels all required items.

**Response:**

PCCA inadvertently did not include its previously prepared USGS maps in their entirety, thereby omitting the USGS map with PCCA's property boundaries on Harbor Island, the facility boundaries, and an indication of the one-mile radius from the facility. **Attachment D – USGS Maps** includes all USGS maps.

5. Administrative Report 1.1, Item 1

The affected landowner map does not label the applicant's property boundaries and does not include all adjacent landowners. The map shows the facility boundary but adjacent property "3" is owned by the applicant. The applicant cannot be their own adjacent landowner. Please provide a revised affected landowner map that labels the applicant's property boundary as all contiguous

land owned by the applicant and the affected landowners as all properties adjacent to the applicant's property boundary.

Please also provide an updated cross-referenced landowner list and the landowner list formatted for mailing labels (Avery 5160) in a Microsoft Word document.

**Response:**

PCCA updated the landowners map to label the applicant's property boundary as all contiguous land owned by the applicant and the affected landowners as all properties adjacent to the applicant's property boundary. PCCA also updated the adjacent landowners table and mailing labels. **Attachment E - Updated Landowners Map and Table** provides the updated map and table. The mailing labels are attached to this email as a Microsoft Word Document.

6. The following is a portion of the NORI which contains information relevant to your application. Please read it carefully and indicate if it contains any errors or omissions. The complete notice will be sent to you once the application is declared administratively complete.

**Response:**

The Port suggests the following revisions shown in redline/strikeout:

APPLICATION. Port of Corpus Christi Authority of Nueces County, P.O. Box 1541, Corpus Christi, Texas, 78403, which ~~own~~ will own a seawater desalination facility, has applied to the Texas Commission on Environmental Quality (TCEQ) for proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005488000 (EPA I.D. No. TX0147681) to authorize the discharge of treated wastewater at a volume not to exceed a daily average flow of 191,200,000 gallons per day. The facility will be located at 225 State Highway 361, approximately 0.8 miles south of the intersection of Harbor Island Road and State Highway 361, in the city of Port Aransas, Nueces County, Texas 78373. The discharge route will be~~]~~ from the Northeast of Harbor Island, tunneled approximately 65 feet under the seabed out to the Gulf of Mexico/America (Gulf) and approximately 1.8 miles offshore from San Jose Island. ~~the plant site directly to the Gulf of America.~~ TCEQ received this application on April 1, 2025. The permit application will be available for viewing and copying at La Retama Central Library, 805 Comanche Street, Corpus Christi, Ellis Memorial Library, 700 W. Avenue A, Port Aransas, Texas, 78373, in Nueces County, Texas, and Ed and Hazel Richmond Public Library, 110 N. Lamont Street, Aransas Pass, Texas 78336 in Aransas County, Texas prior to the date this notice is published in the newspaper. The application, including any updates, and associated notices are available electronically at the following webpage:

https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications.

This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application.

https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.07277,27.848611&level=18

Further information may also be obtained from Port of Corpus Christi Authority of Nueces County at the address stated above or by calling Ms. Sarah Garza, Director of Environmental Planning & Compliance, at 361-885-6163.

7. The application indicates that public notices in Spanish are required. After confirming the portion of the NORI above does not contain any errors or omissions, please use the attached template to translate the NORI into Spanish. Only the first and last paragraphs are unique to this application and require translation. Please provide the translated Spanish NORI in a Microsoft Word document.

**Response:**

The Spanish language version of the NORI is attached to this email as a Microsoft Word Document.

Should you have any questions or comments, please contact me at (361) 885-6163 (sarah@pocca..com) or Yvonne Dives-Gomez at 361-885-6606 (ydives-gomez@pocca.com).

Sincerely,
PORT OF CORPUS CHRISTI AUTHORITY

Sarah L. Garza
Director of Environmental
Planning and Compliance

Enclosure

cc: Yvonne Dives-Gomez, Environmental Permitting Specialist, Port of Corpus Christi Authority

# ATTACHMENT A
# REVISED CDF

TCEQ Use Only

# TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

**1. Reason for Submission** (*If other is checked please describe in space provided.*)

☐ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☒ Renewal *(Core Data Form should be submitted with the renewal form)*

☐ Other

| **2. Customer Reference Number** *(if issued)* | Follow this link to search for CN or RN numbers in Central Registry** | **3. Regulated Entity Reference Number** *(if issued)* |
|---|---|---|
| **CN 600885248** | | **RN 105622112** |

## SECTION II: Customer Information

**4. General Customer Information** | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

***The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).***

**6. Customer Legal Name** *(If an individual, print last name first: eg: Doe, John)*

*If new Customer, enter previous Customer below:*

Port of Corpus Christi Authority of Nueces County

| **7. TX SOS/CPA Filing Number** | **8. TX State Tax ID** (11 digits) | **9. Federal Tax ID** (9 digits) | **10. DUNS Number** *(if applicable)* |
|---|---|---|---|
| N/A | 746000609 | N/A | 063069835 |

**11. Type of Customer:**

☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☒ Other ☐ Sole Proprietorship ☐ Other:

**12. Number of Employees**

☐ 0-20 ☐ 21-100 ☐ 101-250 ☒ 251-500 ☐ 501 and higher

**13. Independently Owned and Operated?**

☒ **Yes** ☐ **No**

**14. Customer Role** (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

**15. Mailing Address:**

Port of Corpus Christi Authority of Nueces County
P.O. Box 1541

| **City** | Corpus Christi | **State** | TX | **ZIP** | 78403 | **ZIP + 4** | |
|---|---|---|---|---|---|---|---|

| **16. Country Mailing Information** *(if outside USA)* | **17. E-Mail Address** *(if applicable)* |
|---|---|
| N/A | Sarah@pocca.com |

| 18. Telephone Number | 19. Extension or Code | 20. Fax Number *(if applicable)* |
|---|---|---|
| ( 361 ) 885-6163 | | ( ) - |

## SECTION III: Regulated Entity Information

**21. General Regulated Entity Information** *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

***The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).***

**22. Regulated Entity Name** *(Enter name of the site where the regulated action is taking place.)*

Harbor Island Desalination Facility

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **23. Street Address of the Regulated Entity:** ***(No PO Boxes)*** | 222 Hwy 361 | | | | | | | |
| | **City** | Port Aransas | **State** | TX | **ZIP** | 78373 | **ZIP + 4** | |
| **24. County** | Nueces | | | | | | | |

**If no Street Address is provided, fields 25-28 are required.**

| | |
|---|---|
| **25. Description to Physical Location:** | The proposed desalination facility is located on Harbor Island, east of HWY 361 in Port Aransas, Nueces County, Texas. From the intersection of HWY 361 and Harbor Island Drive, head south approximately 0.8 miles, the facility is to the east of the highway. |

| 26. Nearest City | State | Nearest ZIP Code |
|---|---|---|
| Port Aransas | TX | 78373 |

***Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).***

| 27. Latitude (N) In Decimal: | 27.848611 | | 28. Longitude (W) In Decimal: | -97.072778 | |
|---|---|---|---|---|---|
| Degrees | Minutes | Seconds | Degrees | Minutes | Seconds |
| 27 | 50 | 55 | -97 | 04 | 22 |

| 29. Primary SIC Code (4 digits) | 30. Secondary SIC Code (4 digits) | 31. Primary NAICS Code (5 or 6 digits) | 32. Secondary NAICS Code (5 or 6 digits) |
|---|---|---|---|
| 4491 | | | |

**33. What is the Primary Business of this entity?** *(Do not repeat the SIC or NAICS description.)*

Marine cargo loading and unloading

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **34. Mailing Address:** | **Port of Corpus Christi Authority of Nueces County** | | | | | | | |
| | **P.O. Box 1541** | | | | | | | |
| | **City** | **Corpus Christi** | **State** | **TX** | **ZIP** | **78403** | **ZIP + 4** | |
| **35. E-Mail Address:** | **Sarah@pocca.com** | | | | | | | |

| 36. Telephone Number | 37. Extension or Code | 38. Fax Number *(if applicable)* |
|---|---|---|
| **( 361 ) 885-6163** | | ( ) - |

**39. TCEQ Programs and ID Numbers** Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

| | | | | |
|---|---|---|---|---|
| ☐ Dam Safety | ☐ Districts | ☐ Edwards Aquifer | ☐ Emissions Inventory Air | ☐ Industrial Hazardous Waste |
| | | | | |
| ☐ Municipal Solid Waste | ☐ New Source Review Air | ☐ OSSF | ☐ Petroleum Storage Tank | ☐ PWS |
| | | | | |
| ☐ Sludge | ☐ Storm Water | ☐ Title V Air | ☐ Tires | ☐ Used Oil |
| | | | | |
| ☐ Voluntary Cleanup | ☒ Wastewater | ☐ Wastewater Agriculture | ☐ Water Rights | ☐ Other: |
| | WQ0005488000 | | | |

## SECTION IV: Preparer Information

| **40. Name:** | Sarah Garza | **41. Title:** | Dir. Env. Permitting & Compliance |
|---|---|---|---|

| **42. Telephone Number** | **43. Ext./Code** | **44. Fax Number** | **45. E-Mail Address** |
|---|---|---|---|
| **(** 361 **)** 885-6163 | | **(  )** - | Sarah@pocca.com |

## SECTION V: Authorized Signature

**46.** By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

| **Company:** | Port of Corpus Christi Authority of Nueces County | **Job Title:** | Dir. Env. Permitting & Compliance |
|---|---|---|---|
| **Name** *(In Print):* | Sarah Garza | **Phone:** | **(** 361 **)** 885- **6163** |
| **Signature:** | | **Date:** | |

# ATTACHMENT B
# UPDATED ADMINISTRATIVE REPORT
# ITEMS 5 - 10

**Note:** The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

## Item 3. Co-applicant Information (Instructions, Page 27)

☒ Check this box if there is no co-applicant.; otherwise, complete the below questions.

a. Legal name of the entity (co-applicant) applying for this permit: N/A

**Note:** The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

b. Customer Number (if applicant is an existing customer): CN N/A

**Note:** Locate the customer number using the TCEQ's Central Registry Customer Search.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

Prefix: N/A Full Name (Last/First Name): N/A

Title: N/A Credential: N/A

d. Will the co-applicant have overall financial responsibility for the facility?

☐ Yes ☐ No

**Note:** The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

## Item 4. Core Data Form (Instructions, Pages 27)

a. Complete and attach one Core Data Form (TCEQ Form 10400) for each customer (applicant and co-applicant(s)). If the customer type selected on the Core Data Form is Individual, complete Attachment 1 of the Administrative Report. Attachment: A-2

## Item 5. Application Contact Information (Instructions, Page 27)

Provide names of two individuals who can be contacted about this application. Indicate if the individual can be contacted about administrative or technical information, or both.

a. ☒ Administrative Contact . ☒ Technical Contact

Prefix: Ms. Full Name (Last/First Name): Garza/Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: PO Box 1541 City/State/Zip: Corpus Christi/TX/78403

Phone No: 361-885-6163 Email: sarah@pocca.com

b. ☐ Administrative Contact ☒ Technical Contact

Prefix: Ms. Full Name (Last/First Name): Dives-Gomez/Yvonne

Title: Environmental Permitting Coordinator Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: PO Box 1541 City/State/Zip: Corpus Christi/TX/78403

Phone No: 361-885-6606 Email: ydives-gomez@pocca.com

Attachment: N/A

## Item 6. Permit Contact Information (Instructions, Page 28)

Provide two names of individuals that can be contacted throughout the permit term.

a. Prefix: Ms. Full Name (Last/First Name): Garza, Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: PO Box 1541 City/State/Zip: Corpus Christi/TX/78403

Phone No: 361-885-6163 Email: sarah@pocca.com

b. Prefix: Ms. Full Name (Last/First Name): Dives-Gomez/Yvonne

Title: Environmental Permitting Coordinator Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: PO Box 1541 City/State/Zip: Corpus Christi/TX/78403

Phone No: 361-885-6606 Email: ydives-gomez@pocca.com

Attachment: N/A

## Item 7. Billing Contact Information (Instructions, Page 28)

The permittee is responsible for paying the annual fee. The annual fee will be assessed for permits **in effect on September 1 of each year**. The TCEQ will send a bill to the address provided in this section. The permittee is responsible for terminating the permit when it is no longer needed (form TCEQ-20029).

Provide the complete mailing address where the annual fee invoice should be mailed and the name and phone number of the permittee's representative responsible for payment of the invoice.

Prefix: Ms. Full Name (Last/First Name): Garza, Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: PO Box 1541 City/State/Zip: Corpus Christi/TX/78403

Phone No: 361-885-6163 Email: sarah@pocca.com

## Item 8. DMR/MER Contact Information (Instructions, Page 28)

Provide the name and mailing address of the person delegated to receive and submit DMRs or MERs. **Note:** DMR data must be submitted through the NetDMR system. An electronic reporting account can be established once the facility has obtained the permit number.

Prefix: Ms. Full Name (Last/First Name): Garza, Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: PO Box 1541 City/State/Zip: Corpus Christi/TX/78403

Phone No: 361-885-6163 Email: sarah@pocca.com

## Item 9. Notice Information (Instructions, Pages 28)

a. Individual Publishing the Notices

Prefix: Ms. Full Name (Last/First Name): Garza, Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: PO Box 1541 City/State/Zip: Corpus Christi/TX/78403

Phone No: 361-885-6163 Email: sarah@pocca.com

b. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package (only for NORI, NAPD will be sent via regular mail)

☒ E-mail: sarah@pocca.com

☐ Fax: N/A

☐ Regular Mail (USPS)

Mailing Address: N/A

City/State/Zip Code: N/A

c. Contact in the Notice

Prefix: Ms. Full Name (Last/First Name): Garza, Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Phone No: 361-885-6163 Email: sarah@pocca.com

d. Public Viewing Location Information

**Note:** If the facility or outfall is located in more than one county, provide a public viewing place for each county.

Public building name:La Retama Central Library Location within the building: First floor, front desk Physical Address of Building: 805 Comanche Street

City: Corpus Christi County: Nueces

See Attachment C of this NOD response for two additional public viewing locations.

e. Bilingual Notice Requirements

This information is required for new, major amendment, minor amendment or minor modification, and renewal applications.

This section of the application is only used to determine if alternative language notices will be needed. Complete instructions on publishing the alternative language notices will be in your public notice package.

Call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine if an alternative language notice(s) is required.

1. Is a bilingual education program required by the Texas Education Code at the elementary or middle school nearest to the facility or proposed facility?

   ☒ Yes ☐ No

If no, publication of an alternative language notice is not required; skip to Item 8 (Regulated Entity and Permitted Site Information.)

2. Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school?

   ☒ Yes ☐ No

3. Do the students at these schools attend a bilingual education program at another location?

   ☐ Yes ☒ No

4. Would the school be required to provide a bilingual education program, but the school has waived out of this requirement under 19 TAC §89.1205(g)?

   ☐ Yes ☐ No ☒ N/A

5. If the answer is yes to question 1, 2, 3, or 4, public notices in an alternative language are required. Which language is required by the bilingual program? Spanish

f. Summary of Application in Plain Language Template – Complete and attach the Summary of Application in Plain Language Template (TCEQ Form 20972), also known as the plain language summary or PLS. Attachment: A-3

g. Complete and attach one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment. Attachment: Attachment PIP

## Item 10. Regulated Entity and Permitted Site Information (Instructions Page 29)

a. TCEQ issued Regulated Entity Number (RN), if available: RN105622112

**Note:** If your business site is part of a larger business site, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. Search the TCEQ's Central Registry to determine the RN or to see if the larger site may already be registered as a Regulated Entity. If the site is found, provide the assigned RN.

b. Name of project or site (name known by the community where located): Harbor Island Desalination Facility

c. Is the location address of the facility in the existing permit the same?

☐ Yes ☐ No ☒ N/A (new permit)

**Note:** If the facility is located in Bexar, Comal, Hays, Kinney, Medina, Travis, Uvalde, or Williamson County, additional information concerning protection of the Edwards Aquifer may be required.

d. Owner of treatment facility:

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: PO Box 1541 City/State/Zip: Corpus Christi/TX/78403

Phone No: 361-885-6163 Email: sarah@pocca.com

e. Ownership of facility: ☒ Public ☐ Private ☐ Both ☐ Federal

f. Owner of land where treatment facility is or will be: N/A

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: PO Box 1541 City/State/Zip: Corpus Christi, TX, 78403

Phone No: 361-885-6163 Email: sarah@pocca.com

**Note:** If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years (In some cases, a lease may not suffice - see instructions). Attachment: N/A

g. Owner of effluent TLAP disposal site (if applicable): N/A

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: N/A

Mailing Address: N/A City/State/Zip: N/A

Phone No: N/A Email: N/A

**Note:** If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: N/A

h. Owner of sewage sludge disposal site (if applicable):

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: N/A

Mailing Address: N/A City/State/Zip: N/A

Phone No: N/A Email: N/A

**Note:** If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: N/A

## Item 11. TDPES Discharge/TLAP Disposal Information (Instructions, Page 31)

a. Is the facility located on or does the treated effluent cross Native American Land?

☐ Yes ☒ No

b. Attach an original full size USGS Topographic Map (or an 8.5"×11" reproduced portion for renewal or amendment applications) with all required information. Check the box next to each item below to confirm it has been included on the map.

☒ One-mile radius

☒ Applicant's property boundaries

☒ Labeled point(s) of discharge

☐ Effluent disposal site boundaries

☐ Sewage sludge disposal site

☐ Three-miles downstream information

☒ Treatment facility boundaries

☒ Highlighted discharge route(s)

☐ All wastewater ponds

☐ New and future construction

Attachment: A-4

c. Is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes ☒ No or New Permit

If no, or a new application, provide an accurate location description: N/A

d. Are the point(s) of discharge in the existing permit correct?

☐ Yes ☒ No or New Permit

If no, or a new application, provide an accurate location description: 27.848836°N, 97.009531°W

e. Are the discharge route(s) in the existing permit correct?

☐ Yes ☒ No or New Permit

If no, or a new permit, provide an accurate description of the discharge route: From the Northeast of Harbor Island, tunneled approximately 65 feet under the seabed out to the Gulf of Mexico/America (Gulf) and approximately 1.8 miles offshore from San Jose Island.

f. City nearest the outfall(s): Port Aransas, TX

g. County in which the outfalls(s) is/are located: Gulf

h. Is or will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch?

☐ Yes ☒ No

If yes, indicate by a check mark if: ☐ Authorization granted ☐ Authorization pending

For new and amendment applications, attach copies of letters that show proof of contact and provide the approval letter upon receipt. Attachment: N/A

For all applications involving an average daily discharge of 5 MGD or more, provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge: N/A

i. For TLAPs, is the location of the effluent disposal site in the existing permit accurate?

☐ Yes No or New Permit ☐ N/A

If no, or a new application, provide an accurate location description: N/A

j. City nearest the disposal site: N/A

k. County in which the disposal site is located: N/A

l. For TLAPs, describe how effluent is/will be routed from the treatment facility to the disposal site: N/A

m. For TLAPs, identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: N/A

# ATTACHMENT C
# ADDITIONAL PUBLIC VIEWING LOCATIONS

**Additional Public Viewing Location Information**

Public building name: Ed and Hazel Richmond Public Library

Location within the building: Front desk

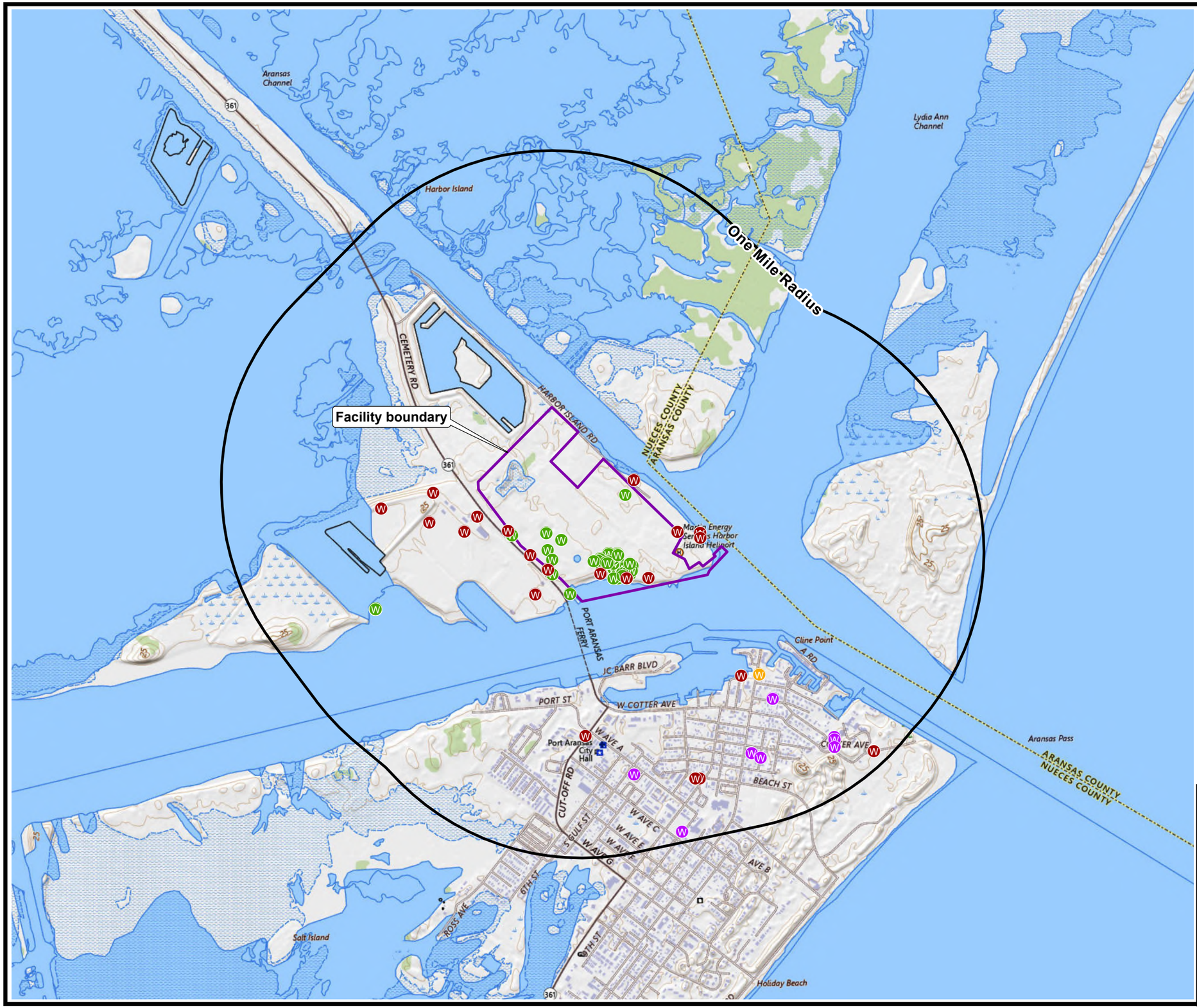
Physical Address of Building: 110 N. Lamont Street City: Aransas Pass County: Aransas

Public building name: Ellis Memorial Library

Location within the building: Front desk

Physical Address of Building: 700 W. Avenue A City: Port Aransas County: Nueces

# ATTACHMENT D
# USGS MAPS




## LEGEND

- Facilty Boundary
- One Mile Radius

TWDB Wells

- Environmental Soil Boring
- Irrigation
- Monitor
- Test Well

**Sources:**
1. USGS Topographic Quadrangles 7.5 Minute Series: Port Aransas, TX
2. TWDB Wells - Texas Water Development Board GIS Data

0 1,000 2,000 FEET

1" = 2,000 FEET
1:24,000

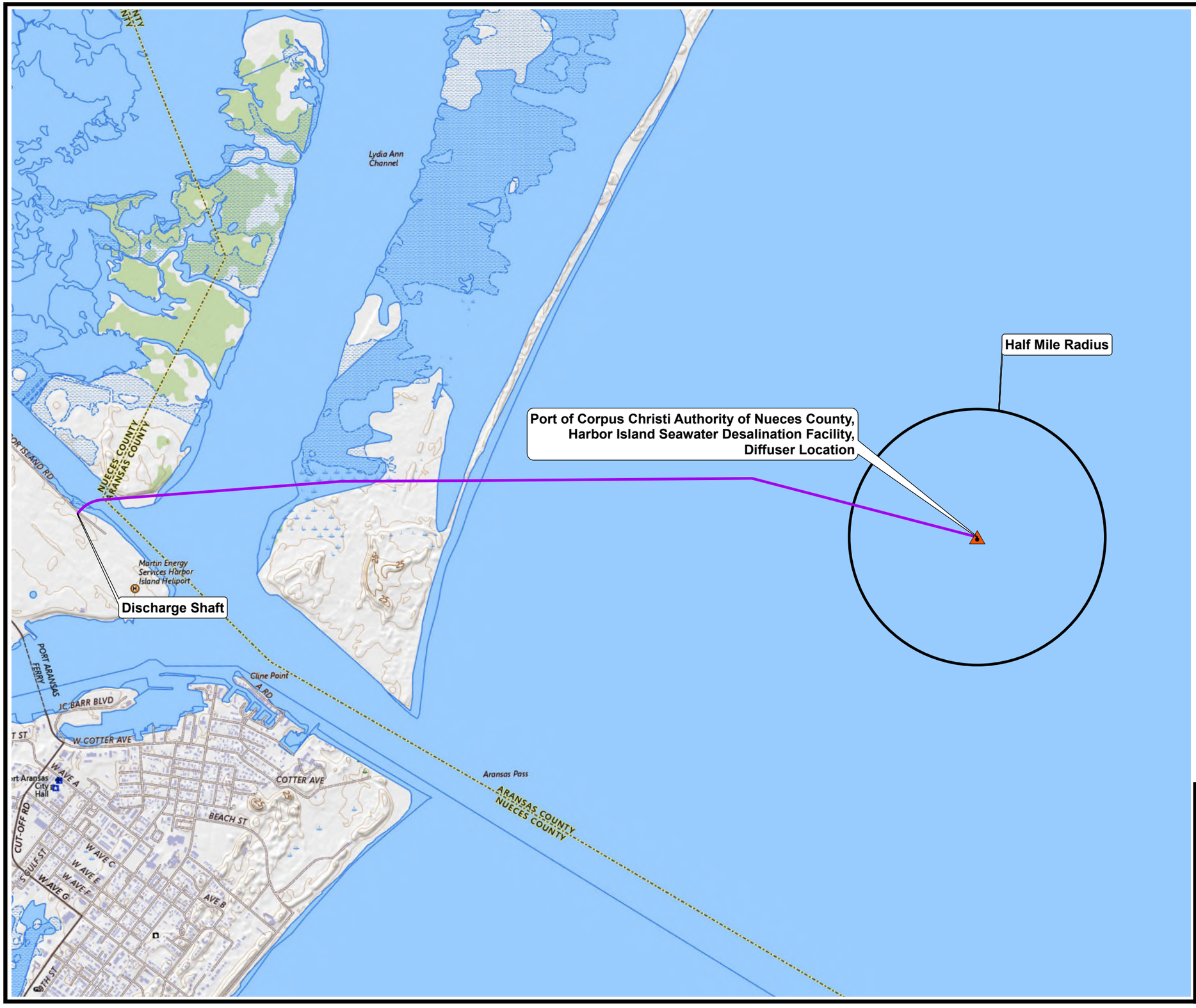
**PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY**
**HARBOR ISLAND SEAWATER DESALINATION FACILITY**

**USGS MAP**

| | | | |
|---|---|---|---|
| DRAWN BY: | S WILSON | SCALE: | PROJ. NO. TPDES 2025 |
| CHECKED BY: | L TISCHLER | AS NOTED | USGS Map |
| APPROVED BY: | L TISCHLER | DATE PRINTED: | |
| DATE: | March 2025 | 3/25/2025 | |

sitemap your mapping professional
www.SiteMapLLC.com
Ph. 409-998-1834
Ph. 409-738-2133

J:\Prj\Port of Corpus Christi\Harbor Island Seawater Desalination Facility\TPDES 2025\GIS.aprx




## LEGEND

- Diffuser Location, Located within Texas State Waters (≤9 Nautical Miles Offshore)
- Half Mile Radius from Diffuser Location
- Desalination Wastewater Effluent Pipe (Underground)

**Source:**
**USGS Topographic Quadrangles 7.5 Minute Series:**
**Port Aransas, TX**

0 1,000 2,000 FEET

1" = 2,000 FEET
1:24,000

**PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY**
**HARBOR ISLAND SEAWATER DESALINATION FACILITY**
**DIFFUSER LOCATION**

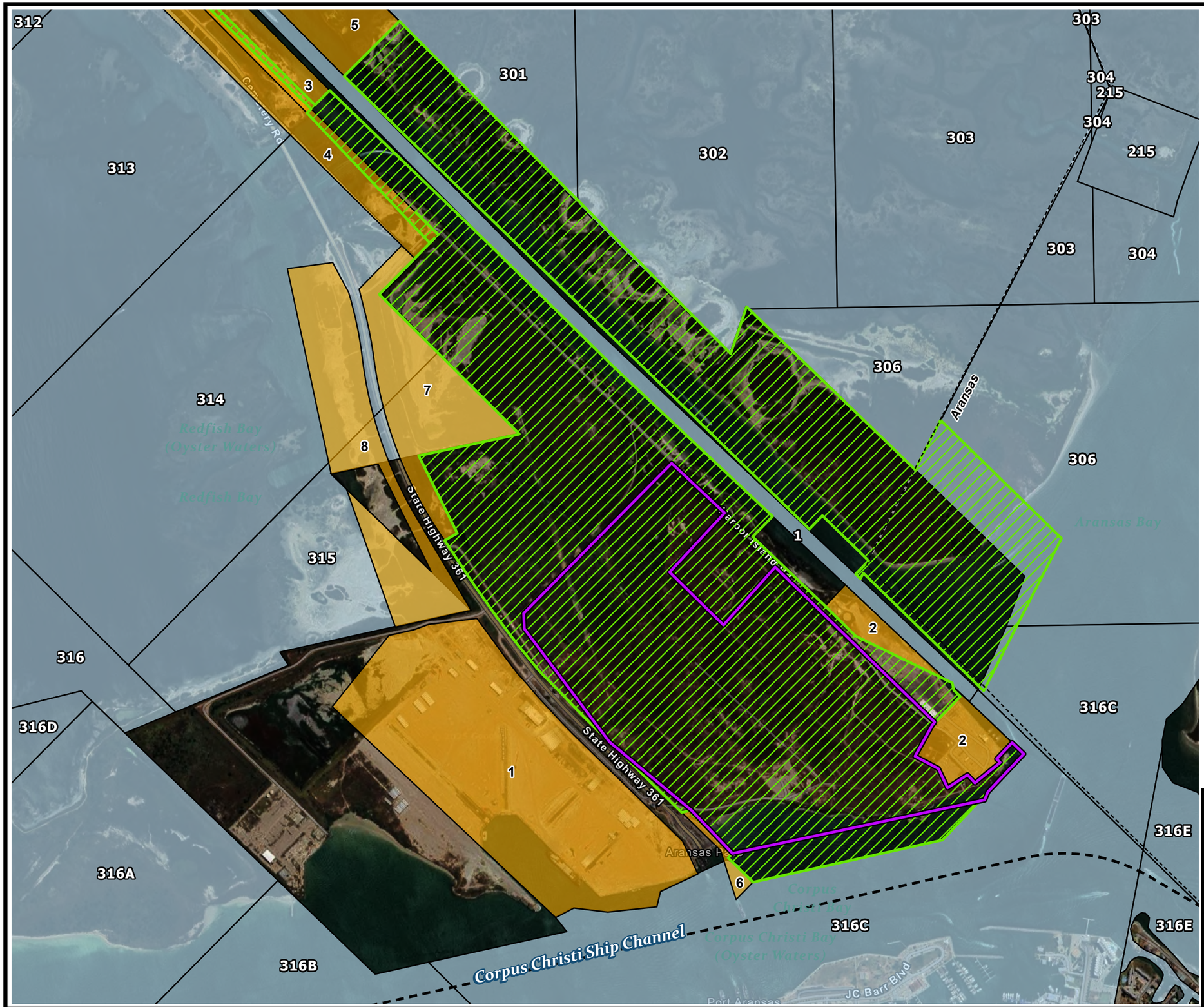
**USGS MAP**

| | | | |
|---|---|---|---|
| DRAWN BY: S WILSON | SCALE: AS NOTED | PROJ. NO. | TPDES 2025 |
| CHECKED BY: L TISCHLER | | | USGS Map |
| APPROVED BY: L TISCHLER | DATE PRINTED: 3/20/2025 | | |
| DATE: March 2025 | | | |

sitemap your mapping professional
www.SiteMapLLC.com
Ph. 409-998-1834
Ph. 409-738-2133

J:\Prj\Port of Corpus Christi\Harbor Island Seawater Desalination Facility\TPDES 2025\GIS.aprx

# ATTACHMENT E
# UPDATED LANDOWNERS MAP AND TABLE




## LEGEND

- Port of Corpus Christi Property Boundary
- Facilty Boundary
- 1 — Adjacent Landowners
- 314 — State of Texas Submerged Tracts with Tract Number

**Parcel Data Sources:**
1. Nueces and Aransas Counties Appraisal District GIS Data
2. Port of Corpus Christi Authority Provided Data
3. Texas General Land Office GIS Data

N

0 500 1,000 FEET

1" = 1,000 FEET
1:12,000

# PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY
# HARBOR ISLAND SEAWATER DESALINATION FACILITY

## ADJACENT LANDOWNER MAP

| | | | |
|---|---|---|---|
| DRAWN BY: | S WILSON | SCALE: | PROJ. NO. TPDES 2025 |
| CHECKED BY: | L TISCHLER | AS NOTED | Adjacent Landowner Map |
| APPROVED BY: | L TISCHLER | DATE PRINTED: | |
| DATE: | May 2025 | 5/1/2025 | |

sitemap your mapping professional
www.SiteMapLLC.com
Ph. 409-998-1834
Ph. 409-738-2133

J:\Prj\Port of Corpus Christi\Harbor Island Seawater Desalination Facility\TPDES 2025\GIS.aprx

| MAP ID | OWNER NAME | ADDRESS | CITY | STATE | ZIP CODE |
|---|---|---|---|---|---|
| 1 | ERF PORT ARANSAS INC | 555 N CARANCAHUA ST #700 | CORPUS CHRISTI | TX | 78401 |
| 2 | MARTIN OPERATING PARTNERSHIP LP | 4900 STONE RD | KILGORE | TX | 75662 |
| 3 | NUECES CO NAVIGATION DIST | NORTH OF NAVIGATION BLVD | CORPUS CHRISTI | TX | 78415 |
| 4 | NUECES CO RD DIST #4 | 901 LEOPARD ST | CORPUS CHRISTI | TX | 78401 |
| 5 | RED FISH BAY PROPERTIES | P O BOX 5454 | AUSTIN | TX | 78763 |
| 6 | STATE OF TEXAS | PO Box 12608 | AUSTIN | TX | 78711 |
| 7 | TEXAS DEPARTMENT OF TRANSPORTATION | 1701 S PADRE ISLAND DR | CORPUS CHRISTI | TX | 78416 |
| 8 | TEXAS GENERAL LAND OFFICE | 1700 CONGRESS AVE | AUSTIN | TX | 78701 |

PORT CORPUS CHRISTI®

March 31, 2025

Applications Review and Processing Team MC-148
Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, TX, 78753

VIA FED EX

**Subject:** **Industrial Wastewater Permit**
**Proposed Harbor Island Desalination Facility**
**Port of Corpus Christi Authority of Nueces County**
**CN: 600885248**

Dear Ladies and Gentlemen,

The Port of Corpus Christi Authority of Nueces County (PCCA) formally submits this Industrial Wastewater application for a proposed desalination facility on Harbor Island with a discharge in the Gulf of America (Gulf) near Port Aransas, Texas.

The purpose of this project is to develop a sustainable water supply in an area reliant entirely on surface water which is vulnerable to persistent drought. To meet this purpose, PCCA proposes to discharge 191.2 mgd to the Gulf to support production of 100 mgd of desalinated product water.

This application requests authorization of an offshore location for the discharge of wastewater (brine) from the Harbor Island Facility.

If you have any questions feel free to contact me by phone at (361) 885-6163 or by email at sarah@pocca.com.

Sincerely,
PORT OF CORPUS CHRISTI AUTHORITY

Yvonne Davis Gomez
for
Sarah L. Garza
Director of Environmental
Planning and Compliance

Enclosure

cc: Kent Britton, Chief Executive Officer, Port of Corpus Christi Authority Clark
Jeffrey Pollack, Chief Strategy and Sustainability Officer, Port of Corpus Christi Authority
Yvonne Dives-Gomez, Environmental Permitting Specialist, Port of Corpus Christi Authority

# Administrative Report 1.0

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST

**Complete and submit this checklist with the industrial wastewater permit application.**

APPLICANT NAME: Port of Corpus Christi Authority of Nueces County

PERMIT NUMBER (If new, leave blank): WQ00

**Indicate if each of the following items is included in your application.**

| | Y | N | | Y | N |
|---|---|---|---|---|---|
| Administrative Report 1.0 | ☒ | ☐ | Worksheet 8.0 | ☐ | ☒ |
| Administrative Report 1.1 | ☒ | ☐ | Worksheet 9.0 | ☐ | ☒ |
| SPIF | ☒ | ☐ | Worksheet 10.0 | ☐ | ☒ |
| Core Data Form | ☒ | ☐ | Worksheet 11.0 | ☐ | ☒ |
| Summary of Application (PLS) | ☒ | ☐ | Worksheet 11.1 | ☐ | ☒ |
| Public Involvement Plan Form | ☒ | ☐ | Worksheet 11.2 | ☐ | ☒ |
| Technical Report 1.0 | ☒ | ☐ | Worksheet 11.3 | ☐ | ☒ |
| Worksheet 1.0 | ☒ | ☐ | Original USGS Map | ☒ | ☐ |
| Worksheet 2.0 | ☒ | ☐ | Affected Landowners Map | ☒ | ☐ |
| Worksheet 3.0 | ☐ | ☒ | Landowner Disk or Labels | ☒ | ☐ |
| Worksheet 3.1 | ☐ | ☒ | Flow Diagram | ☒ | ☐ |
| Worksheet 3.2 | ☐ | ☒ | Site Drawing | ☒ | ☐ |
| Worksheet 3.3 | ☐ | ☒ | Original Photographs | ☒ | ☐ |
| Worksheet 4.0 | ☒ | ☐ | Design Calculations | ☐ | ☒ |
| Worksheet 4.1 | ☐ | ☒ | Solids Management Plan | ☐ | ☒ |
| Worksheet 5.0 | ☐ | ☒ | Water Balance | ☐ | ☒ |
| Worksheet 6.0 | ☐ | ☒ | | | |
| Worksheet 7.0 | ☐ | ☒ | | | |

For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region _____
Permit Number _____

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# INDUSTRIAL WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.0

This report is required for all applications for TPDES permits and TLAPs, except applications for oil and gas extraction operations subject to 40 CFR Part 435. Contact the Applications Review and Processing Team at 512-239-4671 with any questions about completing this report.

Applications for oil and gas extraction operations subject to 40 CFR Part 435 must use Oil and Gas Exploration and Production Administrative Report (TCEQ Form-20893 and 20893-inst[1]).

## Item 1. Application Information and Fees (Instructions, Page 26)

a. Complete each field with the requested information, if applicable.

Applicant Name: Port of Corpus Christi Authority of Nueces County

Permit No.: WQ000 new permit application

EPA ID No.: TX0 N/A

Expiration Date: N/A

b. Check the box next to the appropriate authorization type.

☐ Industrial Wastewater (wastewater and stormwater)

☐ Industrial Stormwater (stormwater only)

☒ Reverse Osmosis Water Treatment (reverse osmosis water treatment wastewaters only)

c. Check the box next to the appropriate facility status.

☐ Active ☒ Inactive

d. Check the box next to the appropriate permit type.

☒ TPDES Permit ☐ TLAP ☐ TPDES with TLAP component

e. Check the box next to the appropriate application type.

☒ New

☐ Renewal with changes ☐ Renewal without changes

☐ Major amendment with renewal ☐ Major amendment without renewal

☐ Minor amendment without renewal

☐ Minor modification without renewal

f. If applying for an amendment or modification, describe the request: N/A

For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region _____
Permit Number _____

[1] https://www.tceq.texas.gov/publications/search_forms.html

g. Application Fee

| EPA Classification | New | Major Amend. (with or without renewal) | Renewal (with or without changes) | Minor Amend. / Minor Mod. (without renewal) |
|---|---|---|---|---|
| Minor facility not subject to EPA categorical effluent guidelines (40 CFR Parts 400-471) | ☒ $350 | ☐ $350 | ☐ $315 | ☐ $150 |
| Minor facility subject to EPA categorical effluent guidelines (40 CFR Parts 400-471) | ☐ $1,250 | ☐ $1,250 | ☐ $1,215 | ☐ $150 |
| Major facility | N/A [2] | ☐ $2,050 | ☐ $2,015 | ☐ $450 |

h. Payment Information

***Mailed***

Check or money order No.: N/A

Check or money order amt.: N/A

Named printed on check or money order: N/A

***Epay***

Voucher number: 759774 and 759775

Copy of voucher attachment: A-1

## Item 2. Applicant Information (Instructions, Pages 26)

a. Customer Number, if applicant is an existing customer: CN600885248

**Note:** Locate the customer number using the TCEQ's Central Registry Customer Search[3].

b. Legal name of the entity (applicant) applying for this permit: Port of Corpus Christi Authority of Nueces County

**Note:** The owner of the facility must apply for the permit. The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

Prefix: Mr. Full Name (Last/First Name): Britton/Kent

Title: Chief Executive Officer Credential: N/A

d. Will the applicant have overall financial responsibility for the facility?

☒ Yes ☐ No

[2] All facilities are designated as minors until formally classified as a major by EPA.

[3] https://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch

**Note:** The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

## Item 3. Co-applicant Information (Instructions, Page 27)

☒ Check this box if there is no co-applicant.; otherwise, complete the below questions.

a. Legal name of the entity (co-applicant) applying for this permit: N/A

**Note:** The legal name must be spelled exactly as filed with the TX SOS, Texas Comptroller of Public Accounts, County, or in the legal documents forming the entity.

b. Customer Number (if applicant is an existing customer): CN N/A

**Note:** Locate the customer number using the TCEQ's Central Registry Customer Search.

c. Name and title of the person signing the application. (**Note:** The person must be an executive official that meets signatory requirements in 30 TAC § 305.44.)

Prefix: N/A Full Name (Last/First Name): N/A

Title: N/A Credential: N/A

d. Will the co-applicant have overall financial responsibility for the facility?

☐ Yes ☐ No

**Note:** The entity with overall financial responsibility for the facility must apply as a co-applicant, if not the facility owner.

## Item 4. Core Data Form (Instructions, Pages 27)

a. Complete and attach one Core Data Form (TCEQ Form 10400) for each customer (applicant and co-applicant(s)). If the customer type selected on the Core Data Form is Individual, complete Attachment 1 of the Administrative Report. Attachment: A-2

## Item 5. Application Contact Information (Instructions, Page 27)

Provide names of two individuals who can be contacted about this application. Indicate if the individual can be contacted about administrative or technical information, or both.

a. ☒ Administrative Contact . ☒ Technical Contact

Prefix: Ms. Full Name (Last/First Name): Garza/Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: 400 Charles Zahn, Jr. Drive City/State/Zip: Corpus Christi/TX/78401

Phone No: 361-885-6163 Email: sarah@pocca.com

b. ☐ Administrative Contact ☒ Technical Contact

Prefix: Ms. Full Name (Last/First Name): Dives-Gomez/Yvonne

Title: Environmental Permitting Coordinator Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: 400 Charles Zahn, Jr. Drive City/State/Zip: Corpus Christi/TX/78401

Phone No: 361-885-6606 Email: ydives-gomez@pocca.com

Attachment: N/A

## Item 6. Permit Contact Information (Instructions, Page 28)

Provide two names of individuals that can be contacted throughout the permit term.

a. Prefix: Ms. Full Name (Last/First Name): Garza, Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: 400 Charles Zahn, Jr. Drive City/State/Zip: Corpus Christi/TX/78401

Phone No: 361-885-6163 Email: sarah@pocca.com

b. Prefix: Ms. Full Name (Last/First Name): Dives-Gomez/Yvonne

Title: Environmental Permitting Coordinator Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: 400 Charles Zahn, Jr. Drive City/State/Zip: Corpus Christi/TX/78401

Phone No: 361-885-6606 Email: ydives-gomez@pocca.com

Attachment: N/A

## Item 7. Billing Contact Information (Instructions, Page 28)

The permittee is responsible for paying the annual fee. The annual fee will be assessed for permits **in effect on September 1 of each year**. The TCEQ will send a bill to the address provided in this section. The permittee is responsible for terminating the permit when it is no longer needed (form TCEQ-20029).

Provide the complete mailing address where the annual fee invoice should be mailed and the name and phone number of the permittee's representative responsible for payment of the invoice.

Prefix: Ms. Full Name (Last/First Name): Garza, Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: 400 Charles Zahn, Jr. Drive City/State/Zip: Corpus Christi/TX/78401

Phone No: 361-885-6163 Email: sarah@pocca.com

## Item 8. DMR/MER Contact Information (Instructions, Page 28)

Provide the name and mailing address of the person delegated to receive and submit DMRs or MERs. **Note:** DMR data must be submitted through the NetDMR system. An electronic reporting account can be established once the facility has obtained the permit number.

Prefix: Ms. Full Name (Last/First Name): Garza, Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: 400 Charles Zahn, Jr. Drive City/State/Zip: Corpus Christi/TX/78401

Phone No: 361-885-6163 Email: sarah@pocca.com

## Item 9. Notice Information (Instructions, Pages 28)

a. Individual Publishing the Notices

Prefix: Ms. Full Name (Last/First Name): Garza, Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: 400 Charles Zahn, Jr. Drive City/State/Zip: Corpus Christi/TX/78401

Phone No: 361-885-6163 Email: sarah@pocca.com

b. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package (only for NORI, NAPD will be sent via regular mail)

☒ E-mail: sarah@pocca.com

☐ Fax: N/A

☐ Regular Mail (USPS)

Mailing Address: N/A

City/State/Zip Code: N/A

c. Contact in the Notice

Prefix: Ms. Full Name (Last/First Name): Garza, Sarah

Title: Director of Environmental Planning & Compliance Credential: N/A

Organization Name: Port of Corpus Christi Authority of Nueces County

Phone No: 361-885-6163 Email: sarah@pocca.com

d. Public Viewing Location Information

**Note:** If the facility or outfall is located in more than one county, provide a public viewing place for each county.

Public building name: La Retama Central Library Location within the building: First floor, front desk

Physical Address of Building: 805 Comanche Street

City: Corpus Christi County: Nueces

e. Bilingual Notice Requirements

This information is required for new, major amendment, minor amendment or minor modification, and renewal applications.

This section of the application is only used to determine if alternative language notices will be needed. Complete instructions on publishing the alternative language notices will be in your public notice package.

Call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine if an alternative language notice(s) is required.

1. Is a bilingual education program required by the Texas Education Code at the elementary or middle school nearest to the facility or proposed facility?

   ☒ Yes ☐ No

If no, publication of an alternative language notice is not required; skip to Item 8 (Regulated Entity and Permitted Site Information.)

2. Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school?

   ☒ Yes ☐ No

3. Do the students at these schools attend a bilingual education program at another location?

   ☐ Yes ☒ No

4. Would the school be required to provide a bilingual education program, but the school has waived out of this requirement under 19 TAC §89.1205(g)?

   ☐ Yes ☐ No ☒ N/A

5. If the answer is yes to question 1, 2, 3, or 4, public notices in an alternative language are required. Which language is required by the bilingual program? Spanish

f. Summary of Application in Plain Language Template – Complete and attach the Summary of Application in Plain Language Template (TCEQ Form 20972), also known as the plain language summary or PLS. Attachment: A-3

g. Complete and attach one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment. Attachment: Attachment PIP

## Item 10. Regulated Entity and Permitted Site Information (Instructions Page 29)

a. TCEQ issued Regulated Entity Number (RN), if available: RN105622112

**Note:** If your business site is part of a larger business site, a Regulated Entity Number (RN) may already be assigned for the larger site. Use the RN assigned for the larger site. Search the TCEQ's Central Registry to determine the RN or to see if the larger site may already be registered as a Regulated Entity. If the site is found, provide the assigned RN.

b. Name of project or site (name known by the community where located): Harbor Island Desalination Facility

c. Is the location address of the facility in the existing permit the same?

☐ Yes ☐ No ☒ N/A (new permit)

**Note:** If the facility is located in Bexar, Comal, Hays, Kinney, Medina, Travis, Uvalde, or Williamson County, additional information concerning protection of the Edwards Aquifer may be required.

d. Owner of treatment facility:

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: 400 Charles Zahn, Jr. Drive City/State/Zip: Corpus Christi/TX/78401

Phone No: 361-885-6163 Email: sarah@pocca.com

e. Ownership of facility: ☒ Public ☐ Private ☐ Both ☐ Federal

f. Owner of land where treatment facility is or will be: N/A

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: Port of Corpus Christi Authority of Nueces County

Mailing Address: 400 Charles Zahn, Jr. Drive City/State/Zip: Corpus Christi, TX, 78401

Phone No: 361-885-6163 Email: sarah@pocca.com

**Note:** If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years (In some cases, a lease may not suffice - see instructions). Attachment: N/A

g. Owner of effluent TLAP disposal site (if applicable): N/A

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: N/A

Mailing Address: N/A City/State/Zip: N/A

Phone No: N/A Email: N/A

**Note:** If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: N/A

h. Owner of sewage sludge disposal site (if applicable):

Prefix: N/A Full Name (Last/First Name): N/A

or Organization Name: N/A

Mailing Address: N/A City/State/Zip: N/A

Phone No: N/A Email: N/A

**Note:** If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: N/A

## Item 11. TDPES Discharge/TLAP Disposal Information (Instructions, Page 31)

a. Is the facility located on or does the treated effluent cross Native American Land?

☐ Yes ☒ No

b. Attach an original full size USGS Topographic Map (or an 8.5"×11" reproduced portion for renewal or amendment applications) with all required information. Check the box next to each item below to confirm it has been included on the map.

☒ One-mile radius

☒ Applicant's property boundaries

☒ Labeled point(s) of discharge

☐ Effluent disposal site boundaries

☐ Sewage sludge disposal site

☐ Three-miles downstream information

☒ Treatment facility boundaries

☒ Highlighted discharge route(s)

☐ All wastewater ponds

☐ New and future construction

Attachment: A-4

c. Is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes ☒ No or New Permit

If no, or a new application, provide an accurate location description: N/A

d. Are the point(s) of discharge in the existing permit correct?

☐ Yes ☒ No or New Permit

If no, or a new application, provide an accurate location description: 27.848836°N, 97.009531°W

e. Are the discharge route(s) in the existing permit correct?

☐ Yes ☒ No or New Permit

If no, or a new permit, provide an accurate description of the discharge route: From the Northeast of Harbor Island, tunneled approximately 65 feet under the seabed out to the Gulf of Mexico/America (Gulf) and approximately 1.8 miles offshore from San Jose Island.

f. City nearest the outfall(s): Port Aransas, TX

g. County in which the outfalls(s) is/are located: Gulf

h. Is or will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch?

☐ Yes ☒ No

If yes, indicate by a check mark if: ☐ Authorization granted ☐ Authorization pending

For new and amendment applications, attach copies of letters that show proof of contact and provide the approval letter upon receipt. Attachment: N/A

For all applications involving an average daily discharge of 5 MGD or more, provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge: N/A

i. For TLAPs, is the location of the effluent disposal site in the existing permit accurate?

☐ Yes No or New Permit ☐ N/A

If no, or a new application, provide an accurate location description: N/A

j. City nearest the disposal site: N/A

k. County in which the disposal site is located: N/A

l. For TLAPs, describe how effluent is/will be routed from the treatment facility to the disposal site: N/A

m. For TLAPs, identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: N/A

## Item 12. Miscellaneous Information (Instructions, Page 33)

a. Did any person formerly employed by the TCEQ represent your company and get paid for service regarding this application?

☒ Yes ☐ No

If yes, list each person: Stephanie Bergeron Perdue

b. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Account no.: N/A

Total amount due: N/A

c. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Enforcement order no.: N/A

Amount due: N/A

## Item 13. Signature Page (Instructions, Page 33)

Permit No: WQ000 N/A

Applicant Name: Port of Corpus Christi Authority of Nueces County

Certification: I, Kent Britton, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that I am authorized under 30 Texas Administrative Code §305.44 to sign and submit this document and can provide documentation in proof of such authorization upon request.

Signatory name (typed or printed): Kent Britton

Signatory title: Chief Executive Officer

Signature: Kent C Britton (Use blue ink) Date: 3/31/25

Subscribed and Sworn to before me by the said Kent A. Britton

on this 31st day of March, 2025.

My commission expires on the 16th day of June, 2026.

Monique Tamez Lerma
Notary Public

Nueces
County, Texas

[SEAL]

MONIQUE TAMEZ LERMA
ID# 1146231-1
Notary Public
STATE OF TEXAS
My Comm. Exp. 06-16-2026

**Note:** *If co-applicants are necessary, each entity must submit an original, separate signature page.*

# INDUSTRIAL WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.1

The following information is required for new and amendment applications.

## Item 1. Affected Landowner Information (Instructions, Page 35)

a. Attach a landowner map or drawing, with scale, as applicable. Check the box next to each item to confirm it has been provided.

- ☒ The applicant's property boundaries.
- ☒ The facility site boundaries within the applicant's property boundaries.
- ☒ The distance the buffer zone falls into adjacent properties and the property boundaries of the landowners located within the buffer zone.
- ☐ The property boundaries of all landowners surrounding the applicant's property. (Note: if the application is a major amendment for a lignite mine, the map must include the property boundaries of all landowners adjacent to the new facility (ponds).)
- ☒ The point(s) of discharge and highlighted discharge route(s) clearly shown for one mile downstream.
- ☒ The property boundaries of the landowners located on both sides of the discharge route for one full stream mile downstream of the point of discharge.
- ☒ The property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge if the point of discharge is into a lake, bay, estuary, or affected by tides.
- ☐ The boundaries of the effluent disposal site (e.g., irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property.
- ☐ The property boundaries of all landowners surrounding the applicant's property boundaries where the effluent disposal site is located.
- ☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners within one-quarter mile of the applicant's property boundaries where the sewage sludge land application site is located.
- ☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (e.g., sludge surface disposal site or sludge monofil) is located.

Attachment: A-4

b. ☒ that the landowners list has also been provided as mailing labels in electronic format (Avery 5160). A-5 -2, A-5-3

c. Check this box to confirm a separate list with the landowners' names and mailing addresses cross-referenced to the landowner's map has been provided.Provide the source of the landowners' names and mailing addresses: Source of landowners' cross-referenced map: Nueces County and PCCA real estate department.

e. As required by Texas Water Code § 5.115, is any permanent school fund land affected by this application?

☐ Yes ☒ No

If yes, provide the location and foreseeable impacts and effects this application has on the land(s): N/A

## Item 2. Original Photographs (Instructions, Page 37)

Provide original ground level photographs. Check the box next to each of the following items to indicate it is included.

☐ At least one original photograph of the new or expanded treatment unit location.

☐ At least two photographs of the existing/proposed point of discharge and as much area downstream (photo 1) and upstream (photo 2) as can be captured. If the discharge is to an open water body (e.g., lake, bay), the point of discharge should be in the right or left edge of each photograph showing the open water and with as much area on each respective side of the discharge as can be captured.

☐ At least one photograph of the existing/proposed effluent disposal site.

☐ A plot plan or map showing the location and direction of each photograph.

Attachment: N/A - Peter Schaefer, TCEQ, advised that PCCA did not need to submit photos of open water in the Gulf.

# Supplemental Permit Information Page

# (SPIF)

# INDUSTRIAL WASTEWATER PERMIT APPLICATION

# SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

This form applies to TPDES permit applications only. Complete and attach the Supplemental Permit information Form (SPIF) (TCEQ Form 20971).

**Attachment:** SPIF

# WATER QUALITY PERMIT

# PAYMENT SUBMITTAL FORM

**Use this form to submit the Application Fee, if mailing the payment. (Instructions, Page 36-37)**

- Complete items 1 through 5 below.
- Staple the check or money order in the space provided at the bottom of this document.
- Do not mail this form with the application form.
- Do not mail this form to the same address as the application.
- Do not submit a copy of the application with this form as it could cause duplicate permit entries.

**Mail this form and the check or money order to:**

*BY REGULAR U.S. MAIL*

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
P.O. Box 13088
Austin, Texas 78711-3088

*BY OVERNIGHT/EXPRESS MAIL*

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, Texas 78753

**Fee Code: WQP** **Permit No:** WQ000N/A - new application

1. Check or Money Order Number: N/A Electronic Payment
2. Check or Money Order Amount: N/A Electronic Payment
3. Date of Check or Money Order: N/A Electronic Payment
4. Name on Check or Money Order: N/A Electronic Payment
5. APPLICATION INFORMATION

   Name of Project or Site: Harbor Island Desalination Facility

   Physical Address of Project or Site: 225 Hwy 361 - The proposed desalination facility is located on Harbor Island, east of HWY 361 in Port Aransas, Nueces County, Texas. From the intersection of HWY 361 and Harbor Island Drive, head south approximately 0.8 miles, the facility is to the east of the highway.

   If the check is for more than one application, attach a list which includes the name of each Project or Site (RE) and Physical Address, exactly as provided on the application.
   Attachment: N/A

**Staple Check or Money Order in This Spac**e

# ATTACHMENT 1

# INDIVIDUAL INFORMATION

## Item 1. Individual information (Instructions, Page 38)

Complete this attachment if the facility applicant or co-applicant is an individual. Make additional copies of this attachment if both are individuals.

Prefix (Mr., Ms., or Miss): N/A

Full legal name (first, middle, and last): N/A

Driver's License or State Identification Number: N/A

Date of Birth: N/A

Mailing Address: N/A

City, State, and Zip Code: N/A

Phone No.: N/A

Fax No.: N/A

E-mail Address: N/A

CN: N/A

# INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST OF COMMON DEFICIENCIES

Below is a list of common deficiencies found during the administrative review of industrial wastewater permit applications. To ensure the timely processing of this application, please review the items below and indicate each item is complete and in accordance applicable rules at 30 TAC Chapters 21, 281, and 305 by checking the box next to the item. If an item is not required this application, indicate by checking N/A where appropriate. Please do not submit the application until all items below are addressed.

☒ Core Data Form (TCEQ Form No. 10400)
*(Required for all applications types. Must be completed in its entirety and signed. Note: Form may be signed by applicant representative.)*

☒ Correct and Current Industrial Wastewater Permit Application Forms
*(TCEQ Form Nos. 10055 and 10411. Version dated 5/10/2019 or later.)*

☒ Water Quality Permit Payment Submittal Form (Page 14)
*(Original payment sent to TCEQ Revenue Section. See instructions for mailing address.)*

☒ 7.5 Minute USGS Quadrangle Topographic Map Attached
*(Full-size map if seeking "New" permit. 8 ½ x 11 acceptable for Renewals and Amendments.)*

☒ N/A ☐ Current/Non-Expired, Executed Lease Agreement or Easement Attached

☐ N/A ☒ Landowners Map
*(See instructions for landowner requirements.)*

**Things to Know:**

- All the items shown on the map must be labeled.
- The applicant's complete property boundaries must be delineated which includes boundaries of contiguous property owned by the applicant.
- The applicant cannot be its own adjacent landowner. You must identify the landowners immediately adjacent to their property, regardless of how far they are from the actual facility.
- If the applicant's property is adjacent to a road, creek, or stream, the landowners on the opposite side must be identified. Although the properties are not adjacent to applicant's property boundary, they are considered potentially affected landowners. If the adjacent road is a divided highway as identified on the USGS topographic map, the applicant does not have to identify the landowners on the opposite side of the highway.

☐ N/A ☒ Landowners Labels and Cross Reference List
*(See instructions for landowner requirements.)*

☒ Electronic Application Submittal
*(See application submittal requirements on page 23 of the instructions.)*

☒ Original signature per 30 TAC § 305.44 – Blue Ink Preferred
*(If signature page is not signed by an elected official or principle executive officer, a copy of signature authority/delegation letter must be attached.)*

☒ Summary of Application (in Plain Language)

# Technical Report 1.0

# Worksheet 2 Pollutant Characterization

# Worksheet 4 Receiving Waters

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# INDUSTRIAL WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.0

The following information **is required** for all applications for a TLAP or an individual TPDES discharge permit.

For **additional information** or clarification on the requested information, please refer to the Instructions for Completing the Industrial Wastewater Permit Application[1] available on the TCEQ website. Please contact the Industrial Permits Team at 512-239-4671 with any questions about this form.

If more than one outfall is included in the application, provide applicable information for each individual outfall. **If an item does not apply to the facility, enter N/A** to indicate that the item has been considered. Include separate reports or additional sheets as **clearly cross-referenced attachments** and provide the attachment number in the space provided for the item the attachment addresses.

**NOTE:** This application is for an industrial wastewater permit only. Additional authorizations from the TCEQ Waste Permits Division or the TCEQ Air Permits Division may be needed.

## Item 1. Facility/Site Information (Instructions, Page 39)

a. Describe the general nature of the business and type(s) of industrial and commercial activities. Include all applicable SIC codes (up to 4).

The Port of Corpus Christi Authority of Nueces County proposes to construct a 100-million gallon per day marine seawater desalination facility and associated infrastructure to produce a reliable, drought-resilient water supply for the Coastal Bend region. This will include construction of a seawater intake pipe, a discharge outfall pipe with diffuser infrastructure, and a finished water distribution pipeline that will run from the facility north to Aransas Pass. It will require seawater collection and will return effluent water to Gulf of Mexico/America (Gulf).

b. Describe all wastewater-generating processes at the facility.

Pre-treatment of the seawater will include removing suspended sediment (total suspended solids – TSS) using several clarification and filtration pretreatment processes, each successively removing smaller particles. The pretreated seawater, which will have essentially all particulate solids removed, will be desalinated using reverse osmosis. Reverse osmosis concentrates the salts (total dissolved solids – TDS) in the seawater in a brine reject stream and produces low TDS in the permeate (product water). The permeate will then be treated to reduce corrosiveness, chlorinated, and distributed to users in the coastal bend counties. The suspended solids will be concentrated into a dried sludge for offsite disposal. The dewatering filtrate, thickener supernatant and the brine reject stream are combined and will be discharged to the Gulf through a high-rate effluent diffuser. See Attachment: T-1.

[1] https://www.tceq.texas.gov/permitting/wastewater/industrial/TPDES_industrial_wastewater_steps.html

c. Provide a list of raw materials, major intermediates, and final products handled at the facility.

**Materials List**

| Raw Materials | Intermediate Products | Final Products |
|---|---|---|
| Sea water from the Gulf | None | Potable Use Water |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Attachment:** T-1

d. Attach a facility map (drawn to scale) with the following information:

- Production areas, maintenance areas, materials-handling areas, waste-disposal areas, and water intake structures.
- The location of each unit of the WWTP including the location of wastewater collection sumps, impoundments, outfalls, and sampling points, if significantly different from outfall locations.

**Attachment:** T-2

e. Is this a new permit application for an existing facility?

☐ Yes ☒ No

If **yes**, provide background discussion: N/A

f. Is/will the treatment facility/disposal site be located above the 100-year frequency flood level.

☒ Yes ☐ No

List source(s) used to determine 100-year frequency flood plain: FEMA Flood Insurance Rate Map Panel number 485498 0001 F dated September 30, 1992. The facility is located in Zone X outside the 500 year flood plain.

If **no**, provide the elevation of the 100-year frequency flood plain and describe what protective measures are used/proposed to prevent flooding (including tail water and rainfall run-on controls) of the treatment facility and disposal area: N/A

**Attachment:** N/A

g. For **new** or **major amendment** permit applications, will any construction operations result in a discharge of fill material into a water in the state?

☒ Yes ☐ No ☐ N/A (renewal only)

h. If **yes** to Item 1.g, has the applicant applied for a USACE CWA Chapter 404 Dredge and Fill permit?

☒ Yes ☐ No

If **yes**, provide the permit number: SWG-2025-00112

If **no**, provide an approximate date of application submittal to the USACE: N/A

## Item 2. Treatment System (Instructions, Page 40)

a. List any physical, chemical, or biological treatment process(es) used/proposed to treat wastewater at this facility. Include a description of each treatment process, starting with initial treatment and finishing with the outfall/point of disposal.

See Attachment T-1

b. Attach a flow schematic **with a water balance** showing all sources of water and wastewater flow into the facility, wastewater flow into and from each treatment unit, and wastewater flow to each outfall/point of disposal.

**Attachment:** Attachment T-1

## Item 3. Impoundments (Instructions, Page 40)

Does the facility use or plan to use any wastewater impoundments (e.g., lagoons or ponds?)

☐ Yes ☒ No

If **no**, proceed to Item 4. If **yes**, complete **Item 3.a** for **existing** impoundments and **Items 3.a - 3.e** for **new or proposed** impoundments. **NOTE:** See instructions, Pages 40-42, for additional information on the attachments required by Items 3.a – 3.e.

a. Complete the table with the following information for each existing, new, or proposed impoundment. Attach additional copies of the Impoundment Information table, if needed.

**Use Designation:** Indicate the use designation for each impoundment as Treatment (**T**), Disposal (**D**), Containment (**C**), or Evaporation (**E**).

**Associated Outfall Number:** Provide an outfall number if a discharge occurs or will occur.

**Liner Type:** Indicate the liner type as Compacted clay liner (**C**), In-situ clay liner (**I**), Synthetic/plastic/rubber liner (**S**), or Alternate liner (**A**). **NOTE:** See instructions for further detail on liner specifications. If an alternate liner (A) is selected, include an attachment that provides a description of the alternate liner and any additional technical information necessary for an evaluation.

**Leak Detection System:** If any leak detection systems are in place/planned, enter **Y** for yes. Otherwise, enter **N** for no.

**Groundwater Monitoring Wells and Data:** If groundwater monitoring wells are in place/planned, enter **Y** for yes. Otherwise, enter **N** for no. Attach any existing groundwater monitoring data.

**Dimensions:** Provide the dimensions, freeboard, surface area, storage capacity of the impoundments, and the maximum depth (not including freeboard). For impoundments with irregular shapes, submit surface area instead of length and width.

**Compliance with 40 CFR Part 257, Subpart D:** If the impoundment is required to be in compliance with 40 CFR Part 257, Subpart D, enter **Y** for yes. Otherwise, enter **N** for no.

**Date of Construction:** Enter the date construction of the impoundment commenced (mm/dd/yy).

**Impoundment Information**

| **Parameter** | **Pond #** | **Pond #** | **Pond #** | **Pond #** |
|---|---|---|---|---|
| Use Designation: (T) (D) (C) or (E) | N/A | | | |
| Associated Outfall Number | | | | |
| Liner Type (C) (I) (S) or (A) | | | | |
| Alt. Liner Attachment Reference | | | | |
| Leak Detection System, Y/N | | | | |
| Groundwater Monitoring Wells, Y/N | | | | |
| Groundwater Monitoring Data Attachment | | | | |
| Pond Bottom Located Above The Seasonal High-Water Table, Y/N | | | | |
| Length (ft) | | | | |
| Width (ft) | | | | |
| Max Depth From Water Surface (ft), Not Including Freeboard | | | | |
| Freeboard (ft) | | | | |
| Surface Area (acres) | | | | |
| Storage Capacity (gallons) | | | | |
| *40 CFR Part 257, Subpart D,* Y/N | | | | |
| Date of Construction | | | | |

**Attachment:** N/A

The following information (**Items 3.b – 3.e**) is required only for **new or proposed** impoundments.

b. For new or proposed impoundments, attach any available information on the following items. If attached, check **yes** in the appropriate box. Otherwise, check **no** or **not yet designed**.

1. Liner data

☐ Yes ☐ No ☐ Not yet designed

2. Leak detection system or groundwater monitoring data

☐ Yes ☐ No ☐ Not yet designed

3. Groundwater impacts

☐ Yes ☐ No ☐ Not yet designed

**NOTE:** Item b.3 is required if the bottom of the pond is not above the seasonal high-water table in the shallowest water-bearing zone.

**Attachment:** N/A

**For TLAP applications: Items 3.c – 3.e** are **not required**, continue to Item 4.

c. Attach a USGS map or a color copy of original quality and scale which accurately locates and identifies all known water supply wells and monitor wells within ½-mile of the impoundments.

**Attachment:** N/A

d. Attach copies of State Water Well Reports (e.g., driller's logs, completion data, etc.), and data on depths to groundwater for all known water supply wells including a description of how the depths to groundwater were obtained.

**Attachment:** N/A

e. Attach information pertaining to the groundwater, soils, geology, pond liner, etc. used to assess the potential for migration of wastes from the impoundments or the potential for contamination of groundwater or surface water.

**Attachment:** N/A

## Item 4. Outfall/Disposal Method Information (Instructions, Page 42)

Complete the following tables to describe the location and wastewater discharge or disposal operations for each outfall for discharge, and for each point of disposal for TLAP operations.

If there are more outfalls/points of disposal at the facility than the spaces provided, copies of pages 6 and/0r numbered accordingly (i.e., page 6a, 6b, etc.) may be used to provide information on the additional outfalls.

**For TLAP applications:** Indicate the disposal method and each individual irrigation area **I**, evaporation pond **E**, or subsurface drainage system **S** by providing the appropriate letter designation for the disposal method followed by a numerical designation for each disposal area in the space provided for **Outfall** number (e.g. **E1** for evaporation pond 1, **I2** for irrigation area No. 2, etc.).

**Outfall Longitude and Latitude**

| Outfall No. | Latitude (Decimal Degrees) | Longitude (Decimal Degrees) |
|---|---|---|
| 001 | 27.848836° | 97.009531°W |
| | | |
| | | |

**Outfall Location Description**

| Outfall No. | Location Description |
|---|---|
| 001 | Outfall will consist of a buried/submerged pipe and diffuser into the Gulf. |
| | |
| | |

**Description of Sampling Point(s) (if different from Outfall location)**

| Outfall No. | Description of sampling point |
|---|---|
| 001 | The sampling point will be on land following comingling of all wastewaters and prior to discharging into the Gulf. |
| | |
| | |

**Outfall Flow Information – Permitted and Proposed**

| Outfall No. | Permitted Daily Avg Flow (MGD) | Permitted Daily Max Flow (MGD) | Proposed Daily Avg Flow (MGD) | Proposed Daily Max Flow (MGD) | Anticipated Discharge Date (mm/dd/yy) |
|---|---|---|---|---|---|
| 001 | N/A | N/A | 191.2 | 191.2 | |
| | | | | | |
| | | | | | |

**Outfall Discharge – Method and Measurement**

| Outfall No. | Pumped Discharge? Y/N | Gravity Discharge? Y/N | Type of Flow Measurement Device Used |
|---|---|---|---|
| 001 | Y | N | Totalizer |
| | | | |
| | | | |

**Outfall Discharge – Flow Characteristics**

| Outfall No. | Intermittent Discharge? Y/N | Continuous Discharge? Y/N | Seasonal Discharge? Y/N | Discharge Duration (hrs/day) | Discharge Duration (days/mo) | Discharge Duration (mo/yr) |
|---|---|---|---|---|---|---|
| 001 | N | Y | N | 24 | 30.417 | 12 |
| | | | | | | |
| | | | | | | |

## Outfall Wastestream Contributions

**Outfall No. 001**

| Contributing Wastestream | Volume (MGD) | Percent (%) of Total Flow |
|---|---|---|
| Reverse Osmosis Reject | 150 | 78.5 |
| Pre-Treatment System Reject | 41.2 | 21.5 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Outfall No. N/A**

| Contributing Wastestream | Volume (MGD) | Percent (%) of Total Flow |
|---|---|---|
| Click to enter text. | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Outfall No. N/A**

| Contributing Wastestream | Volume (MGD) | Percent (%) of Total Flow |
|---|---|---|
| | | |
| | | |
| | | |
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| | | |
| | | |
| | | |
| | | |

**Attachment:** N/A

# Item 5. Blowdown and Once-Through Cooling Water Discharges (Instructions, Page 43)

a. Indicate if the facility currently or proposes to:

☐ Yes ☒ No Use cooling towers that discharge blowdown or other wastestreams

☐ Yes ☒ No Use boilers that discharge blowdown or other wastestreams

☐ Yes ☒ No Discharge once-through cooling water

**NOTE:** If the facility uses or plans to use cooling towers or once-through cooling water, Item 12 **is required**.

b. If **yes** to any of the above, attach an SDS with the following information for each chemical additive.

- Manufacturers Product Identification Number
- Product use (e.g., biocide, fungicide, corrosion inhibitor, etc.)
- Chemical composition including CASRN for each ingredient
- Classify product as non-persistent, persistent, or bioaccumulative
- Product or active ingredient half-life
- Frequency of product use (e.g., 2 hours/day once every two weeks)
- Product toxicity data specific to fish and aquatic invertebrate organisms
- Concentration of whole product or active ingredient, as appropriate, in wastestream.

In addition to each SDS, attach a summary of the above information for each specific wastestream and the associated chemical additives. Specify which outfalls are affected.

**Attachment:** N/A

c. Cooling Towers and Boilers

If the facility currently or proposes to use cooling towers or boilers that discharge blowdown or other wastestreams to the outfall(s), complete the following table.

**Cooling Towers and Boilers**

| Type of Unit | Number of Units | Daily Avg Blowdown (gallons/day) | Daily Max Blowdown (gallons/day) |
|---|---|---|---|
| Cooling Towers | N/A | | |
| Boilers | | | |

# Item 6. Stormwater Management (Instructions, Page 44)

Will any existing/proposed outfalls discharge stormwater associated with industrial activities, as defined at *40 CFR § 122.26(b)(14)*, commingled with any other wastestream?

☐ Yes ☒ No

If **yes**, briefly describe the industrial processes and activities that occur outdoors or in a manner which may result in exposure of the activities or materials to stormwater: N/A

# Item 7. Domestic Sewage, Sewage Sludge, and Septage Management and Disposal (Instructions, Page 44)

***Domestic Sewage*** - Waste and wastewater from humans or household operations that is discharged to a wastewater collection system or otherwise enters a treatment works.

a. Check the box next to the appropriate method of domestic sewage and domestic sewage sludge treatment or disposal. Complete Worksheet 5.0 or Item 7.b if directed to do so.

☐ Domestic sewage is routed (i.e., connected to or transported to) to a WWTP permitted to receive domestic sewage for treatment, disposal, or both. Complete Item 7.b.

☒ Domestic sewage disposed of by an on-site septic tank and drainfield system. Complete Item 7.b.

☐ Domestic and industrial treatment sludge ARE commingled prior to use or disposal.

☐ Industrial wastewater and domestic sewage are treated separately, and the respective sludge IS NOT commingled prior to sludge use or disposal. Complete Worksheet 5.0.

☐ Facility is a POTW. Complete Worksheet 5.0.

☐ Domestic sewage is not generated on-site.

☐ Other (e.g., portable toilets), specify and Complete Item 7.b: N/A

b. Provide the name and TCEQ, NPDES, or TPDES Permit No. of the waste-disposal facility which receives the domestic sewage/septage. If hauled by motorized vehicle, provide the name and TCEQ Registration No. of the hauler.

**Domestic Sewage Plant/Hauler Name**

| **Plant/Hauler Name** | **Permit/Registration No.** |
|---|---|
| TBD during design | TBD during design |
| | |

# Item 8. Improvements or Compliance/Enforcement Requirements (Instructions, Page 45)

a. Is the permittee currently required to meet any implementation schedule for compliance or enforcement?

☐ Yes ☒ No

b. Has the permittee completed or planned for any improvements or construction projects?

☐ Yes ☒ No

c. If **yes** to either 8.a **or** 8.b, provide a brief summary of the requirements and a status update: N/A

## Item 9. Toxicity Testing (Instructions, Page 45)

Have any biological tests for acute or chronic toxicity been made on any of the discharges or on a receiving water in relation to the discharge within the last three years?

☐ Yes ☒ No

If **yes**, identify the tests and describe their purposes: Salinity toxicity in synthetic seawater

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA. **Attachment:** N/A

## Item 10. Off-Site/Third Party Wastes (Instructions, Page 45)

a. Does or will the facility receive wastes from off-site sources for treatment at the facility, disposal on-site via land application, or discharge via a permitted outfall?

☐ Yes ☒ No

If **yes**, provide responses to Items 10.b through 10.d below.

If **no**, proceed to Item 11.

b. Attach the following information to the application:

- List of wastes received (including volumes, characterization, and capability with on-site wastes).
- Identify the sources of wastes received (including the legal name and addresses of the generators).
- Description of the relationship of waste source(s) with the facility's activities.

**Attachment:** N/A

c. Is or will wastewater from another TCEQ, NPDES, or TPDES permitted facility commingled with this facility's wastewater after final treatment and prior to discharge via the final outfall/point of disposal?

☐ Yes ☐ No

If **yes**, provide the name, address, and TCEQ, NPDES, or TPDES permit number of the contributing facility and a copy of any agreements or contracts relating to this activity.

**Attachment:** N/A

d. Is this facility a POTW that accepts/will accept process wastewater from any SIU and has/is required to have an approved pretreatment program under the NPDES/TPDES program?

☐ Yes ☐ No

If **yes**, **Worksheet 6.0** of this application **is required**.

## Item 11. Radioactive Materials (Instructions, Page 46)

a. Are/will radioactive materials be mined, used, stored, or processed at this facility?

☐ Yes ☒ No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L.

**Radioactive Materials Mined, Used, Stored, or Processed**

| Radioactive Material Name | Concentration (pCi/L) |
|---|---|
| N/A | |
| | |
| | |
| | |

b. Does the applicant or anyone at the facility have any knowledge or reason to believe that radioactive materials may be present in the discharge, including naturally occurring radioactive materials in the source waters or on the facility property?

☐ Yes ☒ No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L. Do not include information provided in response to Item 11.a.

**Radioactive Materials Present in the Discharge**

| Radioactive Material Name | Concentration (pCi/L) |
|---|---|
| N/A | |
| | |
| | |
| | |

## Item 12. Cooling Water (Instructions, Page 46)

a. Does the facility use or propose to use water for cooling purposes?

☐ Yes

☒ No

☐ Decommissioned: N/A

☐ To Be Decommissioned: N/A

If **yes**, complete Items 12.b thru 12.f. If **no**, stop here.

If **decommissioned**, provide the date operation ceased and stop here.

If to **be decommissioned**, provide the date operation is anticipated to cease and stop here.

b. Cooling water is/will be obtained from a groundwater source (e.g., on-site well).

☐ Yes ☐ No

If **yes**, stop here. If **no**, continue.

c. Cooling Water Supplier

1. Provide the name of the owner(s) and operator(s) for the CWIS that supplies or will supply water for cooling purposes to the facility.

**Cooling Water Intake Structure(s) Owner(s) and Operator(s)**

| | | | | |
|---|---|---|---|---|
| **CWIS ID** | N/A | | | |
| **Owner** | | | | |
| **Operator** | | | | |

2. Cooling water is/will be obtained from a Public Water Supplier (PWS)

☐ No ☐ Yes; PWS No.: N/A

If **no**, continue. If **yes**, provide the PWS Registration No. and stop here.

3. Cooling water is/will be obtained from a reclaimed water source?

☐ No ☐ Yes; Auth No.: N/A

If **no**, continue. If **yes**, provide the Reuse Authorization No. and stop here.

4. Cooling water is/will be obtained from an Independent Supplier

☐ No ☐ Yes; AIF: N/A

If **no**, proceed to Item 12.d. If **yes**, provide the actual intake flow of the Independent Supplier's CWIS that is/will be used to provide water for cooling purposes and proceed.

d. 316(b) General Criteria

1. The CWIS(s) used to provide water for cooling purposes to the facility has or will have a cumulative design intake flow of 2 MGD or greater.

☐ Yes ☐ No

2. At least 25% of the total water withdrawn by the CWIS(s) is/will be used at the facility exclusively for cooling purposes on an annual average basis.

☐ Yes ☐ No

3. The CWIS(s) withdraw(s)/propose(s) to withdraw water for cooling purposes from surface waters that meet the definition of Waters of the United States in *40 CFR § 122.2*.

☐ Yes ☐ No. Explanation: N/A

If **no**, provide an explanation of how the waterbody does not meet the definition of Waters of the United States in *40 CFR § 122.2*.

If **yes** to all three questions in Item 12.d, the facility **meets** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA. Proceed to **Item 12.f**.

If **no** to any of the questions in Item 12.d, the facility **does not meet** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA; however, a determination is required based upon BPJ. Proceed to **Item 12.e**.

e. The facility does not meet the minimum requirements to be subject to the fill requirements of Section 316(b) **and uses**/proposes **to use cooling towers**.

☐ Yes ☐ No

If **yes**, stop here. If **no**, complete Worksheet 11.0, Items 1.a, 1.b.1-3 and 6, 2.b.1, and 3.a to allow for a determination based upon BPJ.

f. Oil and Gas Exploration and Production

1. The facility is subject to requirements at 40 CFR Part 435, Subparts A or D.

☐ Yes ☐ No

If **yes**, continue. If **no**, skip to Item 12.g.

2. The facility is an existing facility as defined at 40 CFR § 125.92(k) or a new unit at an existing facility as defined at 40 CFR § 125.92(u).

☐ Yes ☐ No

If **yes**, complete Worksheet 11.0, Items 1.a, 1.b.1-3 and 6, 2.b.1, and 3.a to allow for a determination based upon BPJ. If **no**, skip to Item 12.g.3.

g. Compliance Phase and Track Selection

1. Phase I – New facility subject to 40 CFR Part 125, Subpart I

☐ Yes ☐ No

If **yes**, check the box next to the compliance track selection, attach the requested information, and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.

☐ Track I – AIF greater than 2 MGD, but less than 10 MGD

- Attach information required by *40 CFR §§ 125.86(b)(2)-(4)*.

☐ Track I – AIF greater than 10 MGD

- Attach information required by *40 CFR § 125.86(b)*.

☐ Track II

- Attach information required by *40 CFR § 125.86(c)*.

**Attachment:** N/A

2. Phase II – Existing facility subject to 40 CFR Part 125, Subpart J

☐ Yes ☐ No

If **yes**, complete Worksheets 11.0 through 11.3, as applicable.

3. Phase III – New facility subject to 40 CFR Part 125, Subpart N

☐ Yes ☐ No

If **yes**, check the box next to the compliance track selection and provide the requested information.

☐ Track I – Fixed facility

- Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.

☐ Track I – Not a fixed facility

- Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Item 2 (except CWIS latitude/longitude under Item 2.a).

☐ Track II – Fixed facility

- Attach information required by 40 CFR § 125.136(c) and complete Worksheet 11.0, Items 2 and 3.

**Attachment:** N/A

## Item 13. Permit Change Requests (Instructions, Page 48)

This item is only applicable to existing permitted facilities.

a. Is the facility requesting a **major amendment** of an existing permit?

☐ Yes ☒ No

If **yes**, list each request individually and provide the following information: 1) detailed information regarding the scope of each request and 2) a justification for each request. Attach any supplemental information or additional data to support each request.

N/A

b. Is the facility requesting any **minor amendments** to the permit?

☐ Yes ☒ No

If **yes**, list and describe each change individually.

N/A

c. Is the facility requesting any **minor modifications** to the permit?

☐ Yes ☒ No

If **yes**, list and describe each change individually.

N/A

## Item 14. Laboratory Accreditation (Instructions, Page 49)

All laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification*, which includes the following general exemptions from National Environmental Laboratory Accreditation Program (NELAP) certification requirements:

- The laboratory is an in-house laboratory and is:
  - periodically inspected by the TCEQ; or
  - located in another state and is accredited or inspected by that state; or
  - performing work for another company with a unit located in the same site; or
  - performing pro bono work for a governmental agency or charitable organization.
- The laboratory is accredited under federal law.
- The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.
- The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review *30 TAC Chapter 25* for specific requirements.

The following certification statement shall be signed and submitted with every application. See the *Signature Page* section in the Instructions, for a list of designated representatives who may sign the certification.

CERTIFICATION:

I certify that all laboratory tests submitted with this application meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.*

Printed Name: Click to enter text.

Title: Click to enter text.

Signature: _____

Date: _____

# INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 1.0: EPA CATEGORICAL EFFLUENT GUIDELINES

This worksheet **is required** for all applications for TPDES permits for discharges of wastewaters subject to EPA categorical effluent limitation guidelines (ELGs).

## Item 1. Categorical Industries (Instructions, Page 53)

Is this facility subject to any 40 CFR categorical ELGs outlined on page 53 of the instructions?

☐ Yes ☒ No

If **no**, this worksheet is not required. If **yes**, provide the appropriate information below.

**40 CFR Effluent Guideline**

| Industry | 40 CFR Part |
|---|---|
| N/A | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

## Item 2. Production/Process Data (Instructions, Page 54)

**NOTE:** For all TPDES permit applications requesting individual permit coverage for discharges of oil and gas exploration and production wastewater (discharges into or adjacent to water in the state, falling under the Oil and Gas Extraction Effluent Guidelines – 40 CFR Part 435), see Worksheet 12.0, Item 2 instead.

### a. Production Data

Provide appropriate data for effluent guidelines with production-based effluent limitations.

**Production Data**

| Subcategory | Actual Quantity/Day | Design Quantity/Day | Units |
|---|---|---|---|
| N/A | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

### b. Organic Chemicals, Plastics, and Synthetic Fibers Manufacturing Data (40 CFR Part 414)

Provide each applicable subpart and the percent of total production. Provide data for metal-bearing and cyanide-bearing wastestreams, as required by *40 CFR Part 414, Appendices A and B*.

**Percentage of Total Production**

| Subcategory | Percent of Total Production | Appendix A and B - Metals | Appendix A - Cyanide |
|---|---|---|---|
| N/A | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

### c. Refineries (40 CFR Part 419)

Provide the applicable subcategory and a brief justification.

N/A

## Item 3. Process/Non-Process Wastewater Flows (Instructions, Page 54)

Provide a breakdown of wastewater flow(s) generated by the facility, including both process and non-process wastewater flow(s). Specify which wastewater flows are to be authorized for discharge under this permit and the disposal practices for wastewater flows, excluding domestic, which are not to be authorized for discharge under this permit.

N/A

# Item 4. New Source Determination (Instructions, Page 54)

Provide a list of all wastewater-generating processes subject to EPA categorical ELGs, identify the appropriate guideline Part and Subpart, and provide the date the process/construction commenced.

**Wastewater Generating Processes Subject to Effluent Guidelines**

| Process | EPA Guideline Part | EPA Guideline Subpart | Date Process/ Construction Commenced |
|---|---|---|---|
| N/A | | | |
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# INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 2.0: POLLUTANT ANALYSIS

Worksheet 2.0 **is required** for all applications submitted for a TPDES permit. Worksheet 2.0 is not required for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater associated with industrial activities.

## Item 1. General Testing Requirements (Instructions, Page 55)

a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): N/A

b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.

c. Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm. **Attachment:** N/A

## Item 2. Specific Testing Requirements (Instructions, Page 56)

Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** N/A

**TABLE 1 and TABLE 2 (Instructions, Page 58)**

Completion of Tables 1 and 2 is required for all external outfalls for all TPDES permit applications.

**Table 1 for Outfall No.: Estimated average concentration is based upon 4 samples at Gulf intake location and 40% recovery in the desalination facility.** **Samples are (check one): ☐ Composite ☐ Grab**

| Pollutant | Sample 1 (mg/L) | Sample 2 (mg/L) | Sample 3 (mg/L) | Sample 4 (mg/L) |
|---|---|---|---|---|
| BOD (5-day) | <2 | | | |
| CBOD (5-day) | <2 | | | |
| Chemical oxygen demand | | | | |
| Total organic carbon | <5 | | | |
| Dissolved oxygen | | | | |
| Ammonia nitrogen | <0.08 | | | |
| Total suspended solids | <30 | | | |
| Nitrate nitrogen | <10.0 | | | |
| Total organic nitrogen | <0.5 | | | |
| Total phosphorus | <0.05 | | | |
| Oil and grease | <5.0 | | | |
| Total residual chlorine | | | | |

| Pollutant | Sample 1 (mg/L) | Sample 2 (mg/L) | Sample 3 (mg/L) | Sample 4 (mg/L) |
|---|---|---|---|---|
| Total dissolved solids | 53,400 | | | |
| Sulfate | 2,300 | | | |
| Chloride | 3,500 | | | |
| Fluoride | <10.0 | | | |
| Total alkalinity (mg/L as CaCO3) | 180 | | | |
| Temperature (˚F) | | | | |
| pH (standard units) | 8.2 | | | |

**Table 2 for Outfall No.: Estimated average concentration is based upon 4 samples at Gulf intake location and 40% recovery in the desalination facility.** **Samples are (check one): ☐ Composite ☐ Grab**

| Pollutant | Sample 1 (µg/L) | Sample 2 (µg/L) | Sample 3 (µg/L) | Sample 4 (µg/L) | MAL (µg/L) |
|---|---|---|---|---|---|
| Aluminum, total | 74.6 J | | | | 2.5 |
| Antimony, total | <5.30 | | | | 5 |
| Arsenic, total | 3.01J | | | | 0.5 |
| Barium, total | 19.9 J | | | | 3 |
| Beryllium, total | <0.91 | | | | 0.5 |
| Cadmium, total | <0.77 | | | | 1 |
| Chromium, total | <2.51 | | | | 3 |
| Chromium, hexavalent | <2.51 | | | | 3 |
| Chromium, trivalent | <2.51 | | | | N/A |
| Copper, total | <2.5 | | | | 2 |
| Cyanide, available | <2.0 | | | | 2/10 |
| Lead, total | <1.20 | | | | 0.5 |
| Mercury, total | <0.0006 | | | | 0.005/0.0005 |
| Nickel, total | 2.5 | | | | 2 |
| Selenium, total | <8.60 | | | | 5 |
| Silver, total | <0.44 | | | | 0.5 |
| Thallium, total | <2.50 | | | | 0.5 |
| Zinc, total | <10.0 | | | | 5.0 |

**TABLE 3 (Instructions, Page 58)**

**Completion** of Table 3 **is required** for all **external outfalls** which discharge process wastewater.

**Partial completion** of Table 3 **is required** for all **external outfalls** which discharge non-process wastewater and stormwater associated with industrial activities commingled with other wastestreams (see instructions for additional guidance).

**Table 3 for Outfall No.: Estimated average concentration is based upon 4 samples at Gulf intake location and 40% recovery in the desalination facility.** **Samples are (check one): ☐ Composite ☐ Grab**

| Pollutant | Sample 1 (µg/L)* | Sample 2 (µg/L)* | Sample 3 (µg/L)* | Sample 4 (µg/L)* | MAL (µg/L)* |
|---|---|---|---|---|---|
| Acrylonitrile | <10.0 | | | | 50 |
| Anthracene | <5.00 | | | | 10 |
| Benzene | <5.00 | | | | 10 |
| Benzidine | <5.00 | | | | 50 |
| Benzo(a)anthracene | <5.00 | | | | 5 |
| Benzo(a)pyrene | <5.00 | | | | 5 |
| Bis(2-chloroethyl)ether | <5.00 | | | | 10 |
| Bis(2-ethylhexyl)phthalate | <5.00 | | | | 10 |
| Bromodichloromethane [Dichlorobromomethane] | <5.00 | | | | 10 |
| Bromoform | <5.00 | | | | 10 |
| Carbon tetrachloride | <5.00 | | | | 2 |
| Chlorobenzene | <5.00 | | | | 10 |
| Chlorodibromomethane [Dibromochloromethane] | <5.00 | | | | 10 |
| Chloroform | <5.00 | | | | 10 |
| Chrysene | <5.00 | | | | 5 |
| m-Cresol [3-Methylphenol] | <5.00 | | | | 10 |
| o-Cresol [2-Methylphenol] | <5.00 | | | | 10 |
| p-Cresol [4-Methylphenol] | <5.00 | | | | 10 |
| 1,2-Dibromoethane | <5.00 | | | | 10 |
| m-Dichlorobenzene [1,3-Dichlorobenzene] | <5.00 | | | | 10 |
| o-Dichlorobenzene [1,2-Dichlorobenzene] | <5.00 | | | | 10 |
| p-Dichlorobenzene [1,4-Dichlorobenzene] | <5.00 | | | | 10 |
| 3,3'-Dichlorobenzidine | <5.00 | | | | 5 |

| Pollutant | Sample 1 (µg/L)* | Sample 2 (µg/L)* | Sample 3 (µg/L)* | Sample 4 (µg/L)* | MAL (µg/L)* |
|---|---|---|---|---|---|
| 1,2-Dichloroethane | <5.00 | | | | 10 |
| 1,1-Dichloroethene [1,1-Dichloroethylene] | <5.00 | | | | 10 |
| Dichloromethane [Methylene chloride] | <5.00 | | | | 20 |
| 1,2-Dichloropropane | <5.00 | | | | 10 |
| 1,3-Dichloropropene [1,3-Dichloropropylene] | <5.00 | | | | 10 |
| 2,4-Dimethylphenol | <5.00 | | | | 10 |
| Di-n-Butyl phthalate | <5.00 | | | | 10 |
| Epichlorohydrin (1-Chloro-2,3-epoxypropane) | | | | | --- |
| Ethylbenzene | <5.00 | | | | 10 |
| Ethylene Glycol | | | | | --- |
| Fluoride | <10,000 | | | | 500 |
| Hexachlorobenzene | <5.00 | | | | 5 |
| Hexachlorobutadiene | <5.00 | | | | 10 |
| Hexachlorocyclopentadiene | <5.00 | | | | 10 |
| Hexachloroethane | <5.00 | | | | 20 |
| 4,4'-Isopropylidenediphenol (bisphenol A) | | | | | 1 |
| Methyl ethyl ketone | <10.0 | | | | 50 |
| Methyl tert-butyl ether (MTBE) | | | | | --- |
| Nitrobenzene | <5.00 | | | | 10 |
| N-Nitrosodiethylamine | <5.00 | | | | 20 |
| N-Nitroso-di-n-butylamine | <5.00 | | | | 20 |
| Nonylphenol | <5.00 | | | | 333 |
| Pentachlorobenzene | <5.00 | | | | 20 |
| Pentachlorophenol | <5.00 | | | | 5 |
| Phenanthrene | <5.00 | | | | 10 |
| Polychlorinated biphenyls (PCBs) (**) | <0.0125 | | | | 0.2 |
| Pyridine | <5.00 | | | | 20 |
| 1,2,4,5-Tetrachlorobenzene | <5.00 | | | | 20 |
| 1,1,2,2-Tetrachloroethane | <5.00 | | | | 10 |
| Tetrachloroethene | <5.00 | | | | 10 |

| Pollutant | Sample 1 (µg/L)* | Sample 2 (µg/L)* | Sample 3 (µg/L)* | Sample 4 (µg/L)* | MAL (µg/L)* |
|---|---|---|---|---|---|
| [Tetrachloroethylene] | | | | | |
| Toluene | <5.00 | | | | 10 |
| 1,1,1-Trichloroethane | <5.00 | | | | 10 |
| 1,1,2-Trichloroethane | <5.00 | | | | 10 |
| Trichloroethene [Trichloroethylene] | <5.00 | | | | 10 |
| 2,4,5-Trichlorophenol | <5.00 | | | | 50 |
| TTHM (Total trihalomethanes) | <5.00 | | | | 10 |
| Vinyl chloride | <2.00 | | | | 10 |

(*) Indicate units if different from µg/L.

(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

**TABLE 4 (Instructions, Pages 58-59)**

Partial completion of Table 4 **is required** for each **external outfall** based on the conditions below.

a. **Tributyltin**

Is this facility an industrial/commercial facility which currently or proposes to directly dispose of wastewater from the types of operations listed below or a domestic facility which currently or proposes to receive wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, check the box next to each of the following criteria which apply and provide the appropriate testing results in Table 4 below (check all that apply).

☐ Manufacturers and formulators of tributyltin or related compounds.

☐ Painting of ships, boats and marine structures.

☐ Ship and boat building and repairing.

☐ Ship and boat cleaning, salvage, wrecking and scaling.

☐ Operation and maintenance of marine cargo handling facilities and marinas.

☐ Facilities engaged in wood preserving.

☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. **Enterococci (discharge to saltwater)**

This facility discharges/proposes to discharge directly into saltwater receiving waters **and** Enterococci bacteria are expected to be present in the discharge based on facility processes.

☐ Yes ☒ No

Domestic wastewater is/will be discharged.

☐ Yes ☒ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

**c. E. coli (discharge to freshwater)**

This facility discharges/proposes to discharge directly into freshwater receiving waters **and** *E. coli* bacteria are expected to be present in the discharge based on facility processes.

☐ Yes ☒ No

Domestic wastewater is/will be discharged.

☐ Yes ☒ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

**Table 4 for Outfall No.: N/A** **Samples are (check one): ☐ Composite ☐ Grab**

| Pollutant | Sample 1 | Sample 2 | Sample 3 | Sample 4 | MAL |
|---|---|---|---|---|---|
| Tributyltin (µg/L) | | | | | 0.010 |
| Enterococci (cfu or MPN/100 mL) | | | | | N/A |
| *E. coli* (cfu or MPN/100 mL) | | | | | N/A |

**TABLE 5 (Instructions, Page 59)**

**Completion** of Table 5 **is required** for all **external outfalls** which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters that may contain pesticides or herbicides, check N/A.

☒ N/A

**Table 5 for Outfall No.: *N/A*** **Samples are (check one): ☐ Composite ☐ Grab**

| Pollutant | Sample 1 (µg/L)* | Sample 2 (µg/L)* | Sample 3 (µg/L)* | Sample 4 (µg/L)* | MAL (µg/L)* |
|---|---|---|---|---|---|
| Aldrin | | | | | 0.01 |
| Carbaryl | | | | | 5 |
| Chlordane | | | | | 0.2 |
| Chlorpyrifos | | | | | 0.05 |
| 4,4'-DDD | | | | | 0.1 |
| 4,4'-DDE | | | | | 0.1 |
| 4,4'-DDT | | | | | 0.02 |
| 2,4-D | | | | | 0.7 |
| Danitol [Fenpropathrin] | | | | | — |
| Demeton | | | | | 0.20 |
| Diazinon | | | | | 0.5/0.1 |

| **Pollutant** | **Sample 1 (µg/L)*** | **Sample 2 (µg/L)*** | **Sample 3 (µg/L)*** | **Sample 4 (µg/L)*** | **MAL (µg/L)*** |
|---|---|---|---|---|---|
| Dicofol [Kelthane] | | | | | 1 |
| Dieldrin | | | | | 0.02 |
| Diuron | | | | | 0.090 |
| Endosulfan I (*alpha*) | | | | | 0.01 |
| Endosulfan II (*beta*) | | | | | 0.02 |
| Endosulfan sulfate | | | | | 0.1 |
| Endrin | | | | | 0.02 |
| Guthion [Azinphos methyl] | | | | | 0.1 |
| Heptachlor | | | | | 0.01 |
| Heptachlor epoxide | | | | | 0.01 |
| Hexachlorocyclohexane (*alpha*) | | | | | 0.05 |
| Hexachlorocyclohexane (*beta*) | | | | | 0.05 |
| Hexachlorocyclohexane (*gamma*) [Lindane] | | | | | 0.05 |
| Hexachlorophene | | | | | 10 |
| Malathion | | | | | 0.1 |
| Methoxychlor | | | | | 2.0 |
| Mirex | | | | | 0.02 |
| Parathion (ethyl) | | | | | 0.1 |
| Toxaphene | | | | | 0.3 |
| 2,4,5-TP [Silvex] | | | | | 0.3 |

* Indicate units if different from µg/L.

**TABLE 6 (Instructions, Page 59)**

Completion of Table 6 **is required** for all **external outfalls**.

**Table 6 for Outfall No.: Estimated average concentration is based upon 4 samples at Gulf intake location and 40% recovery in the desalination facility.** Samples are (check one): ☐ Composite ☒ Grab

| Pollutants | Believed Present | Believed Absent | Sample 1 (mg/L) | Sample 2 (mg/L) | Sample 3 (mg/L) | Sample 4 (mg/L) | MAL (µg/L)* |
|---|---|---|---|---|---|---|---|
| Bromide | ☒ | ☐ | 75 | | | | 400 |
| Color (PCU) | ☒ | ☐ | 5 | | | | — |
| Nitrate-Nitrite (as N) | ☐ | ☒ | <10.0 | | | | — |
| Sulfide (as S) | ☐ | ☒ | <0.05 | | | | — |
| Sulfite (as SO3) | ☐ | ☒ | | | | | — |
| Surfactants | ☐ | ☒ | <0.087 | | | | — |
| Boron, total | ☒ | ☐ | 6.1 | | | | 20 |
| Cobalt, total | ☐ | ☒ | <0.4 | | | | 0.3 |
| Iron, total | ☐ | ☒ | <0.5 | | | | 7 |
| Magnesium, total | ☒ | ☐ | 1,600 | | | | 20 |
| Manganese, total | ☒ | ☐ | 6 | | | | 0.5 |
| Molybdenum, total | ☒ | ☐ | 14 | | | | 1 |
| Tin, total | ☐ | ☒ | <0.58 | | | | 5 |
| Titanium, total | ☒ | ☐ | <3.9 | | | | 30 |

## TABLE 7 (Instructions, Page 60)

Check the box next to any of the industrial categories applicable to this facility. If no categories are applicable, check N/A. If GC/MS testing is required, check the box provided to confirm the testing results for the appropriate parameters are provided with the application.

☒ N/A

**Table 7 for Applicable Industrial Categories**

| Industrial Category | 40 CFR Part | Volatiles Table 8 | Acids Table 9 | Bases/ Neutrals Table 10 | Pesticides Table 11 |
|---|---|---|---|---|---|
| ☐ Adhesives and Sealants | | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Aluminum Forming | 467 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Auto and Other Laundries | | ☐ Yes | ☐ Yes | ☐ Yes | ☐ Yes |
| ☐ Battery Manufacturing | 461 | ☐ Yes | No | ☐ Yes | No |
| ☐ Coal Mining | 434 | No | No | No | No |
| ☐ Coil Coating | 465 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Copper Forming | 468 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Electric and Electronic Components | 469 | ☐ Yes | ☐ Yes | ☐ Yes | ☐ Yes |
| ☐ Electroplating | 413 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Explosives Manufacturing | 457 | No | ☐ Yes | ☐ Yes | No |
| ☐ Foundries | | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Gum and Wood Chemicals - Subparts A,B,C,E | 454 | ☐ Yes | ☐ Yes | No | No |
| ☐ Gum and Wood Chemicals - Subparts D,F | 454 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Inorganic Chemicals Manufacturing | 415 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Iron and Steel Manufacturing | 420 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Leather Tanning and Finishing | 425 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Mechanical Products Manufacturing | | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Nonferrous Metals Manufacturing | 421,471 | ☐ Yes | ☐ Yes | ☐ Yes | ☐ Yes |
| ☐ Oil and Gas Extraction - Subparts A, D, E, F, G, H | 435 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Ore Mining - Subpart B | 440 | No | ☐ Yes | No | No |
| ☐ Organic Chemicals Manufacturing | 414 | ☐ Yes | ☐ Yes | ☐ Yes | ☐ Yes |
| ☐ Paint and Ink Formulation | 446,447 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Pesticides | 455 | ☐ Yes | ☐ Yes | ☐ Yes | ☐ Yes |
| ☐ Petroleum Refining | 419 | ☐ Yes | No | No | No |
| ☐ Pharmaceutical Preparations | 439 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Photographic Equipment and Supplies | 459 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Plastic and Synthetic Materials Manufacturing | 414 | ☐ Yes | ☐ Yes | ☐ Yes | ☐ Yes |
| ☐ Plastic Processing | 463 | ☐ Yes | No | No | No |
| ☐ Porcelain Enameling | 466 | No | No | No | No |
| ☐ Printing and Publishing | | ☐ Yes | ☐ Yes | ☐ Yes | ☐ Yes |
| ☐ Pulp and Paperboard Mills - Subpart C | 430 | ☐ * | ☐ Yes | ☐ * | ☐ Yes |
| ☐ Pulp and Paperboard Mills - Subparts F, K | 430 | ☐ * | ☐ Yes | ☐ * | ☐ * |
| ☐ Pulp and Paperboard Mills - Subparts A, B, D, G, H | 430 | ☐ Yes | ☐ Yes | ☐ * | ☐ * |
| ☐ Pulp and Paperboard Mills - Subparts I, J, L | 430 | ☐ Yes | ☐ Yes | ☐ * | ☐ Yes |
| ☐ Pulp and Paperboard Mills - Subpart E | 430 | ☐ Yes | ☐ Yes | ☐ Yes | ☐ * |
| ☐ Rubber Processing | 428 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Soap and Detergent Manufacturing | 417 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Steam Electric Power Plants | 423 | ☐ Yes | ☐ Yes | No | No |
| ☐ Textile Mills (Not Subpart C) | 410 | ☐ Yes | ☐ Yes | ☐ Yes | No |
| ☐ Timber Products Processing | 429 | ☐ Yes | ☐ Yes | ☐ Yes | ☐ Yes |

* Test if believed present.

**TABLES 8, 9, 10, and 11 (Instructions, Page 60)**

Completion of Tables 8, 9, 10, and 11 **is required** as specified in Table 7 for all **external outfalls** that contain process wastewater.

Completion of Tables 8, 9, 10, and 11 **may be required** for types of industry not specified in Table 7 for specific parameters that are believed to be present in the wastewater.

**Table 8 for Outfall No.: N/A: Volatile Compounds** **Samples are (check one):** ☐ **Composite** ☐ **Grab**

| **Pollutant** | **Sample 1 (µg/L)*** | **Sample 2 (µg/L)*** | **Sample 3 (µg/L)*** | **Sample 4 (µg/L)*** | **MAL (µg/L)** |
|---|---|---|---|---|---|
| Acrolein | | | | | 50 |
| Acrylonitrile | | | | | 50 |
| Benzene | | | | | 10 |
| Bromoform | | | | | 10 |
| Carbon tetrachloride | | | | | 2 |
| Chlorobenzene | | | | | 10 |
| Chlorodibromomethane | | | | | 10 |
| Chloroethane | | | | | 50 |
| 2-Chloroethylvinyl ether | | | | | 10 |
| Chloroform | | | | | 10 |
| Dichlorobromomethane [Bromodichloromethane] | | | | | 10 |
| 1,1-Dichloroethane | | | | | 10 |
| 1,2-Dichloroethane | | | | | 10 |
| 1,1-Dichloroethylene [1,1-Dichloroethene] | | | | | 10 |
| 1,2-Dichloropropane | | | | | 10 |
| 1,3-Dichloropropylene [1,3-Dichloropropene] | | | | | 10 |
| Ethylbenzene | | | | | 10 |
| Methyl bromide [Bromomethane] | | | | | 50 |
| Methyl chloride [Chloromethane] | | | | | 50 |
| Methylene chloride [Dichloromethane] | | | | | 20 |
| 1,1,2,2-Tetrachloroethane | | | | | 10 |
| Tetrachloroethylene [Tetrachloroethene] | | | | | 10 |
| Toluene | | | | | 10 |
| 1,2-Trans-dichloroethylene | | | | | 10 |

| Pollutant | Sample 1 (µg/L)* | Sample 2 (µg/L)* | Sample 3 (µg/L)* | Sample 4 (µg/L)* | MAL (µg/L) |
|---|---|---|---|---|---|
| [1,2-Trans-dichloroethene] | | | | | |
| 1,1,1-Trichloroethane | | | | | 10 |
| 1,1,2-Trichloroethane | | | | | 10 |
| Trichloroethylene [Trichloroethene] | | | | | 10 |
| Vinyl chloride | | | | | 10 |

* Indicate units if different from µg/L.

**Table 9 for Outfall No.: N/A: Acid Compounds** **Samples are (check one):** ☐ **Composite** ☐ **Grab**

| Pollutant | Sample 1 (µg/L)* | Sample 2 (µg/L)* | Sample 3 (µg/L)* | Sample 4 (µg/L)* | MAL (µg/L) |
|---|---|---|---|---|---|
| 2-Chlorophenol | | | | | 10 |
| 2,4-Dichlorophenol | | | | | 10 |
| 2,4-Dimethylphenol | | | | | 10 |
| 4,6-Dinitro-o-cresol | | | | | 50 |
| 2,4-Dinitrophenol | | | | | 50 |
| 2-Nitrophenol | | | | | 20 |
| 4-Nitrophenol | | | | | 50 |
| p-Chloro-m-cresol | | | | | 10 |
| Pentachlorophenol | | | | | 5 |
| Phenol | | | | | 10 |
| 2,4,6-Trichlorophenol | | | | | 10 |

* Indicate units if different from µg/L.

**Table 10 for Outfall No.: N/A: Base/Neutral Compounds** **Samples are (check one):** ☐ **Composite** ☐ **Grab**

| Pollutant | Sample 1 (µg/L)* | Sample 2 (µg/L)* | Sample 3 (µg/L)* | Sample 4 (µg/L)* | MAL (µg/L) |
|---|---|---|---|---|---|
| Acenaphthene | | | | | 10 |
| Acenaphthylene | | | | | 10 |
| Anthracene | | | | | 10 |
| Benzidine | | | | | 50 |
| Benzo(a)anthracene | | | | | 5 |
| Benzo(a)pyrene | | | | | 5 |
| 3,4-Benzofluoranthene [Benzo(b)fluoranthene] | | | | | 10 |
| Benzo(ghi)perylene | | | | | 20 |

| Pollutant | Sample 1 (µg/L)* | Sample 2 (µg/L)* | Sample 3 (µg/L)* | Sample 4 (µg/L)* | MAL (µg/L) |
|---|---|---|---|---|---|
| Benzo(k)fluoranthene | | | | | 5 |
| Bis(2-chloroethoxy)methane | | | | | 10 |
| Bis(2-chloroethyl)ether | | | | | 10 |
| Bis(2-chloroisopropyl)ether | | | | | 10 |
| Bis(2-ethylhexyl)phthalate | | | | | 10 |
| 4-Bromophenyl phenyl ether | | | | | 10 |
| Butylbenzyl phthalate | | | | | 10 |
| 2-Chloronaphthalene | | | | | 10 |
| 4-Chlorophenyl phenyl ether | | | | | 10 |
| Chrysene | | | | | 5 |
| Dibenzo(a,h)anthracene | | | | | 5 |
| 1,2-Dichlorobenzene [o-Dichlorobenzene] | | | | | 10 |
| 1,3-Dichlorobenzene [m-Dichlorobenzene] | | | | | 10 |
| 1,4-Dichlorobenzene [p-Dichlorobenzene] | | | | | 10 |
| 3,3'-Dichlorobenzidine | | | | | 5 |
| Diethyl phthalate | | | | | 10 |
| Dimethyl phthalate | | | | | 10 |
| Di-n-butyl phthalate | | | | | 10 |
| 2,4-Dinitrotoluene | | | | | 10 |
| 2,6-Dinitrotoluene | | | | | 10 |
| Di-n-octyl phthalate | | | | | 10 |
| 1,2-Diphenylhydrazine (as Azobenzene) | | | | | 20 |
| Fluoranthene | | | | | 10 |
| Fluorene | | | | | 10 |
| Hexachlorobenzene | | | | | 5 |
| Hexachlorobutadiene | | | | | 10 |
| Hexachlorocyclopentadiene | | | | | 10 |
| Hexachloroethane | | | | | 20 |
| Indeno(1,2,3-cd)pyrene | | | | | 5 |
| Isophorone | | | | | 10 |
| Naphthalene | | | | | 10 |

| Pollutant | Sample 1 (µg/L)* | Sample 2 (µg/L)* | Sample 3 (µg/L)* | Sample 4 (µg/L)* | MAL (µg/L) |
|---|---|---|---|---|---|
| Nitrobenzene | | | | | 10 |
| N-Nitrosodimethylamine | | | | | 50 |
| N-Nitrosodi-n-propylamine | | | | | 20 |
| N-Nitrosodiphenylamine | | | | | 20 |
| Phenanthrene | | | | | 10 |
| Pyrene | | | | | 10 |
| 1,2,4-Trichlorobenzene | | | | | 10 |

* Indicate units if different from µg/L.

**Table 11 for Outfall No.: N/A: Pesticides** **Samples are (check one): ☐ Composite ☐ Grab**

| Pollutant | Sample 1 (µg/L)* | Sample 2 (µg/L)* | Sample 3 (µg/L)* | Sample 4 (µg/L)* | MAL (µg/L) |
|---|---|---|---|---|---|
| Aldrin | | | | | 0.01 |
| alpha-BHC [alpha-Hexachlorocyclohexane] | | | | | 0.05 |
| beta-BHC [beta-Hexachlorocyclohexane] | | | | | 0.05 |
| gamma-BHC [gamma-Hexachlorocyclohexane] | | | | | 0.05 |
| delta-BHC [delta-Hexachlorocyclohexane] | | | | | 0.05 |
| Chlordane | | | | | 0.2 |
| 4,4'-DDT | | | | | 0.02 |
| 4,4'-DDE | | | | | 0.1 |
| 4,4'-DDD | | | | | 0.1 |
| Dieldrin | | | | | 0.02 |
| Endosulfan I (alpha) | | | | | 0.01 |
| Endosulfan II (beta) | | | | | 0.02 |
| Endosulfan sulfate | | | | | 0.1 |
| Endrin | | | | | 0.02 |
| Endrin aldehyde | | | | | 0.1 |
| Heptachlor | | | | | 0.01 |
| Heptachlor epoxide | | | | | 0.01 |
| PCB 1242 | | | | | 0.2 |
| PCB 1254 | | | | | 0.2 |
| PCB 1221 | | | | | 0.2 |

| Pollutant | Sample 1 (µg/L)* | Sample 2 (µg/L)* | Sample 3 (µg/L)* | Sample 4 (µg/L)* | MAL (µg/L) |
|---|---|---|---|---|---|
| PCB 1232 | | | | | 0.2 |
| PCB 1248 | | | | | 0.2 |
| PCB 1260 | | | | | 0.2 |
| PCB 1016 | | | | | 0.2 |
| Toxaphene | | | | | 0.3 |

* Indicate units if different from µg/L.

**Attachment:** N/A

**TABLE 12 (DIOXINS/FURAN COMPOUNDS)**

Complete of Table 12 **is required** for **external outfalls**, as directed below. (Instructions, Pages 59-60)

Indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility (check all that apply).

- ☐ 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CASRN 93-76-5
- ☐ 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CASRN 93-72-1
- ☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CASRN 136-25-4
- ☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel) CASRN 299-84-3
- ☐ 2,4,5-trichlorophenol (TCP) CASRN 95-95-4
- ☐ hexachlorophene (HCP) CASRN 70-30-4
- ☒ None of the above

Description: N/A

Does the applicant or anyone at the facility know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in the effluent proposed for discharge?

☐ Yes ☒ No

Description: N/A

If **yes** to either Items a **or** b, complete Table 12 as instructed.

**Table 12 for Outfall No.: N/A** **Samples are (check one):** ☐ **Composite** ☐ **Grab**

| Compound | Toxicity Equivalent Factors | Wastewater Concentration (ppq) | Wastewater Toxicity Equivalents (ppq) | Sludge Concentration (ppt) | Sludge Toxicity Equivalents (ppt) | MAL (ppq) |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1 | | | | | 10 |
| 1,2,3,7,8-PeCDD | 1.0 | | | | | 50 |
| 2,3,7,8-HxCDDs | 0.1 | | | | | 50 |

| Compound | Toxicity Equivalent Factors | Wastewater Concentration (ppq) | Wastewater Toxicity Equivalents (ppq) | Sludge Concentration (ppt) | Sludge Toxicity Equivalents (ppt) | MAL (ppq) |
|---|---|---|---|---|---|---|
| 1,2,3,4,6,7,8-HpCDD | 0.01 | | | | | 50 |
| 2,3,7,8-TCDF | 0.1 | | | | | 10 |
| 1,2,3,7,8-PeCDF | 0.03 | | | | | 50 |
| 2,3,4,7,8-PeCDF | 0.3 | | | | | 50 |
| 2,3,7,8-HxCDFs | 0.1 | | | | | 50 |
| 2,3,4,7,8-HpCDFs | 0.01 | | | | | 50 |
| OCDD | 0.0003 | | | | | 100 |
| OCDF | 0.0003 | | | | | 100 |
| PCB 77 | 0.0001 | | | | | 500 |
| PCB 81 | 0.0003 | | | | | 500 |
| PCB 126 | 0.1 | | | | | 500 |
| PCB 169 | 0.03 | | | | | 500 |
| Total | | | | | | |

**TABLE 13 (HAZARDOUS SUBSTANCES)**

Complete Table 13 **is required** for all **external outfalls** as directed below. (Instructions, Pages 60-61)

Are there any pollutants listed in the instructions (pages 55-62) believed present in the discharge?

☐ Yes ☒ No

Are there pollutants listed in Item 1.c. of Technical Report 1.0 which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☒ No

If **yes** to either Items a **or** b, complete Table 13 as instructed.

**Table 13 for Outfall No.: N/A** **Samples are (check one): ☐ Composite ☐ Grab**

| Pollutant | CASRN | Sample 1 (µg/L) | Sample 2 (µg/L) | Sample 3 (µg/L) | Sample 4 (µg/L) | Analytical Method |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

| Pollutant | CASRN | Sample 1 (µg/L) | Sample 2 (µg/L) | Sample 3 (µg/L) | Sample 4 (µg/L) | Analytical Method |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |

# INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 4.0: RECEIVING WATERS

This worksheet **is required** for all TPDES permit applications.

## Item 1. Domestic Drinking Water Supply (Instructions, Page 80)

a. There is a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge.

☐ Yes ☒ No

If **no**, stop here and proceed to Item 2. If **yes**, provide the following information:

1. The legal name of the owner of the drinking water supply intake: N/A
2. The distance and direction from the outfall to the drinking water supply intake: N/A

b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.

☐ Check this box to confirm the above requested information is provided.

## Item 2. Discharge Into Tidally Influenced Waters (Instructions, Page 80)

If the discharge is to tidally influenced waters, complete this section. Otherwise, proceed to Item 3.

a. Width of the receiving water at the outfall: 4.9213E+06 feet

b. Are there oyster reefs in the vicinity of the discharge?

☐ Yes ☒ No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: N/A

c. Are there sea grasses within the vicinity of the point of discharge?

☐ Yes ☒ No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: N/A

## Item 3. Classified Segment (Instructions, Page 80)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

☒ Yes ☐ No

If **yes**, stop here and do not complete Items 4 and 5 of this worksheet or Worksheet 4.1.

If **no**, complete Items 4 and 5 and Worksheet 4.1 may be required.

# Item 4. Description of Immediate Receiving Waters (Instructions, Page 80)

a. Name of the immediate receiving waters: N/A

b. Check the appropriate description of the immediate receiving waters:

☐ Lake or Pond

- Surface area (acres): Click to enter text.
- Average depth of the entire water body (feet): Click to enter text.
- Average depth of water body within a 500-foot radius of the discharge point (feet): Click to enter text.

☐ Man-Made Channel or Ditch

☐ Stream or Creek

☐ Freshwater Swamp or Marsh

☐ Tidal Stream, Bayou, or Marsh

☐ Open Bay

☐ Other, specify:

If **Man-Made Channel or Ditch** or **Stream or Creek** were selected above, provide responses to Items 4.c – 4.g below:

c. For **existing discharges**, check the description below that best characterizes the area **upstream** of the discharge.

For **new discharges**, check the description below that best characterizes the area **downstream** of the discharge.

☐ Intermittent (dry for at least one week during most years)

☐ Intermittent with Perennial Pools (enduring pools containing habitat to maintain aquatic life uses)

☐ Perennial (normally flowing)

Check the source(s) of the information used to characterize the area upstream (existing discharge) or downstream (new discharge):

☐ USGS flow records

☐ personal observation

☐ historical observation by adjacent landowner(s)

☐ other, specify: N/A

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: N/A

e. The receiving water characteristics change within three miles downstream of the discharge (e.g., natural or man-made dams, ponds, reservoirs, etc.).

☐ Yes ☐ No

If **yes**, describe how: N/A

f. General observations of the water body during normal dry weather conditions: N/A

Date and time of observation: N/A

g. The water body was influenced by stormwater runoff during observations.

☐ Yes ☐ No

If **yes**, describe how: N/A

## Item 5. General Characteristics of Water Body (Instructions, Page 81)

a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by any of the following (check all that apply):

☐ oil field activities
☐ agricultural runoff
☐ upstream discharges
☐ urban runoff
☐ septic tanks
☐ other, specify: N/A

b. Uses of water body observed or evidence of such uses (check all that apply):

☐ livestock watering
☐ non-contact recreation
☐ domestic water supply
☐ contact recreation
☐ fishing
☐ industrial water supply
☐ irrigation withdrawal
☐ navigation
☐ picnic/park activities
☐ other, specify: N/A

c. Description which best describes the aesthetics of the receiving water and the surrounding area (check only one):

☐ **Wilderness:** outstanding natural beauty; usually wooded or un-pastured area: water clarity exceptional

☐ **Natural Area:** trees or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored

☐ **Common Setting:** not offensive, developed but uncluttered; water may be colored or turbid

☐ **Offensive:** stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

# INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 4.1: WATERBODY PHYSICAL CHARACTERISTICS

The following information **is required** for new applications, EPA-designated Major facilities, and major amendment applications requesting to add an outfall if the receiving waters are perennial or intermittent with perennial pools (including impoundments) for a TDPES permit.

Complete the transects downstream of the existing or proposed discharges.

## Item 1. Data Collection (Instructions, Page 82)

a. Date of study: N/A Time of study: N/A

Waterbody name: N/A

General location: N/A

b. Type of stream upstream of an existing discharge or downstream of a proposed discharge (check only one):

☐ perennial ☐ intermittent with perennial pools ☐ impoundment

c. No. of defined stream bends:

Well: N/A Moderately: N/A Poorly: N/A

d. No. of riffles: N/A

e. Evidence of flow fluctuations (check one):

☐ Minor ☐ Moderate ☐ Severe

f. Provide the observed stream uses and where there is evidence of channel obstructions/modifications: N/A

g. Complete the following table with information regarding the transect measurements.

**Stream Transect Data**

| Transect Location | Habitat Type* | Water Surface Width (ft) | Stream Depths (ft)** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N/A | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

* riffle, run, glide, or pool

** channel bed to water surface

## Item 2. Summarize Measurements (Instructions, Page 83)

Provide the following information regarding the transect measurements:

Streambed slope of entire reach (from USGS map in ft. /ft.): N/A

Approximate drainage area above the most downstream transect from USGS map or county highway map (square miles): N/A

Length of stream evaluated (ft): N/A

Number of lateral transects made: N/A

Average stream width (ft): N/A

Average stream depth (ft): N/A

Average stream velocity (ft/sec): N/A

Instantaneous stream flow ($ft^3$/sec): N/A

Indicate flow measurement method (VERY IMPORTANT – type of meter, floating chip timed over a fixed distance, etc.): N/A

Flow fluctuations (i.e., minor, moderate, or severe): N/A

Size of pools (i.e., large, small, moderate, or none): N/A

Maximum pool depth (ft): N/A

Total number of stream bends: N/A

Number well defined: N/A

Number moderately defined: N/A

Number poorly defined: N/A

Total number of riffles: N/A

# Attachment

# SPIF

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

## FOR AGENCIES REVIEWING DOMESTIC OR INDUSTRIAL TPDES WASTEWATER PERMIT APPLICATIONS

**TCEQ USE ONLY:**

Application type: ____Renewal ____Major Amendment ____Minor Amendment ____New

County: _____ Segment Number: _____

Admin Complete Date: _____

Agency Receiving SPIF:

_____ Texas Historical Commission _____ U.S. Fish and Wildlife

_____ Texas Parks and Wildlife Department _____ U.S. Army Corps of Engineers

**This form applies to TPDES permit applications only.** (Instructions, Page 53)

Complete this form as a separate document. TCEQ will mail a copy to each agency as required by our agreement with EPA. If any of the items are not completely addressed or further information is needed, we will contact you to provide the information before issuing the permit. Address each item completely.

**Do not refer to your response to any item in the permit application form**. Provide each attachment for this form separately from the Administrative Report of the application. The application will not be declared administratively complete without this SPIF form being completed in its entirety including all attachments. Questions or comments concerning this form may be directed to the Water Quality Division's Application Review and Processing Team by email at WQ-ARPTeam@tceq.texas.gov or by phone at (512) 239-4671.

The following applies to all applications:

1. Permittee: Port of Corpus Christi Authority of Nueces County

   Permit No. WQ00 N/A EPA ID No. TX N/A

   Address of the project (or a location description that includes street/highway, city/vicinity, and county):

   225 Hwy 361 - The proposed desalination facility is located on Harbor Island, east of HWY 361 in Port Aransas, Nueces County, Texas. From the intersection of HWY 361 and Harbor Island Drive, head south approximately 0.8 miles, the facility is to the east of the highway.

Provide the name, address, phone and fax number of an individual that can be contacted to answer specific questions about the property.

Prefix (Mr., Ms., Miss): Ms.

First and Last Name: Sarah Garza

Credential (P.E, P.G., Ph.D., etc.): N/A

Title: Director of Environmental Planning & Compliance

Mailing Address: 400 Charles Zahn, Jr. Dr.

City, State, Zip Code: Corpus Christi, TX, 78401

Phone No.: (361) 885-6163 Ext.: N/A Fax No.: N/A

E-mail Address: sarah@pocca.com

2. List the county in which the facility is located: Nueces
3. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property.

N/A

4. Provide a description of the effluent discharge route. The discharge route must follow the flow of effluent from the point of discharge to the nearest major watercourse (from the point of discharge to a classified segment as defined in 30 TAC Chapter 307). If known, please identify the classified segment number.

The effluent discharge route begins at the effluent pump station at the Harbor Island (HI) desalination facility (facility). From this point, it will travel through an 84" discharge pipe to the northeast side of HI where it will transition into a 12' diameter effluent pipe, tunneled underneath the Aransas Pass Channel, Lydia Ann Channel, and San Jose Island at an approximate depth of -65' mean lower low water (MLLW). The effluent will travel approximately 1.8 miles offshore into the Gulf and resurface at approximately 27.848836°N, -97.009531°W, and above the seabed at -37' MLLW.

5. Please provide a separate 7.5-minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. Please highlight the discharge route from the point of discharge for a distance of one mile downstream. (This map is required in addition to the map in the administrative report).

Provide original photographs of any structures 50 years or older on the property.

Does your project involve any of the following? Check all that apply.

☐ Proposed access roads, utility lines, construction easements

☐ Visual effects that could damage or detract from a historic property's integrity

☐ Vibration effects during construction or as a result of project design

☒ Additional phases of development that are planned for the future

☐ Sealing caves, fractures, sinkholes, other karst features

☒ Disturbance of vegetation or wetlands

1. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features):

The Project is designed to avoid and minimize impacts by using trenchless tunneling to construct the effluent pipe. A 12 foot tunnel will be constructed approximately -65 feet mean lower low water (MLLW) below the Aransas and Lydia Ann Channels, San Jose Island, and the Gulf seafloor. The Project will result in unavoidable impacts to the Gulf seafloor from construction of the outfall diffuser, which will impact approximately 55,000 square feet of seafloor through the placement of approximately 500 cubic yards of stone.

2. Describe existing disturbances, vegetation, and land use:

The property is the former site of a petroleum tank farm. Currently, the site is vacant and covered with intermittent natural vegetation.

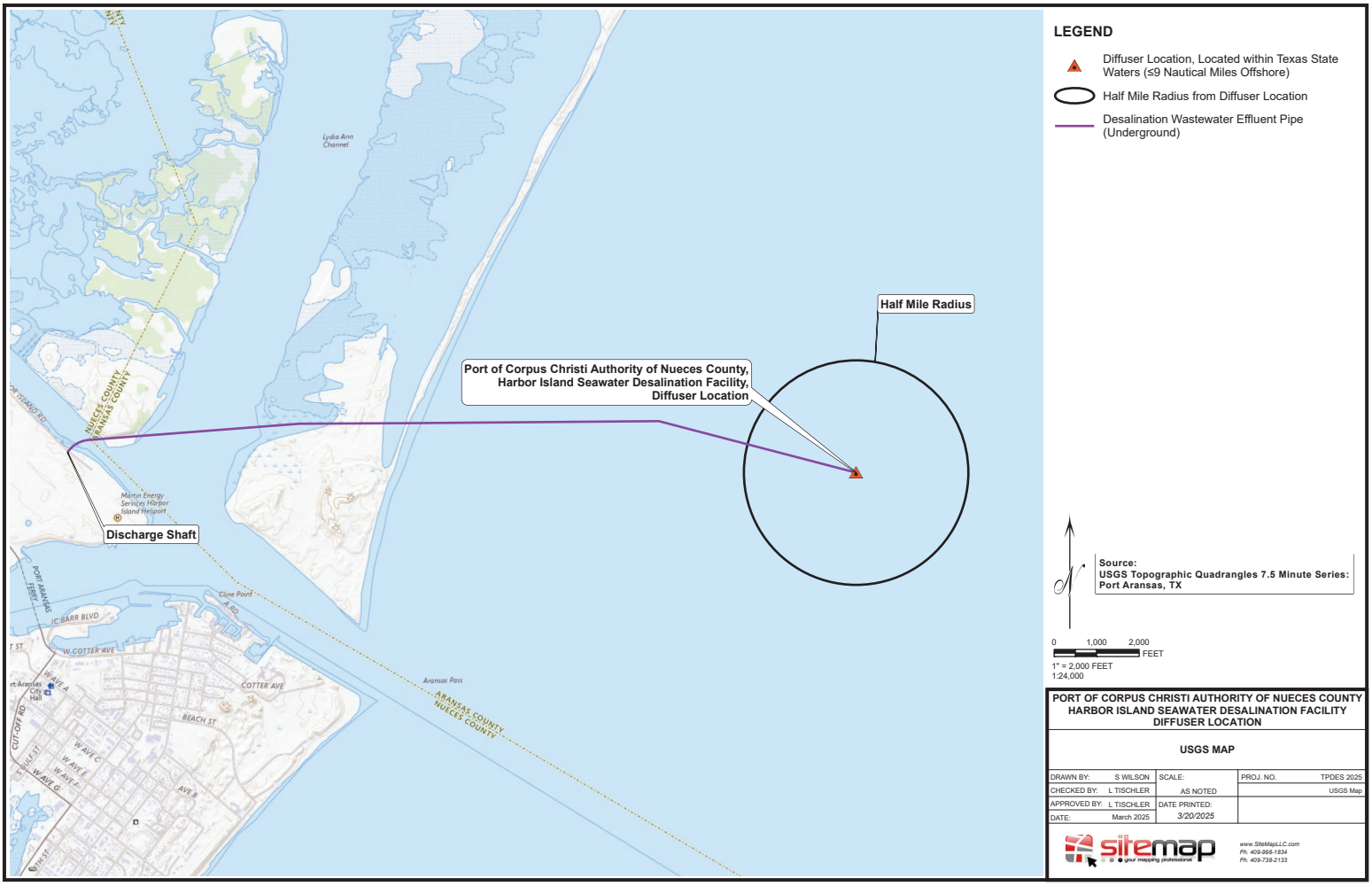
THE FOLLOWING ITEMS APPLY ONLY TO APPLICATIONS FOR NEW TPDES PERMITS AND MAJOR AMENDMENTS TO TPDES PERMITS

3. List construction dates of all buildings and structures on the property:

N/A - There are no buildings on the upland Harbor Island property or in the Gulf.

4. Provide a brief history of the property, and name of the architect/builder, if known.

The property is the location of the former Atofina and Exxon Pipeline Tank Terminals. The tank farms were removed many years ago, and now the property is vacant with no current development.




**LEGEND**

- Diffuser Location, Located within Texas State Waters (≤9 Nautical Miles Offshore)
- Half Mile Radius from Diffuser Location
- Desalination Wastewater Effluent Pipe (Underground)

**Source:**
**USGS Topographic Quadrangles 7.5 Minute Series:**
**Port Aransas, TX**

0 1,000 2,000 FEET

1" = 2,000 FEET
1:24,000

**PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY**
**HARBOR ISLAND SEAWATER DESALINATION FACILITY**
**DIFFUSER LOCATION**

**USGS MAP**

| | | | |
|---|---|---|---|
| DRAWN BY: | S WILSON | SCALE: | PROJ. NO. TPDES 2025 |
| CHECKED BY: | L TISCHLER | AS NOTED | USGS Map |
| APPROVED BY: | L TISCHLER | DATE PRINTED: | |
| DATE: | March 2025 | 3/20/2025 | |

sitemap your mapping professional
www.SiteMapLLC.com
Ph. 409-998-1834
Ph. 409-738-2133

J:\Proj\Port of Corpus Christi\Harbor Island Seawater Desalination Facility\TPDES 2025\GIS.aprx

# Attachment A – 1

# Copy of Application Fee Payment

**From:** steers@tceq.texas.gov
**To:** Dives-Gomez, Yvonne
**Subject:** TCEQ ePay Receipt for 582EA000661467
**Date:** Friday, March 28, 2025 11:17:55 AM

**[EXTERNAL EMAIL]** CAUTION: This email originated from outside Port of Corpus. Exercise caution when opening attachments or clicking links. Please forward any suspicious content to IT Helpdesk.

This is an automated message from the TCEQ ePay system. Please do not reply.
Trace Number: 582EA000661467
Date: 03/28/2025 11:17 AM
Payment Method: CC - Authorization 0000029642
TCEQ Amount: $350.00
Texas.gov Price: $358.13*

* This service is provided by Texas.gov, the official website of Texas. The price of this service includes funds that support the ongoing operations and enhancements of Texas.gov, which is provided by a third party in partnership with the State.

Actor: YVONNE DIVES-GOMEZ
Email: ydives-gomez@pocca.com

Payment Contact: YVONNE DIVES-GOMEZ
Phone: 361-885-6606
Company: PORT OF CORPUS CHRISTI AUTHORITY
Address: 400 CHARLES ZAHN JR DRIVE, CORPUS CHRISTI, TX 78401

Fees Paid:
Fee Description AR Number Amount
WW PERMIT - MINOR FACILITY NOT SUBJECT TO 40 CFR 400-471 - NEW $300.00
30 TAC 305.53B WQ NOTIFICATION FEE $50.00
---
TCEQ Amount: $350.00

==========

Voucher: 759774
Trace Number: 582EA000661467
Date: 03/28/2025 11:17 AM
Payment Method: CC - Authorization 0000029642
Voucher Amount: $300.00
Fee Paid: WW PERMIT - MINOR FACILITY NOT SUBJECT TO 40 CFR 400-471 - NEW
Site Name: HARBOR ISLAND DESALINATION FACILITY
Site Location: THE PROPOSED DESALINATION FACILITY IS LOCATED ON HARBOR ISLAND EAST OF HWY 361 I
CN Number: CN600885248
Customer Name: PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY
Customer Address: 400 CHARLES ZAHN JR DRIVE, CORPUS CHRISTI, TX 78401
---
Voucher: 759775
Trace Number: 582EA000661467
Date: 03/28/2025 11:17 AM
Payment Method: CC - Authorization 0000029642
Voucher Amount: $50.00
Fee Paid: 30 TAC 305.53B WQ NOTIFICATION FEE
---

==========

To print out a copy of the receipt and vouchers for this transaction
either click on or copy and paste the following url into your browser:
https://www3.tceq.texas.gov/epay/index.cfm?fuseaction=cor.search&trace_num_txt=582EA000661467.

This e-mail transmission and any attachments are believed to have been sent free of any virus or other defect that might affect any computer system into which it is received and opened. It is, however, the recipient's responsibility to ensure that the e-mail transmission and any attachments are virus free, and the sender accepts no responsibility for any damage that may in any way arise from their use.

**Transaction Information**

**Voucher Number:** 759774
**Trace Number:** 582EA000661467
**Date:** 03/28/2025 11:17 AM
**Payment Method:** CC - Authorization 0000029642
**Voucher Amount:** $300.00
**Fee Type:** WW PERMIT - MINOR FACILITY NOT SUBJECT TO 40 CFR 400-471 - NEW
**ePay Actor:** YVONNE DIVES-GOMEZ
**Actor Email:** ydives-gomez@pocca.com
**IP:** 64.183.208.115

**Payment Contact Information**

**Name:** YVONNE DIVES-GOMEZ
**Company:** PORT OF CORPUS CHRISTI AUTHORITY
**Address:** 400 CHARLES ZAHN JR DRIVE, CORPUS CHRISTI, TX 78401
**Phone:** 361-885-6606

**Site Information**

**Site Name:** HARBOR ISLAND DESALINATION FACILITY
**Site Location:** THE PROPOSED DESALINATION FACILITY IS LOCATED ON HARBOR ISLAND EAST OF HWY 361
I

**Customer Information**

**CN:** CN600885248
**Customer Name:** PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY
**Customer Address:** 400 CHARLES ZAHN JR DRIVE, CORPUS CHRISTI, TX 78401

**Transaction Information**

**Voucher Number:** 759775
**Trace Number:** 582EA000661467
**Date:** 03/28/2025 11:17 AM
**Payment Method:** CC - Authorization 0000029642
**Voucher Amount:** $50.00
**Fee Type:** 30 TAC 305.53B WQ NOTIFICATION FEE
**ePay Actor:** YVONNE DIVES-GOMEZ
**Actor Email:** ydives-gomez@pocca.com
**IP:** 64.183.208.115

**Payment Contact Information**

**Name:** YVONNE DIVES-GOMEZ
**Company:** PORT OF CORPUS CHRISTI AUTHORITY
**Address:** 400 CHARLES ZAHN JR DRIVE, CORPUS CHRISTI, TX 78401
**Phone:** 361-885-6606

# Attachments A – 2

# Core Data Form

TCEQ Use Only

# TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

**1. Reason for Submission** (*If other is checked please describe in space provided.*)

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

| **2. Customer Reference Number** *(if issued)* | Follow this link to search for CN or RN numbers in Central Registry** | **3. Regulated Entity Reference Number** *(if issued)* |
|---|---|---|
| **CN 600885248** | | **RN 105622112** |

## SECTION II: Customer Information

**4. General Customer Information** | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

***The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).***

**6. Customer Legal Name** *(If an individual, print last name first: eg: Doe, John)* — *If new Customer, enter previous Customer below:*

Port of Corpus Chrisit Authority of Nueces County

| **7. TX SOS/CPA Filing Number** | **8. TX State Tax ID** (11 digits) | **9. Federal Tax ID** (9 digits) | **10. DUNS Number** *(if applicable)* |
|---|---|---|---|
| N/A | 746000609 | N/A | 063069835 |

**11. Type of Customer:** ☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☒ Other ☐ Sole Proprietorship ☐ Other:

**12. Number of Employees**
☐ 0-20 ☐ 21-100 ☐ 101-250 ☒ 251-500 ☐ 501 and higher

**13. Independently Owned and Operated?**
☒ **Yes** ☐ **No**

**14. Customer Role** (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☒ Owner ☐ Operator ☐ Owner & Operator ☐ Other:
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

**15. Mailing Address:**

Port of Corpus Christi Authority of Nueces County
400 Charles Zahn, Jr. Drive

| **City** | Corpus Christi | **State** | TX | **ZIP** | 78401 | **ZIP + 4** | |
|---|---|---|---|---|---|---|---|

| **16. Country Mailing Information** *(if outside USA)* | **17. E-Mail Address** *(if applicable)* |
|---|---|
| N/A | sarah@pocca.com |

| 18. Telephone Number | 19. Extension or Code | 20. Fax Number *(if applicable)* |
|---|---|---|
| ( 361 ) 885-6163 | | ( ) - |

## SECTION III: Regulated Entity Information

**21. General Regulated Entity Information** *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

***The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).***

**22. Regulated Entity Name** *(Enter name of the site where the regulated action is taking place.)*

Harbor Island Desalination Facility

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **23. Street Address of the Regulated Entity:** ***(No PO Boxes)*** | 225 Hwy 361 | | | | | | | |
| | | | | | | | | |
| | **City** | Port Aransas | **State** | TX | **ZIP** | 78373 | **ZIP + 4** | |
| **24. County** | Nueces | | | | | | | |

**If no Street Address is provided, fields 25-28 are required.**

| | |
|---|---|
| **25. Description to Physical Location:** | The proposed desalination facility is located on Harbor Island, east of HWY 361 in Port Aransas, Nueces County, Texas. From the intersection of HWY 361 and Harbor Island Drive, head south approximately 0.8 miles, the facility is to the east of the highway. |

| 26. Nearest City | State | Nearest ZIP Code |
|---|---|---|
| Port Aransas | TX | 78373 |

***Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).***

| 27. Latitude (N) In Decimal: | 27.848611 | | 28. Longitude (W) In Decimal: | -97.072778 | |
|---|---|---|---|---|---|
| Degrees | Minutes | Seconds | Degrees | Minutes | Seconds |
| 27 | 50 | 55 | 97 | 04 | 22 |

| 29. Primary SIC Code (4 digits) | 30. Secondary SIC Code (4 digits) | 31. Primary NAICS Code (5 or 6 digits) | 32. Secondary NAICS Code (5 or 6 digits) |
|---|---|---|---|
| 4491 | | | |

**33. What is the Primary Business of this entity?** *(Do not repeat the SIC or NAICS description.)*

loading/unloading cargo to\from vessels

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **34. Mailing Address:** | **400 Charles Zahn, Jr. Dr.** | | | | | | | |
| | | | | | | | | |
| | **City** | **Corpus Christi** | **State** | **TX** | **ZIP** | **78401** | **ZIP + 4** | |
| **35. E-Mail Address:** | **sarah@pocca.com** | | | | | | | |

| 36. Telephone Number | 37. Extension or Code | 38. Fax Number *(if applicable)* |
|---|---|---|
| **( 361 ) 885-6163** | | ( ) - |

**39. TCEQ Programs and ID Numbers** Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

| | | | | |
|---|---|---|---|---|
| ☐ Dam Safety | ☐ Districts | ☐ Edwards Aquifer | ☐ Emissions Inventory Air | ☐ Industrial Hazardous Waste |
| | | | | |
| ☐ Municipal Solid Waste | ☐ New Source Review Air | ☐ OSSF | ☐ Petroleum Storage Tank | ☐ PWS |
| | | | | |
| ☐ Sludge | ☐ Storm Water | ☐ Title V Air | ☐ Tires | ☐ Used Oil |
| | | | | |
| ☐ Voluntary Cleanup | ☒ Wastewater | ☐ Wastewater Agriculture | ☐ Water Rights | ☐ Other: |
| | | | | |

## SECTION IV: Preparer Information

| 40. Name: | Sarah Garza | 41. Title: | Dir. Env. Planning & Compliance |
|---|---|---|---|

| 42. Telephone Number | 43. Ext./Code | 44. Fax Number | 45. E-Mail Address |
|---|---|---|---|
| (361) 885-6163 | | ( ) - | sarah@pocca.com |

## SECTION V: Authorized Signature

**46.** By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

| Company: | Port of Corpus Christi Authority of Nueces County | Job Title: | Director of Environmental Planning & Compliance |
|---|---|---|---|
| Name *(In Print)*: | Sarah Garza | Phone: | (361) 885- 6163 |
| Signature: | [signature] | Date: | 3/31/2025 |

# Attachment A – 3

# Plain Language Summary

105622112

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# SUMMARY OF APPLICATION IN PLAIN LANGUAGE FOR TPDES OR TLAP PERMIT APPLICATIONS

## Summary of Application (in plain language) Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

Applicants should use this template to develop a plain language summary of your facility and application as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. You may modify the template as necessary to accurately describe your facility as long as the summary includes the following information: (1) the function of the proposed plant or facility; (2) the expected output of the proposed plant or facility; (3) the expected pollutants that may be emitted or discharged by the proposed plant or facility; and (4) how you will control those pollutants, so that the proposed plant will not have an adverse impact on human health or the environment.

Fill in the highlighted areas below to describe your facility and application in plain language. Instructions and examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements. After filling in the information for your facility delete these instructions.

If you are subject to the alternative language notice requirements in 30 TAC Section 39.426, **you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package**. For your convenience, a Spanish template has been provided below.

**ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS INDUSTRIAL WASTEWATER/STORMWATER**

*The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 TAC Chapter 39. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.*

Port of Corpus Christi Authority of Nueces County (CN600885248) proposes to operate the Harbor Island Desalination Facility (RN105622112), a Seawater Desalination Facility. The facility will be located at 225 Hwy 361, in Port Aransas, Nueces County, Texas 78373. This is an application to authorize the discharge of water from seawater pretreatment and reverse osmosis reject water (brine) to the Gulf of Mexico/America. Discharges from the facility are expected to contain suspended solids and seawater salts – primarily salts of sodium, calcium, magnesium, potassium, chloride, and sulfate . The influent seawater will be treated by clarification and filtration pretreatment followed by reverse osmosis treatment that produces freshwater for sale to customers.

**PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS DE TPDES o TLAP**

**AGUAS RESIDUALES** INDUSTRIALES **/AGUAS PLUVIALES**

*El siguiente resumen se proporciona para esta solicitud de permiso de calidad del agua pendiente que está siendo revisada por la Comisión de Calidad Ambiental de Texas según lo requerido por el Capítulo 39 del Código Administrativo de Texas 30. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no es una representación ejecutiva fedérale de la solicitud de permiso.*

La Autoridad del Puerto de Corpus Christi del condado de Nueces (CN600885248) propone operar Harbor Island Instalación de desalinización (RN105622112), una Instalación de desalinización de agua de mar. La instalación estará ubicada en 225 Hwy 361, en Port Aransas, Condado de Nueces, Texas 78373. Esta es una solicitud para autorizar la descarga de agua de mar pretratada y agua de rechazo de ósmosis inversa (salmuera) al Golfo de México/América. Se espera que las descargas de la instalación contengan sólidos en suspensión y sales de agua de mar, principalmente sales de sodio, calcio, magnesio, potasio, cloruro y sulfato. Salmuera de agua de mar . estará tratado por pretratamientos de clarificación y filtración, y ósmosis inversa que produce agua dulce para la venta a los clientes.

## INSTRUCTIONS

1. Enter the name of applicant in this section. The applicant name should match the name associated with the customer number.
2. Enter the Customer Number in this section. Each Individual or Organization is issued a unique 11-digit identification number called a CN (e.g. CN123456789).
3. Choose “operates” in this section for existing facility applications or choose “proposes to operate” for new facility applications.
4. Enter the name of the facility in this section. The facility name should match the name associated with the regulated entity number.
5. Enter the Regulated Entity number in this section. Each site location is issued a unique 11-digit identification number called an RN (e.g. RN123456789).
6. Choose the appropriate article (a or an) to complete the sentence.
7. Enter a description of the facility in this section. For example: steam electric generating facility, nitrogenous fertilizer manufacturing facility, etc.
8. Choose “is” for an existing facility or “will be” for a new facility.
9. Enter the location of the facility in this section.
10. Enter the City nearest the facility in this section.
11. Enter the County nearest the facility in this section.
12. Enter the zip code for the facility address in this section.
13. Enter a summary of the application request in this section. For example: renewal to discharge 25,000 gallons per day of treated domestic wastewater, new application to discharge process wastewater and stormwater on an intermittent and flow-variable basis, or major amendment to reduce monitoring frequency for pH, etc. If more than one outfall is included in the application, provide applicable information for each individual outfall.
14. List all pollutants expected in the discharge from this facility in this section. If applicable, refer to the pollutants from any federal numeric effluent limitations that apply to your facility.
15. Enter the discharge types from your facility in this section (e.g., stormwater, process wastewater, once through cooling water, etc.)
16. Choose the appropriate verb tense to complete the sentence.
17. Enter a description of the wastewater treatment used at your facility. Include a description of each process, starting with initial treatment and finishing with the outfall/point of disposal. Use additional lines for individual discharge types if necessary.

Questions or comments concerning this form may be directed to the Water Quality Division’s Application Review and Processing Team by email at WQ-ARPTeam@tceq.texas.gov or by phone at (512) 239-4671.

**Example 1: Industrial Wastewater TPDES Application (ENGLISH)**

*The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 TAC Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.*

ABC Corporation (CN600000000) operates the Starr Power Station (RN10000000000), a two-unit gas-fired electric generating facility. Unit 1 has a generating capacity of 393 megawatts (MWs) and Unit 2 has a generating capacity of 528 MWs. The facility is located at 1356 Starr Street, near the City of Austin, Travis County, Texas 78753.

This application is for a renewal to discharge 870,000,000 gallons per day of once through cooling water, auxiliary cooling water, and also authorizes the following waste streams monitored inside the facility (internal outfalls) before it is mixed with the other wastewaters authorized for discharge via main Outfall 001, referred to as "previously monitored effluents" (low-volume wastewater, metal-cleaning waste, and stormwater (from diked oil storage area yards and storm drains)) via Outfall 001. Low-volume waste sources, metal-cleaning waste, and stormwater drains on a continuous and flow-variable basis via internal Outfall 101.

The discharge of once through cooling water via Outfall 001 and low-volume waste and metal-cleaning waste via Outfall 101 from this facility is subject to federal effluent limitation guidelines at 40 CFR Part 423. The pollutants expected from these discharges based on 40 CFR Part 423 are: free available chlorine, total residual chlorine, total suspended solids, oil and grease, total iron, total copper, and pH. Temperature is also expected from these discharges. Additional potential pollutants are included in the Industrial Wastewater Application Technical Report, Worksheet 2.0.

Cooling water and boiler make-up water are supplied by Lake Starr Reservoir. The City of Austin municipal water plant (CN600000000, PWS 00000) supplies the facility's potable water and serves as an alternate source of boiler make-up water. Water from the Lake Starr Reservoir is withdrawn at the intake structure and treated with sodium hypochlorite to prevent biofouling and sodium bromide as a chlorine enhancer to improve efficacy and then passed through condensers and auxiliary equipment on a once-through basis to cool equipment and condense exhaust steam.

Low-volume wastewater from blowdown of boiler Units 1 and 2 and metal-cleaning wastes receive no treatment prior to discharge via Outfall 101. Plant floor and equipment drains and stormwater runoff from diked oil storage areas, yards, and storm drains are routed through an oil and water separator prior to discharge via Outfall 101. Domestic wastewater, blowdown, and backwash water from the service water filter, clarifier, and sand filter are routed to the Starr Creek Domestic Sewage Treatment Plant, TPDES Permit No. WQ0010000001, for treatment and disposal. Metal-cleaning waste from equipment cleaning is generally disposed of off-site.

**Example 2: Domestic Wastewater TPDES Renewal application**

*The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.*

The City of Texas (CN000000000) operates the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the complete mix mode. The facility is located at 123 Texas Street, near the City of More Texas, Texas County, Texas 71234.

This application is for a renewal to discharge at an annual average flow of 1,200,000 gallons per day of treated domestic wastewater via Outfalls 001 and 002.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand ($CBOD_5$), total suspended solids (TSS), ammonia nitrogen ($NH_3$-N), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent and Domestic Worksheet 4.0 in the permit application package. Domestic wastewater is treated by an activated sludge process plant and the treatment units include a bar screen, a grit chamber, aeration basins, final clarifiers, sludge digesters, a belt filter press, chlorine contact chambers and a dechlorination chamber.

**Example 3: Domestic Wastewater TPDES New Application**

*The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.*

The City of Texas (CN000000000) proposes to operate the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the extended aeration mode. The facility will be located at 123 Texas Street, in the City of More Texas, Texas County, Texas 71234.

This application is for a new application to discharge at a daily average flow of 200,000 gallons per day of treated domestic wastewater.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand ($CBOD_5$), total suspended solids (TSS), ammonia nitrogen ($NH_3$-N), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent in the permit application package. Domestic wastewater will be treated by an activated sludge process plant and the treatment units will include a bar screen, a grit chamber, aeration basins, final clarifiers, sludge digesters, a belt filter press, chlorine contact chambers and a dechlorination chamber.

**Example 4: Domestic Wastewater TLAP Renewal application**

*The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations*

*of the permit application.*

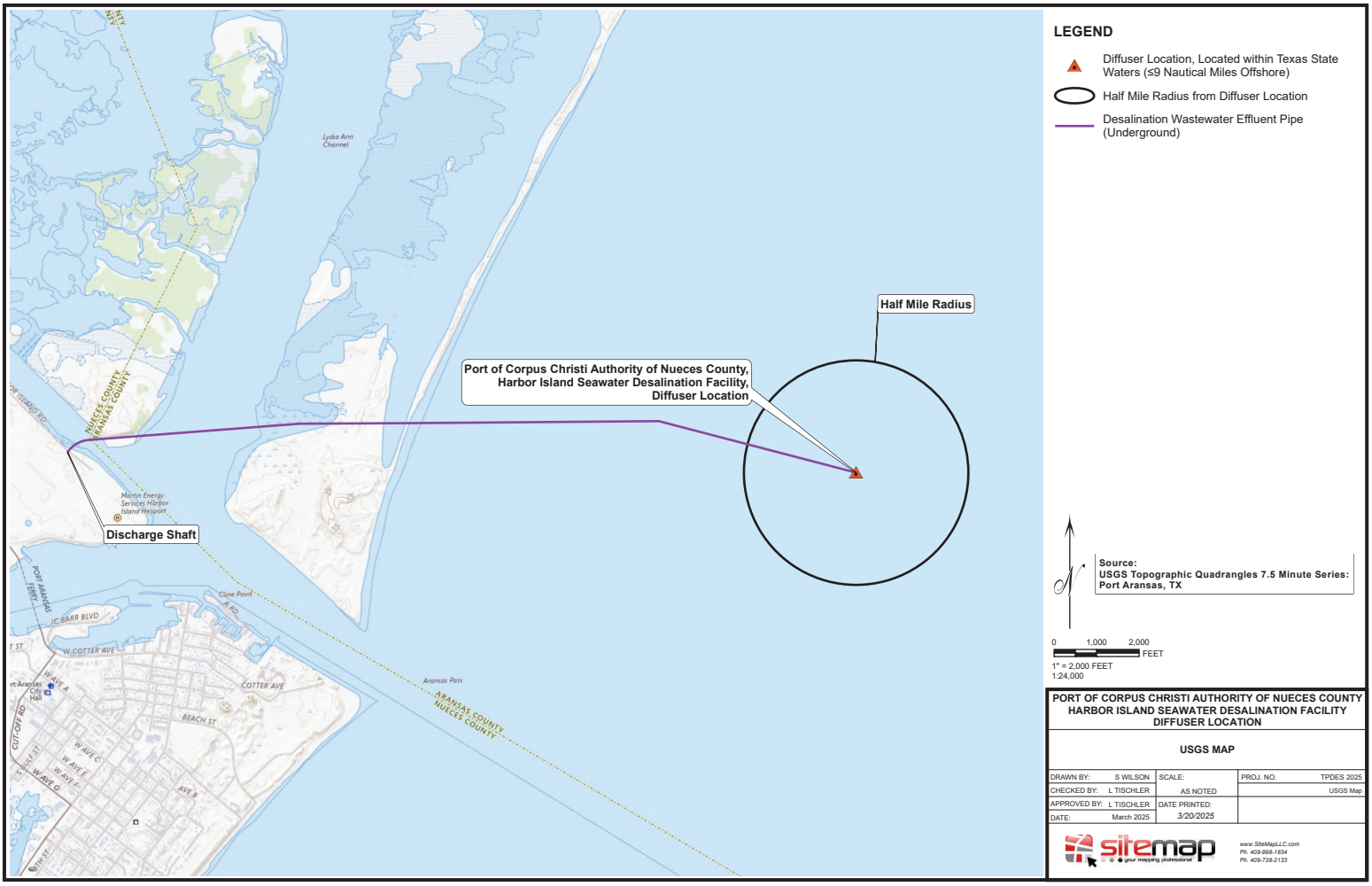
The City of Texas (CN000000000) operates the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the complete mix mode. The facility is located at 123 Texas Street, near the City of More Texas, Texas County, Texas 71234.

This application is for a renewal to dispose a daily average flow not to exceed 76,500 gallons per day of treated domestic wastewater via public access subsurface drip irrigation system with a minimum area of 32 acres. This permit will not authorize a discharge of pollutants into water in the state.

Land application of domestic wastewater from the facility are expected to contain five-day biochemical oxygen demand ($BOD_5$), total suspended solids (TSS), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent in the permit application package. Domestic wastewater is treated by an activated sludge process plant and the treatment units include a bar screen, an equalization basin, an aeration basin, a final clarifier, an aerobic sludge digester, tertiary filters, and a chlorine contact chamber. In addition, the facility includes a temporary storage that equals to at least three days of the daily average flow.

# Attachment A – 4

# USGS Map




**LEGEND**

- Diffuser Location, Located within Texas State Waters (≤9 Nautical Miles Offshore)
- Half Mile Radius from Diffuser Location
- Desalination Wastewater Effluent Pipe (Underground)

**Source:**
**USGS Topographic Quadrangles 7.5 Minute Series:**
**Port Aransas, TX**

0 1,000 2,000 FEET

1" = 2,000 FEET
1:24,000

**PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY**
**HARBOR ISLAND SEAWATER DESALINATION FACILITY**
**DIFFUSER LOCATION**

**USGS MAP**

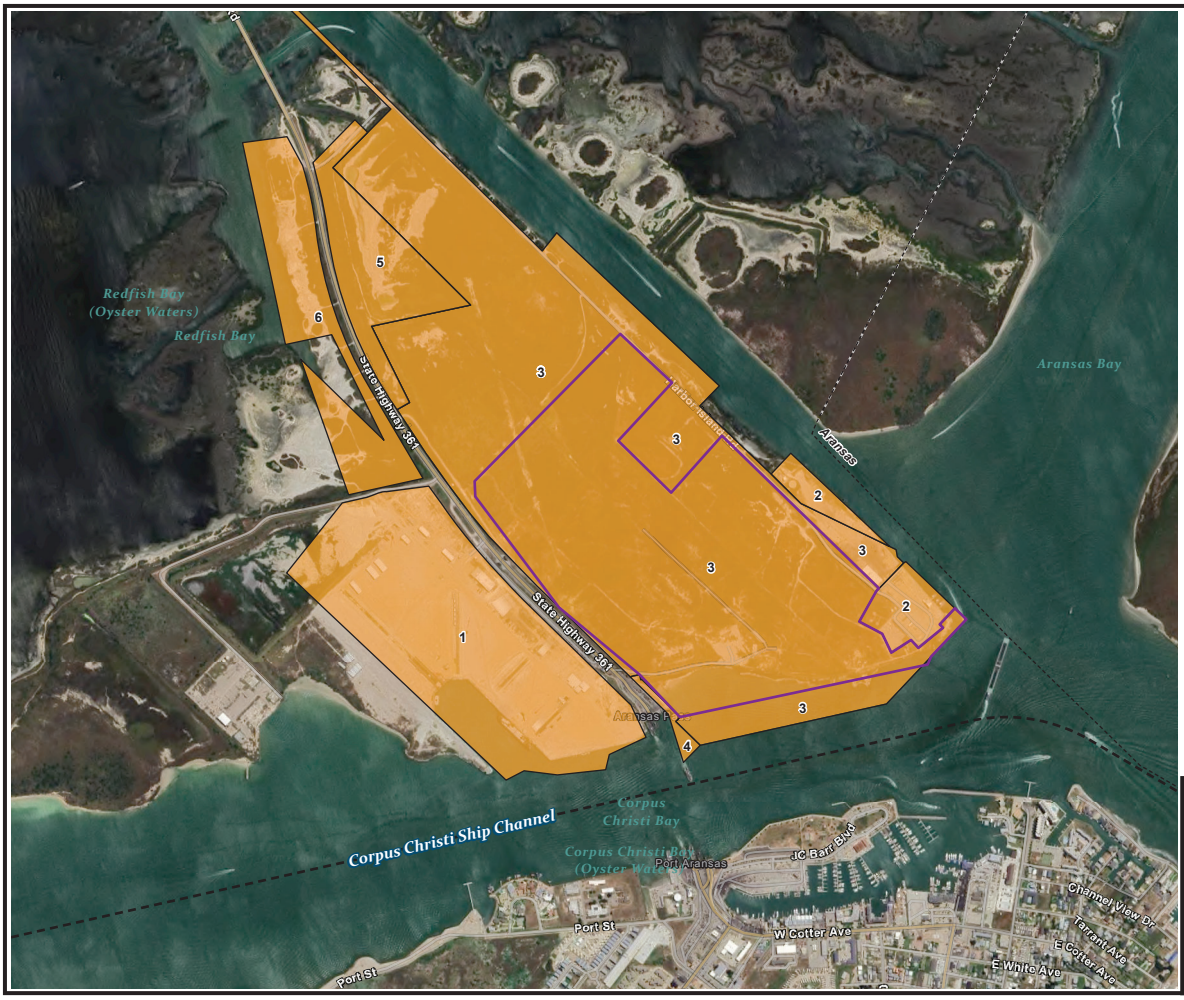
| | | | |
|---|---|---|---|
| DRAWN BY: | S WILSON | SCALE: | PROJ. NO. TPDES 2025 |
| CHECKED BY: | L TISCHLER | AS NOTED | USGS Map |
| APPROVED BY: | L TISCHLER | DATE PRINTED: | |
| DATE: | March 2025 | 3/20/2025 | |

sitemap your mapping professional
www.SiteMapLLC.com
Ph. 409-998-1834
Ph. 409-738-2133

J:\Proj\Port of Corpus Christi\Harbor Island Seawater Desalination Facility\TPDES 2025\GIS.aprx

# Attachment A – 5

# Adjacent Landowner Map




## LEGEND

- Facilty Boundary
- 1 Adjacent Landowners

**Adjacent Landowner Source:**
**Nueces County Appraisal District GIS Data and Port of Corpus Christi Authority Provided Data**

0 500 1,000 FEET

1" = 1,000 FEET
1:12,000

# PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY
# HARBOR ISLAND SEAWATER DESALINATION FACILITY

## ADJACENT LANDOWNER MAP

| | | | |
|---|---|---|---|
| DRAWN BY: | S WILSON | SCALE: | PROJ. NO. TPDES 2025 |
| CHECKED BY: | L TISCHLER | AS NOTED | Adjacent Landowner Map |
| APPROVED BY: | L TISCHLER | DATE PRINTED: | |
| DATE: | March 2025 | 3/28/2025 | |

sitemap your mapping professional
www.SiteMapLLC.com
Ph. 409-998-1834
Ph. 409-738-2133

J:\Prj\Port of Corpus Christi\Harbor Island Seawater Desalination Facility\TPDES 2025\GIS.aprx

# Attachment A – 5-1

# Adjacent Landowner List

| MAP ID | OWNER NAME | ADDRESS | CITY | STATE | ZIP CODE |
|---|---|---|---|---|---|
| 1 | ERF PORT ARANSAS INC | 555 N Carancahua St #700 | CORPUS CHRISTI | TX | 78401 |
| 2 | MARTIN OPERATING PARTNERSHIP LP | 4900 STONE RD | KILGORE | TX | 75662 |
| 3 | PORT OF CORPUS CHRISTI AUTH | P O BOX 1541 | CORPUS CHRISTI | TX | 78403 |
| 4 | STATE OF TEXAS | PO Box 12608 | AUSTIN | TX | 78711 |
| 5 | TEXAS DEPARTMENT OF TRANSPORTATION | 1701 S PADRE ISLAND DR | CORPUS CHRISTI | TX | 78403 |
| 6 | TEXAS GENERAL LAND OFFICE | 1700 CONGRESS AVE | AUSTIN | TX | 78701 |

# Attachment A – 5-2

# Adjacent Landowner Mailing Labels (on CD)

ERF PORT ARANSAS INC
555 N CARANCAHUA ST #700
CORPUS CHRISTI TX 78401

MARTIN OPERATING PARTNERSHIP LP
4900 STONE RD
KILGORE TX 75662

TEXAS DEPARTMENT OF TRANSPORTATION
1701 S PADRE ISLAND DR
CORPUS CHRISTI TX 78403

PORT OF CORPUS CHRISTI AUTH
PO BOX 1541
CORPUS CHRISTI TX 78403

STATE OF TEXAS
PO BOX 12608
AUSTIN TX 78711

TEXAS GENERAL LAND OFFICE
1700 CONGRESS AVE
AUSTIN TX 78701

# Attachment

# Public Involvement Plan Form

Texas Commission on Environmental Quality

# Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

## Section 1. Preliminary Screening

☒ New Permit or Registration Application

☐ New Activity – modification, registration, amendment, facility, etc. (see instructions)

**If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.**

## Section 2. Secondary Screening

☒ Requires public notice,

☒ Considered to have significant public interest, **and**

☐ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

**If all the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2 and submit the form.**

☒ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

The Port of Corpus Christi Authority's application and proposed discharge is located 1.8 miles offshore in the Gulf of Mexico/America (Gulf) and does not fall within one of the specific geographic locations listed above. Additionally, because of the distance of the proposed discharge in the Gulf, a case-by-case review of the location supported a conclusion under the Secondary Screening that a Public Involvement Plan is not applicable to this application.

## Section 3. Application Information

**Type of Application (check all that apply):**

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V

Waste ☐ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire
☐ Radioactive Material Licensing ☐ Underground Injection Control

Water Quality

☐ Texas Pollutant Discharge Elimination System (TPDES)

- ☐ Texas Land Application Permit (TLAP)
- ☐ State Only Concentrated Animal Feeding Operation (CAFO)
- ☐ Water Treatment Plant Residuals Disposal Permit

☐ Class B Biosolids Land Application Permit

☐ Domestic Septage Land Application Registration

Water Rights New Permit

☐ New Appropriation of Water

☐ New or existing reservoir

Amendment to an Existing Water Right

☐ Add a New Appropriation of Water

☐ Add a New or Existing Reservoir

☐ Major Amendment that could affect other water rights or the environment

## Section 4. Plain Language Summary

Provide a brief description of planned activities.

## Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

**Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.**

(City)

(County)

(Census Tract)
Please indicate which of these three is the level used for gathering the following information.

☐ City ☐ County ☐ Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

(b) Per capita income for population near the specified location

(c) Percent of minority population and percent of population by race within the specified location

(d) Percent of Linguistically Isolated Households by language within the specified location

(e) Languages commonly spoken in area by percentage

(f) Community and/or Stakeholder Groups

(g) Historic public interest or involvement

## Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☐ Yes ☐ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☐ No

If Yes, please describe.

**If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.**

(c) Will you provide notice of this application in alternative languages?

☐ Yes ☐ No

**Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.**

If yes, how will you provide notice in alternative languages?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☐ Yes ☐ No

(e) If a public meeting is held, will a translator be provided if requested?

☐ Yes ☐ No

(f) Hard copies of the application will be available at the following (check all that apply):

☐ TCEQ Regional Office ☐ TCEQ Central Office

☐ Public Place (specify)

## Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☐ Yes ☐ No

What types of notice will be provided?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

# Attachment T-1

# Technical Report

**ATTACHMENT T-1**
**TECHNICAL REPORT**

The Port of Corpus Christi Authority of Nueces County, Texas (PCCA) intends to construct a desalination facility (the "Facility") on Harbor Island to produce reliable wholesale water for the Coastal Bend region beyond its current freshwater sources. Lake Corpus Christi, Choke Canyon Reservoir, Lake Texana and the Colorado River currently provide raw water to the region. Recent droughts with increased water demand have emphasized the continued need to find additional drought-proof water sources for the Coastal Bend region. PCCA has requested authorization to divert up to 350,000 acre-ft/year (maximum diversion rate of 217,000 gallons/minute (gpm)) of State Water from the Gulf of Mexico ('State Water') to the Facility to produce 100 million gallons per day (MGD) (112,000 acre-ft/year) of desalinated product water. Product water will be distributed on a wholesale basis to municipal and industrial entities.

## Facility Description

The proposed desalination facility will be located on Harbor Island. The seawater intake will be located in the Gulf of America (Gulf), approximately 1.5 miles from the nearest shoreline.

Pre-treatment of the seawater will include removing suspended sediment (total suspended solids – TSS) using several clarification and filtration pretreatment processes, each successively removing smaller particles. The pretreated seawater, which will have essentially all particulate solids removed, will be desalinated using reverse osmosis. Reverse osmosis concentrates the salts (total dissolved solids – TDS) in the seawater in a brine reject stream and produces low TDS in the permeate (product water). The permeate will then be treated to reduce corrosiveness, chlorinated, and distributed to users in the coastal bend counties. The suspended solids will be concentrated into a dried sludge for offsite disposal. The dewatering filtrate, thickener supernatant and the brine reject stream are combined and will be discharged to the Gulf through a high-rate effluent diffuser.

The principal unit processes in the desalination facility are:

- Intake screens to remove large particulates from seawater
- Intake clarification with chemical coagulation to remove algae and suspended solids
- Strainers to remove fine debris
- Ultrafiltration to remove fine TSS
- Reverse Osmosis to remove TDS
- Calcite filters to add alkalinity to the permeate to reduce its corrosiveness
- Chlorination
- Distribution pumping

- Energy recovery
- Discharge of the membrane brine or reject under a TPDES permit
- Thickening of the clarifier underflow
- Consolidation of the ultrafiltration membrane backwash solids with thickened clarifier underflow
- Dewatering of consolidated sludge streams
- Discharge of the RO brine reject, thickener supernatant, and dewatering filtrate through a high-rate diffuser located in the Gulf.

Figure 1 is the desalination facility process flow diagram.

The proposed desalination facility is expected to operate with a desalination recovery rate from 40 to 50%, meaning that 40% to 50% of the pre-treated seawater that enters the reverse osmosis (RO) units becomes desalinated product water, with the balance of the water (called RO retentate or RO reject) as a higher salinity brine wastewater. Other wastewater flows are generated as reject from the pre-treatment system; they are combined with the RO retentate to produce the expected total of 191.2 MGD of wastewater at 40% recovery, or 132.9 MGD at 50% recovery. The salt content of the other wastewater flows is essentially the same as the source seawater; water treatment chemicals are dosed at concentrations in the low milligram per liter (mg/L) range and will not significantly impact salinity. The water balances for the facility operating at 40% and 50% recovery are shown in Table 1 and 2, respectively.

**Effluent Diffuser**

PCCA seeks authorization for an offshore location for the discharge of wastewater (brine) from the Harbor Island Facility. Locating the outfall in the Gulf will require routing the effluent pipeline under the Aransas Pass Channel, the Lydia Ann Channel, and San Jose Island. Siting the outfall in the Gulf will be a substantial cost; however, PCCA recognizes that for discharge of the large volume of wastewater associated with production of 100 MGD of desalinated water, an outfall in the open Gulf life enables flexibility and adaptability in managing brine discharge. The location selected is outside of areas designated for navigation and anchorage. The center of the diffuser will be approximately 9,800 ft (2,987 meters [m]) from shore at its nearest point, and approximately one-half mile (810 m) from the Harbor Island Desalination Facility intake to avoid entrainment of the diluted brine plume. The anticipated latitude/longitude of the diffuser is 27.848836°N, 97.009531°W. The coordinates could shift slightly during the detailed design phase based on a more detailed bathymetric survey and geotechnical study.

The effluent will be discharged through a high-rate diffuser that has a minimum exit velocity at each port ≥ 3 m/sec that will generate sufficient energy and momentum to assure rapid mixing of the effluent with the surrounding seawater. The diffuser will have 25 risers with two ports/riser for a total of 50 ports. Risers are located at 6.25-m intervals on the diffuser barrel resulting in a total diffuser length of 150 m. The diffuser conceptual design is provided in Attachment T-4.

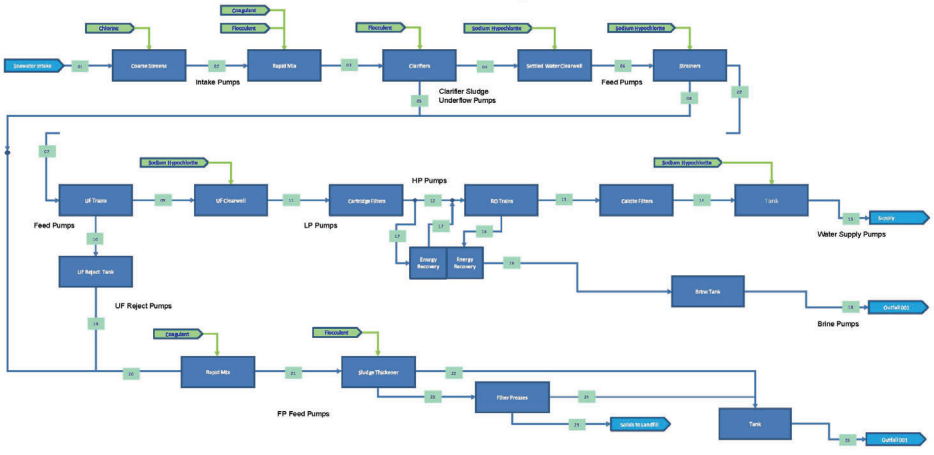
**Table 1. Water balance for the proposed 100 MGD desalination facility operating at a 40% recovery rate.**

| Characteristics | Desalination Plant Intake | Desalination Production | Desalination Plant Effluent | Units |
|---|---|---|---|---|
| Total required intake flowrate: | 301.4 | | | MGD |
| Marine life screening and return | 10.6 | | | MGD |
| Total intake tunnel flowrate | 312 | | | MGD |
| Production flowrate (desalinated water): | | 100.0 | | MGD |
| Recovery rate of desalination process: | | 40 | | % |
| RO retentate flowrate: | | | 150.0 | MGD |
| Other waste flows: | | | 41.2 | MGD |
| Permitted Outfall flowrate: | | | 191.2 | MGD |

**Table 2. Water balance for the proposed 100 MGD desalination facility operating at a 50% recovery rate.**

| Characteristics | Desalination Plant Intake | Desalination Production | Desalination Plant Effluent | Units |
|---|---|---|---|---|
| Total required intake flowrate: | 241.2 | | | MGD |
| Marine life screening and return | 10.6 | | | MGD |
| Total intake tunnel flowrate | 251.8 | | | MGD |
| Production flowrate (desalinated water): | | 100.0 | | MGD |
| Recovery rate of desalination process: | | 50 | | % |
| RO Retentate flowrate: | | | 100.0 | MGD |
| Other waste flows: | | | 32.9 | MGD |
| Permitted Outfall flowrate: | | | 132.9 | MGD |

# Process Flow Diagram




Port of Corpus Christi
Proposed Desalination Plant
Harbor Island Site
Corpus Christi, Texas

**PROCESS FLOW DIAGRAM**

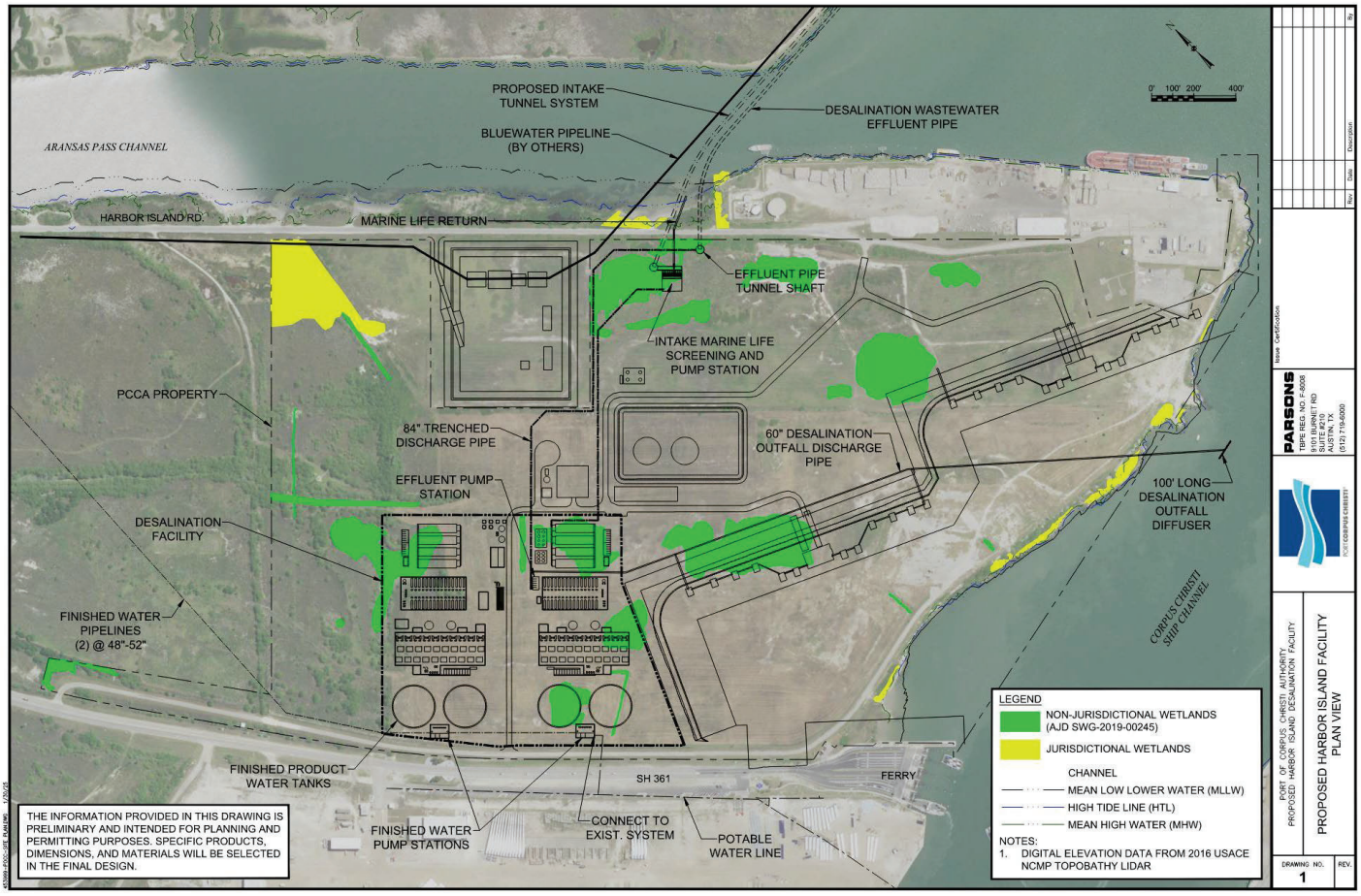
amec foster wheeler

Application 000133

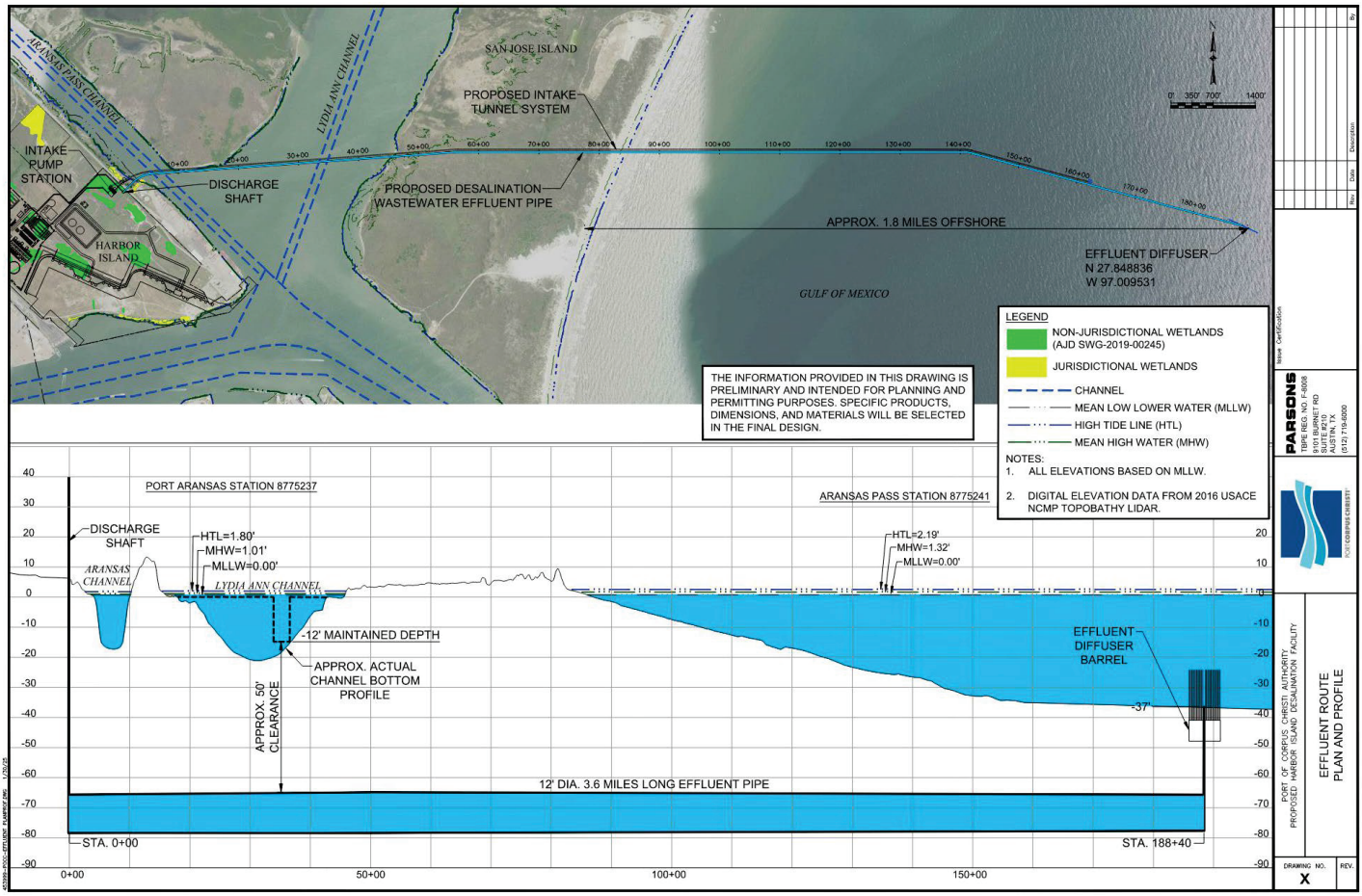
**FIGURE**
**1**

# Attachment T-2

# Facility Plot Plan




**Harbor Island Seawater Desalination Facility**




**Harbor Island Seawater Desalination Facility Effluent Diffuser**

# Attachment T-3
# Treatment Chemicals

| Chemical Name | CAS | Use | Estimated Dosage | Concentration in Discharge |
|---|---|---|---|---|
| Sodium hydroxide | 1310-73-2 | pH Control | As needed | ~0 (pH 6-9) |
| Sulfuric acid | 7664-93-9 | pH Control | As needed | ~0 (pH 6-9) |
| Sodium hypochlorite | 7681-52-9. | Algae control | As needed | TBD |
| Coagulant chemical | TBD* | Coagulate particulates | TBD | TBD |
| Flocculant chemical | TBD | Enhance Settling | TBD | TBD |

*TBD – to be determined. TCEQ will be notified and provided with dosage data and SDS' when available. All chemicals used will be classified as acceptable for drinking water treatment.

# Attachment T-4

# Conceptual Design – Effluent Diffuser

## Pollakis, Amanda

**From:** Lial Tischler <lial@tkee.com>
**Sent:** Thursday, November 20, 2025 10:57 AM
**To:** Leah Whallon
**Cc:** Garza, Sarah; Bergeron Perdue, Stephanie
**Subject:** WQ0005488000 (EPA I.D. No. TX0147681) - Port of Corpus Christi Authority of Nueces County - Harbor Island Desalination Facility
**Attachments:** pocca HI gulf diffuser 10-31-25.pdf

**[EXTERNAL EMAIL]** CAUTION: This email originated from outside Port of Corpus. Exercise caution when opening attachments or clicking links. Please forward any suspicious content to IT Helpdesk.

Ms. Whallon
Attached is the revised report “Conceptual Design – Effluent Diffuser” that is Attachment T-4 to the subject TPDES application. Please add this report to the application file and insure that the appropriate TPDES staff members that are working on the permit receive it. The Port is placing copies of the revised report in the TPDES application copies that are at the two libraries identified in the permit application.
Please contact me if you have any questions and please confirm receipt. Thanks for your assistance.

---

Lial Tischler, Ph.D., P.E., B.C.E.E.
Tischler/Kocurek
107 South Mays Street
Round Rock, TX 78664
(512) 244-9058
(512) 388-3409 FAX
(575) 687-3081 New Mexico

# High-Rate Diffuser Conceptual Design
# Harbor Island Desalination Facility

*Prepared for*

**Port of Corpus Christi Authority**
Corpus Christi, Texas

Under Contract to
**Parsons Environment & Infrastructure Group, Inc.**

*by*

Lial F. Tischler, P.E. No. 32768
**Tischler/Kocurek**
Round Rock, Texas

965

January 2025
(Revised October 2025)

**Table of Contents**

## List of Tables



## List of Figures

| **Units** | |
|---|---|
| | |
| °C | degrees Celsius |
| cm | centimeter |
| °F | degrees Fahrenheit |
| ft | feet |
| ft/s | feet per second |
| in | inch |
| $kg/m^3$ | kilogram per cubic meter |
| MGD | million gallons per day |
| mg/L | milligram per liter |
| m/s | meters per second |
| $m^3/s$ | cubic meters per second |
| ppt | parts per thousand |

# 1. Introduction

The Port of Corpus Christi Authority (POCCA) is planning to construct a marine seawater desalination facility with a design capacity of 100 million gallons/day (MGD) of finished desalted product water to provide a drought proof, sustainable water supply for the region. The Harbor Island Desalination Facility (HIDF) includes options for an intake structure and a high-rate diffuser for the HIDF effluent to be constructed in the Gulf of Mexico (GOM). The proposed locations of the GOM intake and diffuser and the pipes connecting them to the HIDF are shown in Figure 1.

This report presents the conceptual design of the proposed high-rate effluent diffuser proposed for the GOM. The design is based on a modeling evaluation performed by Tischler/Kocurek (T/K) to assure that the effluent discharge has no adverse effects on the Gulf of Mexico water quality, aquatic biota, and other designated uses.

## *Water Quality Standards*

The Gulf of Mexico (GOM) is identified as Segment 2501 in the Surface Water Quality Standards adopted by the Texas Commission on Environmental Quality (TCEQ) at 30 Texas Administrative Code Chapter 307 (30 TAC 307). Segment 2501 has numeric water quality standards (WQS) for dissolved oxygen, pH, indicator bacteria, and temperature. There are no numeric criteria for salinity or total dissolved solids (TDS) because the GOM is seawater with naturally elevated concentrations of sea salts. The applicable Chapter 307 General Criteria narrative WQS for salinity is at 30 TAC 307.4(g)(1) and states that: "Concentrations and the relative ratios of dissolved minerals such as chloride, sulfate, and total dissolved solids must be maintained such that existing, designated, presumed, and attainable uses are not impaired."

Water Quality Standards adopted by TCEQ for toxic pollutants at 30 TAC 307.6 are applicable to the HIFD discharge and are used to develop WQBELs, as necessary, based on evaluation of the constituents of a discharge, using three mixing zone categories:

1. Zone of initial dilution (ZID) where standards to protect aquatic life from acute toxicity are applied.
2. Mixing zone (MZ) where standards to protect aquatic life from chronic toxicity are applied.
3. Human health mixing zone (HHMZ) where standards to protect human health through the fish/shellfish tissue consumption pathway are applied.

The WQS specify maximum allowable ambient temperatures (30 TAC 307.10, Appendix A) in designated stream segments. The maximum allowable ambient temperature standard for Segment No. 2501 is 95 °F (35.0 °C)[1] (30 TAC 307.10, Appendix A). The temperature standards also specify allowable increases over ambient temperatures for discharges to water in the state. In

[1] Because the output of the mixing model used in this study is in SI (metric) units, SI units will be used in the report with English units shown as needed for interpretation.

Segment 2501 the maximum allowable temperature rise is 1.5 °F (0.83 °C) in summer (June, July, and August) and 4 °F (2.22 °C) during the spring, fall, and winter (30 TAC 307.4(f)(3)).

The Texas surface water quality standards apply at the boundary of an authorized thermal mixing zone. The standards do not establish a maximum size for such mixing zones, but state that the temperature shall be maintained so as not to interfere with reasonable uses of such waters (30 TAC 307.4(f)).

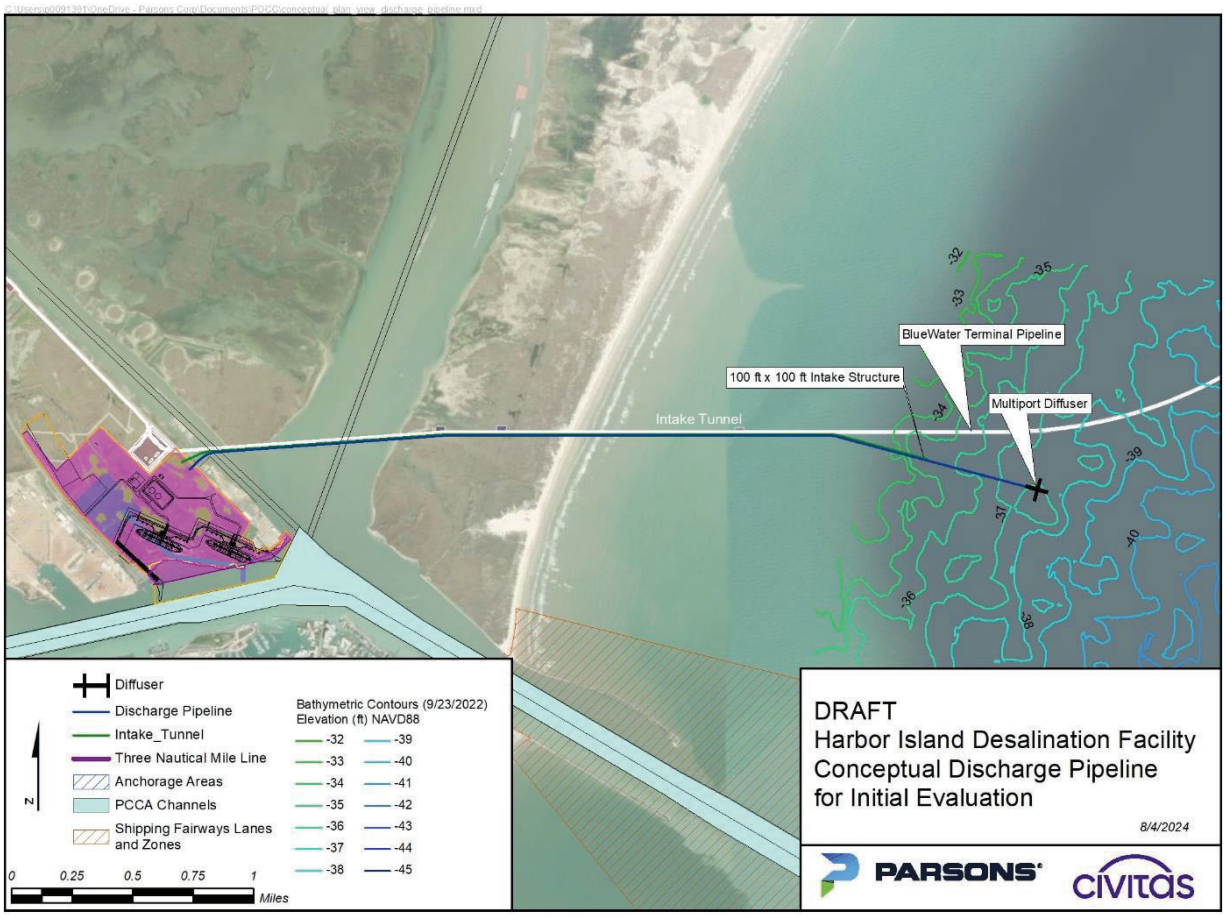



**Figure 1. Proposed HIDF Intake and Diffuser Locations**

There is no Texas WQS specifying the allowable salinity increase in the receiving water resulting from the discharge of desalination facility brine effluent. This diffuser conceptual design is based on achieving a maximum increase in receiving water salinity less than or equal to 2 parts/thousand (ppt) at a distance of 100 meters (m) from the diffuser ports at the critical hydrologic condition.

## 2. Diffuser Design

The design is for a high-rate diffuser that will discharge at port exit velocities ≥ 3 meters/second (m/s) at the estimated maximum monthly average effluent flows. Diffuser port exit velocities ≥ 3 m/s generate sufficient momentum and energy in the effluent discharge to assure rapid mixing of the effluent and receiving water.

### *Diffuser Location*

The diffuser is proposed in the GOM at the location shown on Figure 1. The location is outside of areas designated for navigation and anchorage and the diffuser riser/port closest to the shoreline will be approximately 10,000 feet (3,300 m) offshore. The approximate latitude/longitude of the mid-point of the 150 m long diffuser barrel is 27.848836°N and 97.009531°W. This location is approximately one-half mile (805 m) southeast from the HIDF intake and in deeper water to avoid entrainment of the diluted brine plume. The precise latitude/longitude of the diffuser will be determined upon completion of a bathymetric study will be provided to TCEQ when this work is completed.

### *Diffuser Configuration*

The conceptual design is a 50-port diffuser with 160-millimeter (mm) (6.3-inch) diameter ports. The ports will discharge at a minimum centerline depth of –7.5 m at mean low water (MLW). The total water depth at the center of the diffuser barrel will be ≥ 37 feet (~11.3 m) NAVD88 (Figure 1).

The diffuser will have 25 risers with 2 ports/riser oriented at 180° to each other.[2] The ports on each riser will point in the prevailing direction of the ambient current: north-northeast (NNE) and south-southwest (SSW)[TABS Buoy D (1995-2022) @ 2m depth][3]. The risers will be spaced at 6.25-m intervals on the diffuser barrel which results in a diffuser length of 150 m (first riser to last riser). The diffuser barrel will have a removable plug (or equivalent opening) at its far end to allow it to be pigged to remove settled solids if necessary. The diffuser ports will discharge at vertical angle of 60° to the water surface (i.e., angled toward the surface). The port and riser configuration is shown schematically in Figure 2. Figure 3 shows the diffuser orientation in the GOM relative to the ambient current as simulated by the CORMIX2 model.

The diffuser ports may be fitted with Tideflex™ or equivalent duckbill valves[4] to prevent backflow when there is no effluent discharge. The decision to add duckbill valves or use the

[2] A design alternative with an elevated diffuser barrel with ports drilled on either side at the appropriate horizontal angle, spacing, and minimum depth below the water surface will provide equal dilution.

[3] The prevailing longshore current is to the NNE most of the year. During summer months it shifts to the SSW.

[4] Duckbill valves are made of an elastomer that pinches closed the port opening when there is no flow and prevents backflow of seawater into the diffuser barrel. The valve opens gradually as flows increase due to the increasing pressure of the water and becomes equivalent to a conventional open port at the design flow.

designed open ports will be made when the final design is prepared. The CORMIX2 modeling does not consider these valves to be present – it assumes conventional ports. The addition of duckbill valves will increase the port exit velocities at lower effluent flows (below the design flow) that will increase dilution above the values predicted for this conceptual design.

## *Effluent Characteristics*

The proposed effluent flow rates for the diffuser are shown in Table 1. POCCA has estimated these flows based on the HIDF reverse osmosis membrane process freshwater production capacity for two operating scenarios: (1) 50% recovery; and (2) 40% recovery. The percent recovery is the percentage by volume of produced water (desalinated seawater) recovered from the intake seawater volume. The effluent flow is the volume of water that contains the sea salts that are removed by the reverse osmosis system and water generated during pretreatment of the sea water to prepare it for reverse osmosis.

The effluent flow rates for these two operating conditions are used to design the diffuser and calculate the dilution achieved in the GOM.

**Table 1. HIDF Design Effluent Flow**

| Averaging Period | Flow (MGD) | Flow ($m^3/s$) |
|---|---|---|
| Max. Monthly Average (50% recovery) | 132.9 | 5.823 |
| Max. Monthly Average (40% recovery) | 191.2 | 8.375 |

Parsons Environment & Infrastructure Group, Inc. (Parsons) developed thirty-two combinations of HIDF temperatures, densities, and salinity for development of the diffuser design. These combinations include the 5$^{th}$, 50$^{th}$, and 95$^{th}$ percentiles of temperature, salinity, and density of the GOM at the discharge location during the spring, summer, fall and winter, and the predicted HIDF effluent values for each of these properties at the two design flows shown in Table 1. Parsons also provided the 5$^{th}$, 50$^{th}$, and 95$^{th}$ percentiles of the GOM ambient currents at the proposed diffuser location.

Thirty-six combinations, representing the highest and lowest effluent densities predicted at each of the three ambient currents and at the two effluent flows, were selected to develop the diffuser design. Table 2 shows the predicted effluent temperatures and densities that are used in the diffuser design. The relationship between density, salinity and temperature is:

Density = (1+(0.001*((28.14-0.0735*T-0.00469*T^2) + (0.802-0.002*T)*(S-35))))*1000

where: S = salinity in parts/thousand (ppt); T = temperature (°C).

**Table 2. HIDF Outfall Temperatures, Salinities and Densities**

| Condition | Temperature (°C) | Salinity (ppt)** | Density ($kg/m^3$)** |
|---|---|---|---|
| Summer – T5, S95 | 26.59 | 63.77/55.46 | 1044.41/1038.19 |
| Summer – T95, S5 | 30.41 | 45.42/39.52 | 1029.29/1024.92 |
| Fall – T5, S95 | 25.57 | 62.62/54.46 | 1045.9/1039.68 |
| Spring – T5, S5 | 15.26 | 42.31/36.81 | 1031.57/1027.32 |
| Winter – T5, S95 | 12.02 | 59.46/51.72 | 1045.61/1039.59 |
| Spring – T95, S5 | 26.78 | 42.31/36.81 | 1028.28/1024.16 |

*T5 – 5$^{th}$ percentile temperature; S95 – 95$^{th}$ percentile salinity, etc.
**50% recovery/40% recovery. Salinity in parts per thousand.

The diffuser design evaluates operation at 40% and 50% recovery because of the discharge flow rate and density/salinity differences at the different recovery rates. The resulting conceptual diffuser design will assure that the design effluent dilution at critical hydrologic conditions will be achieved when the HIDF operates at all product water recoveries from 40% to 50%.

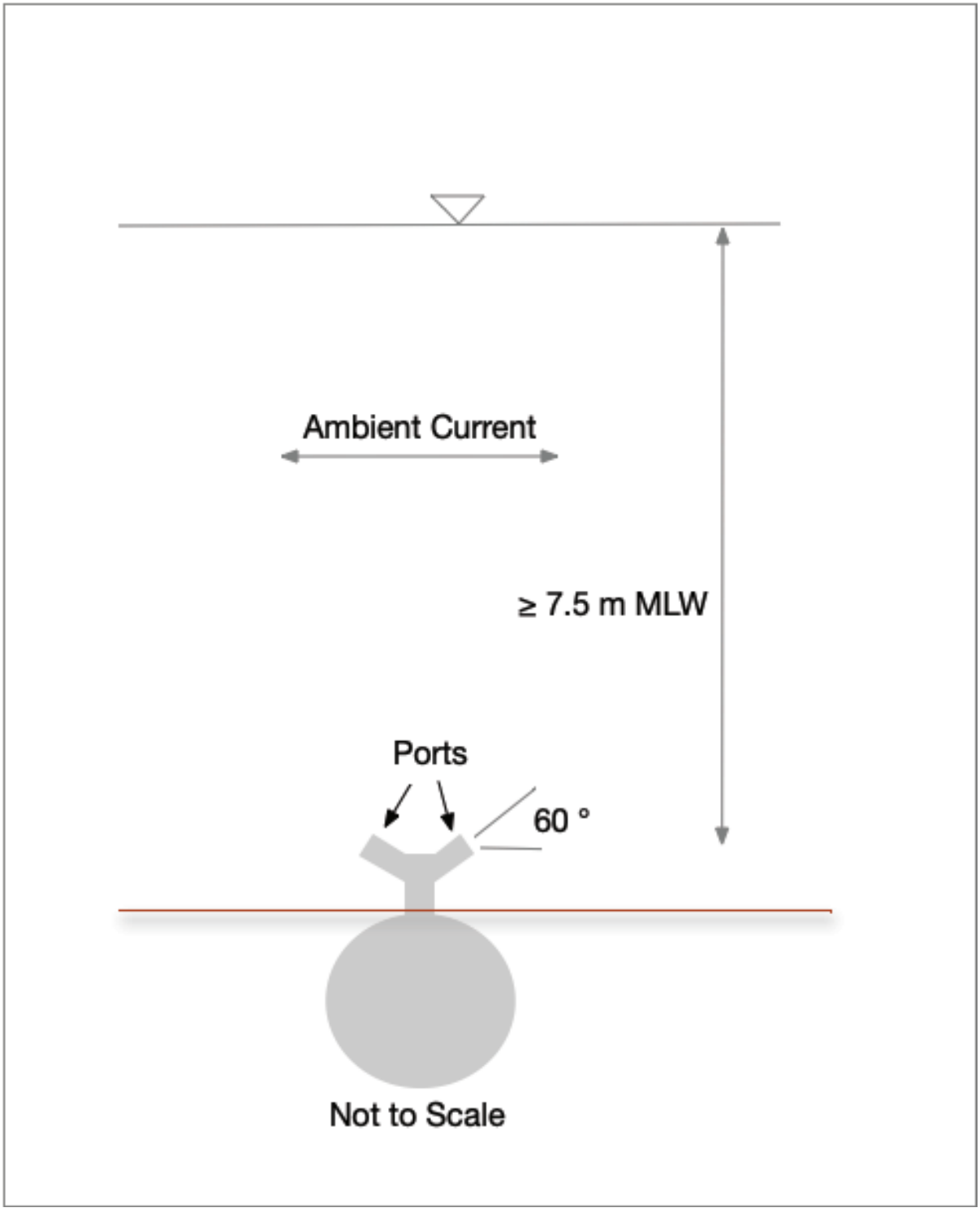



**Figure 2. Port and Riser Configuration**

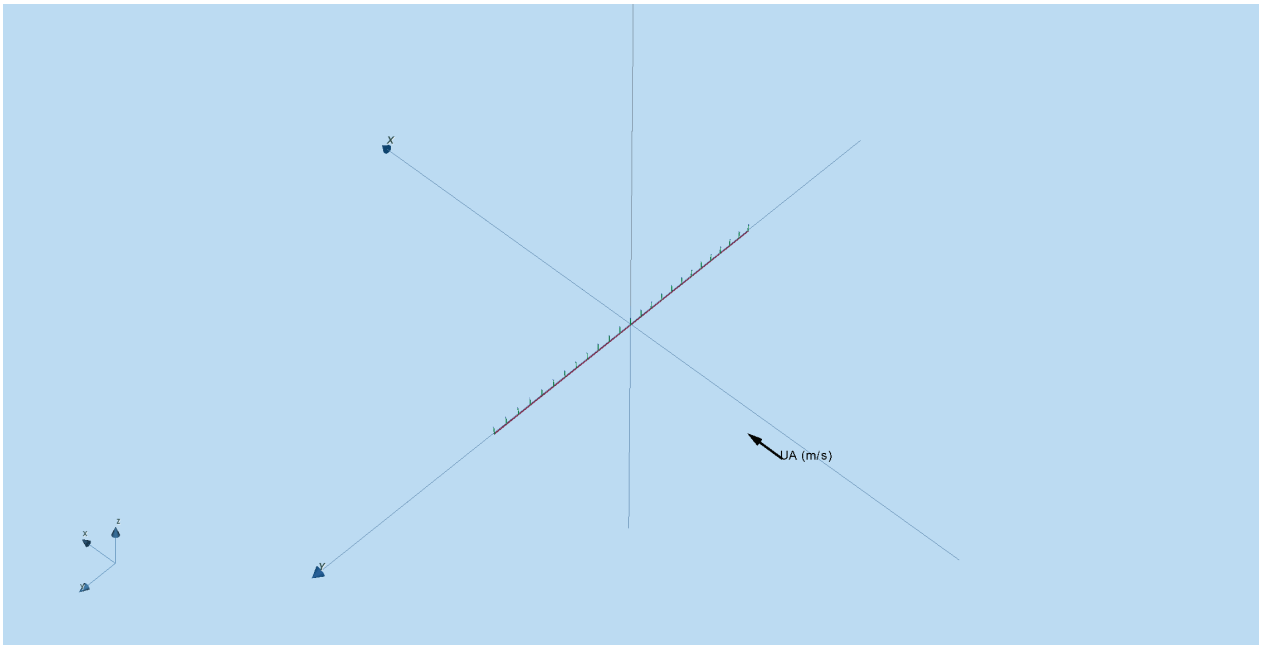



**Figure 3. Diffuser Orientation**

## 3. Dilution Analysis

The dilution that is achieved with the 50-port diffuser was simulated using the mixing zone model CORMIX2[5]. CORMIX2 simulates the mixing of a positively or negatively buoyant discharge plume from a multiple port diffuser into a receiving water that may be density stratified or unstratified. The model includes the effect of ambient currents on mixing. The output from CORMIX2 is the centerline dilution factor and plume dimensions as a function of distance from the discharge ports. The highest predicted effluent concentration is at the plume centerline and decreases to background concentrations at the edges of the plume. The model can simulate both near-field[6] and far-field mixing.

An effluent plume is buoyant when it has a lower salinity and higher temperature than the receiving water; therefore, the worst case for mixing with a positively buoyant plume is usually when the density difference between the effluent and the receiving water is the greatest. Under these conditions, after jet momentum is dissipated the plume rises toward the water surface due to its buoyancy. Additional dilution occurs during this plume rise as it entrains surface water from the surrounding area. Once the plume surfaces, it spreads across the water surface due to its retained momentum and the ambient current velocity.

Negatively buoyant effluents sink to the bottom of the receiving water. Diffusers for negatively buoyant plumes orient the ports toward the water surface. When the initial jet dilution achieved by the port exit velocity dissipates, if the density of the plume exceeds that of the receiving water the plume will sink to the bottom of the waterbody and then flow with the ambient current along the bottom of the water body. Mixing of the plume with the surrounding water continues and dispersion generated by the ambient current results in the continuing decrease of salinity until the plume becomes indistinguishable from the surrounding seawater salinity and temperature.

The effluent from the HIDF diffuser will be negatively buoyant under all ambient conditions because the intake water and the effluent discharge are taken from essentially the same location in the GOM and the salt content of the effluent discharge is increased by the desalination process, resulting in an effluent discharge that is always of a greater density than that of the seawater at the discharge location. Temperature increases during the desalination process, if any, are insufficient to have any measurable effect on the density of the effluent.

[5] Doneker, R.L. and Jirka, G.H., December 2007 (updated February 2017). CORMIX Users Manual: A Hydrodynamic Mixing Zone Model and Decision Support System for Pollutant Discharges into Surface Waters, EPA-823-K-07-001, U.S. Environmental Protection Agency, Washington, D.C.

[6] Near-field mixing occurs in the region near the diffuser where the momentum of the plume induced by the high port exit velocity is the dominant force affecting mixing. Far-field mixing is a result of the ambient current speed, plume-receiving water density difference, and natural dispersion (including wind-induced mixing).

## *Ambient Conditions*

The physical dimensions of the GOM at the proposed discharge location are shown in Table 3. This location is in shallow water outside of designated navigation and anchorage areas. The precise geographical coordinates of the diffuser location cannot be identified until the final design is completed.

**Table 3. GOM Physical/Hydrologic Parameters**

| | Physical Parameter | | Reference |
|---|---|---|---|
| Distance from shoreline | ~10,000 ft | ~3,050 m | Google Earth™ |
| Average depth near discharge | ~37 ft | ~11.3 m | NAVD88[7] |
| Depth at diffuser location | ~37 ft | ~11.3 m | NAVD88 |

The ambient temperature, salinity and current data are from the TABS Buoy D of the Texas Automated Buoy System[8]. Records for the monitoring period 1995-2022 (272,990 observations) were analyzed by Parsons to determine the 5$^{th}$, 50$^{th}$, and 95$^{th}$ percentile values for each of these parameters.

The relationship between density and salinity and temperature is:

Density = (1+(0.001*((28.14-0.0735*T-0.00469*T^2) + (0.802-0.002*T)*(S-35))))*1000

where: S = salinity in parts/thousand (ppt); T = temperature (°C).

Table 4 presents the GOM ambient conditions used for the diffuser design.

**Table 4. GOM Ambient Water Quality***

| Density Condition | Temperature (°C) | Salinity (ppt) | Density (kg/m$^3$) |
|---|---|---|---|
| Summer – T5, S95 | 26.59 | 36.50 | 1023.99 |
| Summer – T95, S5 | 30.41 | 26.03 | 1014.92 |
| Fall – T5, S95 | 19.81 | 35.84 | 1025.48 |
| Winter – T5, S95 | 12.02 | 34.04 | 1025.83 |
| Spring – T95, S5 | 26.78 | 24.25 | 1014.76 |
| Spring – T5, S5 | 15.26 | 24.25 | 1017.63 |

*TABS Buoy D (1995-2022)

These densities are based on combinations of the 95$^{th}$ and 5$^{th}$ percentile temperatures (T5, T95) and salinities (S5, S95) in the data for TABS Buoy D and represent the conditions that will maximize the density difference between the effluent discharge and the ambient water. The maximum density difference between effluent and receiving typically water results in the minimum achievable dilution for a buoyant (positive or negative) plume.

Ambient current statistics from 1995-2022 were calculated for TABS Buoy 5. The 50$^{th}$ percentile (median) current of 0.27 m/s, the 5$^{th}$ percentile current of 0.11 m/s, and the 95$^{th}$ percentile current of 0.65 m/s were used to develop the diffuser design. The median current of 0.27 m/s is representative of the 24-hour long-term average current and is the best estimate of the daily average available dilution at the diffuser site.

[7] https://geodesy.noaa.gov/datums/vertical/north-american-vertical-datum-1988.shtml

[8] Texas Automated Buoy System (TABS), https://tabs.gerg.tamu.edu/Tglo/

## *Modeling Results*

The plume centerline dilution factor at the edge of the hydrodynamic mixing zone (near-field region), which is the point at which momentum-induced mixing ceases, is predicted by the CORMIX2 model. The model calculates the plume width and thickness at the distance from the diffuser ports at each output interval where the model generates a predicted centerline dilution factor and percent effluent.

Additional mixing of the diluted effluent with the receiving water outside of the near-field region occurs due to density differences, wind, and ambient currents. This dilution is termed far-field dilution and is also predicted by CORMIX2.

### Mixing Zone Definition

TCEQ has a consistent policy for establishing mixing zones for high-rate diffusers. TCEQ designates 3 categories of mixing zone: (1) the zone of initial dilution (ZID), which is the acute aquatic life protection mixing zone; (2) the chronic aquatic life mixing zone that is identified as the mixing zone (MZ); and (3) the human health mixing zone (HHMZ). The mixing zone policy is intended to address the specific language at 30 TAC 307.8(b), which defines the size of the zone of initial dilution (ZID). The regulatory language specifies the size of the ZID and indicates that for diffusers, the ZID will have an area or volume equivalent to the size specified in the regulation.

The TCEQ mixing zone policy for multi-port diffusers is as follows:

- The ZID and mixing zones for the diffuser are based on an equivalent volume representing the following dimensions: ZID = 50 foot radius (15.2 metres); MZ = 200 foot radius (60.5 m); and HHMZ = 400 foot radius (121 m) extending over the local water depth.
- The shape of the equivalent mixing zone for a multi-port diffuser is a rectangular box extending from the channel bottom to water surface.

This diffuser design, with a 150-m distance between the inner and outermost risers, has the following mixing zone dimensions:

MZ: x = 76.4 m; y = 55 m where x is measured along the diffuser axis (x=0 at the center of the diffuser barrel) and y is the distance from the ports measured on either side of the diffuser in the direction (s) of the ambient current.

HHMZ: x = 130 m; y = 130 m using the same coordinates as the MZ.

The ZID is at x = 14.1 m and y = 6.5 m using the same coordinates as the MZ.

### Diffuser Dilution Calculations

A total of 36 combinations of effluent and ambient density were examined to determine the critical ambient and effluent conditions in terms of critical initial dilution that are achieved with the diffuser design. Effluent and ambient conditions that represent the maximum density difference were used to screen potential diffuser configurations at the 50% recovery design flow (maximum monthly average, 5.823 $m^3/s$) – number of ports, distance between ports, and port exit velocity. The initial configuration choice(s) were then evaluated at the 40% recovery flow rate (8.375 $m^3/s$). The screening analysis results were used to configure the conceptual diffuser design.

The performance of the selected design was then evaluated for 36 representative combinations of effluent flow and density and receiving water density and ambient current.

Table 5 presents the results of the 36 diffuser mixing simulations. Table 6 presents the salinity and the rise (Δ) above ambient salinity at 100 m from the ports.

**Table 5. Predicted Effluent Dilution**

| Effluent Flow ($m^3/s$)* | Effluent Density ($kg/m^3$) | Ambient Density (Percentile) | Ambient Current (m/s) | ZID Percent Effluent | MZ Percent Effluent | 100 m Percent Effluent | HHMZ Percent Effluent |
|---|---|---|---|---|---|---|---|
| 5.823 | 1044.41 | 1023.99 | 0.27 | 13.99 | 6.66 | 4.24 | 3.31 |
| 5.823 | 1029.29 | 1014.92 | 0.27 | 12.47 | 5.88 | 3.63 | 2.78 |
| 5.823 | 1045.9 | 1025.48 | 0.27 | 13.93 | 6.70 | 4.27 | 3.34 |
| 5.823 | 1031.57 | 1017.63 | 0.27 | 12.35 | 5.81 | 3.58 | 2.74 |
| 5.823 | 1045.61 | 1025.83 | 0.27 | 12.87 | 6.60 | 4.20 | 3.28 |
| 5.823 | 1028.28 | 1014.76 | 0.27 | 13.81 | 5.74 | 3.54 | 2.71 |
| 5.823 | 1044.41 | 1023.99 | 0.11 | 12.21 | 8.66 | 7.30 | 6.81 |
| 5.823 | 1029.29 | 1014.92 | 0.11 | 14.23 | 8.17 | 7.15 | 6.51 |
| 5.823 | 1045.9 | 1025.48 | 0.11 | 12.68 | 8.56 | 7.35 | 6.72 |
| 5.823 | 1031.57 | 1017.63 | 0.11 | 14.19 | 8.08 | 7.03 | 6.42 |
| 5.823 | 1045.61 | 1025.83 | 0.11 | 12.56 | 8.63 | 7.34 | 6.81 |
| 5.823 | 1028.28 | 1014.76 | 0.11 | 14.07 | 8.03 | 7.01 | 6.37 |
| 5.823 | 1044.41 | 1023.99 | 0.65 | 12.48 | 1.84 | 0.80 | 0.70 |
| 5.823 | 1029.29 | 1014.92 | 0.65 | 9.76 | 2.05 | 1.12 | 0.71 |
| 5.823 | 1045.9 | 1025.48 | 0.65 | 9.35 | 1.84 | 0.80 | 0.70 |
| 5.823 | 1031.57 | 1017.63 | 0.65 | 9.76 | 2.07 | 1.13 | 0.71 |
| 5.823 | 1045.61 | 1025.83 | 0.65 | 9.32 | 1.86 | 0.80 | 0.70 |
| 5.823 | 1028.28 | 1014.76 | 0.65 | 9.70 | 2.09 | 1.14 | 0.71 |
| 5.823 | 1038.19 | 1023.99 | 0.27 | 9.30 | 6.66 | 4.24 | 3.31 |
| 8.375 | 1024.92 | 1014.92 | 0.27 | 8.81 | 5.02 | 3.48 | 2.81 |
| 8.375 | 1039.68 | 1025.48 | 0.27 | 10.01 | 5.72 | 4.03 | 3.27 |
| 8.375 | 1027.32 | 1017.63 | 0.27 | 9.05 | 4.95 | 3.44 | 2.76 |
| 8.375 | 1039.59 | 1025.83 | 0.27 | 9.98 | 5.65 | 3.97 | 3.22 |
| 8.375 | 1024.16 | 1014.76 | 0.27 | 8.95 | 4.90 | 3.39 | 2.73 |
| 8.375 | 1038.19 | 1023.99 | 0.11 | 9.88 | 3.40 | 3.16 | 3.07 |
| 8.375 | 1024.92 | 1014.92 | 0.11 | 9.88 | 3.26 | 3.40 | 3.27 |
| 8.375 | 1039.68 | 1025.48 | 0.11 | 66.05 | 3.42 | 3.15 | 3.05 |
| 8.375 | 1027.32 | 1017.63 | 0.11 | 84.78 | 3.22 | 3.43 | 3.29 |
| 8.375 | 1039.59 | 1025.83 | 0.11 | 71.60 | 3.40 | 3.18 | 3.09 |
| 8.375 | 1024.16 | 1014.76 | 0.11 | 79.99 | 3.16 | 3.45 | 3.31 |
| 8.375 | 1038.19 | 1023.99 | 0.65 | 9.82 | 5.27 | 3.14 | 2.41 |
| 8.375 | 1024.92 | 1014.92 | 0.65 | 9.08 | 4.94 | 3.30 | 2.73 |
| 8.375 | 1039.68 | 1025.48 | 0.65 | 9.82 | 5.27 | 3.14 | 2.41 |
| 8.375 | 1027.32 | 1017.63 | 0.65 | 8.26 | 4.91 | 3.32 | 2.76 |
| 8.375 | 1039.59 | 1025.83 | 0.65 | 9.78 | 5.23 | 3.15 | 2.44 |
| 8.375 | 1024.16 | 1014.76 | 0.65 | 8.31 | 2.16 | 1.24 | 0.66 |

*5.823 m3/s = 50% recovery; 8.375 m3/s = 40% recovery

**Table 6. Predicted Salinity Increases at 100 m from Diffuser**

| Effluent Flow ($m^3/s$)* | Effluent Density ($kg/m^3$) | Ambient Density (Percentile) | Ambient Current (m/s) | Ambient Salinity (ppt) | Effluent Salinity (ppt) | Δ Salinity @ 100 m (ppt) | Salinity @ 100 m (ppt) |
|---|---|---|---|---|---|---|---|
| 5.823 | 1044.41 | 1023.99 | 0.27 | 36.5 | 63.77 | 1.16 | 37.66 |
| 5.823 | 1029.29 | 1014.92 | 0.27 | 26.03 | 45.42 | 0.70 | 26.73 |
| 5.823 | 1045.9 | 1025.48 | 0.27 | 35.84 | 62.62 | 1.14 | 36.98 |
| 5.823 | 1031.57 | 1017.63 | 0.27 | 24.25 | 42.31 | 0.65 | 24.90 |
| 5.823 | 1045.61 | 1025.83 | 0.27 | 34.04 | 59.46 | 1.07 | 35.11 |
| 5.823 | 1028.28 | 1014.76 | 0.27 | 24.25 | 42.31 | 0.64 | 24.89 |
| 5.823 | 1044.41 | 1023.99 | 0.11 | 36.5 | 63.77 | 1.99 | 38.49 |
| 5.823 | 1029.29 | 1014.92 | 0.11 | 26.03 | 45.42 | 1.39 | 27.42 |
| 5.823 | 1045.9 | 1025.48 | 0.11 | 35.84 | 62.62 | 1.97 | 37.81 |
| 5.823 | 1031.57 | 1017.63 | 0.11 | 24.25 | 42.31 | 1.27 | 25.52 |
| 5.823 | 1045.61 | 1025.83 | 0.11 | 34.04 | 59.46 | 1.87 | 35.91 |
| 5.823 | 1028.28 | 1014.76 | 0.11 | 24.25 | 42.31 | 1.27 | 25.52 |
| 5.823 | 1044.41 | 1023.99 | 0.65 | 36.5 | 63.77 | 0.22 | 36.72 |
| 5.823 | 1029.29 | 1014.92 | 0.65 | 26.03 | 45.42 | 0.22 | 26.25 |
| 5.823 | 1045.9 | 1025.48 | 0.65 | 35.84 | 62.62 | 0.21 | 36.05 |
| 5.823 | 1031.57 | 1017.63 | 0.65 | 24.25 | 42.31 | 0.20 | 24.45 |
| 5.823 | 1045.61 | 1025.83 | 0.65 | 34.04 | 59.46 | 0.20 | 34.24 |
| 5.823 | 1028.28 | 1014.76 | 0.65 | 24.25 | 42.31 | 0.21 | 24.46 |
| 8.375 | 1038.19 | 1023.99 | 0.27 | 36.5 | 55.46 | 1.16 | 37.66 |
| 8.375 | 1024.92 | 1014.92 | 0.27 | 26.03 | 39.52 | 1.11 | 27.14 |
| 8.375 | 1039.68 | 1025.48 | 0.27 | 35.84 | 54.46 | 1.78 | 37.62 |
| 8.375 | 1027.32 | 1017.63 | 0.27 | 24.25 | 36.81 | 1.01 | 25.26 |
| 8.375 | 1039.59 | 1025.83 | 0.27 | 34.04 | 51.72 | 1.67 | 35.71 |
| 8.375 | 1024.16 | 1014.76 | 0.27 | 24.25 | 36.81 | 1.00 | 25.25 |
| 8.375 | 1038.19 | 1023.99 | 0.11 | 36.5 | 55.46 | 1.70 | 38.20 |
| 8.375 | 1024.92 | 1014.92 | 0.11 | 26.03 | 39.52 | 1.29 | 27.32 |
| 8.375 | 1039.68 | 1025.48 | 0.11 | 35.84 | 54.46 | 1.66 | 37.50 |
| 8.375 | 1027.32 | 1017.63 | 0.11 | 24.25 | 36.81 | 1.21 | 25.46 |
| 8.375 | 1039.59 | 1025.83 | 0.11 | 34.04 | 51.72 | 1.60 | 35.64 |
| 8.375 | 1024.16 | 1014.76 | 0.11 | 24.25 | 36.81 | 1.22 | 25.47 |
| 8.375 | 1038.19 | 1023.99 | 0.65 | 36.5 | 55.46 | 1.34 | 37.84 |
| 8.375 | 1024.92 | 1014.92 | 0.65 | 26.03 | 39.52 | 1.08 | 27.11 |
| 8.375 | 1039.68 | 1025.48 | 0.65 | 35.84 | 54.46 | 1.31 | 37.15 |
| 8.375 | 1027.32 | 1017.63 | 0.65 | 24.25 | 36.81 | 1.02 | 25.27 |
| 8.375 | 1039.59 | 1025.83 | 0.65 | 34.04 | 51.72 | 1.26 | 35.30 |
| 8.375 | 1024.16 | 1014.76 | 0.65 | 24.25 | 36.81 | 0.24 | 24.49 |

*5.823 m3/s = 50% recovery; 8.375 m3/s = 40% recovery

The critical condition with respect to the increase in the ambient (background) salinity at 100 m from the diffuser occurs at the 50% recovery rate and corresponds to the greatest difference between ambient salinity (which is the intake salinity for the HIDF) and the effluent salinity. This occurs at the Fall (T5, S95) ambient condition and the 5$^{th}$ percentile ambient current. The maximum salinity concentration is predicted to be 38.49 ppt at 100 m from the diffuser (1.99 ppt greater than the ambient salinity under these conditions). This predicted concentration is at the centerline of the plume. At this location (100 m from the ports), CORMIX2 predicts that the salinity plume will be attached to the bottom and is 2.3 m thick and 320 m wide. At the boundaries of the plume the salinity concentration decreases to the ambient salinity. The predicted width of the plume – 320 m – assures that it will not interact with the HIDF intake that will be located over 800 m from the closest diffuser port pair (first riser). The joint probability of occurrence of this combination of ambient conditions is 0.000125 ($0.05^3$) assuming that there is no correlation between the three conditions. The CORMIX2 model output and a schematic of the plume for the critical case are provided in the appendix.

As shown in Table 6, at the ambient/effluent conditions associated with the 40% recovery HIDF operation the increases in ambient salinity at the 100 m distance from the diffuser are less than for the 50% recovery operation. There are two reasons for this: (1) the effluent salinity concentrations

are lower at 40% recovery rate so the difference in salinity between the effluent and ambient is lower; and (2) the higher effluent flow rate at 40% recovery results in an increased discharge velocity at the 50 ports which in turn results in more rapid mixing due to the greater momentum and energy of the discharged effluent.

The dilution at the ZID (6.5 m from the ports) is low (66-85% effluent) at the 8.375 $m^3/s$ flow rate when the ambient current is at the 5$^{th}$ percentile (0.11 m/s). Because the momentum of the discharge is high compared to the ambient current, local instability occurs near the diffuser and the model predicts the area close to the ports to have high concentrations of effluent. Under all other effluent/ambient conditions the dilution at the ZID is ≤ 14.2% effluent.

### Alternative Discharge Scenarios

One potential alternative for the discharge design was identified. The diffuser could be located further offshore at a greater distance from the intake structure. This alternative would locate the diffuser in deeper water and provide an additional safety factor with respect to intake entrainment of HIDF effluent.

Extending the pipeline offshore from the proposed location by an additional 1,000 m would increase the average water depth at the center of the diffuser to approximately 45 feet (NAVD88)(13.7 m). Modeling of the critical case scenario [Fall (T5, S95)] at a 13.7 m water depth (at two different riser heights above the bottom) with CORMIX2 did not provide any increase in the predicted effluent dilution or reduce the salinity concentration at the 100 m distance from the diffuser. The additional costs and impacts associated with extending the diffuser to an average water depth of 45 feet will not improve the achievable dilution/salinity or reduce the risk of entrainment at the intake of HIDF effluent.

Another alternative that would locate the diffuser closer to the shore, in shallower water, was rejected because of the lower dilution potential, possible intake entrainment of the plume, and possible interference with recreational activity. The GOM bottom has a downward slope toward the center of the gulf so there will be a tendency for the bottom-attached plume to move downgradient toward the HIDF intake and potentially be entrained. The shallower water decreases the available volume of ambient water flowing across the diffuser thus decreasing the dilution that can be achieved. Locating the diffuser closer to the shoreline at shallower depths near shore may also interfere with recreational activities.

### Temperature Analysis

The Texas surface water quality standards apply at the boundary of an authorized thermal mixing zone. The standards do not establish a maximum size for such mixing zones, but state that that the temperature shall be maintained so as not to interfere with reasonable uses of such waters [30 TAC 307.4(f)]. The Texas surface water quality standards rule and the TCEQ mixing zone policy do not establish a maximum size for thermal mixing zones so they are determined by a case-by-case TCEQ evaluation. The HIDF is not a thermal discharge[9] and this analysis is performed only for the purpose of documenting that the GOM water temperature standard will not be exceeded by the effluent discharge.

[9] Any heating of the seawater during the pretreatment and desalination process is incidental and a result of ambient air temperature, solar radiation, and wind that heats and cools the treatment equipment. There is no thermal "process" that adds heat to the intake water used by the HIDF.

For simplicity, this temperature analysis uses the MZ dimensions described above for toxic pollutants, but this assumption is made only to demonstrate that the surface water quality standards for temperature are achieved rapidly in the GOM. This assumption of the mixing zone dimensions is not T/K's conclusion or recommendation that the MZ dimensions are the appropriate physical dimensions for a thermal mixing zone that achieves the Texas water quality standard for temperature.

The statistical analysis of the ambient data (Table 4) show that the 95$^{th}$ percentile water temperature at the intake/discharge location is 30.41 °C (87 °F) which is 4.59 °C (8.26 °F) below the 35 °C (95 °F) water quality standard for Segment 2501.

A simplified heat budget analysis was performed using the methodology developed by Argaman and Adams for wastewater treatment tanks[10]. An approximation of the surface area and perimeter of the tanks/equipment used by the desalination process was estimated from the draft plot plan of the HIDF. Based on Port Aransas meteorologic data a daily high temperature of 95 °F and wind speed of 10 miles/hour were used to calculate the equilibrium temperature in the water treatment system. This calculation indicates that there will be an approximately 0.26 °C maximum temperature rise across the desalination process under these ambient conditions at mid-day. The increase in temperature above intake water temperature will negligible during the rest of the daylight hours and at night.

The discharge will also be diluted to a concentration of 8.66 percent effluent or less at the edge of the mixing zone (Table 5). This amount of dilution would allow an increase in effluent temperature of 9.6 °C above ambient at the edge of the MZ, based on the water quality standard maximum allowable summer temperature increase above ambient temperature of 0.83 °C (30 TAC 307.4(f)(3)). The predicted maximum temperature increase from the intake to the effluent at the HIDF is ~21.6% of the allowable 0.83 °C. Therefore, the proposed HIDF discharge does not have a reasonable potential to cause or contribute to an exceedance of the applicable temperature standards.

[10] Argaman, Y. and Adams, C. (1977) *Comprehensive temperature model for aerated biological systems*, Prog. Water Technology, V9, pp. 397-409, Pergamon Press. Note: the terms in the heat balance equations for aeration and biological heat generation are removed for this analysis.

## 4. Conclusions

The CORMIX2 modeling analysis demonstrates that a 50-port high-rate diffuser can be effectively used to enhance mixing of the HIDF effluent with the GOM receiving waters. At the proposed discharge location and with the 50-port design, the maximum increase in ambient GOM salinity at a horizontal distance of 100 m from the diffuser will be < 2 ppt. The plume will be bottom attached at this distance from the diffuser and will be 2.3 m thick and 320 m wide. The appendix provides a schematic of the plume shape and dimensions at this effluent/ambient condition.

The key components of the diffuser design are as follows:

| | |
|---|---|
| minimum bottom elevation | ≥11.3 m MLLW |
| port depth below surface (center of diffuser) | ≥7.5 m MLLW |
| number of risers | 25 |
| distance between risers | 6.25 m |
| total length of diffuser barrel | 150 m |
| number of ports per riser | 2 |
| orientation of ports on risers | 180° (opposing) |
| port diameter | 160 mm |
| port angle to horizontal (water surface) | 60° |
| port angle to ambient current | 0º-180° (~NNE, SSW) |

The detailed engineering design of the diffuser will be prepared following approval of the diffuser critical dilutions by TCEQ and issuance of a TPDES permit based on the dilution achieved by the proposed diffuser.

# Appendix
# CORMIX Output File and Plume Schematic
# Critical Condition

```
CORMIX2 PREDICTION FILE:
2222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222
                      CORMIX MIXING ZONE EXPERT SYSTEM
               Subsystem CORMIX2: Multiport Diffuser Discharges
                             CORMIX Version 12.0GT
                      HYDRO2 Version 12.0.1.0 August 2021
-------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------------------
CASE DESCRIPTION
 Site name/label:   POCCA Gulf Diffuser
 Design case:       pocca_7
 FILE NAME:         C:\... Projects\pocca gulf diffuser\pocca_2024_7_25.prd
 Time stamp:        10/31/2025--10:00:44

ENVIRONMENT PARAMETERS (metric units)
 Unbounded section
 HA    =     11.00  HD    =     11.00
 UA    =      0.110 F     =      1.412 USTAR =0.4622E-01
 UW    =      2.000 UWSTAR=0.2198E-02
 Uniform density environment
 STRCND=  U         RHOAM = 1023.9900

DIFFUSER DISCHARGE PARAMETERS (metric units)
 Diffuser type:     DITYPE= alternating_perpendicular
 BANK  =  LEFT      DISTB =   2475.00  YB1   =   2400.00  YB2   =   2550.00
 LD    =    150.00  NOPEN =   50       NRISER=   25       SPAC  =      6.25    NPPERR =    2
 D0    =      0.160 A0    =      0.020 H0    =      3.50  SUB0  =      7.50
 D0INP =      0.160 CR0   =      1.000 B0    =0.6434E-02
 Nozzle/port arrangement:   alternating_without_fanning
 GAMMA =     90.00  THETA =     60.00  SIGMA =      0.00  BETA  =     90.00
 U0    =      5.792 Q0    =      5.823 Q0A   =0.5823E+01
 RHO0  = 1044.4100  DRHO0 =-.2042E+02  GP0   =-.1956E+00
 C0    =0.1000E+03  CUNITS=  %
 IPOLL =  1         KS    =0.0000E+00  KD    =0.0000E+00

FLUX VARIABLES - PER UNIT DIFFUSER LENGTH (metric units)
 q0    =0.3882E-01          SIGNJ0=     -1.0
 m0 =U0^2*B0 =0.2159E+00   j0 =U0*GP0*B0 =-.7288E-02   (based on slot width B0)
 m0 =U0*q0   =0.2249E+00   j0 =q0*GP0    =-.7592E-02   (based on volume flux q0)
 Associated 2-d length scales (meters)
 lQ=B  =      0.007 lM    =      5.73  lm    =     18.58
 lmp   =  99999.00  lbp   =  99999.00  la    =  99999.00

FLUX VARIABLES - ENTIRE DIFFUSER (metric units)
 Q0    =0.5823E+01  M0    =0.3238E+02  J0    =-.1093E+01
 Associated 3-d length scales (meters)
 LQ    =      0.14  LM    =     12.98  Lm    =     52.80  Lb    =    855.56
                                       Lmp   =  99999.00  Lbp   =  99999.00

NON-DIMENSIONAL PARAMETERS
 FR0   =    163.29  FRD0  =     32.75  R     =     52.66  PL    =  140.00
 (slot)             (port/nozzle)

RECOMPUTED SOURCE CONDITIONS FOR ALTERNATING JETS OR RISER GROUPS:
 Momentum fluxes:   m0    =0.1869E+00  M0    =0.2804E+02
 lQ=B  =      0.008 lM    =      4.96  lm    =     16.09  lmp   =  99999.00
 LQ    =      0.933 LM    =     11.65  Lm    =     49.13  Lmp   =  99999.00
 Properties of riser group with  2 ports/nozzles each:
 U0    =      5.016 D0    =      0.243 A0    =      0.046 THETA =     90.00
 FR0   =    131.60  FRD0  =     23.00  R     =     45.60
 (slot)             (riser group)

FLOW CLASSIFICATION
 22222222222222222222222222222222222222222222222
 2  Flow class (CORMIX2)      =    MNU1         2
 2  Applicable layer depth HS =    11.00        2
 22222222222222222222222222222222222222222222222

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.1000E+03  CUNITS=  %
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```
 NTOX  =  0
 NSTD  =  0
 REGMZ =  1
 REGSPC=  1         XREG  =    100.00  WREG  =      0.00  AREG  =      0.00
 XINT  =   5000.00  XMAX  =   5000.00

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the bottom and the diffuser mid-point:
      2475.00 m  from the LEFT  bank/shore.
    X-axis points downstream, Y-axis points to left, Z-axis points upward.
NSTEP = 100 display intervals per module
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BEGIN MOD201: DIFFUSER DISCHARGE MODULE

 Due to complex near-field motions:  EQUIVALENT SLOT DIFFUSER (2-D) GEOMETRY

 Profile definitions:
   BV = Gaussian 1/e (37%) width, in vertical plane normal to trajectory
   BH = top-hat half-width, in horizontal plane normal to trajectory
   S  = hydrodynamic centerline dilution
   C  = centerline concentration (includes reaction effects, if any)
   Uc = Local centerline excess velocity (above ambient)
   TT = Cumulative travel time

       X        Y       Z        S       C       BV       BH       Uc        TT
      0.00     0.00    3.50     1.0 0.100E+03   0.01    75.00     5.792   .00000E+00

END OF MOD201: DIFFUSER DISCHARGE MODULE
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BEGIN MOD224: NEGATIVELY BUOYANT LINE PLUME

 Profile definitions:
   BV = top-hat thickness, measured vertically
   BH = top-hat half-width, measured horizontally in y-direction
   ZU = upper plume boundary (Z-coordinate)
   ZL = lower plume boundary (Z-coordinate)
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

  Control volume inflow:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    3.50     1.0 0.100E+03   0.01    75.00   .00000E+00

  Control volume outflow:
       X        Y       Z        S       C       BV       BH        TT
      2.48     0.00    0.00     6.8 0.146E+02   0.74    75.74   .12370E+02
 Cumulative travel time =          12.3705 sec  (    0.00 hrs)

END OF MOD224: NEGATIVELY BUOYANT LINE PLUME
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BEGIN MOD232: LAYER BOUNDARY IMPINGEMENT/UPSTREAM SPREADING

  Vertical angle of layer/boundary impingement    =     -90.00 deg
  Horizontal angle of layer/boundary impingement  =       0.00 deg

 UPSTREAM INTRUSION PROPERTIES:
        Upstream intrusion length              =     136.20 m
        X-position of upstream stagnation point =    -133.71 m
        Thickness in intrusion region          =       0.68 m
        Half-width at downstream end           =     157.22 m
        Thickness at downstream end            =       2.13 m

 In this case, the upstream INTRUSION IS VERY LARGE, exceeding 10 times
   the local water depth.
 This may be caused by a very small ambient velocity, perhaps in
   combination with large discharge buoyancy.
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 If the ambient conditions are strongly transient (e.g. tidal), then the
   CORMIX steady-state predictions of upstream intrusion are probably
   unrealistic.
 The plume predictions prior to boundary impingement and wedge formation
   will be acceptable, however.

  Control volume inflow:
       X        Y       Z        S       C       BV       BH        TT
     2.48     0.00    0.00     6.8 0.146E+02   0.74    75.74   .12370E+02

 Profile definitions:
   BV = top-hat thickness, measured vertically
   BH = top-hat half-width, measured horizontally in y-direction
   ZU = upper plume boundary (Z-coordinate)
   ZL = lower plume boundary (Z-coordinate)
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

       X        Y       Z        S       C       BV       BH      ZU      ZL       TT
   -133.71     0.00    0.00  9999.9 0.000E+00   0.00     0.00    0.00    0.00   .12505E+04
   -129.42     0.00    0.00    30.7 0.325E+01   0.15    22.23    0.15    0.00   .12115E+04
   -108.37     0.00    0.00    12.7 0.785E+01   0.36    54.01    0.36    0.00   .10201E+04
    -87.32     0.00    0.00     9.6 0.104E+02   0.48    73.07    0.48    0.00   .82871E+03
    -66.26     0.00    0.00     8.2 0.123E+02   0.57    88.10    0.57    0.00   .63734E+03
    -45.21     0.00    0.00     7.4 0.135E+02   0.63   100.91    0.63    0.00   .44597E+03
    -24.16     0.00    0.00     7.0 0.143E+02   0.66   112.28    0.66    0.00   .25460E+03
      3.11     0.00    0.00     6.8 0.146E+02   0.68   122.59    0.68    0.00   .63230E+02
     17.94     0.00    0.00     7.7 0.130E+02   0.89   152.10    0.89    0.00   .15288E+03
     38.99     0.00    0.00    10.2 0.979E+01   1.52   153.91    1.52    0.00   .34425E+03
     60.04     0.00    0.00    12.0 0.834E+01   1.96   155.61    1.96    0.00   .53562E+03
     81.09     0.00    0.00    12.7 0.789E+01   2.13   157.22    2.13    0.00   .72700E+03
 Cumulative travel time =         726.9952 sec  (    0.20 hrs)

END OF MOD232: LAYER BOUNDARY IMPINGEMENT/UPSTREAM SPREADING
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** End of NEAR-FIELD REGION (NFR) **
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BEGIN MOD241: BUOYANT AMBIENT SPREADING

 Profile definitions:
   BV = top-hat thickness, measured vertically
   BH = top-hat half-width, measured horizontally in y-direction
   ZU = upper plume boundary (Z-coordinate)
   ZL = lower plume boundary (Z-coordinate)
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

 Plume Stage 1 (not bank attached):
       X        Y       Z        S       C       BV       BH      ZU      ZL       TT
     81.09     0.00    0.00    12.7 0.789E+01   2.13   157.22    2.13    0.00   .72700E+03
     93.71     0.00    0.00    13.2 0.759E+01   2.20   158.66    2.20    0.00   .84167E+03
 ** REGULATORY MIXING ZONE BOUNDARY **
 In this prediction interval the plume DOWNSTREAM distance meets or exceeds
 the regulatory value =   100.00 m.
 This is the extent of the REGULATORY MIXING ZONE.
    106.32     0.00    0.00    13.7 0.730E+01   2.26   160.10    2.26    0.00   .95635E+03
    118.93     0.00    0.00    14.2 0.704E+01   2.33   161.56    2.33    0.00   .10710E+04
    131.55     0.00    0.00    14.7 0.678E+01   2.39   163.02    2.39    0.00   .11857E+04
    144.16     0.00    0.00    15.3 0.654E+01   2.46   164.49    2.46    0.00   .13004E+04
    156.78     0.00    0.00    15.8 0.631E+01   2.53   165.97    2.53    0.00   .14151E+04
    169.39     0.00    0.00    16.4 0.609E+01   2.59   167.45    2.59    0.00   .15297E+04
    182.01     0.00    0.00    17.0 0.589E+01   2.66   168.94    2.66    0.00   .16444E+04
    194.62     0.00    0.00    17.6 0.569E+01   2.73   170.43    2.73    0.00   .17591E+04
    207.24     0.00    0.00    18.2 0.550E+01   2.80   171.93    2.80    0.00   .18738E+04
    219.85     0.00    0.00    18.8 0.533E+01   2.87   173.43    2.87    0.00   .19885E+04
    232.47     0.00    0.00    19.4 0.516E+01   2.93   174.94    2.93    0.00   .21031E+04
    245.08     0.00    0.00    20.0 0.499E+01   3.00   176.45    3.00    0.00   .22178E+04
    257.70     0.00    0.00    20.7 0.484E+01   3.07   177.97    3.07    0.00   .23325E+04
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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 270.31 | 0.00 | 0.00 | 21.3 | 0.469E+01 | 3.14 | 179.49 | 3.14 | 0.00 | .24472E+04 |
| 282.93 | 0.00 | 0.00 | 22.0 | 0.455E+01 | 3.21 | 181.02 | 3.21 | 0.00 | .25619E+04 |
| 295.54 | 0.00 | 0.00 | 22.7 | 0.441E+01 | 3.29 | 182.55 | 3.29 | 0.00 | .26765E+04 |
| 308.16 | 0.00 | 0.00 | 23.3 | 0.428E+01 | 3.36 | 184.08 | 3.36 | 0.00 | .27912E+04 |
| 320.77 | 0.00 | 0.00 | 24.0 | 0.416E+01 | 3.43 | 185.62 | 3.43 | 0.00 | .29059E+04 |
| 333.38 | 0.00 | 0.00 | 24.8 | 0.404E+01 | 3.50 | 187.16 | 3.50 | 0.00 | .30206E+04 |
| 346.00 | 0.00 | 0.00 | 25.5 | 0.392E+01 | 3.57 | 188.70 | 3.57 | 0.00 | .31353E+04 |
| 358.61 | 0.00 | 0.00 | 26.2 | 0.381E+01 | 3.65 | 190.25 | 3.65 | 0.00 | .32499E+04 |
| 371.23 | 0.00 | 0.00 | 27.0 | 0.371E+01 | 3.72 | 191.79 | 3.72 | 0.00 | .33646E+04 |
| 383.84 | 0.00 | 0.00 | 27.7 | 0.361E+01 | 3.80 | 193.35 | 3.80 | 0.00 | .34793E+04 |
| 396.46 | 0.00 | 0.00 | 28.5 | 0.351E+01 | 3.87 | 194.90 | 3.87 | 0.00 | .35940E+04 |
| 409.07 | 0.00 | 0.00 | 29.3 | 0.342E+01 | 3.94 | 196.46 | 3.94 | 0.00 | .37086E+04 |
| 421.69 | 0.00 | 0.00 | 30.1 | 0.332E+01 | 4.02 | 198.02 | 4.02 | 0.00 | .38233E+04 |
| 434.30 | 0.00 | 0.00 | 30.9 | 0.324E+01 | 4.10 | 199.58 | 4.10 | 0.00 | .39380E+04 |
| 446.92 | 0.00 | 0.00 | 31.7 | 0.315E+01 | 4.17 | 201.14 | 4.17 | 0.00 | .40527E+04 |
| 459.53 | 0.00 | 0.00 | 32.6 | 0.307E+01 | 4.25 | 202.71 | 4.25 | 0.00 | .41674E+04 |
| 472.15 | 0.00 | 0.00 | 33.4 | 0.299E+01 | 4.33 | 204.28 | 4.33 | 0.00 | .42820E+04 |
| 484.76 | 0.00 | 0.00 | 34.3 | 0.292E+01 | 4.41 | 205.85 | 4.41 | 0.00 | .43967E+04 |
| 497.38 | 0.00 | 0.00 | 35.1 | 0.285E+01 | 4.49 | 207.42 | 4.49 | 0.00 | .45114E+04 |
| 509.99 | 0.00 | 0.00 | 36.0 | 0.277E+01 | 4.56 | 208.99 | 4.56 | 0.00 | .46261E+04 |
| 522.60 | 0.00 | 0.00 | 36.9 | 0.271E+01 | 4.64 | 210.57 | 4.64 | 0.00 | .47408E+04 |
| 535.22 | 0.00 | 0.00 | 37.9 | 0.264E+01 | 4.72 | 212.14 | 4.72 | 0.00 | .48554E+04 |
| 547.83 | 0.00 | 0.00 | 38.8 | 0.258E+01 | 4.81 | 213.72 | 4.81 | 0.00 | .49701E+04 |
| 560.45 | 0.00 | 0.00 | 39.7 | 0.252E+01 | 4.89 | 215.30 | 4.89 | 0.00 | .50848E+04 |
| 573.06 | 0.00 | 0.00 | 40.7 | 0.246E+01 | 4.97 | 216.89 | 4.97 | 0.00 | .51995E+04 |
| 585.68 | 0.00 | 0.00 | 41.7 | 0.240E+01 | 5.05 | 218.47 | 5.05 | 0.00 | .53142E+04 |
| 598.29 | 0.00 | 0.00 | 42.7 | 0.234E+01 | 5.13 | 220.05 | 5.13 | 0.00 | .54288E+04 |
| 610.91 | 0.00 | 0.00 | 43.7 | 0.229E+01 | 5.22 | 221.64 | 5.22 | 0.00 | .55435E+04 |
| 623.52 | 0.00 | 0.00 | 44.7 | 0.224E+01 | 5.30 | 223.23 | 5.30 | 0.00 | .56582E+04 |
| 636.14 | 0.00 | 0.00 | 45.7 | 0.219E+01 | 5.38 | 224.81 | 5.38 | 0.00 | .57729E+04 |
| 648.75 | 0.00 | 0.00 | 46.8 | 0.214E+01 | 5.47 | 226.40 | 5.47 | 0.00 | .58875E+04 |
| 661.37 | 0.00 | 0.00 | 47.9 | 0.209E+01 | 5.56 | 227.99 | 5.56 | 0.00 | .60022E+04 |
| 673.98 | 0.00 | 0.00 | 48.9 | 0.204E+01 | 5.64 | 229.58 | 5.64 | 0.00 | .61169E+04 |
| 686.60 | 0.00 | 0.00 | 50.0 | 0.200E+01 | 5.73 | 231.18 | 5.73 | 0.00 | .62316E+04 |
| 699.21 | 0.00 | 0.00 | 51.1 | 0.196E+01 | 5.81 | 232.77 | 5.81 | 0.00 | .63463E+04 |
| 711.83 | 0.00 | 0.00 | 52.3 | 0.191E+01 | 5.90 | 234.36 | 5.90 | 0.00 | .64609E+04 |
| 724.44 | 0.00 | 0.00 | 53.4 | 0.187E+01 | 5.99 | 235.96 | 5.99 | 0.00 | .65756E+04 |
| 737.05 | 0.00 | 0.00 | 54.6 | 0.183E+01 | 6.08 | 237.56 | 6.08 | 0.00 | .66903E+04 |
| 749.67 | 0.00 | 0.00 | 55.7 | 0.179E+01 | 6.17 | 239.15 | 6.17 | 0.00 | .68050E+04 |
| 762.28 | 0.00 | 0.00 | 56.9 | 0.176E+01 | 6.26 | 240.75 | 6.26 | 0.00 | .69197E+04 |
| 774.90 | 0.00 | 0.00 | 58.1 | 0.172E+01 | 6.35 | 242.35 | 6.35 | 0.00 | .70343E+04 |
| 787.51 | 0.00 | 0.00 | 59.4 | 0.168E+01 | 6.44 | 243.95 | 6.44 | 0.00 | .71490E+04 |
| 800.13 | 0.00 | 0.00 | 60.6 | 0.165E+01 | 6.53 | 245.55 | 6.53 | 0.00 | .72637E+04 |
| 812.74 | 0.00 | 0.00 | 61.8 | 0.162E+01 | 6.62 | 247.15 | 6.62 | 0.00 | .73784E+04 |
| 825.36 | 0.00 | 0.00 | 63.1 | 0.158E+01 | 6.72 | 248.75 | 6.72 | 0.00 | .74931E+04 |
| 837.97 | 0.00 | 0.00 | 64.4 | 0.155E+01 | 6.81 | 250.35 | 6.81 | 0.00 | .76077E+04 |
| 850.59 | 0.00 | 0.00 | 65.7 | 0.152E+01 | 6.90 | 251.96 | 6.90 | 0.00 | .77224E+04 |
| 863.20 | 0.00 | 0.00 | 67.0 | 0.149E+01 | 7.00 | 253.56 | 7.00 | 0.00 | .78371E+04 |
| 875.82 | 0.00 | 0.00 | 68.4 | 0.146E+01 | 7.09 | 255.16 | 7.09 | 0.00 | .79518E+04 |
| 888.43 | 0.00 | 0.00 | 69.7 | 0.143E+01 | 7.19 | 256.77 | 7.19 | 0.00 | .80664E+04 |
| 901.05 | 0.00 | 0.00 | 71.1 | 0.141E+01 | 7.28 | 258.37 | 7.28 | 0.00 | .81811E+04 |
| 913.66 | 0.00 | 0.00 | 72.5 | 0.138E+01 | 7.38 | 259.98 | 7.38 | 0.00 | .82958E+04 |
| 926.27 | 0.00 | 0.00 | 73.9 | 0.135E+01 | 7.48 | 261.58 | 7.48 | 0.00 | .84105E+04 |
| 938.89 | 0.00 | 0.00 | 75.3 | 0.133E+01 | 7.57 | 263.19 | 7.57 | 0.00 | .85252E+04 |
| 951.50 | 0.00 | 0.00 | 76.7 | 0.130E+01 | 7.67 | 264.80 | 7.67 | 0.00 | .86398E+04 |
| 964.12 | 0.00 | 0.00 | 78.2 | 0.128E+01 | 7.77 | 266.40 | 7.77 | 0.00 | .87545E+04 |
| 976.73 | 0.00 | 0.00 | 79.7 | 0.125E+01 | 7.87 | 268.01 | 7.87 | 0.00 | .88692E+04 |
| 989.35 | 0.00 | 0.00 | 81.2 | 0.123E+01 | 7.97 | 269.62 | 7.97 | 0.00 | .89839E+04 |
| 1001.96 | 0.00 | 0.00 | 82.7 | 0.121E+01 | 8.07 | 271.23 | 8.07 | 0.00 | .90986E+04 |
| 1014.58 | 0.00 | 0.00 | 84.2 | 0.119E+01 | 8.17 | 272.84 | 8.17 | 0.00 | .92132E+04 |
| 1027.19 | 0.00 | 0.00 | 85.8 | 0.117E+01 | 8.27 | 274.45 | 8.27 | 0.00 | .93279E+04 |
| 1039.81 | 0.00 | 0.00 | 87.3 | 0.114E+01 | 8.37 | 276.06 | 8.37 | 0.00 | .94426E+04 |
| 1052.42 | 0.00 | 0.00 | 88.9 | 0.112E+01 | 8.48 | 277.67 | 8.48 | 0.00 | .95573E+04 |
| 1065.04 | 0.00 | 0.00 | 90.5 | 0.110E+01 | 8.58 | 279.28 | 8.58 | 0.00 | .96720E+04 |
| 1077.65 | 0.00 | 0.00 | 92.2 | 0.109E+01 | 8.68 | 280.89 | 8.68 | 0.00 | .97866E+04 |
| 1090.27 | 0.00 | 0.00 | 93.8 | 0.107E+01 | 8.79 | 282.50 | 8.79 | 0.00 | .99013E+04 |
| 1102.88 | 0.00 | 0.00 | 95.5 | 0.105E+01 | 8.89 | 284.11 | 8.89 | 0.00 | .10016E+05 |
| 1115.49 | 0.00 | 0.00 | 97.1 | 0.103E+01 | 9.00 | 285.72 | 9.00 | 0.00 | .10131E+05 |
| 1128.11 | 0.00 | 0.00 | 98.8 | 0.101E+01 | 9.10 | 287.33 | 9.10 | 0.00 | .10245E+05 |
| 1140.72 | 0.00 | 0.00 | 100.6 | 0.994E+00 | 9.21 | 288.95 | 9.21 | 0.00 | .10360E+05 |

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   1153.34     0.00    0.00   102.3 0.978E+00   9.32   290.56    9.32    0.00   .10475E+05
   1165.95     0.00    0.00   104.1 0.961E+00   9.43   292.17    9.43    0.00   .10589E+05
   1178.57     0.00    0.00   105.8 0.945E+00   9.54   293.78    9.54    0.00   .10704E+05
   1191.18     0.00    0.00   107.6 0.929E+00   9.64   295.40    9.64    0.00   .10819E+05
   1203.80     0.00    0.00   109.4 0.914E+00   9.75   297.01    9.75    0.00   .10933E+05
   1216.41     0.00    0.00   111.3 0.899E+00   9.86   298.62    9.86    0.00   .11048E+05
   1229.03     0.00    0.00   113.1 0.884E+00   9.97   300.24    9.97    0.00   .11163E+05
   1241.64     0.00    0.00   115.0 0.869E+00  10.09   301.85   10.09    0.00   .11277E+05
   1254.26     0.00    0.00   116.9 0.855E+00  10.20   303.46   10.20    0.00   .11392E+05
   1266.87     0.00    0.00   118.8 0.842E+00  10.31   305.08   10.31    0.00   .11507E+05
   1279.48     0.00    0.00   120.8 0.828E+00  10.42   306.69   10.42    0.00   .11621E+05
   1292.10     0.00    0.00   122.7 0.815E+00  10.54   308.31   10.54    0.00   .11736E+05
   1304.71     0.00    0.00   124.7 0.802E+00  10.65   309.92   10.65    0.00   .11851E+05
   1317.33     0.00    0.00   126.7 0.789E+00  10.77   311.54   10.77    0.00   .11966E+05
   1329.94     0.00    0.00   128.7 0.777E+00  10.88   313.15   10.88    0.00   .12080E+05
   1342.56     0.00    0.00   130.8 0.765E+00  11.00   314.77   11.00    0.00   .12195E+05
 Cumulative travel time =       12194.8818 sec  (    3.39 hrs)

END OF MOD241: BUOYANT AMBIENT SPREADING
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BEGIN MOD261: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.102E+00 m^2/s
  Horizontal diffusivity (initial value) = 0.321E+01 m^2/s

 Profile definitions:
   BV = Gaussian s.d.*sqrt(pi/2) (46%) thickness, measured vertically
      = or equal to layer depth, if fully mixed
   BH = Gaussian s.d.*sqrt(pi/2) (46%) half-width,
        measured horizontally in Y-direction
   ZU = upper plume boundary (Z-coordinate)
   ZL = lower plume boundary (Z-coordinate)
   S  = hydrodynamic centerline dilution
   C  = centerline concentration (includes reaction effects, if any)
   TT = Cumulative travel time

 Plume Stage 1 (not bank attached):
        X        Y       Z        S       C       BV       BH      ZU      ZL       TT
   1342.56     0.00    0.00   130.8 0.765E+00  11.00   314.77   11.00    0.00   .12195E+05
 Plume interacts with SURFACE.
 The passive diffusion plume becomes VERTICALLY FULLY MIXED within this
   prediction interval.
   1379.13     0.00    0.00   133.0 0.752E+00  11.00   320.11   11.00    0.00   .12527E+05
   1415.71     0.00    0.00   135.3 0.739E+00  11.00   325.49   11.00    0.00   .12860E+05
   1452.28     0.00    0.00   137.5 0.727E+00  11.00   330.89   11.00    0.00   .13192E+05
   1488.86     0.00    0.00   139.8 0.715E+00  11.00   336.32   11.00    0.00   .13525E+05
   1525.43     0.00    0.00   142.0 0.704E+00  11.00   341.79   11.00    0.00   .13857E+05
   1562.00     0.00    0.00   144.3 0.693E+00  11.00   347.28   11.00    0.00   .14190E+05
   1598.58     0.00    0.00   146.6 0.682E+00  11.00   352.80   11.00    0.00   .14522E+05
   1635.15     0.00    0.00   148.9 0.671E+00  11.00   358.35   11.00    0.00   .14855E+05
   1671.73     0.00    0.00   151.2 0.661E+00  11.00   363.93   11.00    0.00   .15187E+05
   1708.30     0.00    0.00   153.6 0.651E+00  11.00   369.54   11.00    0.00   .15520E+05
   1744.88     0.00    0.00   155.9 0.641E+00  11.00   375.17   11.00    0.00   .15852E+05
   1781.45     0.00    0.00   158.3 0.632E+00  11.00   380.84   11.00    0.00   .16185E+05
   1818.03     0.00    0.00   160.6 0.623E+00  11.00   386.53   11.00    0.00   .16517E+05
   1854.60     0.00    0.00   163.0 0.613E+00  11.00   392.25   11.00    0.00   .16850E+05
   1891.17     0.00    0.00   165.4 0.605E+00  11.00   398.00   11.00    0.00   .17182E+05
   1927.75     0.00    0.00   167.8 0.596E+00  11.00   403.78   11.00    0.00   .17515E+05
   1964.32     0.00    0.00   170.2 0.587E+00  11.00   409.58   11.00    0.00   .17847E+05
   2000.90     0.00    0.00   172.6 0.579E+00  11.00   415.41   11.00    0.00   .18180E+05
   2037.47     0.00    0.00   175.1 0.571E+00  11.00   421.27   11.00    0.00   .18512E+05
   2074.05     0.00    0.00   177.5 0.563E+00  11.00   427.16   11.00    0.00   .18845E+05
   2110.62     0.00    0.00   180.0 0.556E+00  11.00   433.07   11.00    0.00   .19177E+05
   2147.20     0.00    0.00   182.5 0.548E+00  11.00   439.01   11.00    0.00   .19510E+05
   2183.77     0.00    0.00   184.9 0.541E+00  11.00   444.98   11.00    0.00   .19842E+05
   2220.34     0.00    0.00   187.4 0.534E+00  11.00   450.97   11.00    0.00   .20175E+05
   2256.92     0.00    0.00   189.9 0.527E+00  11.00   457.00   11.00    0.00   .20507E+05
   2293.49     0.00    0.00   192.4 0.520E+00  11.00   463.04   11.00    0.00   .20840E+05
   2330.07     0.00    0.00   195.0 0.513E+00  11.00   469.12   11.00    0.00   .21172E+05
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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2366.64 | 0.00 | 0.00 | 197.5 | 0.506E+00 | 11.00 | 475.22 | 11.00 | 0.00 | .21505E+05 |
| 2403.22 | 0.00 | 0.00 | 200.0 | 0.500E+00 | 11.00 | 481.34 | 11.00 | 0.00 | .21837E+05 |
| 2439.79 | 0.00 | 0.00 | 202.6 | 0.494E+00 | 11.00 | 487.50 | 11.00 | 0.00 | .22170E+05 |
| 2476.37 | 0.00 | 0.00 | 205.2 | 0.487E+00 | 11.00 | 493.68 | 11.00 | 0.00 | .22502E+05 |
| 2512.94 | 0.00 | 0.00 | 207.7 | 0.481E+00 | 11.00 | 499.88 | 11.00 | 0.00 | .22835E+05 |
| 2549.51 | 0.00 | 0.00 | 210.3 | 0.475E+00 | 11.00 | 506.11 | 11.00 | 0.00 | .23167E+05 |
| 2586.09 | 0.00 | 0.00 | 212.9 | 0.470E+00 | 11.00 | 512.37 | 11.00 | 0.00 | .23500E+05 |
| 2622.66 | 0.00 | 0.00 | 215.5 | 0.464E+00 | 11.00 | 518.65 | 11.00 | 0.00 | .23832E+05 |
| 2659.24 | 0.00 | 0.00 | 218.2 | 0.458E+00 | 11.00 | 524.96 | 11.00 | 0.00 | .24165E+05 |
| 2695.81 | 0.00 | 0.00 | 220.8 | 0.453E+00 | 11.00 | 531.29 | 11.00 | 0.00 | .24497E+05 |
| 2732.39 | 0.00 | 0.00 | 223.4 | 0.448E+00 | 11.00 | 537.65 | 11.00 | 0.00 | .24830E+05 |
| 2768.96 | 0.00 | 0.00 | 226.1 | 0.442E+00 | 11.00 | 544.03 | 11.00 | 0.00 | .25162E+05 |
| 2805.54 | 0.00 | 0.00 | 228.8 | 0.437E+00 | 11.00 | 550.44 | 11.00 | 0.00 | .25495E+05 |
| 2842.11 | 0.00 | 0.00 | 231.4 | 0.432E+00 | 11.00 | 556.87 | 11.00 | 0.00 | .25827E+05 |
| 2878.69 | 0.00 | 0.00 | 234.1 | 0.427E+00 | 11.00 | 563.33 | 11.00 | 0.00 | .26160E+05 |
| 2915.26 | 0.00 | 0.00 | 236.8 | 0.422E+00 | 11.00 | 569.81 | 11.00 | 0.00 | .26492E+05 |
| 2951.83 | 0.00 | 0.00 | 239.5 | 0.418E+00 | 11.00 | 576.32 | 11.00 | 0.00 | .26825E+05 |
| 2988.41 | 0.00 | 0.00 | 242.2 | 0.413E+00 | 11.00 | 582.85 | 11.00 | 0.00 | .27157E+05 |
| 3024.98 | 0.00 | 0.00 | 245.0 | 0.408E+00 | 11.00 | 589.40 | 11.00 | 0.00 | .27490E+05 |
| 3061.56 | 0.00 | 0.00 | 247.7 | 0.404E+00 | 11.00 | 595.99 | 11.00 | 0.00 | .27822E+05 |
| 3098.13 | 0.00 | 0.00 | 250.4 | 0.399E+00 | 11.00 | 602.59 | 11.00 | 0.00 | .28155E+05 |
| 3134.71 | 0.00 | 0.00 | 253.2 | 0.395E+00 | 11.00 | 609.22 | 11.00 | 0.00 | .28487E+05 |
| 3171.28 | 0.00 | 0.00 | 256.0 | 0.391E+00 | 11.00 | 615.87 | 11.00 | 0.00 | .28820E+05 |
| 3207.86 | 0.00 | 0.00 | 258.7 | 0.387E+00 | 11.00 | 622.55 | 11.00 | 0.00 | .29152E+05 |
| 3244.43 | 0.00 | 0.00 | 261.5 | 0.382E+00 | 11.00 | 629.25 | 11.00 | 0.00 | .29485E+05 |
| 3281.00 | 0.00 | 0.00 | 264.3 | 0.378E+00 | 11.00 | 635.98 | 11.00 | 0.00 | .29817E+05 |
| 3317.58 | 0.00 | 0.00 | 267.1 | 0.374E+00 | 11.00 | 642.73 | 11.00 | 0.00 | .30150E+05 |
| 3354.15 | 0.00 | 0.00 | 269.9 | 0.370E+00 | 11.00 | 649.50 | 11.00 | 0.00 | .30482E+05 |
| 3390.73 | 0.00 | 0.00 | 272.8 | 0.367E+00 | 11.00 | 656.30 | 11.00 | 0.00 | .30815E+05 |
| 3427.30 | 0.00 | 0.00 | 275.6 | 0.363E+00 | 11.00 | 663.12 | 11.00 | 0.00 | .31147E+05 |
| 3463.88 | 0.00 | 0.00 | 278.4 | 0.359E+00 | 11.00 | 669.96 | 11.00 | 0.00 | .31480E+05 |
| 3500.45 | 0.00 | 0.00 | 281.3 | 0.356E+00 | 11.00 | 676.83 | 11.00 | 0.00 | .31812E+05 |
| 3537.03 | 0.00 | 0.00 | 284.1 | 0.352E+00 | 11.00 | 683.72 | 11.00 | 0.00 | .32145E+05 |
| 3573.60 | 0.00 | 0.00 | 287.0 | 0.348E+00 | 11.00 | 690.63 | 11.00 | 0.00 | .32477E+05 |
| 3610.17 | 0.00 | 0.00 | 289.9 | 0.345E+00 | 11.00 | 697.57 | 11.00 | 0.00 | .32810E+05 |
| 3646.75 | 0.00 | 0.00 | 292.8 | 0.342E+00 | 11.00 | 704.52 | 11.00 | 0.00 | .33142E+05 |
| 3683.32 | 0.00 | 0.00 | 295.7 | 0.338E+00 | 11.00 | 711.51 | 11.00 | 0.00 | .33475E+05 |
| 3719.90 | 0.00 | 0.00 | 298.6 | 0.335E+00 | 11.00 | 718.51 | 11.00 | 0.00 | .33807E+05 |
| 3756.47 | 0.00 | 0.00 | 301.5 | 0.332E+00 | 11.00 | 725.54 | 11.00 | 0.00 | .34140E+05 |
| 3793.05 | 0.00 | 0.00 | 304.5 | 0.328E+00 | 11.00 | 732.59 | 11.00 | 0.00 | .34472E+05 |
| 3829.62 | 0.00 | 0.00 | 307.4 | 0.325E+00 | 11.00 | 739.67 | 11.00 | 0.00 | .34805E+05 |
| 3866.20 | 0.00 | 0.00 | 310.3 | 0.322E+00 | 11.00 | 746.76 | 11.00 | 0.00 | .35137E+05 |
| 3902.77 | 0.00 | 0.00 | 313.3 | 0.319E+00 | 11.00 | 753.88 | 11.00 | 0.00 | .35470E+05 |
| 3939.34 | 0.00 | 0.00 | 316.3 | 0.316E+00 | 11.00 | 761.02 | 11.00 | 0.00 | .35802E+05 |
| 3975.92 | 0.00 | 0.00 | 319.3 | 0.313E+00 | 11.00 | 768.19 | 11.00 | 0.00 | .36135E+05 |
| 4012.49 | 0.00 | 0.00 | 322.2 | 0.310E+00 | 11.00 | 775.37 | 11.00 | 0.00 | .36467E+05 |
| 4049.07 | 0.00 | 0.00 | 325.2 | 0.307E+00 | 11.00 | 782.58 | 11.00 | 0.00 | .36800E+05 |
| 4085.64 | 0.00 | 0.00 | 328.2 | 0.305E+00 | 11.00 | 789.81 | 11.00 | 0.00 | .37132E+05 |
| 4122.22 | 0.00 | 0.00 | 331.3 | 0.302E+00 | 11.00 | 797.06 | 11.00 | 0.00 | .37465E+05 |
| 4158.79 | 0.00 | 0.00 | 334.3 | 0.299E+00 | 11.00 | 804.34 | 11.00 | 0.00 | .37797E+05 |
| 4195.37 | 0.00 | 0.00 | 337.3 | 0.296E+00 | 11.00 | 811.64 | 11.00 | 0.00 | .38129E+05 |
| 4231.94 | 0.00 | 0.00 | 340.4 | 0.294E+00 | 11.00 | 818.95 | 11.00 | 0.00 | .38462E+05 |
| 4268.51 | 0.00 | 0.00 | 343.4 | 0.291E+00 | 11.00 | 826.29 | 11.00 | 0.00 | .38794E+05 |
| 4305.09 | 0.00 | 0.00 | 346.5 | 0.289E+00 | 11.00 | 833.66 | 11.00 | 0.00 | .39127E+05 |
| 4341.66 | 0.00 | 0.00 | 349.5 | 0.286E+00 | 11.00 | 841.04 | 11.00 | 0.00 | .39459E+05 |
| 4378.24 | 0.00 | 0.00 | 352.6 | 0.284E+00 | 11.00 | 848.45 | 11.00 | 0.00 | .39792E+05 |
| 4414.81 | 0.00 | 0.00 | 355.7 | 0.281E+00 | 11.00 | 855.87 | 11.00 | 0.00 | .40124E+05 |
| 4451.38 | 0.00 | 0.00 | 358.8 | 0.279E+00 | 11.00 | 863.32 | 11.00 | 0.00 | .40457E+05 |
| 4487.96 | 0.00 | 0.00 | 361.9 | 0.276E+00 | 11.00 | 870.79 | 11.00 | 0.00 | .40789E+05 |
| 4524.53 | 0.00 | 0.00 | 365.0 | 0.274E+00 | 11.00 | 878.28 | 11.00 | 0.00 | .41122E+05 |
| 4561.11 | 0.00 | 0.00 | 368.1 | 0.272E+00 | 11.00 | 885.80 | 11.00 | 0.00 | .41454E+05 |
| 4597.68 | 0.00 | 0.00 | 371.3 | 0.269E+00 | 11.00 | 893.33 | 11.00 | 0.00 | .41787E+05 |
| 4634.26 | 0.00 | 0.00 | 374.4 | 0.267E+00 | 11.00 | 900.89 | 11.00 | 0.00 | .42119E+05 |
| 4670.83 | 0.00 | 0.00 | 377.6 | 0.265E+00 | 11.00 | 908.47 | 11.00 | 0.00 | .42452E+05 |
| 4707.40 | 0.00 | 0.00 | 380.7 | 0.263E+00 | 11.00 | 916.06 | 11.00 | 0.00 | .42784E+05 |
| 4743.98 | 0.00 | 0.00 | 383.9 | 0.261E+00 | 11.00 | 923.68 | 11.00 | 0.00 | .43117E+05 |
| 4780.55 | 0.00 | 0.00 | 387.1 | 0.258E+00 | 11.00 | 931.32 | 11.00 | 0.00 | .43449E+05 |
| 4817.13 | 0.00 | 0.00 | 390.2 | 0.256E+00 | 11.00 | 938.98 | 11.00 | 0.00 | .43782E+05 |
| 4853.70 | 0.00 | 0.00 | 393.4 | 0.254E+00 | 11.00 | 946.67 | 11.00 | 0.00 | .44114E+05 |
| 4890.28 | 0.00 | 0.00 | 396.6 | 0.252E+00 | 11.00 | 954.37 | 11.00 | 0.00 | .44447E+05 |

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   4926.85     0.00    0.00   399.8 0.250E+00  11.00   962.09   11.00    0.00   .44779E+05
   4963.42     0.00    0.00   403.1 0.248E+00  11.00   969.84   11.00    0.00   .45112E+05
   5000.00     0.00    0.00   406.3 0.246E+00  11.00   977.60   11.00    0.00   .45444E+05
 Cumulative travel time =       45444.3516 sec  (   12.62 hrs)

 Simulation limit based on maximum specified distance =   5000.00 m.
   This is the REGION OF INTEREST limitation.

END OF MOD261: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
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CORMIX2: Multiport Diffuser Discharges       End of Prediction File
22222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222222
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**Plume Shape and Dimensions at Critical Dilution**