



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
-



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, el Aviso de Recepción de Solicitud e Intención de Obtener un Permiso)
 - Inglés
 - Idioma alternativo (español)
3. Solicitud original



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

Plain Language Summary 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 as required by [Title 30, Texas Administrative Code \(30 TAC\), Chapter 39, Subchapter H](#). Applicants may modify the template as necessary to accurately describe their 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 the applicant 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.

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.

DSM Nutritional Products, LLC (CN602496499) operates DSM Nutritional Products (RN101190221), a beta carotene manufacturing facility. The facility is located at 1000 County Road 227A, in Freeport, Brazoria County, Texas 77541. DSM is seeking to renew their TPDES permit application.

Discharges from the facility are expected to contain : total suspended solids, ammonia nitrogen, cyanide, acetone, 4-methyl-2-pentanone, isobutyraldehyde, n-amyl acetate, n-butyl acetate, ethyl acetate, isopropyl acetate, methyl formate, amyl alcohol, ethanol, isopropanol, methanol, methyl cellosolve, dimethyl sulfoxide, triethyl amine, phenol, benzene, toluene, xylenes, n-hexane, n-heptane, methylene chloride, chloroform, 1,2-dichloroethane, tetrahydrofuran, isopropyl ether, diethyl amine, acetonitrile, and enterococci. Treated process wastewater, utility wastewater, water treatment wastes, treated domestic wastewater, and stormwater are treated by physical, chemical, and biological methods, including pH

adjustment, equalization, scum skimmer, aeration, flocculation, clarification, filtration, and chlorination.

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

AGUAS RESIDUALES Introduzca 'INDUSTRIALES' o 'DOMÉSTICAS' aquí /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.

DSM Nutritional Products, LLC ((CN602496499) opera DSM Nutritional Products (RN101190221), una instalación de fabricación de betacaroteno. La instalación está ubicada en 1000 County Road 227A, en Freeport, Condado de Brazoria, Texas 77541. DSM está tratando de renovar su solicitud de permiso TPDES.

Se espera que las descargas de la instalación contengan : sólidos suspendidos totales, nitrógeno amoniacal, cianuro, acetona, 4-metil-2-pentanona, isobutiraldehído, acetato de n-amilo, acetato de n-butilo, acetato de etilo, acetato de isopropilo, formiato de metilo, alcohol amílico, etanol, isopropanol, metanol, metilcelosolve (2-metoxietanol), dimetilsulfóxido, trietilamina, fenol, benceno, tolueno, xilenos, n-hexano, n-heptano, cloruro de metileno, cloroformo, 1,2-dicloroetano, tetrahidrofurano, éter isopropílico, dietil amina, acetonitrilo, y enterococos. Aguas residuales de procesos tratados, aguas residuales de servicios públicos, residuos del tratamiento del agua, aguas residuales domésticas tratadas y aguas pluviales. **están** tratado por métodos físicos, químicos y biológicos, incluidos el ajuste del pH, la ecualización, el espumador, la aireación, la floculación, la clarificación, la filtración y la cloración.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



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

PERMIT NO. WQ0002216000

APPLICATION. DSM Nutritional Products, LLC, 1000 County Road 227A, Freeport, Texas, 77541, which owns a beta-carotene manufacturing facility, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0002216000 (EPA I.D. No. TX0064912) to authorize the discharge of treated wastewater and stormwater at a volume not to exceed a daily average flow of 190,000 gallons per day. The facility is located at 1000 County Road 227A, in the city of Freeport, in Brazoria County, Texas 77541. The discharge route is from the plant site via pipeline to the Dow Plant "A" Canal; thence to Brazos River Tidal. TCEQ received this application on August 30, 2024. The permit application will be available for viewing and copying at Freeport Branch Public Library, public notice shelf, 410 North Brazosport Boulevard, Freeport, 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=-95.367777,29.0075&level=18>

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.**

TCEQ may act on an application to renew a permit for discharge of wastewater without providing an opportunity for a contested case hearing if certain criteria are met.

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 DSM Nutritional Products, LLC at the address stated above or by calling Ms. Kinzie Griffin, Environmental Professional, at 979-373-5080.

Issuance Date: October 4, 2024

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 RENOVACION

PERMISO NO. WQ0002216000

SOLICITUD. DSM Nutritional Products, LLC, 1000 County Road 227A, Freeport, Texas, 77541, dueño de una planta de fabricación de betacaroteno, ha solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) para renovar el Permiso No. WQ0002216000 (EPA I.D. No. TX0064912) del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES) para autorizar la descarga de aguas residuales tratadas y pluviales en un volumen que no sobrepasa un flujo promedio diario de 190,000 galones por día. La planta está ubicada en 1000 County Road 227A en la ciudad de Freeport, en el Condado de Brazoria, en Texas 77541. La ruta de descarga es del sitio de la planta a través de tubería hasta el Canal "A" en la Planta de Dow; de allí a Brazos River Tidal. La TCEQ recibió esta solicitud el 30 de Agosto de 2024. La solicitud para el permiso está disponible para leerla y copiarla en Freeport Branch Public Library, en el estante de aviso público, en 410 North Brazosport Boulevard, Freeport, Texas antes de la fecha de que este aviso se publica 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=-95.367777,29.0075&level=18>

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. Si ciertos criterios se cumplen, la TCEQ puede actuar sobre una solicitud para renovar un permiso sin proveer una oportunidad de una audiencia administrativa de lo contencioso.

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 de 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 específico. Si desea que se agregue 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.

CONTACTOS E INFORMACIÓN DE LA TCEQ. Todos los comentarios escritos del público y los para pedidos una reunión deben ser presentados a la Oficina del Secretario Principal, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 o por el internet at 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. Si necesita más información en Español sobre esta solicitud para un permiso o el proceso del permiso, por favor llame a El Programa de Educación Pública de la TCEQ, sin cobro, al 1-800-687-4040. La información general sobre la TCEQ puede ser encontrada en nuestro sitio de la red: www.tceq.texas.gov.

También se puede obtener más información de DSM Nutritional Products, LLC en la dirección indicada arriba o llamando a la Sra. Kinzie Griffin, Profesional Medioambiental, al número de teléfono 979-373-5080.

Fecha de emisión: 4 de octubre de 2024

Jon Niermann, *Chairman*
Bobby Janecka, *Commissioner*
Catarina R. Gonzales, *Commissioner*
Kelly Keel, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 30, 2024

Re: Confirmation of Submission of the Renewal without changes for Industrial Wastewater Authorization.

Dear Applicant:

This is an acknowledgement that you have successfully completed Renewal without changes for the Industrial Wastewater authorization.

ER Account Number: ER103701
Application Reference Number: 671347
Authorization Number: WQ0002216000
Site Name: Dsm Nutritional Products
Regulated Entity: RN101190221 - Dsm Nutritional Products
Customer(s): CN602496499 - Dsm Nutritional Products, LLC

Please be aware that TCEQ staff may contact your designated contact for any additional information.

If you have any questions, you may contact the Applications Review and Processing Team by email at WQ-ARPTeam@tceq.texas.gov or by telephone at (512) 239-4671.

Sincerely,
Applications Review and Processing Team
Water Quality Division

Texas Commission on Environmental Quality

Update Domestic or Industrial Individual Permit

WQ0002216000

Site Information (Regulated Entity)

What is the name of the site to be authorized?	DSM NUTRITIONAL PRODUCTS
Does the site have a physical address?	Yes
Physical Address	
Number and Street	1000 COUNTY ROAD 227 # A
City	FREEPORT
State	TX
ZIP	77541
County	BRAZORIA
Latitude (N) (##.#####)	29.0075
Longitude (W) (-###.#####)	-95.367777
Primary SIC Code	2833
Secondary SIC Code	
Primary NAICS Code	325411
Secondary NAICS Code	
Regulated Entity Site Information	
What is the Regulated Entity's Number (RN)?	RN101190221
What is the name of the Regulated Entity (RE)?	DSM NUTRITIONAL PRODUCTS
Does the RE site have a physical address?	Yes
Physical Address	
Number and Street	1000 COUNTY ROAD 227
City	FREEPORT
State	TX
ZIP	77541
County	BRAZORIA
Latitude (N) (##.#####)	29.01278
Longitude (W) (-###.#####)	-95.36333
Facility NAICS Code	
What is the primary business of this entity?	BETA CAROTENE PRODUCTION FACILITY

DSM Nut-Customer (Applicant) Information (Owner)

How is this applicant associated with this site?	Owner
What is the applicant's Customer Number (CN)?	CN602496499
Type of Customer	Corporation
Full legal name of the applicant:	
Legal Name	DSM Nutritional Products, LLC
Texas SOS Filing Number	800189929
Federal Tax ID	274085144
State Franchise Tax ID	12740851444
State Sales Tax ID	
Local Tax ID	
DUNS Number	2191211
Number of Employees	501+
Independently Owned and Operated?	No
I certify that the full legal name of the entity applying for this permit has been provided and is legally authorized to do business in Texas.	Yes
Responsible Authority Contact	
Organization Name	DSM Nutritional Products, LLC
Prefix	MR
First	Renato
Middle	S
Last	Lopes
Suffix	
Credentials	
Title	SITE MANAGER
Responsible Authority Mailing Address	
Enter new address or copy one from list:	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	1000 COUNTY ROAD 227 # A
Routing (such as Mail Code, Dept., or Attn:)	
City	FREEPORT
State	TX
ZIP	77541
Phone (###-###-####)	8433567943
Extension	
Alternate Phone (###-###-####)	

Fax (###-###-####)

E-mail

renato.lopes@dsm-firmenich.com

Billing Contact

Responsible contact for receiving billing statements:

Select the permittee that is responsible for payment of the annual fee.

Organization Name

Prefix

First

Middle

Last

Suffix

Credentials

Title

Enter new address or copy one from list:

Mailing Address

Address Type

Mailing Address (include Suite or Bldg. here, if applicable)

Routing (such as Mail Code, Dept., or Attn:)

City

State

ZIP

Phone (###-###-####)

Extension

Alternate Phone (###-###-####)

Fax (###-###-####)

E-mail

CN602496499, DSM Nutritional Products, LLC

DSM NUTRITIONAL PRODUCTS INC

Domestic

1000 COUNTY ROAD 227 # A

FREEPORT

TX

77541

9793735080

kinzie.griffin@dsm-firmenich.com

Application Contact

Person TCEQ should contact for questions about this application:

Same as another contact?

Organization Name

Prefix

First

Middle

Billing Contact

DSM NUTRITIONAL PRODUCTS LLC

Kinzie

Last	Griffin
Suffix	
Credentials	
Title	Environmental Professional
Enter new address or copy one from list:	Billing Contact
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	1000 COUNTY ROAD 227 # A
Routing (such as Mail Code, Dept., or Attn:)	
City	FREEPORT
State	TX
ZIP	77541
Phone (###-###-####)	9793735080
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	kinzie.griffin@dsm-firmenich.com

Technical Contact

Person TCEQ should contact for questions about this application:	
Same as another contact?	Application Contact
Organization Name	DSM NUTRITIONAL PRODUCTS LLC
Prefix	MS
First	Kinzie
Middle	
Last	Griffin
Suffix	
Credentials	
Title	Environmental Professional
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	1000 COUNTY ROAD 227 # A
Routing (such as Mail Code, Dept., or Attn:)	
City	FREEPORT
State	TX

ZIP	77541
Phone (###-###-####)	9793735080
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	kinzie.griffin@dsm-firmenich.com

DMR Contact

Person responsible for submitting Discharge Monitoring Report Forms:	
Same as another contact?	Application Contact
Organization Name	DSM NUTRITIONAL PRODUCTS LLC
Prefix	
First	Kinzie
Middle	
Last	Griffin
Suffix	
Credentials	
Title	Environmental Professional
Enter new address or copy one from list:	
Mailing Address:	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	1000 COUNTY ROAD 227 # A
Routing (such as Mail Code, Dept., or Attn:)	
City	FREEPORT
State	TX
ZIP	77541
Phone (###-###-####)	9793735080
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	kinzie.griffin@dsm-firmenich.com

Section 1# Permit Contact

Permit Contact#: 1
Person TCEQ should contact throughout the permit term.

1) Same as another contact?	Application Contact
2) Organization Name	DSM NUTRITIONAL PRODUCTS LLC
3) Prefix	
4) First	Kinzie
5) Middle	
6) Last	Griffin
7) Suffix	
8) Credentials	
9) Title	Environmental Professional
Mailing Address	
10) Enter new address or copy one from list	
11) Address Type	Domestic
11.1) Mailing Address (include Suite or Bldg. here, if applicable)	1000 COUNTY ROAD 227 # A
11.2) Routing (such as Mail Code, Dept., or Attn:)	
11.3) City	FREEPORT
11.4) State	TX
11.5) ZIP	77541
12) Phone (###-###-####)	9793735080
13) Extension	
14) Alternate Phone (###-###-####)	
15) Fax (###-###-####)	
16) E-mail	kinzie.griffin@dsm-firmenich.com

Section 2# Permit Contact

Permit Contact#: 2

Person TCEQ should contact throughout the permit term.

1) Same as another contact?	
2) Organization Name	GREEN Environmental Consulting Inc
3) Prefix	
4) First	Karen
5) Middle	
6) Last	Miller
7) Suffix	
8) Credentials	PG (TBPG) PE
9) Title	Senior Engineer
Mailing Address	

10) Enter new address or copy one from list	
11) Address Type	Domestic
11.1) Mailing Address (include Suite or Bldg. here, if applicable)	2902 CLARICE CT
11.2) Routing (such as Mail Code, Dept., or Attn:)	
11.3) City	AUSTIN
11.4) State	TX
11.5) ZIP	78757
12) Phone (###-###-####)	5124687325
13) Extension	
14) Alternate Phone (###-###-####)	
15) Fax (###-###-####)	
16) E-mail	kmiller@green-envi.com

Owner Information

Owner of Treatment Facility

1) Prefix	
2) First and Last Name	
3) Organization Name	DSM Nutritional Products LLC
4) Mailing Address	1000 County Rd 227A
5) City	Freeport
6) State	TX
7) Zip Code	77541
8) Phone (###-###-####)	9793735000
9) Extension	
10) Email	kinzie.griffin@dsm-firmenich.com
11) What is ownership of the treatment facility?	Private

Owner of Land (where treatment facility is or will be)

12) Prefix	
13) First and Last Name	
14) Organization Name	DSM Nutritional Products LLC
15) Mailing Address	1000 County Rd 227A
16) City	Freeport
17) State	TX
18) Zip Code	77541
19) Phone (###-###-####)	9793735000
20) Extension	

21) Email	kinzie.griffin@dsm-firmenich.com
22) Is the landowner the same person as the facility owner or co-applicant?	Yes

General Information Renewal-Amendment

1) Current authorization expiration date:	02/11/2025
2) Current Facility operational status:	Active
3) Is the facility located on or does the treated effluent cross American Indian Land?	No
4) What is the application type that you are seeking?	Renewal without changes
5) Current Authorization type:	Industrial Wastewater
5.1) What is your EPA facility classification?	Minor
5.1.1) Are the discharges at your facility subjected to federal effluent limitation guidelines (ELG) 40 CFR Part 400-471?	Yes
5.1.1.1) Select the applicable fee for the Minor facility that is subjected to 40 CFR 400-471:	Renewal - \$1,215
6) What is the classification for your authorization?	TPDES
6.1) What is the EPA Identification Number?	TX0064912
6.2) Is the wastewater treatment facility location in the existing permit accurate?	Yes
6.3) Are the point(s) of discharge and the discharge route(s) in the existing permit correct?	Yes
6.4) City nearest the outfall(s):	Freeport
6.5) County where the outfalls are located:	BRAZORIA
6.6) Is or will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch?	No
6.7) Is the daily average discharge at your facility of 5 MGD or more?	No
7) Did any person formerly employed by the TCEQ represent your company and get paid for service regarding this application?	No

Public Notice Information

Individual Publishing the Notices

1) Prefix	MS
2) First and Last Name	Kinzie Griffin
3) Credential	
4) Title	Environmental Professional
5) Organization Name	DSM Nutritional Products LLC
6) Mailing Address	1000 COUNTY ROAD 227
7) Address Line 2	A
8) City	FREEPORT
9) State	TX

10) Zip Code	77541
11) Phone (###-###-####)	9793735080
12) Extension	
13) Fax (###-###-####)	
14) Email	kinzie.griffin@dsm-firmenich.com
Contact person to be listed in the Notices	
15) Prefix	
16) First and Last Name	Kinzie Griffin
17) Credential	
18) Title	Environmental Professional
19) Organization Name	DSM Nutritional Products LLC
20) Phone (###-###-####)	9793735080
21) Fax (###-###-####)	
22) Email	kinzie.griffin@dsm-firmenich.com
Bilingual Notice Requirements	
23) 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
23.1) Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school?	Yes
23.2) Do the students at these schools attend a bilingual education program at another location?	No
23.3) 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)?	No
23.4) Which language is required by the bilingual program?	Spanish

Section 1# Public Viewing Information

County#: 1

1) County	BRAZORIA
2) Public building name	Freeport Branch Public Library
3) Location within the building	Public notice shelf
4) Physical Address of Building	410 N. Brazosport Blvd
5) City	Freeport
6) Contact Name	
7) Phone (###-###-####)	9792333622
8) Extension	
9) Is the location open to the public?	Yes

Plain Language

1) Plain Language	
[File Properties]	
File Name	LANG_MGH-Attachment 2 plain language summary.pdf
Hash	B0F3E947DE30649C50C51615F50824E969435AB0B635C7C07237F35DA7A1CD65
MIME-Type	application/pdf

Supplemental Permit Information Form

1) Supplemental Permit Information Form (SPIF)	
[File Properties]	
File Name	SPIF_SPIF w USGS Map.pdf
Hash	659CFA3D6B3A6A01FE38028E5430FB17BF38D04B1439AC085612497AFBB648FB
MIME-Type	application/pdf

Industrial Attachments

1) Attach an 8.5"x11", reproduced portion of the most current and original USGS Topographic Quadrangle Map(s) that meets the 1:24,000 scale.	
[File Properties]	
File Name	MAP_USGS Topo Map.pdf
Hash	AEA5696FEB6C47A1E646826049022A45D82C798475CD047DA339C053FF4C64D2
MIME-Type	application/pdf
2) I confirm that all required sections of Technical Report 1.0 are complete and will be included in the Technical Attachment.	Yes
2.1) I confirm that Worksheet 1.0 (EPA Categorical Effluent Guidelines) is complete and included in the Technical Attachment.	Yes
2.2) I confirm that Worksheet 2.0 (Pollutant Analyses Requirements) is complete and included in the Technical Attachment.	Yes
2.3) I confirm that Worksheet 4.0 (Receiving Waters) is complete and included in the Technical Attachment.	Yes
2.4) Are you planning to include Worksheet 4.1 (Waterbody Physical Characteristics) in the Technical Attachment?	No
2.5) Are you planning to include Worksheet 6.0 (Industrial Waste Contribution) in the Technical Attachment?	No

2.6) Are you planning to include Worksheet 7.0 (Stormwater Discharges Associated with Industrial Activities) to the Technical Attachment?	No
2.7) Are you planning to include Worksheet 8.0 (Aquaculture) in the Technical Attachment?	No
2.8) Are you planning to include Worksheet 9.0 (Class V Injection Well Inventory/Authorization) in the Technical Attachment?	No
2.9) Are you planning to include Worksheet 10.0 (Quarries in the John Graves Scenic Riverway) in the Technical Attachment?	No
2.10) Are you planning to include Worksheet 11.0 (Cooling Water System Information) in the Technical Attachment?	No
2.11) Are you planning to include Worksheet 11.1 (Impingement Mortality) in the Technical Attachment?	No
2.12) Are you planning to include Worksheet 11.2 (Source Water Biological Data) in the Technical Attachment?	No
2.13) Are you planning to include Worksheet 11.3 (Entrainment) in the Technical Attachment?	No
2.14) Technical Attachment	
[File Properties]	
File Name	TECH_2024 Tech report.pdf
Hash	A7AEC26DF9930E7F3F3E854880869A28AF64E51262C2F9B3343F03E562DAED8D
MIME-Type	application/pdf
3) Flow Diagram	
[File Properties]	
File Name	FLDIA_Flow Diagram.pdf
Hash	C463503F7FE880F36C85BF741DD090B31D7B43DEE7EF3DFAFD4E00B822F49E3
MIME-Type	application/pdf
4) Site Drawing	
[File Properties]	
File Name	SITEDR_Facility Map.pdf
Hash	C3F5728E79D8D7C111AACEEDB888D9D5F4E3600B63735370D31E73013013DA6A
MIME-Type	application/pdf
5) Design Calculations	
[File Properties]	
File Name	DES_CAL_Design Calculations.pdf
Hash	AC7080C6124C1F98AF7B89E8CB84B1FC5B667A38FF3489BAF6C1D5B6630A5FC4
MIME-Type	application/pdf
6) Solids Management Plan	

7) Water Balance

[File Properties]

File Name

WB_Water Balance.pdf

Hash

1E1C9EA19A7525F180B85872423B56E20C072E3B4A76C7584E5AB56C14911F5D

MIME-Type

application/pdf

8) Other Attachments

[File Properties]

File Name

OTHER_Other Attachments.pdf

Hash

30E84AACB9F2EA1609D18E11A133CCD61E071DB490275006791E358FA63A9D2B

MIME-Type

application/pdf

[File Properties]

File Name

OTHER_2024 Admin report.pdf

Hash

AB29ABD0A0B67401AA8E9FFC20EC9F581CC110D8D344F114E9D9783F16C8E5FA

MIME-Type

application/pdf

[File Properties]

File Name

OTHER_DSM TPDES Permit Renewal 2024.pdf

Hash

DDB6517EE840435E26F7D96141C55C77B576C5A3BBE66EA67C1EE60521B90B40

MIME-Type

application/pdf

Certification

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

I 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.

- 1. I am Renato S Lopes, the owner of the STEERS account ER103701.
- 2. I have the authority to sign this data on behalf of the applicant named above.
- 3. I have personally examined the foregoing and am familiar with its content and the content of any attachments, and based upon my personal knowledge and/or inquiry of any individual responsible for information contained herein, that this information is true, accurate, and complete.
- 4. I further certify that I have not violated any term in my TCEQ STEERS participation agreement and that I have no reason to believe that the confidentiality or use of my password has been compromised at any time.
- 5. I understand that use of my password constitutes an electronic signature legally equivalent to my written signature.
- 6. I also understand that the attestations of fact contained herein pertain to the implementation, oversight and enforcement of a state and/or federal environmental program and must be true and complete to the best of my knowledge.
- 7. I am aware that criminal penalties may be imposed for statements or omissions that I know or have reason to believe are untrue or misleading.
- 8. I am knowingly and intentionally signing Update Domestic or Industrial Individual Permit WQ0002216000.
- 9. My signature indicates that I am in agreement with the information on this form, and authorize its submittal to the TCEQ.

OWNER Signature: Renato S Lopes OWNER

Customer Number:

CN602496499

Legal Name:

DSM Nutritional Products, LLC

Account Number:

ER103701

Signature IP Address:

104.50.76.97

Signature Date:

2024-08-30

Signature Hash:

C1DD670656EB6E58239F8546EA7433A473E7CCBA0B2933E4FEE42910EAE4DCE5

Form Hash Code at time of Signature:

E9E8F6C436A89DFB95088D770FB01989DCA4B72BC445CC5CD1FD3232B92B173A

Fee Payment

Transaction by:

The application fee payment transaction was made by ER103701/Renato S Lopes

Paid by:

The application fee was paid by XANECIA MICHNA

Fee Amount:

\$1200.00

Paid Date:

The application fee was paid on 2024-08-30

Transaction/Voucher number:

The transaction number is 582EA000623682 and the voucher number is 719463

Submission

Reference Number:

The application reference number is 671347

Submitted by:

The application was submitted by ER103701/Renato S Lopes

Submitted Timestamp:

The application was submitted on 2024-08-30 at 08:49:35 CDT

Submitted From:

The application was submitted from IP address 104.50.76.97

Confirmation Number:

The confirmation number is 560568

Steers Version:

The STEERS version is 6.81

Permit Number:

The permit number is WQ0002216000

Additional Information

Application Creator: This account was created by Karen Miller



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST

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

APPLICANT NAME: DSM Nutritional Products, LLC

PERMIT NUMBER (If new, leave blank): WQ00 02216000

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

	Y	N		Y	N
Administrative Report 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 8.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Administrative Report 1.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Worksheet 9.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPIF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 10.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Core Data Form	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 11.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Public Involvement Plan Form	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Worksheet 11.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Plain Language Summary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 11.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Technical Report 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 11.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Original USGS Map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Affected Landowners Map	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 3.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Landowner Disk or Labels	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 3.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Flow Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 3.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Site Drawing	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 3.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Original Photographs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 4.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Design Calculations	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 4.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Solids Management Plan	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 5.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Water Balance	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 6.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 7.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

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 the Oil and Gas Exploration and Production Administrative Report ([TCEQ Form-20893 and 20893-inst¹](#)).

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

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

Applicant Name: DSM Nutritional Products, LLC

Permit No.: WQ0002216000

EPA ID No.: TXD083558486

Expiration Date: 2/11/2025

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

☒ Industrial Wastewater (wastewater and stormwater)

☐ Industrial Stormwater (stormwater 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)	<input type="checkbox"/> \$350	<input type="checkbox"/> \$350	<input type="checkbox"/> \$315	<input type="checkbox"/> \$150
Minor facility subject to EPA categorical effluent guidelines (40 CFR Parts 400-471)	<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,250	<input checked="" type="checkbox"/> \$1,215	<input type="checkbox"/> \$150
Major facility	N/A ²	<input type="checkbox"/> \$2,050	<input type="checkbox"/> \$2,015	<input type="checkbox"/> \$450

h. Payment Information

Mailed

Check or money order No.: [Click to enter text.](#)

Check or money order amt.: [Click to enter text.](#)

Named printed on check or money order: [Click to enter text.](#)

Epay

Voucher number: [Click to enter text.](#)

Copy of voucher attachment: [Click to enter text.](#)

Item 2. Applicant Information (Instructions, Pages 26)

- a. Customer Number, if applicant is an existing customer: CN602496499

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: DSM Nutritional Products, LLC

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): Lopes/Renato S

Title: Site Manager

Credential: [Click to enter text.](#)

- 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: Click to enter text.

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): CNClick to enter text.

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: Click to enter text.

Full Name (Last/First Name): Click to enter text.

Title: Click to enter text.

Credential: Click to enter text.

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 one Core Data Form (TCEQ Form 10400) for each customer (applicant and co-applicant(s)) and include as an attachment. If the customer type selected on the Core Data Form is Individual, complete Attachment 1 of the Administrative Report. Attachment: 1

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

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

a. ☒ Administrative Contact . ☒ Technical Contact

Prefix: Ms. Full Name (Last/First Name): Miller/Karen M

Title: Senior Engineer Credential: PE, PG

Organization Name: GREEN Environmental Consulting, Inc.

Mailing Address: 2902 Clarice Ct

City/State/Zip: Austin, TX 78757

Phone No: 512-468-7325

Email: kmiller@green-envi.com

b. ☒ Administrative Contact ☒ Technical Contact

Prefix: Ms. Full Name (Last/First Name): Griffin/Kinzie

Title: Environmental Professional Credential:

Organization Name: DSM Nutritional Products, LLC

Mailing Address: 1000 County Road 227A

City/State/Zip: Freeport, TX 77541

Phone No: 979-373-5080

Email: Kinzie.griffin@dsm-firmenich.com

Attachment: [Click to enter text.](#)

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): Griffin/Kinzie

Title: Environmental Professional Credential:

Organization Name: DSM Nutritional Products, LLC

Mailing Address: 1000 County Road 227A City/State/Zip: Freeport, TX 77541

Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.com

b. Prefix: Mr. Full Name (Last/First Name): Strack/David

Title: Safety, Health, Environmental Manager - Interim Credential: EIT, CSP, ASP

Organization Name: DSM Nutritional Products, LLC

Mailing Address: 1000 County Road 227A City/State/Zip: Freeport, TX 77541

Phone No: 979-373-5045 Email: david.strack@dsm-firmenich.com

Attachment: [Click to enter text.](#)

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): Griffin/Kinzie

Title: Environmental Professional Credential: [Click to enter text.](#)

Organization Name: DSM Nutritional Products

Mailing Address: 1000 County Rd 227A City/State/Zip: Freeport, TX 77541

Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.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): Griffin/Kinzie

Title: Environmental Professional Credential: [Click to enter text.](#)

Organization Name: DSM Nutritional Products

Mailing Address: 1000 County Rd 227A City/State/Zip: Freeport, TX 77541

Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.com

Item 9. Notice Information (Instructions, Pages 28)

a. Individual Publishing the Notices

Prefix: Ms. Full Name (Last/First Name): Griffin/Kinzie

Title: Environmental Professional Credential:

Organization Name: DSM Nutritional Products, LLC

Mailing Address: 1000 County Road 227A City/State/Zip: Freeport, TX 77541

Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.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: kinzie.griffin@dsm-firmenich.com

☐ Fax: Click to enter text.

☒ Regular Mail (USPS)

Mailing Address: 1000 County Rd 227A

City/State/Zip Code: Freeport, TX 77541

c. Contact in the Notice

Prefix: Ms. Full Name (Last/First Name): Griffin/Kinzie

Title: Environmental Professional Credential:

Organization Name: DSM Nutritional Products, LLC

Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.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: Freeport Branch Public Library Location within the building: Public notice shelf

Physical Address of Building: 410 N. Brazosport Blvd.

City: Freeport County: Brazoria

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. Plain Language Summary Template – Complete the Plain Language Summary (TCEQ Form 20972) and include as an attachment. Attachment: 2
- g. Complete one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment and include as an attachment. Attachment: n/a

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

- a. TCEQ issued Regulated Entity Number (RN), if available: RN101190221

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 (the name known by the community where located): DSM Nutritional Products Freeport 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: Click to enter text. Full Name (Last/First Name): Click to enter text.

or Organization Name: DSM Nutritional Products

Mailing Address: 1000 County Rd 227A

City/State/Zip: Freeport/TX/77541

Phone No: 979-373-5080

Email: Kinzie.griffin@dsm-firmenich.com

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

- f. Owner of land where treatment facility is or will be: DSM Nutritional Products

Prefix: [Click to enter text.](#) Full Name (Last/First Name): [Click to enter text.](#)

or Organization Name: [DSM Nutritional Products](#)

Mailing Address: [1000 County Rd 227!](#)

City/State/Zip: [Freeport/TX/77541](#)

Phone No: [979-373-5080](#)

Email: [Kinzie.griffin@dsm-firmenich.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: [Click to enter text.](#) Full Name (Last/First Name): [Click to enter text.](#)

or Organization Name: [Click to enter text.](#)

Mailing Address: [Click to enter text.](#)

City/State/Zip: [Click to enter text.](#)

Phone No: [Click to enter text.](#)

Email: [Click to enter text.](#)

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: [Click to enter text.](#)

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

Prefix: [n/a](#) Full Name (Last/First Name): [Click to enter text.](#)

or Organization Name: [Click to enter text.](#)

Mailing Address: [Click to enter text.](#)

City/State/Zip: [Click to enter text.](#)

Phone No: [Click to enter text.](#)

Email: [Click to enter text.](#)

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: [Click to enter text.](#)

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

☒ Three-miles downstream information

☒ Applicant's property boundaries

☒ Treatment facility boundaries

☒ Labeled point(s) of discharge

☒ Highlighted discharge route(s)

☐ Effluent disposal site boundaries

☒ All wastewater ponds

☐ Sewage sludge disposal site

☐ New and future construction

Attachment: [3](#)

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: [Click to enter text.](#)

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: [Click to enter text.](#)

f. City nearest the outfall(s): Freeport

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

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: [Click to enter text.](#)

- b. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Account no.: [Click to enter text.](#)

Total amount due: [Click to enter text.](#)

- c. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Enforcement order no.: [Click to enter text.](#)

Amount due: [Click to enter text.](#)

Item 13. Signature Page (Instructions, Page 33)

Permit No: WQ0002216000

Applicant Name: DSM Nutritional Products

Certification: I, Renato S Lopes, 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): Renato S Lopes

Signatory title: Site Manager

Signature: Renato S Lopes Date: 08/14/2024
(Use blue ink)

Subscribed and Sworn to before me by the said Renato Da Silva Lopes
on this 14 day of August, 2024.
My commission expires on the 9 day of August, 2027.

Monique Gentry Simmons
Notary Public

Brazoria
County, Texas



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: n/a

- b. Check the box next to the format of the landowners list:

☐ Readable/Writeable CD ☐ Four sets of labels

Attachment: n/a

- d. Provide the source of the landowners' names and mailing addresses: n/a

- 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

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: 4

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:** WQ000 [Click to enter text.](#)

1. Check or Money Order Number: [Click to enter text.](#)
2. Check or Money Order Amount: [Click to enter text.](#)
3. Date of Check or Money Order: [Click to enter text.](#)
4. Name on Check or Money Order: [Click to enter text.](#)
5. APPLICATION INFORMATION

Name of Project or Site: [Click to enter text.](#)

Physical Address of Project or Site: [Click to enter text.](#)

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: [Click to enter text.](#)

Staple Check or Money Order in This Space

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): Click to enter text.

Driver's License or State Identification Number: Click to enter text.

Date of Birth: Click to enter text.

Mailing Address: Click to enter text.

City, State, and Zip Code: Click to enter text.

Phone No.: Click to enter text.

Fax No.: Click to enter text.

E-mail Address: Click to enter text.

CN: Click to enter text.

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 Cross Reference List
(See instructions for landowner requirements.)
- ☒ N/A ☐ Landowners Labels or CD-RW attached
(See instructions for landowner requirements.)
- ☒ 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.)*
- ☒ Plain Language Summary



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

Plain Language Summary 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 as required by [Title 30, Texas Administrative Code \(30 TAC\), Chapter 39, Subchapter H](#). Applicants may modify the template as necessary to accurately describe their 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 the applicant 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.

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.

DSM Nutritional Products, LLC (CN602496499) operates DSM Nutritional Products (RN101190221), a beta carotene manufacturing facility. The facility is located at 1000 County Road 227A, in Freeport, Brazoria County, Texas 77541. DSM is seeking to renew their TPDES permit application.

Discharges from the facility are expected to contain : total suspended solids, ammonia nitrogen, cyanide, acetone, 4-methyl-2-pentanone, isobutyraldehyde, n-amyl acetate, n-butyl acetate, ethyl acetate, isopropyl acetate, methyl formate, amyl alcohol, ethanol, isopropanol, methanol, methyl cellosolve, dimethyl sulfoxide, triethyl amine, phenol, benzene, toluene, xylenes, n-hexane, n-heptane, methylene chloride, chloroform, 1,2-dichloroethane, tetrahydrofuran, isopropyl ether, diethyl amine, acetonitrile, and enterococci. Treated process wastewater, utility wastewater, water treatment wastes, treated domestic wastewater, and stormwater are treated by physical, chemical, and biological methods, including pH

adjustment, equalization, scum skimmer, aeration, flocculation, clarification, filtration, and chlorination.

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

AGUAS RESIDUALES Introduzca 'INDUSTRIALES' o 'DOMÉSTICAS' aquí /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.

DSM Nutritional Products, LLC ((CN602496499) opera DSM Nutritional Products (RN101190221), una instalación de fabricación de betacaroteno. La instalación está ubicada en 1000 County Road 227A, en Freeport, Condado de Brazoria, Texas 77541. DSM está tratando de renovar su solicitud de permiso TPDES.

Se espera que las descargas de la instalación contengan : sólidos suspendidos totales, nitrógeno amoniacal, cianuro, acetona, 4-metil-2-pentanona, isobutiraldehído, acetato de n-amilo, acetato de n-butilo, acetato de etilo, acetato de isopropilo, formiato de metilo, alcohol amílico, etanol, isopropanol, metanol, metilcelosolve (2-metoxietanol), dimetilsulfóxido, trietilamina, fenol, benceno, tolueno, xilenos, n-hexano, n-heptano, cloruro de metileno, cloroformo, 1,2-dicloroetano, tetrahidrofurano, éter isopropílico, dietil amina, acetonitrilo, y enterococos. Aguas residuales de procesos tratados, aguas residuales de servicios públicos, residuos del tratamiento del agua, aguas residuales domésticas tratadas y aguas pluviales. **están** tratado por métodos físicos, químicos y biológicos, incluidos el ajuste del pH, la ecualización, el espumador, la aireación, la floculación, la clarificación, la filtración y la cloración.

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

Individual Industrial Wastewater 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 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.

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: DSM Nutritional Products

Permit No. WQ00 02216000

EPA ID No. TX 083558486

Address of the project (or a location description that includes street/highway, city/vicinity, and county):

1000 County Rd 227A, Freeport, TX 77541

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: Kinzie Griffin

Credential (P.E, P.G., Ph.D., etc.):

Title: Environmental Professional

Mailing Address: 1000 County Road 227A

City, State, Zip Code: Freeport, TX 77541

Phone No.: 979-373-5080 Ext.:

Fax No.:

E-mail Address: Kinzie.griffin@dsm-firmenich.com

2. List the county in which the facility is located: Brazoria
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.

Discharge at the facility drains via pipeline to the Dow Plant "A" canal, thence to Brazos River Tidal in Segment No. 1201 in the Brazos River Basin

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):

n/a

2. Describe existing disturbances, vegetation, and land use:

Facility is an existing manufacturing site. No construction is proposed as part of this permit renewal.

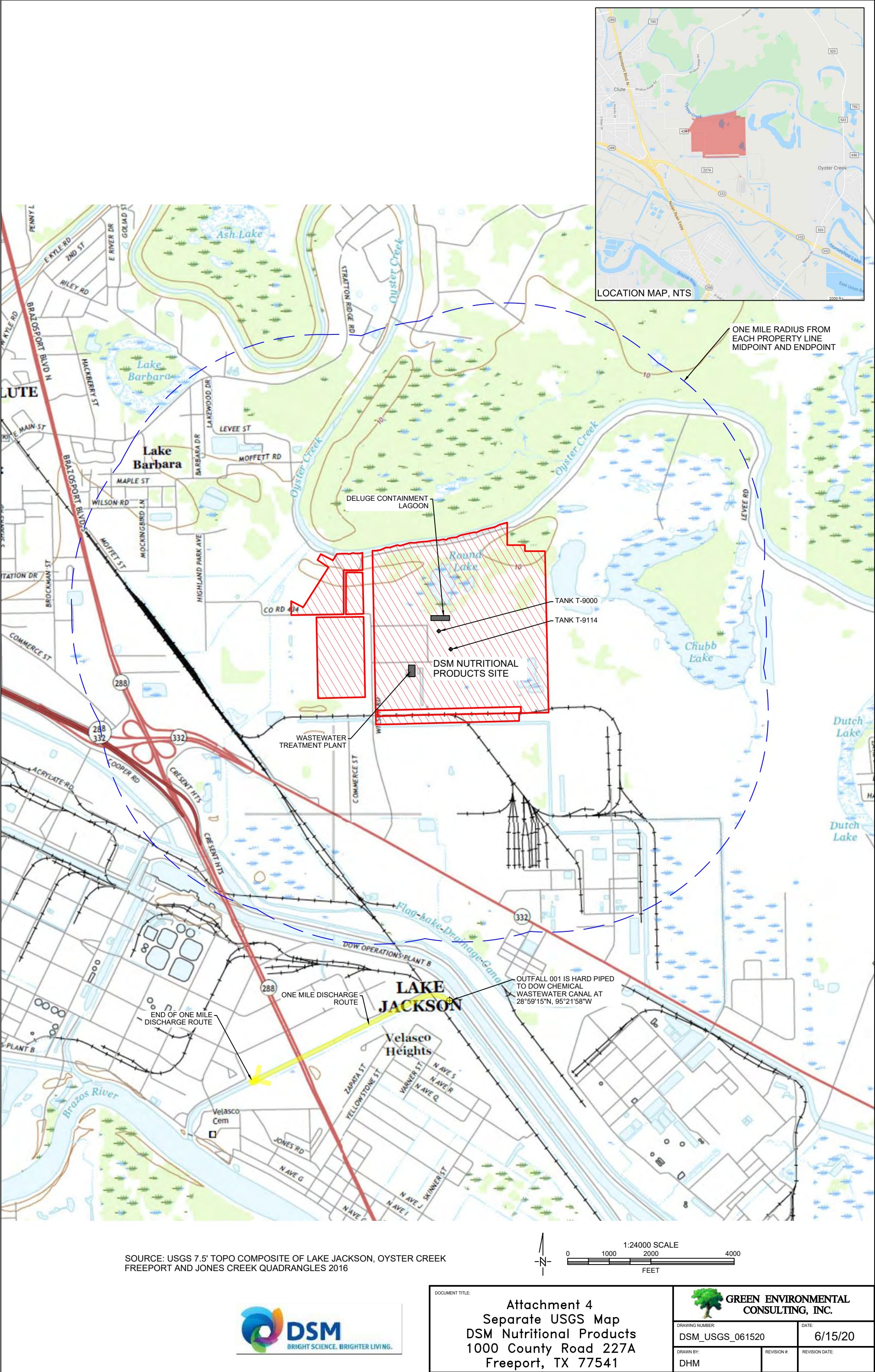
THE FOLLOWING ITEMS APPLY ONLY TO APPLICATIONS FOR NEW TPDES PERMITS AND MAJOR AMENDMENTS TO TPDES PERMITS

3. List construction dates of all buildings and structures on the property:

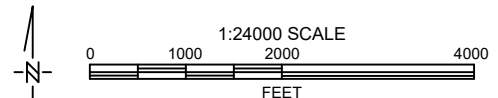
n/a


4. Provide a brief history of the property, and name of the architect/builder, if known.

n/a



SOURCE: USGS 7.5' TOPO COMPOSITE OF LAKE JACKSON, OYSTER CREEK
FREEPORT AND JONES CREEK QUADRANGLES 2016



DOCUMENT TITLE: Attachment 4 Separate USGS Map DSM Nutritional Products 1000 County Road 227A Freeport, TX 77541		 GREEN ENVIRONMENTAL CONSULTING, INC.	
DRAWING NUMBER: DSM_USGS_061520	DATE: 6/15/20		
DRAWN BY: DHM	REVISION #:	REVISION DATE:	



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).

DSM Nutritional Products, SIC 2833, manufactures beta carotene, which is a Vitamin A precursor, via a chemical synthesis process. The facility employs an in-process chemical recovery system for the major organic solvents (methanol, acetone, and methylene chloride) that are used as the raw materials to maximize process efficiency and minimize waste generation.

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

Process wastewater is generated from the use of process equipment, such as water-supplied vacuum pumps, distillation columns, overhead condensers, equipment cooling (tower water). Utility wastewater is generated by cooling tower blowdown, cooling water for compressors, boiler blowdown, and deionized water plant reject flow, as well as regeneration of the Dealkylized Beds.

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
Acetic acid CAS 64-19-7	Etinol CAS 17075-53-5	Beta Carotene CAS 7235-40-7
Acetone CAS 67-64-1		
Acetylene CAS 74-86-2	Vinylol CAS 5208-93-5	C25 Aldehyde
Anhydrous ammonia CAS 7664-41-7		
Beta-Ionone CAS 14901-07-6	Vinyl Salt CAS 1062-12-0	
C10-Dialdehyde CAS 5056-17-7		
Hexane CAS 110-54-3		
Hydrochloric acid CAS 7647-01-0		
Hydrogen CAS 1333-74-0		
Methanol CAS 67-65-1		
Methylene Chloride CAS 75-09-2		
Potassium hydroxide CAS 1310-58-3		
Sodium Hydroxide CAS 1310-73-2		
Sulfuric acid CAS 7664-93-9		
Palladium on calcium carbonate CAS 7440-05-3		
Toluene CAS 108-88-3		
Brine solution CAS 7647-14-5		
Triphenylphosphine CAS 603-53-0		
Pyridine CAS 110-86-1		

d. **Attachment:** [Click to enter text.](#)

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: 5

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

☐ Yes ☒ No

If **yes**, provide background discussion: [Click to enter text.](#)

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: 12/30/2020 FEMA FIRM map

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: [Click to enter text.](#)

Attachment: 6

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: [Click to enter text.](#)

If **no**, provide an approximate date of application submittal to the USACE: [Click to enter text.](#)

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.

The facility's wastewater treatment processes consist of: physical treatment, chemical treatment, and biological treatment. Detailed descriptions of the processes are included in Attachment 7.

- 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: 8

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)	C, E			
Associated Outfall Number	001			
Liner Type (C) (I) (S) or (A)	I			
Alt. Liner Attachment Reference	n/a			
Leak Detection System, Y/N	N			
Groundwater Monitoring Wells, Y/N	N			
Groundwater Monitoring Data Attachment	None			
Pond Bottom Located Above The Seasonal High-Water Table, Y/N	Y			
Length (ft)	340			
Width (ft)	80			
Max Depth From Water Surface (ft), Not Including Freeboard	Approx 11			
Freeboard (ft)	0			
Surface Area (acres)	0.6			
Storage Capacity (gallons)	2.3 million			
40 CFR Part 257, Subpart D, Y/N	N			
Date of Construction	1970s			

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: [Click to enter text.](#)

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: 9

- 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: 10

- 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: 11

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/or 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	28 degrees 59' 45"	95 degrees 21' 59"

Outfall Location Description

Outfall No.	Location Description
001	12-inch steel pipe empties into the Dow Canal at the Dow Chemical Plant site. The flow meter is on DSM property.

Outfall No.	Location Description

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

Outfall No.	Description of sampling point
001	Sampling of the outfall occurs on the DSM property at the wastewater treatment plant.

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	0.190	0.390	0.190	0.390	Ongoing

Outfall Discharge - Method and Measurement

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

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	12

Outfall Wastestream Contributions

Outfall No. 001

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Process	0.1	68
Cooling tower blowdown	0.006	4
Sanitary wastewater	0.004	3
Utilities (boiler blowdown, et. al)	0.03	26

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Stormwater	0.005	3

Outfall No. [Click to enter text.](#)

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

Outfall No. [Click to enter text.](#)

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

Attachment: [Click to enter text.](#)

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: 12

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	1	6,345	86,175
Boilers	1	3,003	10,423

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: Product and raw materials are stored outdoors. Plus, the process structure where beta carotene is manufactured is not enclosed. Spills in areas could contact stormwater, which is collected in contained areas and sumps and is then pumped to the wastewater treatment plant for treatment prior to discharge through Outfall 001. Additionally, cooling tower overspray blows onto the ground and collects in low areas while the water seals around the EV flare are emptied onto the ground surface, both of which have the potential to contaminate stormwater that then drains to Round Lake.

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: [Click to enter text.](#)
- 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.
Hauler: Sprint	8836
Disposal facility: Seabreeze Environmental Landfill	H1539

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: [Click to enter text.](#)

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: [Click to enter text.](#)

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA. **Attachment:** [Click to enter text.](#)

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: [Click to enter text.](#)

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: [Click to enter text.](#)

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)

- 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)

Item 12. Cooling Water (Instructions, Page 46)

- a. Does the facility use or propose to use water for cooling purposes?

☒ Yes ☐ No

If **no**, stop here. If **yes**, complete Items 12.b thru 12.f.

- 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	COOL-01			
Owner	DSM			
Operator	DSM			

2. Cooling water is/will be obtained from a Public Water Supplier (PWS)

☒ Yes ☐ No

If **no**, continue. If **yes**, provide the PWS Registration No. and stop here: PWS No. TX0200232

3. Cooling water is/will be obtained from a reclaimed water source?

☐ Yes ☐ No

If **no**, continue. If **yes**, provide the Reuse Authorization No. and stop here: [Click to enter text.](#)

4. Cooling water is/will be obtained from an Independent Supplier

☐ Yes ☐ No

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: [Click to enter text.](#)

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 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

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*: [Click to enter text.](#)

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: [Click to enter text.](#)

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: [Click to enter text.](#)

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.

[Click to enter text.](#)

b. Is the facility requesting any **minor amendments** to the permit?

☐ Yes ☒ No

If **yes**, list and describe each change individually.

[Click to enter text.](#)

c. Is the facility requesting any **minor modifications** to the permit?

☐ Yes ☒ No

If **yes**, list and describe each change individually.

Click to enter text.

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: Renato S Lopes

Title: Site Manager

Signature: _____

Date: 08/14/2024

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
Pharmaceutical manufacturing	439

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.

DSM purchases an average of 45 million gallons of water from Dow annually for use in onsite processes. Approximately a sixth of the water is used in non-contact cooling and evaporated from the cooling tower while approximately nine percent is blown down and sent to the WWTP for treatment. A majority, about 65%, of the fresh water from Dow is dealkylized and then used onsite in the boiler, as process water feed, and as feedstock to produce deionized water, which is also used in onsite production. About eight percent of the water treated via dealkylation is blown down for treatment in the WWTP. Approximately seven percent of the incoming fresh water is lost from the boiler to steam and to the onsite flare while about six percent is sent as boiler blowdown to the WWTP for treatment. Approximately 77 percent is used as feedstock to make DI water, most of which is used in the process. More detail of the water flows is shown on Attachment 8.

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
Beta carotene production	439	C	12/1993

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)

- 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): 3/28/2024 – 7/2/2024
- ☒ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- 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: 13

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.: 001

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)	7	8	7	3
CBOD (5-day)	2	3	<2	<2
Chemical oxygen demand	70	58	97	44
Total organic carbon	11.5	11.1	11.8	12.1
Dissolved oxygen	8	9	9	9
Ammonia nitrogen	<0.25	<0.25	<0.25	<0.25
Total suspended solids	18	31	16	13
Nitrate nitrogen	52.6	69.8	55.2	40.1
Total organic nitrogen	0.782	0.642	2.82	2.57
Total phosphorus	5.41	7.40	6.17	5.02
Oil and grease	<5.0	<5.0	<5.0	<5.0
Total residual chlorine	0.06	0.02	0.01	0.08

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Total dissolved solids	1,750	2,020	1,780	1,780
Sulfate	207	216	150	163
Chloride	621	631	601	659
Fluoride	<0.50	<0.50	<0.5	<0.5
Total alkalinity (mg/L as CaCO3)	60	54	80	108
Temperature (°F)	62.2	66.2	66.4	69.3
pH (standard units)	7.8	7.70	7.60	7.90

Table 2 for Outfall No.: **001**

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	346	564	277	331	2.5
Antimony, total	0.6	0.8	0.7	0.7	5
Arsenic, total	3.3	4.4	3.7	5.0	0.5
Barium, total	79.5	91.2	54.8	37.2	3
Beryllium, total	<0.4	<0.4	<0.4	<0.4	0.5
Cadmium, total	<0.4	<0.4	<0.4	<0.4	1
Chromium, total	1.1	1.6	0.6	0.7	3
Chromium, hexavalent	4.7	4.7	4.7	4.7	3
Chromium, trivalent	1.1	1.6	0.6	0.7	N/A
Copper, total	16.1	21.1	15.6	14.2	2
Cyanide, available	<9	<9	<9	<9	2/10
Lead, total	<0.4	0.5	<0.4	<0.4	0.5
Mercury, total	0.000966	0.000257000	0.0013	0.00118	0.005/0.0005
Nickel, total	4.2	<0.4	4.0	3.4	2
Selenium, total	<3.2	<0.4	<3.2	<3.2	5
Silver, total	<0.4	<0.4	<0.4	<0.4	0.5
Thallium, total	<0.4	<0.4	<0.4	<0.4	0.5
Zinc, total	40.4	65.3	39.3	39.2	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.: **001**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	<43	<43	<43	<43	50
Anthracene	<0.35	<1.80	<0.35	<0.35	10
Benzene	<1	<1	<1	<1	10
Benzidine	<0.66	<3.30	<0.66	<0.66	50
Benzo(a)anthracene	<0.33	<1.90	<0.38	<0.38	5
Benzo(a)pyrene	<0.85	<4.30	<0.85	<0.85	5
Bis(2-chloroethyl)ether	<0.72	<3.60	<0.72	<0.72	10
Bis(2-ethylhexyl)phthalate	<2.20	11.00	<2.20	<2.20	10
Bromodichloromethane [Dichlorobromomethane]	2	3	<1	2	10
Bromoform	<2	<2	<2	<2	10
Carbon tetrachloride	<2	<2	<2	<2	2
Chlorobenzene	<1	<1	<1	<1	10
Chlorodibromomethane [Dibromochloromethane]	<1	<1	<1	<1	10
Chloroform	<2	4	<2	3	10
Chrysene	<0.57	<2.90	<0.57	<0.57	5
m-Cresol [3-Methylphenol]	<1.30	<6.60	<1.30	<1.30	10
o-Cresol [2-Methylphenol]	<1.00	<5.00	<1.00	<1.00	10
p-Cresol [4-Methylphenol]	<1.30	<6.60	<1.30	<1.30	10
1,2-Dibromoethane	<1	<1	<1	<1	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<0.53	<2.70	<0.53	<0.53	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<0.41	<2.10	<0.41	<0.41	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<0.25	<1.30	<0.25	<0.25	10
3,3'-Dichlorobenzidine	<0.88	<4.40	<0.88	<0.88	5
1,2-Dichloroethane	<1	<1	<1	<1	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
1,1-Dichloroethene [1,1-Dichloroethylene]	<1	<1	<1	<1	10
Dichloromethane [Methylene chloride]	<1	<1	<1	<1	20
1,2-Dichloropropane	<1	<1	<1	<1	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<2	<2	<2	<2	10
2,4-Dimethylphenol	<0.53	<2.70	<0.53	<0.53	10
Di-n-Butyl phthalate	<1.20	<6.10	<1.20	<1.20	10
Ethylbenzene	<1	<1	<1	<1	10
Fluoride	<0.50	<0.50	<0.5	<0.5	500
Hexachlorobenzene	<0.69	<3.50	<0.69	<0.69	5
Hexachlorobutadiene	<0.41	<2.10	<0.41	<0.41	10
Hexachlorocyclopentadiene	<0.35	<1.80	<0.35	<0.35	10
Hexachloroethane	<0.47	<2.40	<0.47	<0.47	20
Methyl ethyl ketone	<4	<4	<4	<4	50
Nitrobenzene	<0.91	<4.60	<0.91	<0.91	10
N-Nitrosodiethylamine	<5.00	25.0	<5.00	<5.00	20
N-Nitroso-di-n-butylamine	<5.00	25	<5.00	<5.00	20
Nonylphenol	<5.00	<25.0	<5.00	<5.00	333
Pentachlorobenzene	<3.00	<15.0	<3.00	<3.00	20
Pentachlorophenol	<0.50	<2.50	<0.50	<0.50	5
Phenanthrene	<0.44	<2.20	<0.44	<0.44	10
Polychlorinated biphenyls (PCBs) (**)	<0.03	<0.03	<0.03	<0.03	0.2
Pyridine	<0.35	<1.80	<0.35	<0.35	20
1,2,4,5-Tetrachlorobenzene	<5.00	25	<5.00	<5.00	20
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	10
Tetrachloroethene [Tetrachloroethylene]	<1	<1	<1	<1	10
Toluene	<1	<1	<1	<1	10
1,1,1-Trichloroethane	<1	<1	<1	<1	10
1,1,2-Trichloroethane	<1	<1	<1	<1	10
Trichloroethene [Trichloroethylene]	<1	<1	<1	<1	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
2,4,5-Trichlorophenol	<0.85	<4.30	<0.85	<0.85	50
TTHM (Total trihalomethanes)	2	7	<2	5	10
Vinyl chloride	<1	<1	<1	<1	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.: **001**

Samples are (check one): ☐ Composite ☒ Grab

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)	n/a	n/a	n/a	n/a	0.010
Enterococci (cfu or MPN/100 mL)	4.0	4.0	42.2	10.4	N/A
<i>E. coli</i> (cfu or MPN/100 mL)	n/a	n/a	n/a	n/a	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.: [Click to enter text.](#)

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 [Fenprothrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Endosulfan I (<i>alpha</i>)					0.01
Endosulfan II (<i>beta</i>)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (<i>alpha</i>)					0.05
Hexachlorocyclohexane (<i>beta</i>)					0.05
Hexachlorocyclohexane (<i>gamma</i>) [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.: **001**

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	<input type="checkbox"/>	<input checked="" type="checkbox"/>					400
Color (PCU)	<input checked="" type="checkbox"/>	<input type="checkbox"/>		15			—
Nitrate-Nitrite (as N)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	52.6				—
Sulfide (as S)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<0.05				—
Sulfite (as SO ₃)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Surfactants	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Boron, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Cobalt, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					0.3
Iron, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.535	0.875	0.425	0.347	7
Magnesium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Manganese, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					0.5
Molybdenum, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					1
Tin, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					5
Titanium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					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
<input type="checkbox"/> Adhesives and Sealants		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Aluminum Forming	467	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Auto and Other Laundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Battery Manufacturing	461	<input type="checkbox"/> Yes	No	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Coal Mining	434	No	No	No	No
<input type="checkbox"/> Coil Coating	465	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Copper Forming	468	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Electric and Electronic Components	469	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Electroplating	413	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Explosives Manufacturing	457	No	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Foundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts A,B,C,E	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts D,F	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Inorganic Chemicals Manufacturing	415	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Iron and Steel Manufacturing	420	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Leather Tanning and Finishing	425	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Mechanical Products Manufacturing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Nonferrous Metals Manufacturing	421,471	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Oil and Gas Extraction - Subparts A, D, E, F, G, H	435	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Ore Mining - Subpart B	440	No	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Organic Chemicals Manufacturing	414	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Paint and Ink Formulation	446,447	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Pesticides	455	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Petroleum Refining	419	<input type="checkbox"/> Yes	No	No	No
<input checked="" type="checkbox"/> Pharmaceutical Preparations	439	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	No
<input type="checkbox"/> Photographic Equipment and Supplies	459	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Plastic and Synthetic Materials Manufacturing	414	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Plastic Processing	463	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Porcelain Enameling	466	No	No	No	No
<input type="checkbox"/> Printing and Publishing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart C	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts F, K	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts I, J, L	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart E	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *
<input type="checkbox"/> Rubber Processing	428	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Soap and Detergent Manufacturing	417	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Steam Electric Power Plants	423	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Textile Mills (Not Subpart C)	410	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Timber Products Processing	429	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> 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.: 001

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	<8				50
Acrylonitrile	<43	<43	<43	<43	50
Benzene	<1	<1	<1	<1	10
Bromoform	<2	<2	<2	<2	10
Carbon tetrachloride	<2	<2	<2	<2	2
Chlorobenzene	<1	<1	<1	<1	10
Chlorodibromomethane	<1	<1	<1	<1	10
Chloroethane	<1				50
2-Chloroethylvinyl ether	<10				10
Chloroform	<2	4	<2	3	10
Dichlorobromomethane [Bromodichloromethane]	2	3	<1	2	10
1,1-Dichloroethane	<1				10
1,2-Dichloroethane	<1	<1	<1	<1	10
1,1-Dichloroethylene [1,1-Dichloroethene]	<1	<1	<1	<1	10
1,2-Dichloropropane	<1	<1	<1	<1	10
1,3-Dichloropropylene [1,3-Dichloropropene]	<2	<2	<2	<2	10
Ethylbenzene	<1	<1	<1	<1	10
Methyl bromide [Bromomethane]	<2				50
Methyl chloride [Chloromethane]	<1				50
Methylene chloride [Dichloromethane]	<1	<1	<1	<1	20
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	10
Tetrachloroethylene [Tetrachloroethene]	<1	<1	<1	<1	10
Toluene	<1	<1	<1	<1	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<1				10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
1,1,1-Trichloroethane	<1	<1	<1	<1	10
1,1,2-Trichloroethane	<1	<1	<1	<1	10
Trichloroethylene [Trichloroethene]	<1	<1	<1	<1	10
Vinyl chloride	<1	<1	<1	<1	10

* Indicate units if different from µg/L.

Table 9 for Outfall No.: 001

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	<0.50				10
2,4-Dichlorophenol	<0.69				10
2,4-Dimethylphenol	<0.53	<2.70	<0.53		10
4,6-Dinitro-o-cresol	<0.66				50
2,4-Dinitrophenol	<1.40				50
2-Nitrophenol	<0.88				20
4-Nitrophenol	<1.10				50
p-Chloro-m-cresol	<0.53				10
Pentachlorophenol	<0.50				5
Phenol	<0.44				10
2,4,6-Trichlorophenol	<0.79				10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: 001

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	<0.28				10
Acenaphthylene	<0.47				10
Anthracene	<0.35	<1.80	<0.35	<0.35	10
Benzidine	<0.66	<3.30	<0.66	<0.66	50
Benzo(a)anthracene	<0.38	<1.90	<0.38	<0.38	5
Benzo(a)pyrene	<0.85	<4.30	<0.85	<0.85	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	<0.57				10
Benzo(ghi)perylene	<0.63				20
Benzo(k)fluoranthene	<0.57				5
Bis(2-chloroethoxy)methane	<0.35				10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Bis(2-chloroethyl)ether	<0.72	<3.60	<0.72	<0.72	10
Bis(2-chloroisopropyl)ether	<0.85				10
Bis(2-ethylhexyl)phthalate	<2.20	11.0	<2.20	<2.20	10
4-Bromophenyl phenyl ether	<0.41				10
Butylbenzyl phthalate	<0.69				10
2-Chloronaphthalene	<0.28				10
4-Chlorophenyl phenyl ether	<0.66				10
Chrysene	<0.57	<2.90	<0.57	<0.57	5
Dibenzo(a,h)anthracene	<0.69				5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<0.41	<2.10	<0.41	<0.41	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<0.53	<2.70	<0.53	<0.53	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<0.25	<1.30	<0.25	<0.25	10
3,3'-Dichlorobenzidine	<0.88	<4.40	<0.88	<0.88	5
Diethyl phthalate	<0.63				10
Dimethyl phthalate	<0.72				10
Di-n-butyl phthalate	<1.20	<6.10	<1.20	<1.20	10
2,4-Dinitrotoluene	<0.97				10
2,6-Dinitrotoluene	<1.20				10
Di-n-octyl phthalate	<2.80				10
1,2-Diphenylhydrazine (as Azobenzene)	<0.22				20
Fluoranthene	<0.44				10
Fluorene	<0.47				10
Hexachlorobenzene	<0.69	<3.50	<0.69	<0.69	5
Hexachlorobutadiene	<0.41	<2.10	<0.41	<0.41	10
Hexachlorocyclopentadiene	<0.35	<1.80	<0.35	<0.35	10
Hexachloroethane	<0.47	<2.40	<0.47	<0.47	20
Indeno(1,2,3-cd)pyrene	<0.22				5
Isophorone	<0.28				10
Naphthalene	<0.31				10
Nitrobenzene	<0.91	<4.60	<0.91	<0.91	10
N-Nitrosodimethylamine	<5.00	25.0	<5.00	<5.00	50

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
N-Nitrosodi-n-propylamine	<0.72				20
N-Nitrosodiphenylamine	<0.47				20
Phenanthrene	<0.44	<2.20	<0.44	<0.44	10
Pyrene	<0.57				10
1,2,4-Trichlorobenzene	<0.53				10

* Indicate units if different from µg/L.

Table 11 for Outfall No.: [Click to enter text.](#) 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
PCB 1232					0.2
PCB 1248					0.2

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
PCB 1260					0.2
PCB 1016					0.2
Toxaphene					0.3

* Indicate units if different from µg/L.

Attachment: [Click to enter text.](#)

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 (Ronnell) 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.: [Click to enter text.](#) 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
1,2,3,4,6,7,8-HpCDD	0.01					50

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
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.: [Click to enter text.](#) 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
Methylene chloride	75-09-2	<4	<4	<4	<4	624.1
Toluene	108-88-3	<4	<4	<4	<4	624.1

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND APPLICATION OF EFFLUENT

This worksheet **is required** for all applications for a permit to disposal of wastewater by land application (i.e., TLAP)).

Item 1. Type of Disposal System (Instructions, Page 69)

Check the box next to the type of land disposal requested by this application:

- | | |
|--|---|
| <input type="checkbox"/> Irrigation | <input type="checkbox"/> Subsurface application |
| <input type="checkbox"/> Evaporation | <input type="checkbox"/> Subsurface soils absorption |
| <input type="checkbox"/> Evapotranspiration beds | <input type="checkbox"/> Surface application |
| <input type="checkbox"/> Drip irrigation system | <input type="checkbox"/> Other, specify: Click to enter text. |

Item 2. Land Application Area (Instructions, Page 69)

Land Application Area Information

Effluent Application (gallons/day)	Irrigation Acreage (acres)	Describe land use & indicate type(s) of crop(s)	Public Access? (Y/N)

Item 3. Annual Cropping Plan (Instructions, Page 69)

Attach the required cropping plan that includes each of the following:

- Cool and warm season plant species
- Breakdown of acreage and percent of total acreage for each crop
- Crop growing season
- Harvesting method/number of harvests
- Minimum/maximum harvest height
- Crop yield goals
- Soils map
- Nitrogen requirements per crop
- Additional fertilizer requirements
- Supplemental watering requirements
- Crop salt tolerances
- Justification for not removing existing vegetation to be irrigated

Attachment:

Item 4. Well and Map Information (Instructions, Page 70)

- a. Check each box to confirm the required information is shown and labeled on the attached USGS map:

- ☐ The exact boundaries of the land application area
- ☐ On-site buildings
- ☐ Waste-disposal or treatment facilities
- ☐ Effluent storage and tailwater control facilities
- ☐ Buffer zones
- ☐ All surface waters in the state onsite and within 500 feet of the property boundaries
- ☐ All water wells within ½-mile of the disposal site, wastewater ponds, or property boundaries
- ☐ All springs and seeps onsite and within 500 feet of the property boundaries

Attachment: [Click to enter text.](#)

- b. List and cross reference all water wells located on or within 500 feet of the disposal site, wastewater ponds, or property boundaries in the following table. Attach additional pages as necessary to include all of the wells.

Well and Map Information Table

Well ID	Well Use	Producing? Y/N/U	Open, cased, capped, or plugged?	Proposed Best Management Practice

Attachment: [Click to enter text.](#)

- c. Groundwater monitoring wells or lysimeters are/will be installed around the land application site or wastewater ponds.

☐ Yes ☐ No

If **yes**, provide the existing/proposed location of the monitoring wells or lysimeters on the site map attached for Item 4.a. Additionally, attach information on the depth of the wells or lysimeters, sampling schedule, and monitoring parameters for TCEQ review, possible modification, and approval.

Attachment: [Click to enter text.](#)

- d. Attach a short groundwater technical report using *30 TAC § 309.20(a)(4)* as guidance.

Attachment:

Item 5. Soil Map and Soil Information (Instructions, Page 71)

Check each box to confirm that the following information is attached:

- ☐ USDA NRCS Soil Survey Map depicting the area to be used for land application with the locations identified by fields and crops.
- ☐ Breakdown of acreage and percent of total acreage for each soil type.
- ☐ Copies of laboratory soil analyses. **Attachment:**

Item 6. Effluent Monitoring Data (Instructions, Page 72)

- a. Completion of Table 14 **is required** for all **renewal** and **major amendment** applications. Complete the table with monitoring data for the previous two years for all parameters regulated in the current permit. An additional table has been provided with blank headers for parameters regulated in the current permit which are not listed in Table 14.

Table 14 for Outfall No.: [Click to enter text.](#)

Samples are (check one): ☐

Composite  Grab

[illegible]

Item 7. Pollutant Analysis (Instructions, Page 72)

- 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): [Click to enter text.](#)
- ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- Complete Tables 15 and 16.

Table 15 for Outfall No.: [Click to enter text.](#) 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)				
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)				

Table 16 for Outfall No.: [Click to enter text.](#) 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					2.5
Antimony, total					5
Arsenic, total					0.5
Barium, total					3

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Beryllium, total					0.5
Cadmium, total					1
Chromium, total					3
Chromium, hexavalent					3
Chromium, trivalent					N/A
Copper, total					2
Cyanide, available					2/10
Lead, total					0.5
Mercury, total					0.005/0.0005
Nickel, total					2
Selenium, total					5
Silver, total					0.5
Thallium, total					0.5
Zinc, total					5.0

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 3.1: SURFACE LAND APPLICATION AND APPLICATION

This worksheet **is required** for all applications for a permit to disposal of wastewater by surface land application or evaporation.

Item 1. Edwards Aquifer (Instructions, Page 73)

a. Is the facility subject to *30 TAC Chapter 213*, Edwards Aquifer Rules?

☐ Yes ☐ No

If **no**, proceed to Item 2. If **yes**, complete Items 1.b and 1.c.

b. Check the box next to the subchapter applicable to the facility.

☐ 30 TAC Chapter 213, Subchapter A
☐ 30 TAC Chapter 213, Subchapter B

c. If *30 TAC Chapter 213, Subchapter A* applies, attach **either**: 1) a Geologic Assessment (if conducted in accordance with *30 TAC § 213.5*) **or** 2) a report that contains the following:

- A description of the surface geological units within the proposed land application site and wastewater pond area.
- The location and extent of any sensitive recharge features in the land application site and wastewater pond area
- A list of any proposed BMPs to protect the recharge features.

Attachment: [Click to enter text.](#)

Item 2. Surface Spray/Irrigation (Instructions, Page 73)

a. Provide the following information on the irrigation operations:

Area under irrigation (acres): [Click to enter text.](#)

Design application rate (acre-ft/acre/yr): [Click to enter text.](#)

Design application frequency (hours/day): [Click to enter text.](#)

Design application frequency (days/week): [Click to enter text.](#)

Design total nitrogen loading rate (lbs nitrogen/acre/year): [Click to enter text.](#)

Average slope of the application area (percent): [Click to enter text.](#)

Maximum slope of the application area (percent): [Click to enter text.](#)

Irrigation efficiency (percent): [Click to enter text.](#)

Effluent conductivity (mmhos/cm): [Click to enter text.](#)

Soil conductivity (mmhos/cm): [Click to enter text.](#)

Curve number: [Click to enter text.](#)

Describe the application method and equipment: [Click to enter text.](#)

- b. Attach a detailed engineering report which includes a water balance, storage volume calculations, and a nitrogen balance. **Attachment:** [Click to enter text.](#)

Item 3. Evaporation Ponds (Instructions, Page 74)

- a. Daily average effluent flow into ponds: [Click to enter text.](#) gallons per day
- b. Attach a separate engineering report of evaporation calculations for average long-term and worst-case critical conditions. **Attachment:** [Click to enter text.](#)

Item 4. Evapotranspiration Beds (Instructions, Page 74)

- a. Provide the following information on the evapotranspiration beds:
- Number of beds: [Click to enter text.](#)
- Area of bed(s) (acres): [Click to enter text.](#)
- Depth of bed(s) (feet): [Click to enter text.](#)
- Void ratio of soil in the beds: [Click to enter text.](#)
- Storage volume within the beds (include units): [Click to enter text.](#)
- Description of any lining to protect groundwater: [Click to enter text.](#)
- b. Attach a certification by a licensed Texas professional engineer that the liner meets TCEQ requirements. **Attachment:** [Click to enter text.](#)
- c. Attach a separate engineering report with water balance, storage volume calculations, and description of the liner. **Attachment:** [Click to enter text.](#)

Item 5. Overland Flow (Instructions, Page 74)

- a. Provide the following information on the overland flow:
- Area used for application (acres): [Click to enter text.](#)
- Slopes for application area (percent): [Click to enter text.](#)
- Design application rate (gpm/foot of slope width): [Click to enter text.](#)
- Slope length (feet): [Click to enter text.](#)
- Design BOD5 loading rate (lbs BOD5/acre/day): [Click to enter text.](#)
- Design application frequency (hours/day): [Click to enter text.](#)
- Design application frequency (days/week): [Click to enter text.](#)
- b. Attach a separate engineering report with the method of application and design requirements according to 30 TAC § 217.212. **Attachment:** [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 3.2: SUBSURFACE IRRIGATION (NON-DRIP)

This worksheet **is required** for all applications for a permit to disposal of wastewater by subsurface land application.

- ☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 75)

- a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?
- ☐ Yes ☐ No
- b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?
- ☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by *30 TAC § 213.8*. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Subsurface Application (Instructions, Page 75)

- a. Check the box next to the type of subsurface land disposal system requested:
- ☐ Conventional drainfield, beds, or trenches
- ☐ Low pressure dosing
- ☐ Other: [Click to enter text.](#)
- b. Provide the following information on the irrigation operations:
- Application area (acres): [Click to enter text.](#)
- Area of drainfield (square feet): [Click to enter text.](#)
- Application rate (gal/square ft/day): [Click to enter text.](#)
- Depth to groundwater (feet): [Click to enter text.](#)
- Area of trench (square feet): [Click to enter text.](#)
- Dosing duration per area (hours): [Click to enter text.](#)
- Number of beds: [Click to enter text.](#)
- Dosing amount per area (inches/day): [Click to enter text.](#)
- Soil infiltration rate (inches/hour): [Click to enter text.](#)
- Storage volume (gallons): [Click to enter text.](#)
- Area of bed(s) (square feet): [Click to enter text.](#)
- Soil classification: [Click to enter text.](#)
- c. Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation. **Attachment:** [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 3.3: SUBSURFACE AREA DRIP DISPERSAL SYSTEMS

This worksheet **is required** for all applications for a permit to dispose of wastewater using a subsurface area drip dispersal system (SADDS).

- ☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 76)

- a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?

☐ Yes ☐ No

- b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?

☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by *30 TAC § 213.8*. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Administrative Information (Instructions, Page 76)

- a. Provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the treatment facility: [Click to enter text.](#)

- b. The owner of the land where the WWTF is/will be located is the same as the owner of the WWTF.

☐ Yes ☐ No

If **no**, provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the land where the WWTF is/will be located: [Click to enter text.](#)

- c. Provide the legal name of the owner of the SADDS: [Click to enter text.](#)

- d. The owner of the SADDS is the same as the owner of the WWTF or the site where the WWTF is/will be located.

☐ Yes ☐ No

If **no**, identify the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in Item 1.c: [Click to enter text.](#)

- e. Provide the legal name of the owner of the land where the SADDS is located: [Click to enter text.](#)

- f. The owner of the land where the SADDs is/will be located is the same as owner of the WWTF, the site where the WWTF is located, or the owner of the SADDs.

☐ Yes ☐ No

If **no**, provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in item 1.e: [Click to enter text.](#)

Item 3. SADDs (Instructions, Page 77)

- a. Check the box next to the type SADDs requested by this application:

☐ Subsurface drip/trickle irrigation
☐ Surface drip irrigation
☐ Other: [Click to enter text.](#)

- b. Attach a description of the SADDs proposed/used by the facility (see instructions for guidance). **Attachment:** [Click to enter text.](#)

- c. Provide the following information on the SADDs:

Application area (acres): [Click to enter text.](#)

Soil infiltration rate (inches/hour): [Click to enter text.](#)

Average slope of the application area: [Click to enter text.](#)

Maximum slope of the application area: [Click to enter text.](#)

Storage volume (gallons): [Click to enter text.](#)

Major soil series: [Click to enter text.](#)

Depth to groundwater (feet): [Click to enter text.](#)

Effluent conductivity (mmhos/cm): [Click to enter text.](#)

- d. The facility is/will be located west of the boundary shown in 30 TAC § 222.83 **and** using a vegetative cover of non-native grasses over seeded with cool-season grasses.

☐ Yes ☐ No

If **yes**, the facility may propose a hydraulic application rate up to, but not to exceed, 0.1 gal/ft²/day.

- e. The facility is/will be located east of the boundary shown in 30 TAC § 222.83 **or** is the facility proposing any crop other than non-native grasses.

☐ Yes ☐ No

If **yes**, the facility must use the formula in 30 TAC § 222.83 to calculate the maximum hydraulic application rate.

- f. The facility has or plans to submit an alternative method to calculate the hydraulic application rate for approval by the ED.

☐ Yes ☐ No

If **yes**, provide the following information on the hydraulic application rates:

- Hydraulic application rate (gal/square foot/day): [Click to enter text.](#)
- Nitrogen application rate (gal/square foot/day): [Click to enter text.](#)

g. Provide the following dosing information:

Number of doses per day: [Click to enter text.](#)

Dosing duration per area (hours): [Click to enter text.](#)

Rest period between doses (hours): [Click to enter text.](#)

Dosing amount per area (inches/day): [Click to enter text.](#)

Number of zones: [Click to enter text.](#)

h. The system is/will be a surface drip irrigation system using existing native vegetation as a crop?

☐ Yes ☐ No

If **yes**, attach the following information:

- A vegetation survey by a certified arborist describing the percent canopy cover and relative percentage of major overstory and understory plant species.
Attachment: [Click to enter text.](#)
- Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation.
Attachment: [Click to enter text.](#)

Item 4. Required Plans (Instructions, Page 78)

a. Attach a Soil Evaluation with all information required in *30 TAC § 222.73*.

Attachment: [Click to enter text.](#)

b. Attach a Site Preparation Plan with all information required in *30 TAC § 222.75*.

Attachment: [Click to enter text.](#)

c. Attach a Recharge Feature Plan with all information required in *30 TAC § 222.79*.

Attachment: [Click to enter text.](#)

d. Provide soil sampling and testing with all information required in *30 TAC § 222.157*.

Attachment: [Click to enter text.](#)

Item 5. Flood and Run-On Protection (Instructions, Page 79)

a. Is the existing/proposed SADDs located within the 100-year frequency flood level?

☐ Yes ☐ No

Source: [Click to enter text.](#)

If **yes**, describe how the site will be protected from inundation: [Click to enter text.](#)

b. Is the existing/proposed SADDs within a designated floodway?

☐ Yes ☐ No

If **yes**, attach either the FEMA flood map or alternate information used to make this determination. **Attachment:** [Click to enter text.](#)

Item 6. Surface Waters in The State (Instructions, Page 79)

a. Attach a buffer map which shows the appropriate buffers on surface waters in the state, water wells, and springs/seeps. **Attachment:** [Click to enter text.](#)

b. The facility has or plans to request a buffer variance from water wells or waters in the state?

☐ Yes ☐ No

If **yes**, attach the additional information required in *30 TAC § 222.81(c)*. **Attachment:** [Click to enter text.](#)

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: [Click to enter text.](#)
2. The distance and direction from the outfall to the drinking water supply intake: [Click to enter text.](#)

- 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: [Click to enter text.](#) 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: [Click to enter text.](#)

- 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: [Click to enter text.](#)

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: Dow Chemical Plant A Wastewater Canal

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: Click to enter text.

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Brazos River

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: Receiving water enters the Brazos River and goes from a large canal to an even larger river.

- f. General observations of the water body during normal dry weather conditions: Perennially-flowing manmade drainage canal.

Date and time of observation: 6/3/2024 at 7:00 am

- g. The water body was influenced by stormwater runoff during observations.

☒ Yes ☒ No

If **yes**, describe how: Water level is higher than normal and at a slightly higher flow rate due to recent rains.

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):

<input type="checkbox"/> oil field activities	<input checked="" type="checkbox"/> urban runoff
<input type="checkbox"/> agricultural runoff	<input type="checkbox"/> septic tanks
<input checked="" type="checkbox"/> upstream discharges	<input type="checkbox"/> other, specify: <u>Click to enter text.</u>

- b. Uses of water body observed or evidence of such uses (check all that apply):

<input type="checkbox"/> livestock watering	<input checked="" type="checkbox"/> industrial water supply
<input type="checkbox"/> non-contact recreation	<input type="checkbox"/> irrigation withdrawal
<input type="checkbox"/> domestic water supply	<input type="checkbox"/> navigation
<input type="checkbox"/> contact recreation	<input type="checkbox"/> picnic/park activities
<input type="checkbox"/> fishing	<input type="checkbox"/> other, specify: <u>Click to enter text.</u>

- 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: [Click to enter text.](#) Time of study: [Click to enter text.](#)
Waterbody name: [Click to enter text.](#)
General location: [Click to enter text.](#)
- 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: [Click to enter text.](#) Moderately: [Click to enter text.](#) Poorly: [Click to enter text.](#)
- d. No. of riffles: [Click to enter text.](#)
- 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: [Click to enter text.](#)
- 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)**								

* 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.): [Click to enter text.](#)

Approximate drainage area above the most downstream transect from USGS map or county highway map (square miles): [Click to enter text.](#)

Length of stream evaluated (ft): [Click to enter text.](#)

Number of lateral transects made: [Click to enter text.](#)

Average stream width (ft): [Click to enter text.](#)

Average stream depth (ft): [Click to enter text.](#)

Average stream velocity (ft/sec): [Click to enter text.](#)

Instantaneous stream flow (ft³/sec): [Click to enter text.](#)

Indicate flow measurement method (VERY IMPORTANT – type of meter, floating chip timed over a fixed distance, etc.): [Click to enter text.](#)

Flow fluctuations (i.e., minor, moderate, or severe): [Click to enter text.](#)

Size of pools (i.e., large, small, moderate, or none): [Click to enter text.](#)

Maximum pool depth (ft): [Click to enter text.](#)

Total number of stream bends: [Click to enter text.](#)

Number well defined: [Click to enter text.](#)

Number moderately defined: [Click to enter text.](#)

Number poorly defined: [Click to enter text.](#)

Total number of riffles: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 5.0: SEWAGE SLUDGE MANAGEMENT AND DISPOSAL

The following information **is required** for all TPDES permit applications that meet the conditions as outlined in Technical Report 1.0, Item 7.

Item 1. Sewage Sludge Solids Management Plan (Instructions, Page 84)

a. Is this a new permit application or an amendment permit application?

☐ Yes ☐ No

b. Does or will the facility discharge in the Lake Houston watershed?

☐ Yes ☐ No

If **yes** to either Item 1.a or 1.b, attach a solids management plan. **Attachment:** [Click to enter text.](#)

Item 2. Sewage Sludge Management and Disposal (Instructions, Page 84)

a. Check the box next to the sludge disposal method(s) authorized under the facility's existing permit (check all that apply).

- ☐ Permitted landfill
- ☐ Marketing and distribution by the permittee, attach Form TCEQ-00551
- ☐ Registered land application site, attach Form TCEQ-00565
- ☐ Processed by the permittee, attach Form TCEQ-00744
- ☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744
- ☐ Transported to another WWTP
- ☐ Beneficial land application, attach Form TCEQ-10451
- ☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach the required TCEQ forms as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment: [Click to enter text.](#)

b. Provide the following information for each disposal site:

Disposal site name: [Click to enter text.](#)

TCEQ Permit/Registration Number: [Click to enter text.](#)

County where disposal site is located: [Click to enter text.](#)

c. Method of sewage sludge transportation:

☐ truck ☐ train ☐ pipe ☐ other: [Click to enter text.](#)

TCEQ Hauler Registration Number: [Click to enter text.](#)

d. Sludge is transported as a:

☐ liquid ☐ semi-liquid ☐ semi-solid ☐ solid

e. Purpose of land application: ☐ reclamation ☐ soil conditioning ☐ N/A

f. If sewage sludge is transported to another WWTP for treatment, attach a written statement or copy of contractual agreements confirming that the WWTP identified above will accept and be responsible for the sludge from this facility for the life of the permit (at least 5 years).

Attachment: [Click to enter text.](#)

Item 3. Authorization for Sewage Sludge Disposal (Instructions, Page 85)

If this is a new or major amendment application which requests authorization of a new sewage sludge disposal method, check the new sewage disposal method(s) requested for authorization (check all that apply):

- ☐ Marketing and distribution by the permittee, attach Form TCEQ-00551
- ☐ Processed by the permittee, attach Form TCEQ-00744
- ☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744
- ☐ Beneficial land application, attach Form TCEQ-10451
- ☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach any required TCEQ forms, as directed. Failure to submit the required TCEQ form will result in delays in processing the application.

Attachment: [Click to enter text.](#)

NOTE: New authorization for beneficial land application, incineration, processing, or disposal in the TPDES permit or TLAP **requires a major amendment to the permit.** New authorization for composting may require a major amendment to the permit. See the instructions to determine if a major amendment is required or if authorization for composting can be added through the renewal process.

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 6.0: INDUSTRIAL WASTE CONTRIBUTION

The following information is **required** for all applications for publicly-owned treatment works (POTWs).

For an explanation of the terms used in this worksheet, refer to the General Definitions on pages 4-12 and the Definitions Relating to Pretreatment on pages 13-14 of the Instructions.

Item 1. All POTWs (Instructions, Page 86)

- a. Complete the following table with the number of each type of industrial users (IUs) that discharge to the POTW and the daily average flows from each.

Industrial User Information

Type of Industrial User	Number of Industrial Users	Daily Average Flow (gallons per day)
CIU		
SIU - Non-categorical		
Other IU		

- b. In the past three years, has the POTW experienced treatment plant interference?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, nature of interference, and probable cause(s) and possible source(s) of each interference event. Include the names of the IU(s) that may have caused the interference: [Click to enter text.](#)

- c. In the past three years, has the POTW experienced pass-through?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, pollutants passing through the treatment plant, and probable cause(s) and possible source(s) of each pass-through event. Include the names of the IU(s) that may have caused the pass-through: [Click to enter text.](#)

- d. Does the POTW have, or is it required to develop, an approved pretreatment program?

☐ Yes ☐ No

If **yes**, answer all questions in Item 2 and skip Item 3.

If **no**, skip Item 2 and answer all questions in Item 3 for each SIU and CIU.

Item 2. POTWs With Approved Pretreatment Programs or Those Required To Develop A Pretreatment Program (Instructions, Page 86)

- a. Have there been any substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ) for approval according to 40 CFR § 403.18?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all substantial modifications that have not been submitted to the TCEQ and the purpose of the modifications.

Attachment: [Click to enter text.](#)

- b. Have there been any non-substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ)?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all non-substantial modifications that have not been submitted to the TCEQ and the purpose of the modification.

Attachment: [Click to enter text.](#)

- c. List all parameters measured above the MAL in the POTW's effluent monitoring during the last three years:

Effluent Parameters Measured Above the MAL

Pollutant	Concentration	MAL	Units	Date

Attachment: [Click to enter text.](#)

- d. Has any SIU, CIU, or other IU caused or contributed to any other problems (excluding interference or pass-through) at the POTW in the past three years?

☐ Yes ☐ No

If **yes**, provide a description of each episode, including date(s), duration, description of problems, and probable pollutants. Include the name(s) of the SIU(s)/CIU(s)/other IU(s) that may have caused or contributed to any of the problems: [Click to enter text.](#)

Item 3. Significant Industrial User and Categorical Industrial User Information (Instructions, Pages 88-87)

POTWs that **do not** have an approved pretreatment program **are required** to provide the following information for each SIU and CIU:

- a. Mr. or Ms.: [Click to enter text.](#) First/Last Name: [Click to enter text.](#)

Organization Name: [Click to enter text.](#)

SIC Code: [Click to enter text.](#)

Phone number: [Click to enter text.](#)

Email address: [Click to enter text.](#)

Physical Address: [Click to enter text.](#)

City/State/ZIP Code: [Click to enter text.](#)

Attachment: [Click to enter text.](#)

- b. Describe the industrial processes or other activities that affect or contribute to the SIU(s) or CIU(s) discharge (e.g., process and non-process wastewater): [Click to enter text.](#)

c. Provide a description of the principal products(s) or service(s) performed: [Click to enter text.](#)

d. Flow rate information

Flow Rate Information

Effluent Type	Discharge Day (gallons per day)	Discharge Frequency (Continuous, batch, or intermittent)
Process Wastewater		
Non-process Wastewater		

e. Pretreatment Standards

1. Is the SIU or CIU subject to technology-based local limits as defined in the application instructions?

☐ Yes ☐ No

2. Is the SIU subject to categorical pretreatment standards?

☐ Yes ☐ No

If **yes**, provide the category and subcategory or subcategories in the SIUs Subject To Categorical Pretreatment Standards table.

SIUs Subject to Categorical Pretreatment Standards

Category in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR

f. Has the SIU or CIU caused or contributed to any problem(s) (e.g., interferences, pass through, odors, corrosion, blockages) at the POTW in the past three years?

☐ Yes ☐ No

If **yes**, provide a description of each episode, including dates, duration, description of problems, and probable pollutants, and include the name(s) of the SIU(s)/CIU(s) that may have caused or contributed to the problem(s): [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 7.0: STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

This worksheet **is required** for all TPDES permit applications requesting individual permit coverage for discharges consisting of **either**: 1) solely of stormwater discharges associated with industrial activities, as defined in *40 CFR § 122.26(b)(14)(i-xi)*, **or** 2) stormwater discharges associated with industrial activities and any of the listed allowable non-stormwater discharges, as defined in the MSGP (TXR05000), Part II, Section A, Item 6.

Discharges of stormwater as defined in *40 CFR § 122.26 (b)(13)* are not required to obtain authorization under a TPDES permit (see exceptions at *40 CFR §§ 122.26(a)(1)* and *(9)*). Authorization for discharge may be required from a local municipal separate storm sewer system.

Item 1. Applicability (Instructions, Page 89)

Do discharges from any of the existing/proposed outfalls consist either 1) solely of stormwater discharges associated with industrial activities **or** 2) stormwater discharges associated with industrial activities and any of the allowable non-stormwater discharges?

☐ Yes ☒ No

If **no**, stop here. If **yes**, proceed as directed.

Item 2. Stormwater Coverage (Instructions, Page 89)

List each existing/proposed stormwater outfall at the facility and indicate which type of authorization covers or is proposed to cover discharges.

Authorization Coverage

Outfall	Authorization under MSGP	Authorized Under Individual Permit
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

If **all** existing/proposed outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) are **authorized under the MSGP**, **stop** here.

If **seeking authorization** for any outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) **under an individual permit**, **proceed**.

NOTE: The following information is required for each existing/proposed stormwater outfall for which the facility is seeking individual permit authorization under this application

Item 3. Site Map (Instructions, Page 90)

Attach a site map or maps (drawn to scale) of the entire facility with the following information.

- the location of each stormwater outfall to be covered by the permit
- an outline of the drainage area that is within the facility's boundary and that contributes stormwater to each outfall to be covered by the permit
- connections or discharge points to municipal separate storm sewer systems
- locations of all structures (e.g. buildings, garages, storage tanks)
- structural control devices that are designed to reduce pollution in discharges of stormwater associated with industrial activities
- process wastewater treatment units (including ponds)
- bag house and other air treatment units exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)
- landfills; scrapyards; surface water bodies (including wetlands)
- vehicle and equipment maintenance areas
- physical features of the site that may influence discharges of stormwater associated with industrial activities or contribute a dry weather flow
- locations where spills or leaks of reportable quality (as defined in *30 TAC § 327.4*) have occurred during the three years before this application was submitted to obtain coverage under an individual permit
- processing areas, storage areas, material loading/unloading areas, and other locations where significant materials are exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)

☐ Check the box to confirm all above information was provided on the facility site map(s).

Attachment: [Click to enter text.](#)

Item 4. Facility/Site Information (Instructions, Page 90)

- a. Provide the area of impervious surface and the total area drained by each stormwater outfall requested for authorization by this permit application.

Impervious Surfaces

Outfall	Area of Impervious Surface (include units)	Total Area Drained (include units)

- b. Provide the following local area rainfall information and the source of the information.
- Wettest month: [Click to enter text.](#)
- Average rainfall for wettest month (total inches): [Click to enter text.](#)
- 25-year, 24-hour rainfall (inches): [Click to enter text.](#)
- Source: [Click to enter text.](#)
- c. Attach an inventory, or list, of materials currently handled at the facility that may be exposed to precipitation. **Attachment:** [Click to enter text.](#)
- d. Attach narrative descriptions of the industrial processes and activities involving the materials in the above-listed inventory that occur outdoors or in some manner that may result in exposure of the materials to precipitation or runoff (see instructions for guidance). **Attachment:** [Click to enter text.](#)
- e. Describe any BMPs and controls the facility uses/proposes to prevent or effectively reduce pollution in stormwater discharges from the facility: [Click to enter text.](#)

Item 5. Pollutant Analysis (Instructions, Page 91)

- 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): [Click to enter text.](#)
- b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- c. Complete Table 17 as directed on page 92 of the Instructions.

Table 17 for Outfall No.: [Click to enter text.](#)

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled	MAL (mg/L)
pH (standard units)	(max)	—	(min)	—		—
Total suspended solids						—
Chemical oxygen demand						—
Total organic carbon						—
Oil and grease						—
Arsenic, total						0.0005
Barium, total						0.003
Cadmium, total						0.001
Chromium, total						0.003
Chromium, trivalent						—
Chromium, hexavalent						0.003
Copper, total						0.002

Item 6. Storm Event Data (Instructions, Page 93)

Provide the following data for the storm event(s) which resulted in the maximum values for the analytical data submitted:

Date of storm event: [Click to enter text.](#)

Duration of storm event (minutes): [Click to enter text.](#)

Total rainfall during storm event (inches): [Click to enter text.](#)

Number of hours the between beginning of the storm measured and the end of the previous measurable storm event (hours): [Click to enter text.](#)

Maximum flow rate during rain event (gallons/minute): [Click to enter text.](#)

Total stormwater flow from rain event (gallons): [Click to enter text.](#)

Provide a description of the method of flow measurement or estimate:

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 8.0: AQUACULTURE

This worksheet **is required** for all TPDES permit applications requesting individual permit coverage for discharges of aquaculture wastewater.

Item 1. Facility/Site Information (Instructions, Page 94)

- a. Complete the following table with information regarding production ponds, raceways, and fabricated tanks at the facility.

Production Pond Descriptions

Number of Ponds	Dimensions (include units)	Area of Each Pond (include units)	Number of Ponds x Area of Ponds (include Units)

Total surface area of all ponds: [Click to enter text.](#)

Raceway Descriptions

Number of Raceways	Dimensions (include units)

Fabricated Tank Descriptions

Number of Tanks	Dimensions (include units)

b. Does the facility have a TPWD-approved emergency plan?

☐ Yes ☐ No

If **yes**, attach a copy of the approved plan.

Attachment: [Click to enter text.](#)

c. Does the facility have an aquatic plant transplant authorization?

☐ Yes ☐ No

If **yes**, attach a copy of the authorization letter.

Attachment: [Click to enter text.](#)

d. Provide the number of aquaculture facilities located within 25-miles of this facility: [Click to enter text.](#)

Item 2. Species Identification (Instructions, Page 95)

Complete the following table regarding each species raised, source, origin, and disease status of the stock. Identify and attach copies of any current relevant authorizations or permits that authorize the species.

Stock Species Information

Species	Source of Stock	Origin of Stock	Disease Status	Authorizations

Attachment: [Click to enter text.](#)

Item 3. Stock Management Plan (Instructions, Page 95)

Attach a detailed stock management plan: [Click to enter text.](#)

Item 4. Water Treatment and Discharge Description (Instructions, Page 96)

Attach a detailed description of the discharge practices and water treatment process(es): [Click to enter text.](#)

Item 5. Solid Waste Management (Instructions, Page 96)

Attach a description of the solid waste-disposal practices: [Click to enter text.](#)

Item 6. Site Assessment Report (Instructions, Page 96)

All new and expanding commercial shrimp facilities located/to be located within the coastal zone must attach a detailed site assessment report which identifies sensitive aquatic habitats within the coastal zone: [Click to enter text.](#)

WORKSHEET 9.0

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CLASS V INJECTION WELL INVENTORY/AUTHORIZATION FORM

Submit the completed form to:

TCEQ
IUC Permits Team
Radioactive Materials Division
MC-233
PO Box 13087
Austin, Texas 78711-3087
512-239-6466

For TCEQ Use Only

Reg. No. _____

Date Received _____

Date Authorized _____

Item 1. General Information (Instructions Page 99)

1. TCEQ Program Area

Program Area (PST, VCP, IHW, etc.): [Click to enter text.](#)

Program ID: [Click to enter text.](#)

Contact Name: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

2. Agent/Consultant Contact Information

Contact Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

3. Owner/Operator Contact Information

☐ Owner ☐ Operator

Owner/Operator Name: [Click to enter text.](#)

Contact Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

4. Facility Contact Information

Facility Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Location description (if no address is available): [Click to enter text.](#)

Facility Contact Person: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

5. Latitude and Longitude, in degrees-minutes-seconds

Latitude: [Click to enter text.](#)

Longitude: [Click to enter text.](#)

Method of determination (GPS, TOPO, etc.): [Click to enter text.](#)

Attach topographic quadrangle map as attachment A.

6. Well Information

Type of Well Construction, select one:

- ☐ Vertical Injection
- ☐ Subsurface Fluid Distribution System
- ☐ Infiltration Gallery
- ☐ Temporary Injection Points
- ☐ Other, Specify: [Click to enter text.](#)

Number of Injection Wells: [Click to enter text.](#)

7. Purpose

Detailed Description regarding purpose of Injection System:

[Click to enter text.](#)

Attach a Site Map as Attachment B (Attach the Approved Remediation Plan, if appropriate.)

8. Water Well Driller/Installer

Water Well Driller/Installer Name: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

License Number: [Click to enter text.](#)

Item 2. Proposed Down Hole Design

Attach a diagram signed and sealed by a licensed engineer as Attachment C.

Down Hole Design Table

Name of String	Size	Setting Depth	Sacks Cement/Grout – Slurry Volume – Top of Center	Hole Size	Weight (lbs/ft) PVC/Steel
Casing					
Tubing					
Screen					

Item 3. Proposed Trench System, Subsurface Fluid Distribution System, or Infiltration Gallery

Attach a diagram signed and sealed by a licensed engineer as Attachment D.

System(s) Dimensions: [Click to enter text.](#)

System(s) Construction: [Click to enter text.](#)

Item 4. Site Hydrogeological and Injection Zone Data

1. Name of Contaminated Aquifer: [Click to enter text.](#)

2. Receiving Formation Name of Injection Zone: [Click to enter text.](#)

3. Well/Trench Total Depth: [Click to enter text.](#)

4. Surface Elevation: [Click to enter text.](#)

5. Depth to Ground Water: [Click to enter text.](#)

6. Injection Zone Depth: [Click to enter text.](#)

7. Injection Zone vertically isolated geologically? ☐ Yes ☐ No

Impervious Strata between Injection Zone and nearest Underground Source of Drinking Water:

Name: [Click to enter text.](#)

Thickness: [Click to enter text.](#)

8. Attach a list of contaminants and the levels (ppm) in contaminated aquifer as Attachment E.

9. Attach the Horizontal and Vertical extent of contamination and injection plume as Attachment F.

10. Attach Formation (Injection Zone) Water Chemistry (Background levels) TDS, etc., as Attachment G.

11. Injection Fluid Chemistry in PPM at point of injection. Attach as Attachment H.

12. Lowest Known Depth of Ground Water with < 10,000 PPM TDS: [Click to enter text.](#)

13. Maximum injection Rate/Volume/Pressure: [Click to enter text.](#)

14. Water wells within 1/4 mile radius (attach map as Attachment I): [Click to enter text.](#)

15. Injection wells within 1/4 mile radius (attach map as Attachment J): [Click to enter text.](#)

16. Monitor wells within 1/4 mile radius (attach drillers logs and map as Attachment K): [Click to enter text.](#)

17. Sampling frequency: [Click to enter text.](#)

18. Known hazardous components in injection fluid: [Click to enter text.](#)

Item 5. Site History

1. Type of Facility: [Click to enter text.](#)
2. Contamination Dates: [Click to enter text.](#)
3. Original Contamination (VOCs, TPH, BTEX, etc.) and Concentrations. Attach as Attachment L.
4. Previous Remediation. Attach results of any previous remediation as Attachment M.

NOTE: Authorization Form should be completed in detail and authorization given by the TCEQ before construction, operation, and/or conversion can begin. Attach additional pages as necessary.

Item 6. CLASS V INJECTION WELL DESIGNATIONS

- 5A07 Heat Pump/AC return (IW used for groundwater to heat or cool buildings)
- 5A19 Industrial Cooling Water Return Flow (IW used to cool industrial process equipment)
- 5B22 Salt Water Intrusion Barrier (IW used to inject fluids to prevent the intrusion of salt water into an aquifer)
- 5D02 Stormwater Drainage (IW designed for the disposal of rain water)
- 5D04 Industrial Stormwater Drainage Wells (IW designed for the disposal of rain water associated with industrial facilities)
- 5F01 Agricultural Drainage (IW that receive agricultural runoff)
- 5R21 Aquifer Recharge (IW used to inject fluids to recharge an aquifer)
- 5S23 Subsidence Control Wells (IW used to control land subsidence caused by groundwater withdrawal)
- 5W09 Untreated Sewage
- 5W10 Large Capacity Cesspools (Cesspools that are designed for 5,000 gpd or greater)
- 5W11 Large Capacity Septic systems (Septic systems designed for 5,000 gpd or greater)
- 5W12 WTPP disposal
- 5W20 Industrial Process Waste-disposal Wells
- 5W31 Septic System (Well Disposal method)
- 5W32 Septic System Drainfield Disposal
- 5X13 Mine Backfill (IW used to control subsidence, dispose of mining byproducts, or fill sections of a mine)
- 5X25 Experimental Wells (Pilot Test) (IW used to test new technologies or tracer dye studies)
- 5X26 Aquifer Remediation (IW used to clean up, treat, or prevent contamination of a USDW)
- 5X27 Other Wells
- 5X28 Motor Vehicle Waste-disposal Wells (IW used to dispose of waste from a motor vehicle site - These are currently banned)
- 5X29 Abandoned Drinking Water Wells (waste disposal)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 10.0: QUARRIES IN THE JOHN GRAVES SCENIC RIVERWAY

This worksheet **is required** for all applications for individual permits for a municipal solid waste facility or mining facility located within a Water Quality Protection Area in the John Graves Scenic Riverway. **Note: Review 30 TAC §§ 311.71-311.82 thoroughly prior to completing any portion of this worksheet.**

Item 1. Exclusions (Instructions, Page 100)

- a. Is this a municipal solid waste facility?
☐ Yes ☐ No
- b. Has this quarry been in operation since January 1, 1994 without cessation of operation for more than 30 consecutive days and under the same ownership?
☐ Yes ☐ No
- c. Is this a coal mine?
☐ Yes ☐ No
- d. Is this facility mining clay and/or shale for use in manufacturing structural clay products?
☐ Yes ☐ No

If **yes** to **any** above question, **stop here**. The facility is required to maintain documentation, as outlined in 30 TAC § 311.72(c), at the facility to demonstrate the exclusion(s).

Item 2. Location of the Quarry (Instructions, Page 101)

Check the box next to the distance between the quarry and the nearest navigable water body:

- ☐ < 200 feet ☐ 200 feet – 1,500 feet ☐ 1,500 feet – 1 mile ☐ > 1 mile

NOTE: The construction or operation of any new quarry or expansion of any existing quarry **is prohibited** within 200 feet of any water body located within a Water Quality Protection Area in the John Graves Scenic Riverway.

Item 3. Additional Requirements (Instructions, Page 101)

Use the table in the Instructions to determine if additional application requirements apply to the facility based on distance between the quarry and the nearest waterway. Attach as appropriate or enter N/A.

- a. Attach a Restoration Plan: [Click to enter text.](#)
- b. Amount of Financial Assurance for Restoration: \$ [Click to enter text.](#)
Mechanism: [Click to enter text.](#)
- c. Attach a Technical Demonstration: [Click to enter text.](#)
- d. Attach a Reclamation Plan: [Click to enter text.](#)
- e. Amount of Financial Assurance for Reclamation: \$ [Click to enter text.](#)
Mechanism: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.0: COOLING WATER SYSTEM INFORMATION

This worksheet is **required** for all TPDES permit applications that meet the conditions outlined in Technical Report 1.0, Item 12.

Item 1. Cooling Water System Data (Instructions, Page 104)

a. Complete the following table with information regarding the cooling water system.

Cooling Water System Data

Parameter	Volume (include units)
Total DIF	
Total AIF	
Intake Flow Use(s) (%)	
Contact cooling	
Non-contact cooling	
Process Wastewater	
Other	

b. Attach the following information:

1. A narrative description of the design and annual operation of the facility's cooling water system and its relationship to the CWIS(s).
2. A scaled map depicting the location of each CWIS, impoundment, intake pipe, and canals, pipes, or waterways used to convey cooling water to, or within, the cooling water system. Provide the latitude and longitude for each CWIS and any intake pipe(s) on the map. Indicate the position of the intake pipe within the water column.
3. A description of water reuse activities, if applicable, reductions in total water withdrawals, if applicable, and the proportion of the source waterbody withdrawn (on a monthly basis).
4. Design and engineering calculations prepared by a qualified professional and data to support the information provided in above item a.
5. Previous year (a minimum of 12 months) of AIF data.
6. A narrative description of existing or proposed impingement and entrainment technologies or operation measures and a summary of their performance, including, but not limited to, reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.

Attachment: [Click to enter text.](#)

Item 2. Cooling Water Intake Structure(s) Data (Instructions, Page 105)

- a. Complete the following table with information regarding each cooling water intake structure (this includes primary and make-up CWIS(s)).

Cooling Water Intake Structure(s) Data

CWIS ID				
DIF (include units)				
AIF (include units)				
Intake Flow Use(s) (%)				
Contact cooling				
Non-contact cooling				
Process Wastewater				
Other				
Latitude (decimal degrees)				
Longitude (decimal degrees)				

- b. Attach the following information regarding the CWIS(s):
1. A narrative description of the configuration of each CWIS, annual and daily operation, including any seasonal changes, and where it is located in the water body and in the water column.
 2. Engineering calculations for each CWIS.

Attachment: [Click to enter text.](#)

Item 3. Source Water Physical Data (Instructions, Page 105)

- a. Complete the following table with information regarding the CWIS(s) source waterbody (this includes primary and make-up CWIS(s)).

Source Waterbody Data

CWIS ID				
Source Waterbody				
Mean Annual Flow				
Source				

- b. Attach the following information regarding the source waterbody.
1. A narrative description of the source water for each CWIS, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports this determination of the water body type where each cooling water intake structure is located.

2. A narrative description of the source waterbody's hydrological and geomorphological features.
3. Scaled drawings showing the physical configuration of all source water bodies used by the facility, including the source waterbody's hydrological and geomorphological features. **NOTE:** The source waterbody's hydrological and geomorphological features may be included on the map submitted for item 1.b.ii of this worksheet.
4. A description of the methods used to conduct any physical studies to determine the intake's area of influence within the waterbody and the results of such studies.

Attachment: [Click to enter text.](#)

Item 4. Operational Status (Instructions, Page 106)

- a. Is this application for a power production or steam generation facility?

☐ Yes ☐ No

If **no**, proceed to Item 4.b. If **yes**, provide the following information as an attachment:

1. Describe the operating status of each individual unit, including age, capacity utilization rate (or equivalent) for the previous five years (a minimum of 60 months), and any seasonal changes in operation.
2. Describe any extended or unusual outages or other factors which significantly affect current data for flow, impingement, entrainment.
3. Identify any operating unit with a capacity utilization rate of less than 8 percent averaged over a contiguous period of two years (a minimum of 24 months).
4. Describe any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes of fuel type.

Attachment: [Click to enter text.](#)

- b. Process Units

1. Is this application for a facility which has process units that use cooling water (other than for power production or steam generation)?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, continue.

2. Does the facility use or intend to use reductions in flow or changes in operations to meet the requirements of *40 CFR § 125.94(c)*?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, attach descriptions of the following information:

- Individual production processes and product lines
- The operating status, including age of each line and seasonal operation
- Any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors

- Any major upgrades completed within the last 15 years and plans or schedules for decommissioning or replacement of process units or production processes and product lines.

Attachment: [Click to enter text.](#)

c. Is this an application for a nuclear power production facility?

☐ Yes ☐ No

If **no**, proceed to Item 4.d. If **yes**, attach a description of completed, approved, or scheduled upgrades and the Nuclear Regulatory Commission relicensing status for each unit at the facility.

Attachment: [Click to enter text.](#)

d. Is this an application for a manufacturing facility?

☐ Yes ☐ No

If **no**, proceed to Worksheet 11.1. If **yes**, attach descriptions of current and future production schedules and any plans or schedules for any new units planned within the next five years (a minimum of 60 mos)

Attachment: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.1: IMPINGEMENT MORTALITY

This worksheet is **required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: [Click to enter text.](#)

Item 1. Impingement Compliance Technology Selection (Instructions, Page 107)

Check the box next to the method of compliance for the Impingement Mortality Standard selected by the facility.

- ☐ Closed-cycle recirculating system (CCRS) [40 CFR § 125.94(c)(1)]
- ☐ 0.5 ft/s Through-Screen Design Velocity [40 CFR § 125.94(c)(2)] – Proceed to Worksheet 11.2
- ☐ 0.5 ft/s Through Screen Actual Velocity [40 CFR § 125.94(c)(3)]
- ☐ Existing offshore velocity cap [40 CFR § 125.94(c)(4)] – Proceed to Worksheet 11.2
- ☐ Modified traveling screens [40 CFR § 125.94(c)(5)]
- ☐ System of technologies [40 CFR § 125.94(c)(6)]
- ☐ Impingement mortality performance standard [40 CFR § 125.94(c)(7)]
- ☐ De minimis rate of impingement [40 CFR § 125.94(c)(11)]
- ☐ Low capacity utilization power-generation facilities [40 CFR § 125.94(c)(12)]

If 0.5 ft/s Through-Screen Design Velocity [40 CFR § 125.94(c)(2)] or existing offshore velocity cap [40 CFR § 125.94(c)(4)] was selected, proceed to Worksheet 11.2. Otherwise, continue to Item 2.

Item 2. Impingement Compliance Technology Information (Instructions, Page 107)

Complete the following sections based on the selection made for item 1 above.

a. CCRS [40 CFR § 125.94(c)(1)]

- ☐ Check this box to confirm the CWS meets the definition of CCRS located at 40 CFR § 125.91(c) and provide a response to the following questions.

1. Does the facility use or propose to use a CWIS to replenish water losses to the CWS?

- ☐ Yes ☐ No

If **no**, proceed to item a.2. If **yes**, provide the following information as an attachment and continue.

- CWIS ID
- 12 months of intake flow data for any CWIS used for make-up intake flows to replenish cooling water losses, excluding intakes for losses due to blowdown, drift, or evaporation.

- A narrative description of any physical or operational measures taken to minimize make-up withdraws.

Attachment: [Click to enter text.](#)

NOTE: Do not complete a separate Worksheet 11.1 for a make-up CWIS.

2. Does the facility use or propose to use cooling towers?

☐ Yes ☐ No

If **no**, proceed to Worksheet 11.2. If **yes**, provide the following information and proceed to Worksheet 11.2.

- Average number of cycles of concentration (COCs) prior to blowdown:

Average COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Attach COC monitoring data for each cooling tower from the previous year (a minimum of 12 months): [Click to enter text.](#)
- Maximum number of COCs each cooling tower can accomplish based on design of the system.

Calculated COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Describe conditions that may limit the number of COCs prior to blowdown, if any, including but not limited to permit conditions: [Click to enter text.](#)

b. 0.5 ft/s Through Screen Actual Velocity [40 CFR § 125.94(c)(3)]

Provide daily intake flow measurement monitoring data from the previous year (a minimum of 12 months) as an attachment and proceed to Worksheet 11.2.

Attachment: [Click to enter text.](#)

c. Modified traveling screens [40 CFR § 125.94(c)(5)]

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the modified traveling screens and associated equipment.
2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods
3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: [Click to enter text.](#)

d. System of technologies [40 CFR § 125.94(c)(6)] or impingement mortality performance standard [40 CFR § 125.94(c)(7)]

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the system of technologies used or proposed for use by the facility to

achieve compliance with the impingement mortality standard.

2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods.
3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: [Click to enter text.](#)

- e. De minimis rate of impingement [*40 CFR § 125.94(c)(11)*]

Provide the following information and proceed to Worksheet 11.2.

1. Attach monitoring data from the previous year (a minimum of 12 months) of intake flow measured at a frequency of 1/day on days of operation.

Attachment: [Click to enter text.](#)

2. If the rate of impingement caused by the CWIS is extremely low (at an organism or age-one equivalent count), attach supplemental information to Worksheet 11.0, item 1.b.6. to support this determination.

Attachment: [Click to enter text.](#)

- f. Low capacity utilization power-generation facilities [*40 CFR § 125.94(c)(12)*]

Attach monthly utilization data from the previous 2 years (a minimum of 24 months) for each operating unit and proceed to Worksheet 11.2.

Attachment: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.2: SOURCE WATER BIOLOGICAL DATA

This worksheet is **required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** source waterbody of a CWIS for which a facility has selected an Impingement Mortality Technology Option described at *40 CFR §§ 125.94(c)(1)-(7)*.

Name of source waterbody: [Click to enter text.](#)

Item 1. Species Management (Instructions, Page 109)

- a. The facility has obtained an incidental take permit for its cooling water intake structure(s) from the USFWS or the NMFS.

☐ Yes ☐ No

If yes, attach any information submitted in order to obtain that permit, which may be used to supplement the permit application information requirements of paragraph *40 CFR § 125.95(f)*.

Attachment: [Click to enter text.](#)

- b. Is the facility requesting a waiver from application requirements at *40 CFR § 122.21(r)(4)* in accordance with *40 CFR § 125.95* for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent?

☐ Yes ☐ No

If **yes**, attach a copy of the most recent managed fisheries report to TPWD, or equivalent.

Attachment: [Click to enter text.](#)

- c. There are no federally listed threatened or endangered species or critical habitat designations within the source water body.

☐ True ☐ False

Item 2. Source Water Biological Data (Instructions, Page 109)

New Facilities (Phase I, Track I and II)

- Provide responses to all items in this section and stop.

Existing Facilities (Phase II)

- If the answer to **1.b.** above was **no**, provide responses to all items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **true**, do not complete any items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **false**, attach a response for any item in this section that is not contained within the most recent TPWD, or equivalent and proceed to Worksheet 11.3.

Attachment: [Click to enter text.](#)

- a. A list of the data requested at *40 CFR § 122.21(r)(4)(ii)* through (vi) that are not available, and efforts made to identify sources of the data.
- b. Provide a list of species (or relevant taxa) in the vicinity of the CWIS and identify the following information regarding each species listed.
 - all life stages and their relative abundance,
 - identification of all species and life stages that would be most susceptible to impingement and entrainment,
 - forage base,
 - significance to commercial fisheries,
 - significance to recreational fisheries,
 - primary period of reproduction,
 - larval recruitment, and
 - period of peak abundance for relevant taxa.
- c. Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the CWIS(s).
- d. Identify all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at the CWIS(s).
- e. Documentation of any public participation or consultation with federal or state agencies undertaken.

The following is required for existing facilities only. Include the following information with the above listed attachment.

- f. Identify any protective measures and stabilization activities that have been implemented and provide a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.
- g. A list of fragile species, as defined at *40 CFR § 125.92(m)*, at the facility. The applicant need only identify those species not already identified as fragile at *40 CFR § 125.92(m)*.

NOTE: New units at an existing facility are not required to resubmit this information if the cooling water withdrawals for the operation of the new unit are from an existing intake.

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.3: ENTRAINMENT

This worksheet is **required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: [Click to enter text.](#)

Item 1. Applicability (Instructions, Page 111)

Is the AIF of the CWIS identified above greater than, or equal to, 125 MGD?

☐ Yes ☐ No

- If **no** or the facility has selected **CCRS** [40 CFR § 125.94(c)(1)] for the impingement mortality compliance method, complete Item 2 and stop here.
- If **yes** and the facility is **seeking a waiver** from application requirements in accordance with 40 CFR § 125.95 for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent, complete item 2 and stop.
- If **yes** and the facility is **not seeking a waiver** from application requirements in accordance with 40 CFR § 125.95, complete item 2 and provide any required and completed studies listed in item 3. For any required studies in item 3 that are not complete, provide a detailed explanation for the delay and an anticipated schedule for completion and submittal.

Item 2. Existing Entrainment Performance Studies (Instructions, Page 111)

Attach any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies.

Attachment: [Click to enter text.](#)

Item 3. Facility Entrainment Performance Studies (Instructions, Page 111)

- Attach an entrainment characterization study, as described at 40 CFR § 122.21(r)(9): [Click to enter text.](#)
- Attach a comprehensive feasibility study, as described as 40 CFR § 122.21(r)(10): [Click to enter text.](#)
- Attach a benefits valuation study, as described as 40 CFR § 122.21(r)(11): [Click to enter text.](#)
- Attach a non-water quality environmental and other impacts study, as described as 40 CFR § 122.21(r)(12): [Click to enter text.](#)
- Attach a peer review analysis, as described as 40 CFR § 122.21(r)(13): [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 12.0: OIL AND GAS EXPLORATION, DEVELOPMENT, AND PRODUCTION WASTEWATER DISCHARGES

This worksheet **is required** for all TPDES permit applications that are subject to Effluent Limitation Guidelines in 40 CFR Part 435.

Item 1. Operational Information (Instructions, Page 112)

- a. Is the wastewater from an oil and gas exploration, development, or production facility located west of the 98th meridian?

☐ Yes ☐ No

If yes, continue to the next question. If no, skip to Item 2 relating to Production/Process Data.

- b. Provide justification for how the wastewater is/will be used for agriculture or wildlife propagation.

Click to enter text.

Item 2. Production/Process Data (Instructions, Page 112)

- a. Provide the applicable 40 CFR Part 435 Subpart(s).

Click to enter text.

- b. Describe if the permit being sought is for discharges from exploration, development, production, or for a combination of more than one of those activities.

Click to enter text.

c. Provide information on all waste-streams generated and specify which waste-streams you are requesting to be authorized for discharge.

Wastestreams Generated

Wastestream	Requesting authorization to discharge? (Yes/No)	Volume (MGD)	% of Total Flow

d. Describe how the facility will manage wastestreams for which discharge authorization is not being sought.

Click to enter text.

Attachment: Click to enter text.

e. Provide information on miscellaneous discharges.

Click to enter text.

Attachment: Click to enter text.

- f. List of chemicals that are in use, or will be used, downhole. Provide the category, concentration used/to be used, and purpose of using the chemical. Attach a safety data sheet for each chemical listed.

Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: [Click to enter text.](#)

- g. List of chemicals that are in use, or will be used, to treat the wastewater to be discharged under this authorization. Provide the concentration used/to be used and purpose of using the chemical. Attach a safety data sheet for each chemical listed.

Water Treatment Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: [Click to enter text.](#)

Item 3. Pollutant Analysis (Instructions, Page 113)

Tables 1, 2, 6, and 7 located in Worksheet 2.0 are required. In addition, Table 19 below is required and must be completed for each outfall and submitted with this application. The remaining tables in Worksheet 2.0, are required as applicable.

- 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): [Click to enter text.](#)
- 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: [Click to enter text.](#)
- d. Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** [Click to enter text.](#)

Table 19 for Outfall No.: [Click to enter text.](#) Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (mg/L)*	Sample 2 (mg/L)*	Sample 3 (mg/L)*	Sample 4 (mg/L)*
Calcium				
Potassium				
Sodium				

*Indicate units if different from mg/L.

Not Applicable
Existing Facility

Extension Letter

From: Leah Whallon Leah.Whallon@Tceq.Texas.Gov
Subject: 180-Day Extension Request to Renew TPDES Permit No. WQ0002216000;TX0064912
Date: August 14, 2024 at 9:15 AM
To: Janet L. Greenberg JGreen@green-envi.com
Cc: Sara McCordic smccordic@green-envi.com, Karen Miller kmiller@green-envi.com, Kinzie Griffin kinzie.griffin@dsm-firmenich.com, Linda S. Kee lkee@green-envi.com, Monica Baez monica.baez@tceq.texas.gov, Matthew Kennington Matthew.Kennington@tceq.texas.gov, Macy Beauchamp Macy.Beauchamp@tceq.texas.gov, Krista Urea Krista.Urea@tceq.texas.gov, WQD-ICIS WQD-ICIS@tceq.texas.gov

Good Morning Janet,

An extension to the application filing deadline is being granted as requested until September 14, 2024. Please see attached for a courtesy copy of the letter. The original will be sent by mail today.

Please let me know if you have any questions.

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

From: Janet L. Greenberg <JGreen@green-envi.com>
Sent: Tuesday, August 13, 2024 2:52 PM
To: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>; WQ-ARPTeam <WQ-ARPTeam@tceq.texas.gov>; Shannon Gibson <Shannon.Gibson@tceq.texas.gov>; Monica Baez <monica.baez@tceq.texas.gov>
Cc: Sara McCordic <smccordic@green-envi.com>; Karen Miller <kmiller@green-envi.com>; Kinzie Griffin <kinzie.griffin@dsm-firmenich.com>; Linda S. Kee <lkee@green-envi.com>
Subject: RE: Re: Fw: question on submittal of renewal - EXTENSION REQUEST

Hello, Leah. DSM Nutritional Products, LLC in Freeport, Texas is in the process of submitting an application to renew TPDES Permit No. WQ0002216000, which expires on February 11, 2025. The renewal application is due for submittal to TCEQ 180 days prior, on August 15, 2024. The application is ready to submit, but the new Site Leader, who needs to sign the application in STEERS, does not yet have a Texas driver's license. On behalf of DSM, we hereby request an extension of 30 days for the submission of this renewal application, to allow the Site Leader time to submit a paper SPA to TCEQ and also obtain a TDL. The application will be promptly submitted in STEERS once he has the authority to sign the application there. Please advise, thank you.

Thanks,

Janet L. Greenberg, P.E.

Administrative Report



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST

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

APPLICANT NAME: DSM Nutritional Products, LLC

PERMIT NUMBER (If new, leave blank): WQ00 02216000

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

	Y	N		Y	N
Administrative Report 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 8.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Administrative Report 1.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Worksheet 9.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPIF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 10.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Core Data Form	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 11.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Public Involvement Plan Form	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Worksheet 11.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Plain Language Summary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 11.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Technical Report 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 11.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Original USGS Map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Affected Landowners Map	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 3.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Landowner Disk or Labels	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 3.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Flow Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 3.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Site Drawing	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 3.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Original Photographs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 4.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Design Calculations	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 4.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Solids Management Plan	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 5.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Water Balance	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 6.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 7.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

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 the Oil and Gas Exploration and Production Administrative Report ([TCEQ Form-20893 and 20893-inst¹](#)).

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

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

Applicant Name: DSM Nutritional Products, LLC

Permit No.: WQ0002216000

EPA ID No.: TXD083558486

Expiration Date: 2/11/2025

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

☒ Industrial Wastewater (wastewater and stormwater)

☐ Industrial Stormwater (stormwater 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)	<input type="checkbox"/> \$350	<input type="checkbox"/> \$350	<input type="checkbox"/> \$315	<input type="checkbox"/> \$150
Minor facility subject to EPA categorical effluent guidelines (40 CFR Parts 400-471)	<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,250	<input checked="" type="checkbox"/> \$1,215	<input type="checkbox"/> \$150
Major facility	N/A ²	<input type="checkbox"/> \$2,050	<input type="checkbox"/> \$2,015	<input type="checkbox"/> \$450

h. Payment Information

Mailed

Check or money order No.: [Click to enter text.](#)

Check or money order amt.: [Click to enter text.](#)

Named printed on check or money order: [Click to enter text.](#)

Epay

Voucher number: [Click to enter text.](#)

Copy of voucher attachment: [Click to enter text.](#)

Item 2. Applicant Information (Instructions, Pages 26)

a. Customer Number, if applicant is an existing customer: CN602496499

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: DSM Nutritional Products, LLC

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): Lopes/Renato S

Title: Site Manager

Credential: [Click to enter text.](#)

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: Click to enter text.

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): CNClick to enter text.

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: Click to enter text.

Full Name (Last/First Name): Click to enter text.

Title: Click to enter text.

Credential: Click to enter text.

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 one Core Data Form (TCEQ Form 10400) for each customer (applicant and co-applicant(s)) and include as an attachment. If the customer type selected on the Core Data Form is Individual, complete Attachment 1 of the Administrative Report. Attachment: 1

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

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

a. ☒ Administrative Contact ☒ Technical Contact

Prefix: Ms. Full Name (Last/First Name): Miller/Karen M

Title: Senior Engineer Credential: PE, PG

Organization Name: GREEN Environmental Consulting, Inc.

Mailing Address: 2902 Clarice Ct City/State/Zip: Austin, TX 78757

Phone No: 512-468-7325 Email: kmiller@green-envi.com

b. ☒ Administrative Contact ☒ Technical Contact

Prefix: Ms. Full Name (Last/First Name): Griffin/Kinzie

Title: Environmental Professional Credential:

Organization Name: DSM Nutritional Products, LLC

Mailing Address: 1000 County Road 227A City/State/Zip: Freeport, TX 77541

Phone No: 979-373-5080

Email: Kinzie.griffin@dsm-firmenich.com

Attachment: [Click to enter text.](#)

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): Griffin/Kinzie
Title: Environmental Professional Credential: _____
Organization Name: DSM Nutritional Products, LLC
Mailing Address: 1000 County Road 227A City/State/Zip: Freeport, TX 77541
Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.com
- b. Prefix: Mr. Full Name (Last/First Name): Strack/David
Title: Safety, Health, Environmental Manager - Interim Credential: EIT, CSP, ASP
Organization Name: DSM Nutritional Products, LLC
Mailing Address: 1000 County Road 227A City/State/Zip: Freeport, TX 77541
Phone No: 979-373-5045 Email: david.strack@dsm-firmenich.com
- Attachment: [Click to enter text.](#)

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): Griffin/Kinzie
Title: Environmental Professional Credential: [Click to enter text.](#)
Organization Name: DSM Nutritional Products
Mailing Address: 1000 County Rd 227A City/State/Zip: Freeport, TX 77541
Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.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): Griffin/Kinzie
Title: Environmental Professional Credential: [Click to enter text.](#)
Organization Name: DSM Nutritional Products
Mailing Address: 1000 County Rd 227A City/State/Zip: Freeport, TX 77541
Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.com

Item 9. Notice Information (Instructions, Pages 28)

a. Individual Publishing the Notices

Prefix: Ms. Full Name (Last/First Name): Griffin/Kinzie

Title: Environmental Professional Credential:

Organization Name: DSM Nutritional Products, LLC

Mailing Address: 1000 County Road 227A City/State/Zip: Freeport, TX 77541

Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.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: kinzie.griffin@dsm-firmenich.com

☐ Fax: Click to enter text.

☒ Regular Mail (USPS)

Mailing Address: 1000 County Rd 227A

City/State/Zip Code: Freeport, TX 77541

c. Contact in the Notice

Prefix: Ms. Full Name (Last/First Name): Griffin/Kinzie

Title: Environmental Professional Credential:

Organization Name: DSM Nutritional Products, LLC

Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.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: Freeport Branch Public Library Location within the building:
Public notice shelf

Physical Address of Building: 410 N. Brazosport Blvd.

City: Freeport County: Brazoria

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. Plain Language Summary Template – Complete the Plain Language Summary (TCEQ Form 20972) and include as an attachment. Attachment: 2

- g. Complete one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment and include as an attachment. Attachment: n/a

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

- a. TCEQ issued Regulated Entity Number (RN), if available: RN101190221

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 (the name known by the community where located): DSM Nutritional Products Freeport 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: Click to enter text. Full Name (Last/First Name): Click to enter text.

or Organization Name: DSM Nutritional Products

Mailing Address: 1000 County Rd 227A

City/State/Zip: Freeport/TX/77541

Phone No: 979-373-5080

Email: Kinzie.griffin@dsm-firmenich.com

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

- f. Owner of land where treatment facility is or will be: DSM Nutritional Products

Prefix: [Click to enter text.](#) Full Name (Last/First Name): [Click to enter text.](#)

or Organization Name: [DSM Nutritional Products](#)

Mailing Address: [1000 County Rd 227!](#)

City/State/Zip: [Freeport/TX/77541](#)

Phone No: [979-373-5080](#)

Email: [Kinzie.griffin@dsm-firmenich.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: [Click to enter text.](#) Full Name (Last/First Name): [Click to enter text.](#)

or Organization Name: [Click to enter text.](#)

Mailing Address: [Click to enter text.](#)

City/State/Zip: [Click to enter text.](#)

Phone No: [Click to enter text.](#)

Email: [Click to enter text.](#)

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: [Click to enter text.](#)

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

Prefix: [n/a](#) Full Name (Last/First Name): [Click to enter text.](#)

or Organization Name: [Click to enter text.](#)

Mailing Address: [Click to enter text.](#)

City/State/Zip: [Click to enter text.](#)

Phone No: [Click to enter text.](#)

Email: [Click to enter text.](#)

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: [Click to enter text.](#)

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

☒ Three-miles downstream information

☒ Applicant's property boundaries

☒ Treatment facility boundaries

☒ Labeled point(s) of discharge

☒ Highlighted discharge route(s)

☐ Effluent disposal site boundaries

☒ All wastewater ponds

☐ Sewage sludge disposal site

☐ New and future construction

Attachment: [3](#)

- 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: [Click to enter text.](#)

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: [Click to enter text.](#)

f. City nearest the outfall(s): Freeport

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

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: [Click to enter text.](#)

- b. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Account no.: [Click to enter text.](#)

Total amount due: [Click to enter text.](#)

- c. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Enforcement order no.: [Click to enter text.](#)

Amount due: [Click to enter text.](#)

Item 13. Signature Page (Instructions, Page 33)

Permit No: WQ0002216000

Applicant Name: DSM Nutritional Products

Certification: I, Renato S Lopes, 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): Renato S Lopes

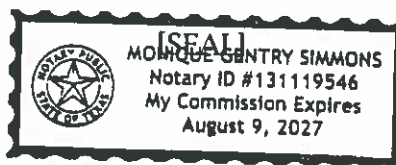
Signatory title: Site Manager

Signature: Renato S Lopes Date: 08/14/2024
(Use blue ink)

Subscribed and Sworn to before me by the said Renato Da Silva Lopes
on this 14 day of August, 2024.
My commission expires on the 9 day of August, 2027.

Monique Gentry Simmons
Notary Public

Brazoria
County, Texas



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: n/a

- b. Check the box next to the format of the landowners list:

☐ Readable/Writeable CD ☐ Four sets of labels

Attachment: n/a

- d. Provide the source of the landowners' names and mailing addresses: n/a

- 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

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: 4

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:** WQ000 [Click to enter text.](#)

1. Check or Money Order Number: [Click to enter text.](#)
2. Check or Money Order Amount: [Click to enter text.](#)
3. Date of Check or Money Order: [Click to enter text.](#)
4. Name on Check or Money Order: [Click to enter text.](#)

5. APPLICATION INFORMATION

Name of Project or Site: [Click to enter text.](#)

Physical Address of Project or Site: [Click to enter text.](#)

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: [Click to enter text.](#)

Staple Check or Money Order in This Space

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): Click to enter text.

Driver's License or State Identification Number: Click to enter text.

Date of Birth: Click to enter text.

Mailing Address: Click to enter text.

City, State, and Zip Code: Click to enter text.

Phone No.: Click to enter text.

Fax No.: Click to enter text.

E-mail Address: Click to enter text.

CN: Click to enter text.

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 Cross Reference List
(See instructions for landowner requirements.)
- ☒ N/A ☐ Landowners Labels or CD-RW attached
(See instructions for landowner requirements.)
- ☒ 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.)*
- ☒ Plain Language Summary

Technical Report



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).

DSM Nutritional Products, SIC 2833, manufactures beta carotene, which is a Vitamin A precursor, via a chemical synthesis process. The facility employs an in-process chemical recovery system for the major organic solvents (methanol, acetone, and methylene chloride) that are used as the raw materials to maximize process efficiency and minimize waste generation.

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

Process wastewater is generated from the use of process equipment, such as water-supplied vacuum pumps, distillation columns, overhead condensers, equipment cooling (tower water). Utility wastewater is generated by cooling tower blowdown, cooling water for compressors, boiler blowdown, and deionized water plant reject flow, as well as regeneration of the Dealkylized Beds.

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
Acetic acid CAS 64-19-7	Etinol CAS 17075-53-5	Beta Carotene CAS 7235-40-7
Acetone CAS 67-64-1		
Acetylene CAS 74-86-2	Vinylol CAS 5208-93-5	C25 Aldehyde
Anhydrous ammonia CAS 7664-41-7		
Beta-Ionone CAS 14901-07-6	Vinyl Salt CAS 1062-12-0	
C10-Dialdehyde CAS 5056-17-7		
Hexane CAS 110-54-3		
Hydrochloric acid CAS 7647-01-0		
Hydrogen CAS 1333-74-0		
Methanol CAS 67-65-1		
Methylene Chloride CAS 75-09-2		
Potassium hydroxide CAS 1310-58-3		
Sodium Hydroxide CAS 1310-73-2		
Sulfuric acid CAS 7664-93-9		
Palladium on calcium carbonate CAS 7440-05-3		
Toluene CAS 108-88-3		
Brine solution CAS 7647-14-5		
Triphenylphosphine CAS 603-53-0		
Pyridine CAS 110-86-1		

d. **Attachment:** [Click to enter text.](#)

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: 5

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

☐ Yes ☒ No

If **yes**, provide background discussion: [Click to enter text.](#)

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: 12/30/2020 FEMA FIRM map

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: [Click to enter text.](#)

Attachment: 6

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: [Click to enter text.](#)

If **no**, provide an approximate date of application submittal to the USACE: [Click to enter text.](#)

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.

The facility's wastewater treatment processes consist of: physical treatment, chemical treatment, and biological treatment. Detailed descriptions of the processes are included in Attachment 7.

- 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: 8

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)	C, E			
Associated Outfall Number	001			
Liner Type (C) (I) (S) or (A)	I			
Alt. Liner Attachment Reference	n/a			
Leak Detection System, Y/N	N			
Groundwater Monitoring Wells, Y/N	N			
Groundwater Monitoring Data Attachment	None			
Pond Bottom Located Above The Seasonal High-Water Table, Y/N	Y			
Length (ft)	340			
Width (ft)	80			
Max Depth From Water Surface (ft), Not Including Freeboard	Approx 11			
Freeboard (ft)	0			
Surface Area (acres)	0.6			
Storage Capacity (gallons)	2.3 million			
40 CFR Part 257, Subpart D, Y/N	N			
Date of Construction	1970s			

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: [Click to enter text.](#)

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: 9

- 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: 10

- 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: 11

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/or 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	28 degrees 59' 45"	95 degrees 21' 59"

Outfall Location Description

Outfall No.	Location Description
001	12-inch steel pipe empties into the Dow Canal at the Dow Chemical Plant site. The flow meter is on DSM property.

Outfall No.	Location Description

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

Outfall No.	Description of sampling point
001	Sampling of the outfall occurs on the DSM property at the wastewater treatment plant.

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	0.190	0.390	0.190	0.390	Ongoing

Outfall Discharge – Method and Measurement

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

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	12

Outfall Wastestream Contributions

Outfall No. 001

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Process	0.1	68
Cooling tower blowdown	0.006	4
Sanitary wastewater	0.004	3
Utilities (boiler blowdown, et. al)	0.03	26

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Stormwater	0.005	3

Outfall No. [Click to enter text.](#)

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

Outfall No. [Click to enter text.](#)

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

Attachment: [Click to enter text.](#)

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: 12

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	1	6,345	86,175
Boilers	1	3,003	10,423

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: Product and raw materials are stored outdoors. Plus, the process structure where beta carotene is manufactured is not enclosed. Spills in areas could contact stormwater, which is collected in contained areas and sumps and is then pumped to the wastewater treatment plant for treatment prior to discharge through Outfall 001. Additionally, cooling tower overspray blows onto the ground and collects in low areas while the water seals around the EV flare are emptied onto the ground surface, both of which have the potential to contaminate stormwater that then drains to Round Lake.

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: [Click to enter text.](#)
- 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.
Hauler: Sprint	8836
Disposal facility: Seabreeze Environmental Landfill	H1539

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: [Click to enter text.](#)

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: [Click to enter text.](#)

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA. **Attachment:** [Click to enter text.](#)

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: [Click to enter text.](#)

- 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: [Click to enter text.](#)

- 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)

- 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)

Item 12. Cooling Water (Instructions, Page 46)

- a. Does the facility use or propose to use water for cooling purposes?

☒ Yes ☐ No

If **no**, stop here. If **yes**, complete Items 12.b thru 12.f.

- 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

- 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	COOL-01			
Owner	DSM			
Operator	DSM			

2. Cooling water is/will be obtained from a Public Water Supplier (PWS)

☒ Yes ☐ No

If **no**, continue. If **yes**, provide the PWS Registration No. and stop here: PWS No. TX0200232

3. Cooling water is/will be obtained from a reclaimed water source?

☐ Yes ☐ No

If **no**, continue. If **yes**, provide the Reuse Authorization No. and stop here: [Click to enter text.](#)

4. Cooling water is/will be obtained from an Independent Supplier

☐ Yes ☐ No

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: [Click to enter text.](#)

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 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

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*: [Click to enter text.](#)

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: [Click to enter text.](#)

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: [Click to enter text.](#)

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.

[Click to enter text.](#)

b. Is the facility requesting any **minor amendments** to the permit?

☐ Yes ☒ No

If **yes**, list and describe each change individually.

[Click to enter text.](#)

c. Is the facility requesting any **minor modifications** to the permit?

☐ Yes ☒ No

If **yes**, list and describe each change individually.

Click to enter text.

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: Renato S Lopes

Title: Site Manager

Signature: _____

Date: 08/14/2024

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
Pharmaceutical manufacturing	439

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.

DSM purchases an average of 45 million gallons of water from Dow annually for use in onsite processes. Approximately a sixth of the water is used in non-contact cooling and evaporated from the cooling tower while approximately nine percent is blown down and sent to the WWTP for treatment. A majority, about 65%, of the fresh water from Dow is dealkylized and then used onsite in the boiler, as process water feed, and as feedstock to produce deionized water, which is also used in onsite production. About eight percent of the water treated via dealkylation is blown down for treatment in the WWTP. Approximately seven percent of the incoming fresh water is lost from the boiler to steam and to the onsite flare while about six percent is sent as boiler blowdown to the WWTP for treatment. Approximately 77 percent is used as feedstock to make DI water, most of which is used in the process. More detail of the water flows is shown on Attachment 8.

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
Beta carotene production	439	C	12/1993

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)

- 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): 3/28/2024 – 7/2/2024
- ☒ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- 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: 13

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.: 001

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)	7	8	7	3
CBOD (5-day)	2	3	<2	<2
Chemical oxygen demand	70	58	97	44
Total organic carbon	11.5	11.1	11.8	12.1
Dissolved oxygen	8	9	9	9
Ammonia nitrogen	<0.25	<0.25	<0.25	<0.25
Total suspended solids	18	31	16	13
Nitrate nitrogen	52.6	69.8	55.2	40.1
Total organic nitrogen	0.782	0.642	2.82	2.57
Total phosphorus	5.41	7.40	6.17	5.02
Oil and grease	<5.0	<5.0	<5.0	<5.0
Total residual chlorine	0.06	0.02	0.01	0.08

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Total dissolved solids	1,750	2,020	1,780	1,780
Sulfate	207	216	150	163
Chloride	621	631	601	659
Fluoride	<0.50	<0.50	<0.5	<0.5
Total alkalinity (mg/L as CaCO3)	60	54	80	108
Temperature (°F)	62.2	66.2	66.4	69.3
pH (standard units)	7.8	7.70	7.60	7.90

Table 2 for Outfall No.: 001

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	346	564	277	331	2.5
Antimony, total	0.6	0.8	0.7	0.7	5
Arsenic, total	3.3	4.4	3.7	5.0	0.5
Barium, total	79.5	91.2	54.8	37.2	3
Beryllium, total	<0.4	<0.4	<0.4	<0.4	0.5
Cadmium, total	<0.4	<0.4	<0.4	<0.4	1
Chromium, total	1.1	1.6	0.6	0.7	3
Chromium, hexavalent	4.7	4.7	4.7	4.7	3
Chromium, trivalent	1.1	1.6	0.6	0.7	N/A
Copper, total	16.1	21.1	15.6	14.2	2
Cyanide, available	<9	<9	<9	<9	2/10
Lead, total	<0.4	0.5	<0.4	<0.4	0.5
Mercury, total	0.000966	0.000257000	0.0013	0.00118	0.005/0.0005
Nickel, total	4.2	<0.4	4.0	3.4	2
Selenium, total	<3.2	<0.4	<3.2	<3.2	5
Silver, total	<0.4	<0.4	<0.4	<0.4	0.5
Thallium, total	<0.4	<0.4	<0.4	<0.4	0.5
Zinc, total	40.4	65.3	39.3	39.2	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.: **001**

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	<43	<43	<43	<43	50
Anthracene	<0.35	<1.80	<0.35	<0.35	10
Benzene	<1	<1	<1	<1	10
Benidine	<0.66	<3.30	<0.66	<0.66	50
Benzo(a)anthracene	<0.33	<1.90	<0.38	<0.38	5
Benzo(a)pyrene	<0.85	<4.30	<0.85	<0.85	5
Bis(2-chloroethyl)ether	<0.72	<3.60	<0.72	<0.72	10
Bis(2-ethylhexyl)phthalate	<2.20	11.00	<2.20	<2.20	10
Bromodichloromethane [Dichlorobromomethane]	2	3	<1	2	10
Bromoform	<2	<2	<2	<2	10
Carbon tetrachloride	<2	<2	<2	<2	2
Chlorobenzene	<1	<1	<1	<1	10
Chlorodibromomethane [Dibromochloromethane]	<1	<1	<1	<1	10
Chloroform	<2	4	<2	3	10
Chrysene	<0.57	<2.90	<0.57	<0.57	5
m-Cresol [3-Methylphenol]	<1.30	<6.60	<1.30	<1.30	10
o-Cresol [2-Methylphenol]	<1.00	<5.00	<1.00	<1.00	10
p-Cresol [4-Methylphenol]	<1.30	<6.60	<1.30	<1.30	10
1,2-Dibromoethane	<1	<1	<1	<1	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<0.53	<2.70	<0.53	<0.53	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<0.41	<2.10	<0.41	<0.41	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<0.25	<1.30	<0.25	<0.25	10
3,3'-Dichlorobenzidine	<0.88	<4.40	<0.88	<0.88	5
1,2-Dichloroethane	<1	<1	<1	<1	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
1,1-Dichloroethene [1,1-Dichloroethylene]	<1	<1	<1	<1	10
Dichloromethane [Methylene chloride]	<1	<1	<1	<1	20
1,2-Dichloropropane	<1	<1	<1	<1	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<2	<2	<2	<2	10
2,4-Dimethylphenol	<0.53	<2.70	<0.53	<0.53	10
Di-n-Butyl phthalate	<1.20	<6.10	<1.20	<1.20	10
Ethylbenzene	<1	<1	<1	<1	10
Fluoride	<0.50	<0.50	<0.5	<0.5	500
Hexachlorobenzene	<0.69	<3.50	<0.69	<0.69	5
Hexachlorobutadiene	<0.41	<2.10	<0.41	<0.41	10
Hexachlorocyclopentadiene	<0.35	<1.80	<0.35	<0.35	10
Hexachloroethane	<0.47	<2.40	<0.47	<0.47	20
Methyl ethyl ketone	<4	<4	<4	<4	50
Nitrobenzene	<0.91	<4.60	<0.91	<0.91	10
N-Nitrosodiethylamine	<5.00	25.0	<5.00	<5.00	20
N-Nitroso-di-n-butylamine	<5.00	25	<5.00	<5.00	20
Nonylphenol	<5.00	<25.0	<5.00	<5.00	333
Pentachlorobenzene	<3.00	<15.0	<3.00	<3.00	20
Pentachlorophenol	<0.50	<2.50	<0.50	<0.50	5
Phenanthrene	<0.44	<2.20	<0.44	<0.44	10
Polychlorinated biphenyls (PCBs) (**)	<0.03	<0.03	<0.03	<0.03	0.2
Pyridine	<0.35	<1.80	<0.35	<0.35	20
1,2,4,5-Tetrachlorobenzene	<5.00	25	<5.00	<5.00	20
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	10
Tetrachloroethene [Tetrachloroethylene]	<1	<1	<1	<1	10
Toluene	<1	<1	<1	<1	10
1,1,1-Trichloroethane	<1	<1	<1	<1	10
1,1,2-Trichloroethane	<1	<1	<1	<1	10
Trichloroethene [Trichloroethylene]	<1	<1	<1	<1	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
2,4,5-Trichlorophenol	<0.85	<4.30	<0.85	<0.85	50
TTHM (Total trihalomethanes)	2	7	<2	5	10
Vinyl chloride	<1	<1	<1	<1	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.: **001**

Samples are (check one): ☐ Composite ☒ Grab

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)	n/a	n/a	n/a	n/a	0.010
Enterococci (cfu or MPN/100 mL)	4.0	4.0	42.2	10.4	N/A
<i>E. coli</i> (cfu or MPN/100 mL)	n/a	n/a	n/a	n/a	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.: [Click to enter text.](#)

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 [Fenprothrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Endosulfan I (<i>alpha</i>)					0.01
Endosulfan II (<i>beta</i>)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (<i>alpha</i>)					0.05
Hexachlorocyclohexane (<i>beta</i>)					0.05
Hexachlorocyclohexane (<i>gamma</i>) [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.: **001**

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	<input type="checkbox"/>	<input checked="" type="checkbox"/>					400
Color (PCU)	<input checked="" type="checkbox"/>	<input type="checkbox"/>		15			—
Nitrate-Nitrite (as N)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	52.6				—
Sulfide (as S)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<0.05				—
Sulfite (as SO ₃)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Surfactants	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Boron, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Cobalt, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					0.3
Iron, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.535	0.875	0.425	0.347	7
Magnesium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Manganese, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					0.5
Molybdenum, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					1
Tin, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					5
Titanium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					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
<input type="checkbox"/> Adhesives and Sealants		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Aluminum Forming	467	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Auto and Other Laundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Battery Manufacturing	461	<input type="checkbox"/> Yes	No	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Coal Mining	434	No	No	No	No
<input type="checkbox"/> Coil Coating	465	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Copper Forming	468	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Electric and Electronic Components	469	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Electroplating	413	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Explosives Manufacturing	457	No	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Foundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts A,B,C,E	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts D,F	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Inorganic Chemicals Manufacturing	415	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Iron and Steel Manufacturing	420	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Leather Tanning and Finishing	425	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Mechanical Products Manufacturing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Nonferrous Metals Manufacturing	421,471	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Oil and Gas Extraction - Subparts A, D, E, F, G, H	435	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Ore Mining - Subpart B	440	No	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Organic Chemicals Manufacturing	414	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Paint and Ink Formulation	446,447	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Pesticides	455	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Petroleum Refining	419	<input type="checkbox"/> Yes	No	No	No
<input checked="" type="checkbox"/> Pharmaceutical Preparations	439	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	No
<input type="checkbox"/> Photographic Equipment and Supplies	459	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Plastic and Synthetic Materials Manufacturing	414	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Plastic Processing	463	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Porcelain Enameling	466	No	No	No	No
<input type="checkbox"/> Printing and Publishing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart C	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts F, K	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts I, J, L	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart E	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *
<input type="checkbox"/> Rubber Processing	428	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Soap and Detergent Manufacturing	417	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Steam Electric Power Plants	423	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Textile Mills (Not Subpart C)	410	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Timber Products Processing	429	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> 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.: 001

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	<8				50
Acrylonitrile	<43	<43	<43	<43	50
Benzene	<1	<1	<1	<1	10
Bromoform	<2	<2	<2	<2	10
Carbon tetrachloride	<2	<2	<2	<2	2
Chlorobenzene	<1	<1	<1	<1	10
Chlorodibromomethane	<1	<1	<1	<1	10
Chloroethane	<1				50
2-Chloroethylvinyl ether	<10				10
Chloroform	<2	4	<2	3	10
Dichlorobromomethane [Bromodichloromethane]	2	3	<1	2	10
1,1-Dichloroethane	<1				10
1,2-Dichloroethane	<1	<1	<1	<1	10
1,1-Dichloroethylene [1,1-Dichloroethene]	<1	<1	<1	<1	10
1,2-Dichloropropane	<1	<1	<1	<1	10
1,3-Dichloropropylene [1,3-Dichloropropene]	<2	<2	<2	<2	10
Ethylbenzene	<1	<1	<1	<1	10
Methyl bromide [Bromomethane]	<2				50
Methyl chloride [Chloromethane]	<1				50
Methylene chloride [Dichloromethane]	<1	<1	<1	<1	20
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	10
Tetrachloroethylene [Tetrachloroethene]	<1	<1	<1	<1	10
Toluene	<1	<1	<1	<1	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<1				10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
1,1,1-Trichloroethane	<1	<1	<1	<1	10
1,1,2-Trichloroethane	<1	<1	<1	<1	10
Trichloroethylene [Trichloroethene]	<1	<1	<1	<1	10
Vinyl chloride	<1	<1	<1	<1	10

* Indicate units if different from µg/L.

Table 9 for Outfall No.: 001

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	<0.50				10
2,4-Dichlorophenol	<0.69				10
2,4-Dimethylphenol	<0.53	<2.70	<0.53		10
4,6-Dinitro-o-cresol	<0.66				50
2,4-Dinitrophenol	<1.40				50
2-Nitrophenol	<0.88				20
4-Nitrophenol	<1.10				50
p-Chloro-m-cresol	<0.53				10
Pentachlorophenol	<0.50				5
Phenol	<0.44				10
2,4,6-Trichlorophenol	<0.79				10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: 001

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	<0.28				10
Acenaphthylene	<0.47				10
Anthracene	<0.35	<1.80	<0.35	<0.35	10
Benzidine	<0.66	<3.30	<0.66	<0.66	50
Benzo(a)anthracene	<0.38	<1.90	<0.38	<0.38	5
Benzo(a)pyrene	<0.85	<4.30	<0.85	<0.85	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	<0.57				10
Benzo(ghi)perylene	<0.63				20
Benzo(k)fluoranthene	<0.57				5
Bis(2-chloroethoxy)methane	<0.35				10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Bis(2-chloroethyl)ether	<0.72	<3.60	<0.72	<0.72	10
Bis(2-chloroisopropyl)ether	<0.85				10
Bis(2-ethylhexyl)phthalate	<2.20	11.0	<2.20	<2.20	10
4-Bromophenyl phenyl ether	<0.41				10
Butylbenzyl phthalate	<0.69				10
2-Chloronaphthalene	<0.28				10
4-Chlorophenyl phenyl ether	<0.66				10
Chrysene	<0.57	<2.90	<0.57	<0.57	5
Dibenzo(a,h)anthracene	<0.69				5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<0.41	<2.10	<0.41	<0.41	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<0.53	<2.70	<0.53	<0.53	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<0.25	<1.30	<0.25	<0.25	10
3,3'-Dichlorobenzidine	<0.88	<4.40	<0.88	<0.88	5
Diethyl phthalate	<0.63				10
Dimethyl phthalate	<0.72				10
Di-n-butyl phthalate	<1.20	<6.10	<1.20	<1.20	10
2,4-Dinitrotoluene	<0.97				10
2,6-Dinitrotoluene	<1.20				10
Di-n-octyl phthalate	<2.80				10
1,2-Diphenylhydrazine (as Azobenzene)	<0.22				20
Fluoranthene	<0.44				10
Fluorene	<0.47				10
Hexachlorobenzene	<0.69	<3.50	<0.69	<0.69	5
Hexachlorobutadiene	<0.41	<2.10	<0.41	<0.41	10
Hexachlorocyclopentadiene	<0.35	<1.80	<0.35	<0.35	10
Hexachloroethane	<0.47	<2.40	<0.47	<0.47	20
Indeno(1,2,3-cd)pyrene	<0.22				5
Isophorone	<0.28				10
Naphthalene	<0.31				10
Nitrobenzene	<0.91	<4.60	<0.91	<0.91	10
N-Nitrosodimethylamine	<5.00	25.0	<5.00	<5.00	50

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAI (µg/L)
N-Nitrosodi-n-propylamine	<0.72				20
N-Nitrosodiphenylamine	<0.47				20
Phenanthrene	<0.44	<2.20	<0.44	<0.44	10
Pyrene	<0.57				10
1,2,4-Trichlorobenzene	<0.53				10

* Indicate units if different from µg/L.

Table 11 for Outfall No.: [Click to enter text.](#) Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAI (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
PCB 1232					0.2
PCB 1248					0.2

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
PCB 1260					0.2
PCB 1016					0.2
Toxaphene					0.3

* Indicate units if different from µg/L.

Attachment: [Click to enter text.](#)

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 (Ronnell) 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.: [Click to enter text.](#) 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
1,2,3,4,6,7,8-HpCDD	0.01					50

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
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.: [Click to enter text.](#) 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
Methylene chloride	75-09-2	<4	<4	<4	<4	624.1
Toluene	108-88-3	<4	<4	<4	<4	624.1

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 3.0: LAND APPLICATION OF EFFLUENT

This worksheet **is required** for all applications for a permit to disposal of wastewater by land application (i.e., TLAP)).

Item 1. Type of Disposal System (Instructions, Page 69)

Check the box next to the type of land disposal requested by this application:

- | | |
|--|---|
| <input type="checkbox"/> Irrigation | <input type="checkbox"/> Subsurface application |
| <input type="checkbox"/> Evaporation | <input type="checkbox"/> Subsurface soils absorption |
| <input type="checkbox"/> Evapotranspiration beds | <input type="checkbox"/> Surface application |
| <input type="checkbox"/> Drip irrigation system | <input type="checkbox"/> Other, specify: Click to enter text. |

Item 2. Land Application Area (Instructions, Page 69)

Land Application Area Information

Effluent Application (gallons/day)	Irrigation Acreage (acres)	Describe land use & indicate type(s) of crop(s)	Public Access? (Y/N)

Item 3. Annual Cropping Plan (Instructions, Page 69)

Attach the required cropping plan that includes each of the following:

- Cool and warm season plant species
- Breakdown of acreage and percent of total acreage for each crop
- Crop growing season
- Harvesting method/number of harvests
- Minimum/maximum harvest height
- Crop yield goals
- Soils map
- Nitrogen requirements per crop
- Additional fertilizer requirements
- Supplemental watering requirements
- Crop salt tolerances
- Justification for not removing existing vegetation to be irrigated

Attachment:

Item 4. Well and Map Information (Instructions, Page 70)

- a. Check each box to confirm the required information is shown and labeled on the attached USGS map:

- ☐ The exact boundaries of the land application area
- ☐ On-site buildings
- ☐ Waste-disposal or treatment facilities
- ☐ Effluent storage and tailwater control facilities
- ☐ Buffer zones
- ☐ All surface waters in the state onsite and within 500 feet of the property boundaries
- ☐ All water wells within ½-mile of the disposal site, wastewater ponds, or property boundaries
- ☐ All springs and seeps onsite and within 500 feet of the property boundaries

Attachment: [Click to enter text.](#)

- b. List and cross reference all water wells located on or within 500 feet of the disposal site, wastewater ponds, or property boundaries in the following table. Attach additional pages as necessary to include all of the wells.

Well and Map Information Table

Well ID	Well Use	Producing? Y/N/U	Open, cased, capped, or plugged?	Proposed Best Management Practice

Attachment: [Click to enter text.](#)

- c. Groundwater monitoring wells or lysimeters are/will be installed around the land application site or wastewater ponds.

☐ Yes ☐ No

If **yes**, provide the existing/proposed location of the monitoring wells or lysimeters on the site map attached for Item 4.a. Additionally, attach information on the depth of the wells or lysimeters, sampling schedule, and monitoring parameters for TCEQ review, possible modification, and approval.

Attachment: [Click to enter text.](#)

- d. Attach a short groundwater technical report using *30 TAC § 309.20(a)(4)* as guidance.

Attachment:

Item 5. Soil Map and Soil Information (Instructions, Page 71)

Check each box to confirm that the following information is attached:

- ☐ USDA NRCS Soil Survey Map depicting the area to be used for land application with the locations identified by fields and crops.
- ☐ Breakdown of acreage and percent of total acreage for each soil type.
- ☐ Copies of laboratory soil analyses. **Attachment:** [Click to enter text.](#)

Item 6. Effluent Monitoring Data (Instructions, Page 72)

- a. Completion of Table 14 **is required** for all **renewal** and **major amendment** applications. Complete the table with monitoring data for the previous two years for all parameters regulated in the current permit. An additional table has been provided with blank headers for parameters regulated in the current permit which are not listed in Table 14.

Table 14 for Outfall No.: [Click to enter text.](#)

Samples are (check one): ☐

Composite ☐ Grab

[illegible]

Item 7. Pollutant Analysis (Instructions, Page 72)

- 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): [Click to enter text.](#)
- ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- Complete Tables 15 and 16.

Table 15 for Outfall No.: [Click to enter text.](#) 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)				
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)				

Table 16 for Outfall No.: [Click to enter text.](#) 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					2.5
Antimony, total					5
Arsenic, total					0.5
Barium, total					3

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Beryllium, total					0.5
Cadmium, total					1
Chromium, total					3
Chromium, hexavalent					3
Chromium, trivalent					N/A
Copper, total					2
Cyanide, available					2/10
Lead, total					0.5
Mercury, total					0.005/0.0005
Nickel, total					2
Selenium, total					5
Silver, total					0.5
Thallium, total					0.5
Zinc, total					5.0

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 3.1: SURFACE LAND APPLICATION AND APPLICATION

This worksheet is **required** for all applications for a permit to disposal of wastewater by surface land application or evaporation.

Item 1. Edwards Aquifer (Instructions, Page 73)

- a. Is the facility subject to *30 TAC Chapter 213*, Edwards Aquifer Rules?

☐ Yes ☐ No

If **no**, proceed to Item 2. If **yes**, complete Items 1.b and 1.c.

- b. Check the box next to the subchapter applicable to the facility.

☐ 30 TAC Chapter 213, Subchapter A

☐ 30 TAC Chapter 213, Subchapter B

- c. If *30 TAC Chapter 213, Subchapter A* applies, attach **either**: 1) a Geologic Assessment (if conducted in accordance with *30 TAC § 213.5*) **or** 2) a report that contains the following:

- A description of the surface geological units within the proposed land application site and wastewater pond area.
- The location and extent of any sensitive recharge features in the land application site and wastewater pond area
- A list of any proposed BMPs to protect the recharge features.

Attachment: [Click to enter text.](#)

Item 2. Surface Spray/Irrigation (Instructions, Page 73)

- a. Provide the following information on the irrigation operations:

Area under irrigation (acres): [Click to enter text.](#)

Design application rate (acre-ft/acre/yr): [Click to enter text.](#)

Design application frequency (hours/day): [Click to enter text.](#)

Design application frequency (days/week): [Click to enter text.](#)

Design total nitrogen loading rate (lbs nitrogen/acre/year): [Click to enter text.](#)

Average slope of the application area (percent): [Click to enter text.](#)

Maximum slope of the application area (percent): [Click to enter text.](#)

Irrigation efficiency (percent): [Click to enter text.](#)

Effluent conductivity (mmhos/cm): [Click to enter text.](#)

Soil conductivity (mmhos/cm): [Click to enter text.](#)

Curve number: [Click to enter text.](#)

Describe the application method and equipment: [Click to enter text.](#)

- b. Attach a detailed engineering report which includes a water balance, storage volume calculations, and a nitrogen balance. **Attachment:** [Click to enter text.](#)

Item 3. Evaporation Ponds (Instructions, Page 74)

- a. Daily average effluent flow into ponds: [Click to enter text.](#) gallons per day
- b. Attach a separate engineering report of evaporation calculations for average long-term and worst-case critical conditions. **Attachment:** [Click to enter text.](#)

Item 4. Evapotranspiration Beds (Instructions, Page 74)

- a. Provide the following information on the evapotranspiration beds:
- Number of beds: [Click to enter text.](#)
- Area of bed(s) (acres): [Click to enter text.](#)
- Depth of bed(s) (feet): [Click to enter text.](#)
- Void ratio of soil in the beds: [Click to enter text.](#)
- Storage volume within the beds (include units): [Click to enter text.](#)
- Description of any lining to protect groundwater: [Click to enter text.](#)
- b. Attach a certification by a licensed Texas professional engineer that the liner meets TCEQ requirements. **Attachment:** [Click to enter text.](#)
- c. Attach a separate engineering report with water balance, storage volume calculations, and description of the liner. **Attachment:** [Click to enter text.](#)

Item 5. Overland Flow (Instructions, Page 74)

- a. Provide the following information on the overland flow:
- Area used for application (acres): [Click to enter text.](#)
- Slopes for application area (percent): [Click to enter text.](#)
- Design application rate (gpm/foot of slope width): [Click to enter text.](#)
- Slope length (feet): [Click to enter text.](#)
- Design BOD5 loading rate (lbs BOD5/acre/day): [Click to enter text.](#)
- Design application frequency (hours/day): [Click to enter text.](#)
- Design application frequency (days/week): [Click to enter text.](#)
- b. Attach a separate engineering report with the method of application and design requirements according to 30 TAC § 217.212. **Attachment:** [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 3.2: SUBSURFACE IRRIGATION (NON-DRIP)

This worksheet **is required** for all applications for a permit to disposal of wastewater by subsurface land application.

- ☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 75)

- a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?
- ☐ Yes ☐ No
- b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?
- ☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by *30 TAC § 213.8*. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Subsurface Application (Instructions, Page 75)

- a. Check the box next to the type of subsurface land disposal system requested:
- ☐ Conventional drainfield, beds, or trenches
- ☐ Low pressure dosing
- ☐ Other: [Click to enter text.](#)
- b. Provide the following information on the irrigation operations:
- Application area (acres): [Click to enter text.](#)
- Area of drainfield (square feet): [Click to enter text.](#)
- Application rate (gal/square ft/day): [Click to enter text.](#)
- Depth to groundwater (feet): [Click to enter text.](#)
- Area of trench (square feet): [Click to enter text.](#)
- Dosing duration per area (hours): [Click to enter text.](#)
- Number of beds: [Click to enter text.](#)
- Dosing amount per area (inches/day): [Click to enter text.](#)
- Soil infiltration rate (inches/hour): [Click to enter text.](#)
- Storage volume (gallons): [Click to enter text.](#)
- Area of bed(s) (square feet): [Click to enter text.](#)
- Soil classification: [Click to enter text.](#)
- c. Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation. **Attachment:** [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 3.3: SUBSURFACE AREA DRIP DISPERSAL SYSTEMS

This worksheet is **required** for all applications for a permit to dispose of wastewater using a subsurface area drip dispersal system (SADDs).

- ☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 76)

- a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?
- ☐ Yes ☐ No
- b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?
- ☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by 30 TAC § 213.8. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Administrative Information (Instructions, Page 76)

- a. Provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the treatment facility: [Click to enter text.](#)
- b. The owner of the land where the WWTF is/will be located is the same as the owner of the WWTF.
- ☐ Yes ☐ No

If **no**, provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the land where the WWTF is/will be located: [Click to enter text.](#)

- c. Provide the legal name of the owner of the SADDs: [Click to enter text.](#)
- d. The owner of the SADDs is the same as the owner of the WWTF or the site where the WWTF is/will be located.
- ☐ Yes ☐ No

If **no**, identify the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in Item 1.c: [Click to enter text.](#)

- e. Provide the legal name of the owner of the land where the SADDs is located: [Click to enter text.](#)

- f. The owner of the land where the SADDs is/will be located is the same as owner of the WWTF, the site where the WWTF is located, or the owner of the SADDs.

☐ Yes ☐ No

If **no**, provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in item 1.e: [Click to enter text.](#)

Item 3. SADDs (Instructions, Page 77)

- a. Check the box next to the type SADDs requested by this application:

☐ Subsurface drip/trickle irrigation
☐ Surface drip irrigation
☐ Other: [Click to enter text.](#)

- b. Attach a description of the SADDs proposed/used by the facility (see instructions for guidance). **Attachment:** [Click to enter text.](#)

- c. Provide the following information on the SADDs:

Application area (acres): [Click to enter text.](#)

Soil infiltration rate (inches/hour): [Click to enter text.](#)

Average slope of the application area: [Click to enter text.](#)

Maximum slope of the application area: [Click to enter text.](#)

Storage volume (gallons): [Click to enter text.](#)

Major soil series: [Click to enter text.](#)

Depth to groundwater (feet): [Click to enter text.](#)

Effluent conductivity (mmhos/cm): [Click to enter text.](#)

- d. The facility is/will be located west of the boundary shown in 30 TAC § 222.83 **and** using a vegetative cover of non-native grasses over seeded with cool-season grasses.

☐ Yes ☐ No

If **yes**, the facility may propose a hydraulic application rate up to, but not to exceed, 0.1 gal/ft²/day.

- e. The facility is/will be located east of the boundary shown in 30 TAC § 222.83 **or** is the facility proposing any crop other than non-native grasses.

☐ Yes ☐ No

If **yes**, the facility must use the formula in 30 TAC § 222.83 to calculate the maximum hydraulic application rate.

- f. The facility has or plans to submit an alternative method to calculate the hydraulic application rate for approval by the ED.

☐ Yes ☐ No

If **yes**, provide the following information on the hydraulic application rates:

- Hydraulic application rate (gal/square foot/day): [Click to enter text.](#)
- Nitrogen application rate (gal/square foot/day): [Click to enter text.](#)

g. Provide the following dosing information:

Number of doses per day: [Click to enter text.](#)

Dosing duration per area (hours): [Click to enter text.](#)

Rest period between doses (hours): [Click to enter text.](#)

Dosing amount per area (inches/day): [Click to enter text.](#)

Number of zones: [Click to enter text.](#)

h. The system is/will be a surface drip irrigation system using existing native vegetation as a crop?

☐ Yes ☐ No

If **yes**, attach the following information:

- A vegetation survey by a certified arborist describing the percent canopy cover and relative percentage of major overstory and understory plant species.

Attachment: [Click to enter text.](#)

- Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation.

Attachment: [Click to enter text.](#)

Item 4. Required Plans (Instructions, Page 78)

a. Attach a Soil Evaluation with all information required in *30 TAC § 222.73*.

Attachment: [Click to enter text.](#)

b. Attach a Site Preparation Plan with all information required in *30 TAC § 222.75*.

Attachment: [Click to enter text.](#)

c. Attach a Recharge Feature Plan with all information required in *30 TAC § 222.79*.

Attachment: [Click to enter text.](#)

d. Provide soil sampling and testing with all information required in *30 TAC § 222.157*.

Attachment: [Click to enter text.](#)

Item 5. Flood and Run-On Protection (Instructions, Page 79)

a. Is the existing/proposed SADDs located within the 100-year frequency flood level?

☐ Yes ☐ No

Source: [Click to enter text.](#)

If **yes**, describe how the site will be protected from inundation: [Click to enter text.](#)

b. Is the existing/proposed SADDs within a designated floodway?

☐ Yes ☐ No

If **yes**, attach either the FEMA flood map or alternate information used to make this determination. **Attachment:** [Click to enter text.](#)

Item 6. Surface Waters in The State (Instructions, Page 79)

a. Attach a buffer map which shows the appropriate buffers on surface waters in the state, water wells, and springs/seeps. **Attachment:** [Click to enter text.](#)

b. The facility has or plans to request a buffer variance from water wells or waters in the state?

☐ Yes ☐ No

If **yes**, attach the additional information required in *30 TAC § 222.81(c)*. **Attachment:** [Click to enter text.](#)

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: [Click to enter text.](#)
2. The distance and direction from the outfall to the drinking water supply intake: [Click to enter text.](#)

- 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: [Click to enter text.](#) 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: [Click to enter text.](#)

- 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: [Click to enter text.](#)

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: Dow Chemical Plant A Wastewater Canal

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: Click to enter text.

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Brazos River

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: **Receiving water enters the Brazos River and goes from a large canal to an even larger river.**

- f. General observations of the water body during normal dry weather conditions: **Perennially-flowing manmade drainage canal.**

Date and time of observation: 6/3/2024 at 7:00 am

- g. The water body was influenced by stormwater runoff during observations.

☒ Yes ☒ No

If **yes**, describe how: Water level is higher than normal and at a slightly higher flow rate due to recent rains.

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):

<input type="checkbox"/> oil field activities	<input checked="" type="checkbox"/> urban runoff
<input type="checkbox"/> agricultural runoff	<input type="checkbox"/> septic tanks
<input checked="" type="checkbox"/> upstream discharges	<input type="checkbox"/> other, specify: <u>Click to enter text.</u>

- b. Uses of water body observed or evidence of such uses (check all that apply):

<input type="checkbox"/> livestock watering	<input checked="" type="checkbox"/> industrial water supply
<input type="checkbox"/> non-contact recreation	<input type="checkbox"/> irrigation withdrawal
<input type="checkbox"/> domestic water supply	<input type="checkbox"/> navigation
<input type="checkbox"/> contact recreation	<input type="checkbox"/> picnic/park activities
<input type="checkbox"/> fishing	<input type="checkbox"/> other, specify: <u>Click to enter text.</u>

- 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

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.): [Click to enter text.](#)

Approximate drainage area above the most downstream transect from USGS map or county highway map (square miles): [Click to enter text.](#)

Length of stream evaluated (ft): [Click to enter text.](#)

Number of lateral transects made: [Click to enter text.](#)

Average stream width (ft): [Click to enter text.](#)

Average stream depth (ft): [Click to enter text.](#)

Average stream velocity (ft/sec): [Click to enter text.](#)

Instantaneous stream flow (ft³/sec): [Click to enter text.](#)

Indicate flow measurement method (VERY IMPORTANT – type of meter, floating chip timed over a fixed distance, etc.): [Click to enter text.](#)

Flow fluctuations (i.e., minor, moderate, or severe): [Click to enter text.](#)

Size of pools (i.e., large, small, moderate, or none): [Click to enter text.](#)

Maximum pool depth (ft): [Click to enter text.](#)

Total number of stream bends: [Click to enter text.](#)

Number well defined: [Click to enter text.](#)

Number moderately defined: [Click to enter text.](#)

Number poorly defined: [Click to enter text.](#)

Total number of riffles: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 5.0: SEWAGE SLUDGE MANAGEMENT AND DISPOSAL

The following information **is required** for all TPDES permit applications that meet the conditions as outlined in Technical Report 1.0, Item 7.

Item 1. Sewage Sludge Solids Management Plan (Instructions, Page 84)

a. Is this a new permit application or an amendment permit application?

☐ Yes ☐ No

b. Does or will the facility discharge in the Lake Houston watershed?

☐ Yes ☐ No

If **yes** to either Item 1.a or 1.b, attach a solids management plan. **Attachment:** [Click to enter text.](#)

Item 2. Sewage Sludge Management and Disposal (Instructions, Page 84)

a. Check the box next to the sludge disposal method(s) authorized under the facility's existing permit (check all that apply).

- ☐ Permitted landfill
- ☐ Marketing and distribution by the permittee, attach Form TCEQ-00551
- ☐ Registered land application site, attach Form TCEQ-00565
- ☐ Processed by the permittee, attach Form TCEQ-00744
- ☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744
- ☐ Transported to another WWTP
- ☐ Beneficial land application, attach Form TCEQ-10451
- ☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach the required TCEQ forms as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment: [Click to enter text.](#)

b. Provide the following information for each disposal site:

Disposal site name: [Click to enter text.](#)

TCEQ Permit/Registration Number: [Click to enter text.](#)

County where disposal site is located: [Click to enter text.](#)

c. Method of sewage sludge transportation:

☐ truck ☐ train ☐ pipe ☐ other: [Click to enter text.](#)

TCEQ Hauler Registration Number: [Click to enter text.](#)

d. Sludge is transported as a:

☐ liquid ☐ semi-liquid ☐ semi-solid ☐ solid

e. Purpose of land application: ☐ reclamation ☐ soil conditioning ☐ N/A

f. If sewage sludge is transported to another WWTP for treatment, attach a written statement or copy of contractual agreements confirming that the WWTP identified above will accept and be responsible for the sludge from this facility for the life of the permit (at least 5 years).

Attachment: [Click to enter text.](#)

Item 3. Authorization for Sewage Sludge Disposal (Instructions, Page 85)

If this is a new or major amendment application which requests authorization of a new sewage sludge disposal method, check the new sewage disposal method(s) requested for authorization (check all that apply):

- ☐ Marketing and distribution by the permittee, attach Form TCEQ-00551
- ☐ Processed by the permittee, attach Form TCEQ-00744
- ☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744
- ☐ Beneficial land application, attach Form TCEQ-10451
- ☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach any required TCEQ forms, as directed. Failure to submit the required TCEQ form will result in delays in processing the application.

Attachment: [Click to enter text.](#)

NOTE: New authorization for beneficial land application, incineration, processing, or disposal in the TPDES permit or TLAP **requires a major amendment to the permit.** New authorization for composting may require a major amendment to the permit. See the instructions to determine if a major amendment is required or if authorization for composting can be added through the renewal process.

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 6.0: INDUSTRIAL WASTE CONTRIBUTION

The following information is **required** for all applications for publicly-owned treatment works (POTWs).

For an explanation of the terms used in this worksheet, refer to the General Definitions on pages 4-12 and the Definitions Relating to Pretreatment on pages 13-14 of the Instructions.

Item 1. All POTWs (Instructions, Page 86)

- a. Complete the following table with the number of each type of industrial users (IUs) that discharge to the POTW and the daily average flows from each.

Industrial User Information

Type of Industrial User	Number of Industrial Users	Daily Average Flow (gallons per day)
CIU		
SIU - Non-categorical		
Other IU		

- b. In the past three years, has the POTW experienced treatment plant interference?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, nature of interference, and probable cause(s) and possible source(s) of each interference event. Include the names of the IU(s) that may have caused the interference: [Click to enter text.](#)

- c. In the past three years, has the POTW experienced pass-through?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, pollutants passing through the treatment plant, and probable cause(s) and possible source(s) of each pass-through event. Include the names of the IU(s) that may have caused the pass-through: [Click to enter text.](#)

- d. Does the POTW have, or is it required to develop, an approved pretreatment program?

☐ Yes ☐ No

If **yes**, answer all questions in Item 2 and skip Item 3.

If **no**, skip Item 2 and answer all questions in Item 3 for each SIU and CIU.

Item 2. POTWs With Approved Pretreatment Programs or Those Required To Develop A Pretreatment Program (Instructions, Page 86)

- a. Have there been any substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ) for approval according to 40 CFR § 403.18?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all substantial modifications that have not been submitted to the TCEQ and the purpose of the modifications.

Attachment: [Click to enter text.](#)

- b. Have there been any non-substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ)?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all non-substantial modifications that have not been submitted to the TCEQ and the purpose of the modification.

Attachment: [Click to enter text.](#)

- c. List all parameters measured above the MAL in the POTW's effluent monitoring during the last three years:

Effluent Parameters Measured Above the MAL

Pollutant	Concentration	MAL	Units	Date

Attachment: [Click to enter text.](#)

- d. Has any SIU, CIU, or other IU caused or contributed to any other problems (excluding interference or pass-through) at the POTW in the past three years?

☐ Yes ☐ No

If **yes**, provide a description of each episode, including date(s), duration, description of problems, and probable pollutants. Include the name(s) of the SIU(s)/CIU(s)/other IU(s) that may have caused or contributed to any of the problems: [Click to enter text.](#)

Item 3. Significant Industrial User and Categorical Industrial User Information (Instructions, Pages 88-87)

POTWs that **do not** have an approved pretreatment program **are required** to provide the following information for each SIU and CIU:

- a. Mr. or Ms.: [Click to enter text.](#) First/Last Name: [Click to enter text.](#)

Organization Name: [Click to enter text.](#)

SIC Code: [Click to enter text.](#)

Phone number: [Click to enter text.](#)

Email address: [Click to enter text.](#)

Physical Address: [Click to enter text.](#)

City/State/ZIP Code: [Click to enter text.](#)

Attachment: [Click to enter text.](#)

- b. Describe the industrial processes or other activities that affect or contribute to the SIU(s) or CIU(s) discharge (e.g., process and non-process wastewater): [Click to enter text.](#)

c. Provide a description of the principal products(s) or service(s) performed: [Click to enter text.](#)

d. Flow rate information

Flow Rate Information

Effluent Type	Discharge Day (gallons per day)	Discharge Frequency (Continuous, batch, or intermittent)
Process Wastewater		
Non-process Wastewater		

e. Pretreatment Standards

1. Is the SIU or CIU subject to technology-based local limits as defined in the application instructions?

☐ Yes ☐ No

2. Is the SIU subject to categorical pretreatment standards?

☐ Yes ☐ No

If **yes**, provide the category and subcategory or subcategories in the SIUs Subject To Categorical Pretreatment Standards table.

SIUs Subject to Categorical Pretreatment Standards

Category in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR

f. Has the SIU or CIU caused or contributed to any problem(s) (e.g., interferences, pass through, odors, corrosion, blockages) at the POTW in the past three years?

☐ Yes ☐ No

If **yes**, provide a description of each episode, including dates, duration, description of problems, and probable pollutants, and include the name(s) of the SIU(s)/CIU(s) that may have caused or contributed to the problem(s): [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 7.0: STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

This worksheet is **required** for all TPDES permit applications requesting individual permit coverage for discharges consisting of **either**: 1) solely of stormwater discharges associated with industrial activities, as defined in *40 CFR § 122.26(b)(14)(i-xi)*, **or** 2) stormwater discharges associated with industrial activities and any of the listed allowable non-stormwater discharges, as defined in the MSGP (TXR05000), Part II, Section A, Item 6.

Discharges of stormwater as defined in *40 CFR § 122.26 (b)(13)* are not required to obtain authorization under a TPDES permit (see exceptions at *40 CFR §§ 122.26(a)(1)* and *(9)*). Authorization for discharge may be required from a local municipal separate storm sewer system.

Item 1. Applicability (Instructions, Page 89)

Do discharges from any of the existing/proposed outfalls consist either 1) solely of stormwater discharges associated with industrial activities **or** 2) stormwater discharges associated with industrial activities and any of the allowable non-stormwater discharges?

☐ Yes ☒ No

If **no**, stop here. If **yes**, proceed as directed.

Item 2. Stormwater Coverage (Instructions, Page 89)

List each existing/proposed stormwater outfall at the facility and indicate which type of authorization covers or is proposed to cover discharges.

Authorization Coverage

Outfall	Authorization under MSGP	Authorized Under Individual Permit
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

If **all** existing/proposed outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) are **authorized under the MSGP**, **stop** here.

If **seeking authorization** for any outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) **under an individual permit**, **proceed**.

NOTE: The following information is required for each existing/proposed stormwater outfall for which the facility is seeking individual permit authorization under this application

Item 3. Site Map (Instructions, Page 90)

Attach a site map or maps (drawn to scale) of the entire facility with the following information.

- the location of each stormwater outfall to be covered by the permit
- an outline of the drainage area that is within the facility’s boundary and that contributes stormwater to each outfall to be covered by the permit
- connections or discharge points to municipal separate storm sewer systems
- locations of all structures (e.g. buildings, garages, storage tanks)
- structural control devices that are designed to reduce pollution in discharges of stormwater associated with industrial activities
- process wastewater treatment units (including ponds)
- bag house and other air treatment units exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)
- landfills; scrapyards; surface water bodies (including wetlands)
- vehicle and equipment maintenance areas
- physical features of the site that may influence discharges of stormwater associated with industrial activities or contribute a dry weather flow
- locations where spills or leaks of reportable quality (as defined in 30 TAC § 327.4) have occurred during the three years before this application was submitted to obtain coverage under an individual permit
- processing areas, storage areas, material loading/unloading areas, and other locations where significant materials are exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)

☐ Check the box to confirm all above information was provided on the facility site map(s).

Attachment: [Click to enter text.](#)

Item 4. Facility/Site Information (Instructions, Page 90)

- a. Provide the area of impervious surface and the total area drained by each stormwater outfall requested for authorization by this permit application.

Impervious Surfaces

Outfall	Area of Impervious Surface (include units)	Total Area Drained (include units)

- b. Provide the following local area rainfall information and the source of the information.
- Wettest month: [Click to enter text.](#)
- Average rainfall for wettest month (total inches): [Click to enter text.](#)
- 25-year, 24-hour rainfall (inches): [Click to enter text.](#)
- Source: [Click to enter text.](#)
- c. Attach an inventory, or list, of materials currently handled at the facility that may be exposed to precipitation. **Attachment:** [Click to enter text.](#)
- d. Attach narrative descriptions of the industrial processes and activities involving the materials in the above-listed inventory that occur outdoors or in some manner that may result in exposure of the materials to precipitation or runoff (see instructions for guidance). **Attachment:** [Click to enter text.](#)
- e. Describe any BMPs and controls the facility uses/proposes to prevent or effectively reduce pollution in stormwater discharges from the facility: [Click to enter text.](#)

Item 5. Pollutant Analysis (Instructions, Page 91)

- 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): [Click to enter text.](#)
- b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- c. Complete Table 17 as directed on page 92 of the Instructions.

Table 17 for Outfall No.: [Click to enter text.](#)

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled	MAL (mg/L)
pH (standard units)	(max)	—	(min)	—		—
Total suspended solids						—
Chemical oxygen demand						—
Total organic carbon						—
Oil and grease						—
Arsenic, total						0.0005
Barium, total						0.003
Cadmium, total						0.001
Chromium, total						0.003
Chromium, trivalent						—
Chromium, hexavalent						0.003
Copper, total						0.002

Item 6. Storm Event Data (Instructions, Page 93)

Provide the following data for the storm event(s) which resulted in the maximum values for the analytical data submitted:

Date of storm event: [Click to enter text.](#)

Duration of storm event (minutes): [Click to enter text.](#)

Total rainfall during storm event (inches): [Click to enter text.](#)

Number of hours the between beginning of the storm measured and the end of the previous measurable storm event (hours): [Click to enter text.](#)

Maximum flow rate during rain event (gallons/minute): [Click to enter text.](#)

Total stormwater flow from rain event (gallons): [Click to enter text.](#)

Provide a description of the method of flow measurement or estimate:

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 8.0: AQUACULTURE

This worksheet **is required** for all TPDES permit applications requesting individual permit coverage for discharges of aquaculture wastewater.

Item 1. Facility/Site Information (Instructions, Page 94)

- a. Complete the following table with information regarding production ponds, raceways, and fabricated tanks at the facility.

Production Pond Descriptions

Number of Ponds	Dimensions (include units)	Area of Each Pond (include units)	Number of Ponds x Area of Ponds (include Units)

Total surface area of all ponds: [Click to enter text.](#)

Raceway Descriptions

Number of Raceways	Dimensions (include units)

Fabricated Tank Descriptions

Number of Tanks	Dimensions (include units)

b. Does the facility have a TPWD-approved emergency plan?

☐ Yes ☐ No

If **yes**, attach a copy of the approved plan.

Attachment: [Click to enter text.](#)

c. Does the facility have an aquatic plant transplant authorization?

☐ Yes ☐ No

If **yes**, attach a copy of the authorization letter.

Attachment: [Click to enter text.](#)

d. Provide the number of aquaculture facilities located within 25-miles of this facility: [Click to enter text.](#)

Item 2. Species Identification (Instructions, Page 95)

Complete the following table regarding each species raised, source, origin, and disease status of the stock. Identify and attach copies of any current relevant authorizations or permits that authorize the species.

Stock Species Information

Species	Source of Stock	Origin of Stock	Disease Status	Authorizations

Attachment: [Click to enter text.](#)

Item 3. Stock Management Plan (Instructions, Page 95)

Attach a detailed stock management plan: [Click to enter text.](#)

Item 4. Water Treatment and Discharge Description (Instructions, Page 96)

Attach a detailed description of the discharge practices and water treatment process(es): [Click to enter text.](#)

Item 5. Solid Waste Management (Instructions, Page 96)

Attach a description of the solid waste-disposal practices: [Click to enter text.](#)

Item 6. Site Assessment Report (Instructions, Page 96)

All new and expanding commercial shrimp facilities located/to be located within the coastal zone must attach a detailed site assessment report which identifies sensitive aquatic habitats within the coastal zone: [Click to enter text.](#)

WORKSHEET 9.0

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CLASS V INJECTION WELL INVENTORY/AUTHORIZATION FORM

Submit the completed form to:

TCEQ
IUC Permits Team
Radioactive Materials Division
MC-233
PO Box 13087
Austin, Texas 78711-3087
512-239-6466

For TCEQ Use Only

Reg. No. _____

Date Received _____

Date Authorized _____

Item 1. General Information (Instructions Page 99)

1. TCEQ Program Area

Program Area (PST, VCP, IHW, etc.): [Click to enter text.](#)

Program ID: [Click to enter text.](#)

Contact Name: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

2. Agent/Consultant Contact Information

Contact Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

3. Owner/Operator Contact Information

☐ Owner ☐ Operator

Owner/Operator Name: [Click to enter text.](#)

Contact Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

4. Facility Contact Information

Facility Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Location description (if no address is available): [Click to enter text.](#)

Facility Contact Person: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

5. Latitude and Longitude, in degrees-minutes-seconds

Latitude: [Click to enter text.](#)

Longitude: [Click to enter text.](#)

Method of determination (GPS, TOPO, etc.): [Click to enter text.](#)

Attach topographic quadrangle map as attachment A.

6. Well Information

Type of Well Construction, select one:

- ☐ Vertical Injection
- ☐ Subsurface Fluid Distribution System
- ☐ Infiltration Gallery
- ☐ Temporary Injection Points
- ☐ Other, Specify: [Click to enter text.](#)

Number of Injection Wells: [Click to enter text.](#)

7. Purpose

Detailed Description regarding purpose of Injection System:

[Click to enter text.](#)

Attach a Site Map as Attachment B (Attach the Approved Remediation Plan, if appropriate.)

8. Water Well Driller/Installer

Water Well Driller/Installer Name: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

License Number: [Click to enter text.](#)

Item 2. Proposed Down Hole Design

Attach a diagram signed and sealed by a licensed engineer as Attachment C.

Down Hole Design Table

Name of String	Size	Setting Depth	Sacks Cement/Grout – Slurry Volume – Top of Center	Hole Size	Weight (lbs/ft) PVC/Steel
Casing					
Tubing					
Screen					

Item 3. Proposed Trench System, Subsurface Fluid Distribution System, or Infiltration Gallery

Attach a diagram signed and sealed by a licensed engineer as Attachment D.

System(s) Dimensions: [Click to enter text.](#)

System(s) Construction: [Click to enter text.](#)

Item 4. Site Hydrogeological and Injection Zone Data

1. Name of Contaminated Aquifer: [Click to enter text.](#)

2. Receiving Formation Name of Injection Zone: [Click to enter text.](#)

3. Well/Trench Total Depth: [Click to enter text.](#)

4. Surface Elevation: [Click to enter text.](#)

5. Depth to Ground Water: [Click to enter text.](#)

6. Injection Zone Depth: [Click to enter text.](#)

7. Injection Zone vertically isolated geologically? ☐ Yes ☐ No

Impervious Strata between Injection Zone and nearest Underground Source of Drinking Water:

Name: [Click to enter text.](#)

Thickness: [Click to enter text.](#)

8. Attach a list of contaminants and the levels (ppm) in contaminated aquifer as Attachment E.

9. Attach the Horizontal and Vertical extent of contamination and injection plume as Attachment F.

10. Attach Formation (Injection Zone) Water Chemistry (Background levels) TDS, etc., as Attachment G.

11. Injection Fluid Chemistry in PPM at point of injection. Attach as Attachment H.

12. Lowest Known Depth of Ground Water with < 10,000 PPM TDS: [Click to enter text.](#)

13. Maximum injection Rate/Volume/Pressure: [Click to enter text.](#)

14. Water wells within 1/4 mile radius (attach map as Attachment I): [Click to enter text.](#)

15. Injection wells within 1/4 mile radius (attach map as Attachment J): [Click to enter text.](#)

16. Monitor wells within 1/4 mile radius (attach drillers logs and map as Attachment K): [Click to enter text.](#)

17. Sampling frequency: [Click to enter text.](#)

18. Known hazardous components in injection fluid: [Click to enter text.](#)

Item 5. Site History

1. Type of Facility: [Click to enter text.](#)
2. Contamination Dates: [Click to enter text.](#)
3. Original Contamination (VOCs, TPH, BTEX, etc.) and Concentrations. Attach as Attachment L.
4. Previous Remediation. Attach results of any previous remediation as Attachment M.

NOTE: Authorization Form should be completed in detail and authorization given by the TCEQ before construction, operation, and/or conversion can begin. Attach additional pages as necessary.

Item 6. CLASS V INJECTION WELL DESIGNATIONS

- 5A07 Heat Pump/AC return (IW used for groundwater to heat or cool buildings)
- 5A19 Industrial Cooling Water Return Flow (IW used to cool industrial process equipment)
- 5B22 Salt Water Intrusion Barrier (IW used to inject fluids to prevent the intrusion of salt water into an aquifer)
- 5D02 Stormwater Drainage (IW designed for the disposal of rain water)
- 5D04 Industrial Stormwater Drainage Wells (IW designed for the disposal of rain water associated with industrial facilities)
- 5F01 Agricultural Drainage (IW that receive agricultural runoff)
- 5R21 Aquifer Recharge (IW used to inject fluids to recharge an aquifer)
- 5S23 Subsidence Control Wells (IW used to control land subsidence caused by groundwater withdrawal)
- 5W09 Untreated Sewage
- 5W10 Large Capacity Cesspools (Cesspools that are designed for 5,000 gpd or greater)
- 5W11 Large Capacity Septic systems (Septic systems designed for 5,000 gpd or greater)
- 5W12 WTP disposal
- 5W20 Industrial Process Waste-disposal Wells
- 5W31 Septic System (Well Disposal method)
- 5W32 Septic System Drainfield Disposal
- 5X13 Mine Backfill (IW used to control subsidence, dispose of mining byproducts, or fill sections of a mine)
- 5X25 Experimental Wells (Pilot Test) (IW used to test new technologies or tracer dye studies)
- 5X26 Aquifer Remediation (IW used to clean up, treat, or prevent contamination of a USDW)
- 5X27 Other Wells
- 5X28 Motor Vehicle Waste-disposal Wells (IW used to dispose of waste from a motor vehicle site - These are currently banned)
- 5X29 Abandoned Drinking Water Wells (waste disposal)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 10.0: QUARRIES IN THE JOHN GRAVES SCENIC RIVERWAY

This worksheet is **required** for all applications for individual permits for a municipal solid waste facility or mining facility located within a Water Quality Protection Area in the John Graves Scenic Riverway. **Note: Review 30 TAC §§ 311.71-311.82 thoroughly prior to completing any portion of this worksheet.**

Item 1. Exclusions (Instructions, Page 100)

- a. Is this a municipal solid waste facility?
☐ Yes ☐ No
- b. Has this quarry been in operation since January 1, 1994 without cessation of operation for more than 30 consecutive days and under the same ownership?
☐ Yes ☐ No
- c. Is this a coal mine?
☐ Yes ☐ No
- d. Is this facility mining clay and/or shale for use in manufacturing structural clay products?
☐ Yes ☐ No

If **yes** to **any** above question, **stop here**. The facility is required to maintain documentation, as outlined in 30 TAC § 311.72(c), at the facility to demonstrate the exclusion(s).

Item 2. Location of the Quarry (Instructions, Page 101)

Check the box next to the distance between the quarry and the nearest navigable water body:

- ☐ < 200 feet ☐ 200 feet – 1,500 feet ☐ 1,500 feet – 1 mile ☐ > 1 mile

NOTE: The construction or operation of any new quarry or expansion of any existing quarry is **prohibited** within 200 feet of any water body located within a Water Quality Protection Area in the John Graves Scenic Riverway.

Item 3. Additional Requirements (Instructions, Page 101)

Use the table in the Instructions to determine if additional application requirements apply to the facility based on distance between the quarry and the nearest waterway. Attach as appropriate or enter N/A.

- a. Attach a Restoration Plan: [Click to enter text.](#)
- b. Amount of Financial Assurance for Restoration: \$ [Click to enter text.](#)
Mechanism: [Click to enter text.](#)
- c. Attach a Technical Demonstration: [Click to enter text.](#)
- d. Attach a Reclamation Plan: [Click to enter text.](#)
- e. Amount of Financial Assurance for Reclamation: \$ [Click to enter text.](#)
Mechanism: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.0: COOLING WATER SYSTEM INFORMATION

This worksheet is **required** for all TPDES permit applications that meet the conditions outlined in Technical Report 1.0, Item 12.

Item 1. Cooling Water System Data (Instructions, Page 104)

a. Complete the following table with information regarding the cooling water system.

Cooling Water System Data

Parameter	Volume (include units)
Total DIF	
Total AIF	
Intake Flow Use(s) (%)	
Contact cooling	
Non-contact cooling	
Process Wastewater	
Other	

b. Attach the following information:

1. A narrative description of the design and annual operation of the facility's cooling water system and its relationship to the CWIS(s).
2. A scaled map depicting the location of each CWIS, impoundment, intake pipe, and canals, pipes, or waterways used to convey cooling water to, or within, the cooling water system. Provide the latitude and longitude for each CWIS and any intake pipe(s) on the map. Indicate the position of the intake pipe within the water column.
3. A description of water reuse activities, if applicable, reductions in total water withdrawals, if applicable, and the proportion of the source waterbody withdrawn (on a monthly basis).
4. Design and engineering calculations prepared by a qualified professional and data to support the information provided in above item a.
5. Previous year (a minimum of 12 months) of AIF data.
6. A narrative description of existing or proposed impingement and entrainment technologies or operation measures and a summary of their performance, including, but not limited to, reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.

Attachment: [Click to enter text.](#)

Item 2. Cooling Water Intake Structure(s) Data (Instructions, Page 105)

- a. Complete the following table with information regarding each cooling water intake structure (this includes primary and make-up CWIS(s)).

Cooling Water Intake Structure(s) Data

CWIS ID				
DIF (include units)				
AIF (include units)				
Intake Flow Use(s) (%)				
Contact cooling				
Non-contact cooling				
Process Wastewater				
Other				
Latitude (decimal degrees)				
Longitude (decimal degrees)				

- b. Attach the following information regarding the CWIS(s):
1. A narrative description of the configuration of each CWIS, annual and daily operation, including any seasonal changes, and where it is located in the water body and in the water column.
 2. Engineering calculations for each CWIS.

Attachment: [Click to enter text.](#)

Item 3. Source Water Physical Data (Instructions, Page 105)

- a. Complete the following table with information regarding the CWIS(s) source waterbody (this includes primary and make-up CWIS(s)).

Source Waterbody Data

CWIS ID				
Source Waterbody				
Mean Annual Flow				
Source				

- b. Attach the following information regarding the source waterbody.
1. A narrative description of the source water for each CWIS, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports this determination of the water body type where each cooling water intake structure is located.

2. A narrative description of the source waterbody's hydrological and geomorphological features.
3. Scaled drawings showing the physical configuration of all source water bodies used by the facility, including the source waterbody's hydrological and geomorphological features. **NOTE:** The source waterbody's hydrological and geomorphological features may be included on the map submitted for item 1.b.ii of this worksheet.
4. A description of the methods used to conduct any physical studies to determine the intake's area of influence within the waterbody and the results of such studies.

Attachment: [Click to enter text.](#)

Item 4. Operational Status (Instructions, Page 106)

- a. Is this application for a power production or steam generation facility?

☐ Yes ☐ No

If **no**, proceed to Item 4.b. If **yes**, provide the following information as an attachment:

1. Describe the operating status of each individual unit, including age, capacity utilization rate (or equivalent) for the previous five years (a minimum of 60 months), and any seasonal changes in operation.
2. Describe any extended or unusual outages or other factors which significantly affect current data for flow, impingement, entrainment.
3. Identify any operating unit with a capacity utilization rate of less than 8 percent averaged over a contiguous period of two years (a minimum of 24 months).
4. Describe any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes of fuel type.

Attachment: [Click to enter text.](#)

- b. Process Units

1. Is this application for a facility which has process units that use cooling water (other than for power production or steam generation)?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, continue.

2. Does the facility use or intend to use reductions in flow or changes in operations to meet the requirements of *40 CFR § 125.94(c)*?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, attach descriptions of the following information:

- Individual production processes and product lines
- The operating status, including age of each line and seasonal operation
- Any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors

- Any major upgrades completed within the last 15 years and plans or schedules for decommissioning or replacement of process units or production processes and product lines.

Attachment: [Click to enter text.](#)

c. Is this an application for a nuclear power production facility?

☐ Yes ☐ No

If **no**, proceed to Item 4.d. If **yes**, attach a description of completed, approved, or scheduled upgrades and the Nuclear Regulatory Commission relicensing status for each unit at the facility.

Attachment: [Click to enter text.](#)

d. Is this an application for a manufacturing facility?

☐ Yes ☐ No

If **no**, proceed to Worksheet 11.1. If **yes**, attach descriptions of current and future production schedules and any plans or schedules for any new units planned within the next five years (a minimum of 60 mos)

Attachment: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.1: IMPINGEMENT MORTALITY

This worksheet is **required** for all TPDES permit applications **that meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: [Click to enter text.](#)

Item 1. Impingement Compliance Technology Selection (Instructions, Page 107)

Check the box next to the method of compliance for the Impingement Mortality Standard selected by the facility.

- ☐ Closed-cycle recirculating system(CCRS) [40 CFR § 125.94(c)(1)]
- ☐ 0.5 ft/s Through-Screen Design Velocity [40 CFR § 125.94(c)(2)] – Proceed to Worksheet 11.2
- ☐ 0.5 ft/s Through Screen Actual Velocity [40 CFR § 125.94(c)(3)]
- ☐ Existing offshore velocity cap [40 CFR § 125.94(c)(4)] – Proceed to Worksheet 11.2
- ☐ Modified traveling screens [40 CFR § 125.94(c)(5)]
- ☐ System of technologies [40 CFR § 125.94(c)(6)]
- ☐ Impingement mortality performance standard [40 CFR § 125.94(c)(7)]
- ☐ De minimis rate of impingement [40 CFR § 125.94(c)(11)]
- ☐ Low capacity utilization power-generation facilities [40 CFR § 125.94(c)(12)]

If 0.5 ft/s Through-Screen Design Velocity [40 CFR § 125.94(c)(2)] or existing offshore velocity cap [40 CFR § 125.94(c)(4)] was selected, proceed to Worksheet 11.2. Otherwise, continue to Item 2.

Item 2. Impingement Compliance Technology Information (Instructions, Page 107)

Complete the following sections based on the selection made for item 1 above.

a. CCRS [40 CFR § 125.94(c)(1)]

- ☐ Check this box to confirm the CWS meets the definition of CCRS located at 40 CFR § 125.91(c) and provide a response to the following questions.

1. Does the facility use or propose to use a CWIS to replenish water losses to the CWS?

- ☐ Yes ☐ No

If **no**, proceed to item a.2. If **yes**, provide the following information as an attachment and continue.

- CWIS ID
- 12 months of intake flow data for any CWIS used for make-up intake flows to replenish cooling water losses, excluding intakes for losses due to blowdown, drift, or evaporation.

- A narrative description of any physical or operational measures taken to minimize make-up withdrawals.

Attachment: [Click to enter text.](#)

NOTE: Do not complete a separate Worksheet 11.1 for a make-up CWIS.

2. Does the facility use or propose to use cooling towers?

☐ Yes ☐ No

If **no**, proceed to Worksheet 11.2. If **yes**, provide the following information and proceed to Worksheet 11.2.

- Average number of cycles of concentration (COCs) prior to blowdown:

Average COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Attach COC monitoring data for each cooling tower from the previous year (a minimum of 12 months): [Click to enter text.](#)
- Maximum number of COCs each cooling tower can accomplish based on design of the system.

Calculated COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Describe conditions that may limit the number of COCs prior to blowdown, if any, including but not limited to permit conditions: [Click to enter text.](#)

b. 0.5 ft/s Through Screen Actual Velocity [40 CFR § 125.94(c)(3)]

Provide daily intake flow measurement monitoring data from the previous year (a minimum of 12 months) as an attachment and proceed to Worksheet 11.2.

Attachment: [Click to enter text.](#)

c. Modified traveling screens [40 CFR § 125.94(c)(5)]

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the modified traveling screens and associated equipment.
2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods
3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: [Click to enter text.](#)

d. System of technologies [40 CFR § 125.94(c)(6)] or impingement mortality performance standard [40 CFR § 125.94(c)(7)]

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the system of technologies used or proposed for use by the facility to

achieve compliance with the impingement mortality standard.

2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods.
3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: [Click to enter text.](#)

- e. De minimis rate of impingement [*40 CFR § 125.94(c)(11)*]

Provide the following information and proceed to Worksheet 11.2.

1. Attach monitoring data from the previous year (a minimum of 12 months) of intake flow measured at a frequency of 1/day on days of operation.

Attachment: [Click to enter text.](#)

2. If the rate of impingement caused by the CWIS is extremely low (at an organism or age-one equivalent count), attach supplemental information to Worksheet 11.0, item 1.b.6. to support this determination.

Attachment: [Click to enter text.](#)

- f. Low capacity utilization power-generation facilities [*40 CFR § 125.94(c)(12)*]

Attach monthly utilization data from the previous 2 years (a minimum of 24 months) for each operating unit and proceed to Worksheet 11.2.

Attachment: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.2: SOURCE WATER BIOLOGICAL DATA

This worksheet is **required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** source waterbody of a CWIS for which a facility has selected an Impingement Mortality Technology Option described at *40 CFR §§ 125.94(c)(1)-(7)*.

Name of source waterbody: [Click to enter text.](#)

Item 1. Species Management (Instructions, Page 109)

- a. The facility has obtained an incidental take permit for its cooling water intake structure(s) from the USFWS or the NMFS.

☐ Yes ☐ No

If yes, attach any information submitted in order to obtain that permit, which may be used to supplement the permit application information requirements of paragraph *40 CFR § 125.95(f)*.

Attachment: [Click to enter text.](#)

- b. Is the facility requesting a waiver from application requirements at *40 CFR § 122.21(r)(4)* in accordance with *40 CFR § 125.95* for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent?

☐ Yes ☐ No

If **yes**, attach a copy of the most recent managed fisheries report to TPWD, or equivalent.

Attachment: [Click to enter text.](#)

- c. There are no federally listed threatened or endangered species or critical habitat designations within the source water body.

☐ True ☐ False

Item 2. Source Water Biological Data (Instructions, Page 109)

New Facilities (Phase I, Track I and II)

- Provide responses to all items in this section and stop.

Existing Facilities (Phase II)

- If the answer to **1.b.** above was **no**, provide responses to all items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **true**, do not complete any items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **false**, attach a response for any item in this section that is not contained within the most recent TPWD, or equivalent and proceed to Worksheet 11.3.

Attachment: [Click to enter text.](#)

- a. A list of the data requested at *40 CFR § 122.21(r)(4)(ii)* through *(vi)* that are not available, and efforts made to identify sources of the data.
- b. Provide a list of species (or relevant taxa) in the vicinity of the CWIS and identify the following information regarding each species listed.
 - all life stages and their relative abundance,
 - identification of all species and life stages that would be most susceptible to impingement and entrainment,
 - forage base,
 - significance to commercial fisheries,
 - significance to recreational fisheries,
 - primary period of reproduction,
 - larval recruitment, and
 - period of peak abundance for relevant taxa.
- c. Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the CWIS(s).
- d. Identify all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at the CWIS(s).
- e. Documentation of any public participation or consultation with federal or state agencies undertaken.

The following is required for existing facilities only. Include the following information with the above listed attachment.

- f. Identify any protective measures and stabilization activities that have been implemented and provide a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.
- g. A list of fragile species, as defined at *40 CFR § 125.92(m)*, at the facility. The applicant need only identify those species not already identified as fragile at *40 CFR § 125.92(m)*.

NOTE: New units at an existing facility are not required to resubmit this information if the cooling water withdrawals for the operation of the new unit are from an existing intake.

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.3: ENTRAINMENT

This worksheet is **required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: [Click to enter text.](#)

Item 1. Applicability (Instructions, Page 111)

Is the AIF of the CWIS identified above greater than, or equal to, 125 MGD?

☐ Yes ☐ No

- If **no** or the facility has selected **CCRS** [40 CFR § 125.94(c)(1)] for the impingement mortality compliance method, complete Item 2 and stop here.
- If **yes** and the facility is **seeking a waiver** from application requirements in accordance with 40 CFR § 125.95 for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent, complete item 2 and stop.
- If **yes** and the facility is **not seeking a waiver** from application requirements in accordance with 40 CFR § 125.95, complete item 2 and provide any required and completed studies listed in item 3. For any required studies in item 3 that are not complete, provide a detailed explanation for the delay and an anticipated schedule for completion and submittal.

Item 2. Existing Entrainment Performance Studies (Instructions, Page 111)

Attach any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies.

Attachment: [Click to enter text.](#)

Item 3. Facility Entrainment Performance Studies (Instructions, Page 111)

- Attach an entrainment characterization study, as described at 40 CFR § 122.21(r)(9): [Click to enter text.](#)
- Attach a comprehensive feasibility study, as described as 40 CFR § 122.21(r)(10): [Click to enter text.](#)
- Attach a benefits valuation study, as described as 40 CFR § 122.21(r)(11): [Click to enter text.](#)
- Attach a non-water quality environmental and other impacts study, as described as 40 CFR § 122.21(r)(12): [Click to enter text.](#)
- Attach a peer review analysis, as described as 40 CFR § 122.21(r)(13): [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 12.0: OIL AND GAS EXPLORATION, DEVELOPMENT, AND PRODUCTION WASTEWATER DISCHARGES

This worksheet is **required** for all TPDES permit applications that are subject to Effluent Limitation Guidelines in 40 CFR Part 435.

Item 1. Operational Information (Instructions, Page 112)

- a. Is the wastewater from an oil and gas exploration, development, or production facility located west of the 98th meridian?

☐ Yes ☐ No

If yes, continue to the next question. If no, skip to Item 2 relating to Production/Process Data.

- b. Provide justification for how the wastewater is/will be used for agriculture or wildlife propagation.

Click to enter text.

Item 2. Production/Process Data (Instructions, Page 112)

- a. Provide the applicable 40 CFR Part 435 Subpart(s).

Click to enter text.

- b. Describe if the permit being sought is for discharges from exploration, development, production, or for a combination of more than one of those activities.

Click to enter text.

c. Provide information on all waste-streams generated and specify which waste-streams you are requesting to be authorized for discharge.

Wastestreams Generated

Wastestream	Requesting authorization to discharge? (Yes/No)	Volume (MGD)	% of Total Flow

d. Describe how the facility will manage wastestreams for which discharge authorization is not being sought.

Click to enter text.

Attachment: Click to enter text.

e. Provide information on miscellaneous discharges.

Click to enter text.

Attachment: Click to enter text.

- f. List of chemicals that are in use, or will be used, downhole. Provide the category, concentration used/to be used, and purpose of using the chemical. Attach a safety data sheet for each chemical listed.

Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: [Click to enter text.](#)

- g. List of chemicals that are in use, or will be used, to treat the wastewater to be discharged under this authorization. Provide the concentration used/to be used and purpose of using the chemical. Attach a safety data sheet for each chemical listed.

Water Treatment Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: [Click to enter text.](#)

Item 3. Pollutant Analysis (Instructions, Page 113)

Tables 1, 2, 6, and 7 located in Worksheet 2.0 are required. In addition, Table 19 below is required and must be completed for each outfall and submitted with this application. The remaining tables in Worksheet 2.0, are required as applicable.

- 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): [Click to enter text.](#)
- 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:** [Click to enter text.](#)
- d. Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** [Click to enter text.](#)

Table 19 for Outfall No.: [Click to enter text.](#) Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (mg/L)*	Sample 2 (mg/L)*	Sample 3 (mg/L)*	Sample 4 (mg/L)*
Calcium				
Potassium				
Sodium				

*Indicate units if different from mg/L.

Attachment 1: Core Data Form



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.)		
<input type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input checked="" type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)		<input type="checkbox"/> 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 602496499		RN 101190221

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)		8/1/2024	
<input type="checkbox"/> New Customer <input checked="" type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership					
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)					
<i>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).</i>					
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)				<i>If new Customer, enter previous Customer below:</i>	
DSM Nutritional Products, LLC					
7. TX SOS/CPA Filing Number		8. TX State Tax ID (11 digits)		9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
800189929		12740851444		274085144	2191211
11. Type of Customer:		<input checked="" type="checkbox"/> Corporation		<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Other:	
12. Number of Employees				13. Independently Owned and Operated?	
<input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input checked="" type="checkbox"/> 501 and higher				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following					
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Owner & Operator <input type="checkbox"/> Other:					
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant					
15. Mailing Address:					
1000 County Road 227A					
City	Freeport	State	TX	ZIP	77541
ZIP + 4					
16. Country Mailing Information (if outside USA)			17. E-Mail Address (if applicable)		
18. Telephone Number		19. Extension or Code		20. Fax Number (if applicable)	

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If 'New Regulated Entity' is selected, a new permit application is also required.)								
<input type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input checked="" type="checkbox"/> Update to Regulated Entity Information								
<i>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).</i>								
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)								
DSM Nutritional Products								
23. Street Address of the Regulated Entity: (No PO Boxes)	1000 County Road 227A							
	City	Freeport	State	TX	ZIP	77541	ZIP + 4	
24. County								

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

25. Description to Physical Location:							
26. Nearest City				State		Nearest ZIP Code	
<i>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).</i>							
27. Latitude (N) In Decimal:			28. Longitude (W) In Decimal:				
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
29	0	44.136 N	95	22	9.192 W		
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)	
2833				325411			
33. What is the Primary Business of this entity? (Do not repeat the SIC or NAICS description.)							
Manufacture of beta carotene							
34. Mailing Address:	1000 County Road 227A						
	City	Freeport	State	TX	ZIP	77541	ZIP + 4
35. E-Mail Address:							
36. Telephone Number			37. Extension or Code			38. Fax Number (if applicable)	
(979) 373-5000						() -	

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.

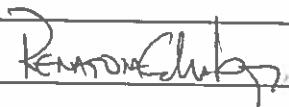
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input checked="" type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:
	WQ0002216000			

SECTION IV: Preparer Information

40. Name:	Karen Miller			41. Title:	Senior Engineer
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address		
(512) 468-7325		() -	kmiller@green-envi.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:	DSM Nutritional Products, LLC		Job Title:	Site Manager	
Name (In Print):	Renato S Lopes			Phone:	(843) 356- 7943
Signature:				Date:	08/14/2024

Attachment 2: Plain Language Summary



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

Plain Language Summary 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 as required by [Title 30, Texas Administrative Code \(30 TAC\), Chapter 39, Subchapter H](#). Applicants may modify the template as necessary to accurately describe their 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 the applicant 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.

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.

DSM Nutritional Products, LLC (CN602496499) operates DSM Nutritional Products (RN101190221), a beta carotene manufacturing facility. The facility is located at 1000 County Road 227A, in Freeport, Brazoria County, Texas 77541. DSM is seeking to renew their TPDES permit application.

Discharges from the facility are expected to contain : total suspended solids, ammonia nitrogen, cyanide, acetone, 4-methyl-2-pentanone, isobutyraldehyde, n-amyl acetate, n-butyl acetate, ethyl acetate, isopropyl acetate, methyl formate, amyl alcohol, ethanol, isopropanol, methanol, methyl cellosolve, dimethyl sulfoxide, triethyl amine, phenol, benzene, toluene, xylenes, n-hexane, n-heptane, methylene chloride, chloroform, 1,2-dichloroethane, tetrahydrofuran, isopropyl ether, diethyl amine, acetonitrile, and enterococci. Treated process wastewater, utility wastewater, water treatment wastes, treated domestic wastewater, and stormwater are treated by physical, chemical, and biological methods, including pH

adjustment, equalization, scum skimmer, aeration, flocculation, clarification, filtration, and chlorination.

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

AGUAS RESIDUALES Introduzca 'INDUSTRIALES' o 'DOMÉSTICAS' aquí /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.

DSM Nutritional Products, LLC ((CN602496499) opera DSM Nutritional Products (RN101190221), una instalación de fabricación de betacaroteno. La instalación está ubicada en 1000 County Road 227A, en Freeport, Condado de Brazoria, Texas 77541. DSM está tratando de renovar su solicitud de permiso TPDES.

Se espera que las descargas de la instalación contengan : sólidos suspendidos totales, nitrógeno amoniacal, cianuro, acetona, 4-metil-2-pentanona, isobutiraldehído, acetato de n-amilo, acetato de n-butilo, acetato de etilo, acetato de isopropilo, formiato de metilo, alcohol amílico, etanol, isopropanol, metanol, metilcelosolve (2-metoxietanol), dimetilsulfóxido, trietilamina, fenol, benceno, tolueno, xilenos, n-hexano, n-heptano, cloruro de metileno, cloroformo, 1,2-dicloroetano, tetrahidrofurano, éter isopropílico, dietil amina, acetonitrilo, y enterococos. Aguas residuales de procesos tratados, aguas residuales de servicios públicos, residuos del tratamiento del agua, aguas residuales domésticas tratadas y aguas pluviales. **están** tratado por métodos físicos, químicos y biológicos, incluidos el ajuste del pH, la ecualización, el espumador, la aireación, la floculación, la clarificación, la filtración y la cloración.

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

Individual Industrial Wastewater 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 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.

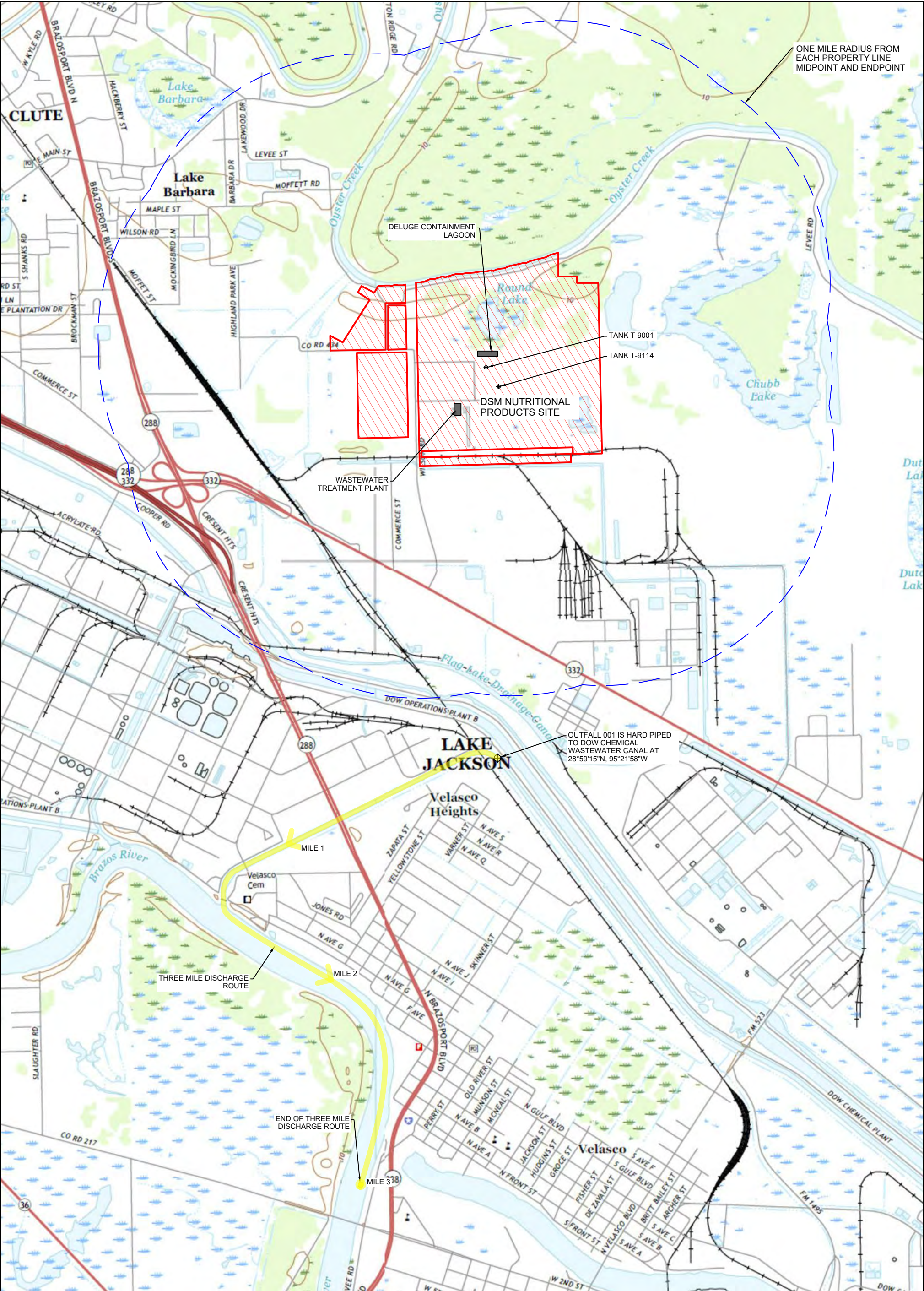
This application is for a renewal to discharge 870,000,000 gallons per day of once through cooling water, auxiliary cooling water, and also authorizes the following waste streams monitored inside the facility (internal outfalls) before it is mixed with the other wastewaters authorized for discharge via 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.

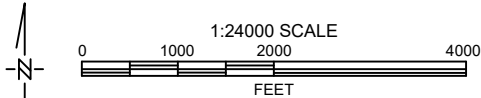
Cooling water and boiler make-up water are supplied by Lake Starr Reservoir. The City of Austin municipal water plant (CN600000000, PWS 00000) supplies the facility’s potable water and serves as an alternate source of boiler make-up water. Water from the Lake Starr Reservoir is withdrawn at the intake 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.


Attachment 3: USGS Map



SOURCE: USGS 7.5' TOPO COMPOSITE OF LAKE JACKSON, OYSTER CREEK
FREEPORT AND JONES CREEK QUADRANGLES 2016



DOCUMENT TITLE:
**Attachment
Full Size USGS Map
DSM Nutritional Products
1000 County Road 227A
Freeport, TX 77541**

 GREEN ENVIRONMENTAL CONSULTING, INC.	
DRAWING NUMBER: DSM_USGS_061520	DATE: 6/15/20
DRAWN BY: DHM	REVISION #: REVISION DATE:

Attachment 4: 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: DSM Nutritional Products

Permit No. WQ00 02216000

EPA ID No. TX 083558486

Address of the project (or a location description that includes street/highway, city/vicinity, and county):

1000 County Rd 227A, Freeport, TX 77541

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: Kinzie Griffin

Credential (P.E, P.G., Ph.D., etc.):

Title: Environmental Professional

Mailing Address: 1000 County Road 227A

City, State, Zip Code: Freeport, TX 77541

Phone No.: 979-373-5080 Ext.:

Fax No.:

E-mail Address: Kinzie.griffin@dsm-firmenich.com

2. List the county in which the facility is located: Brazoria
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.

Discharge at the facility drains via pipeline to the Dow Plant "A" canal, thence to Brazos River Tidal in Segment No. 1201 in the Brazos River Basin

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):

n/a

2. Describe existing disturbances, vegetation, and land use:

Facility is an existing manufacturing site. No construction is proposed as part of this permit renewal.

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:

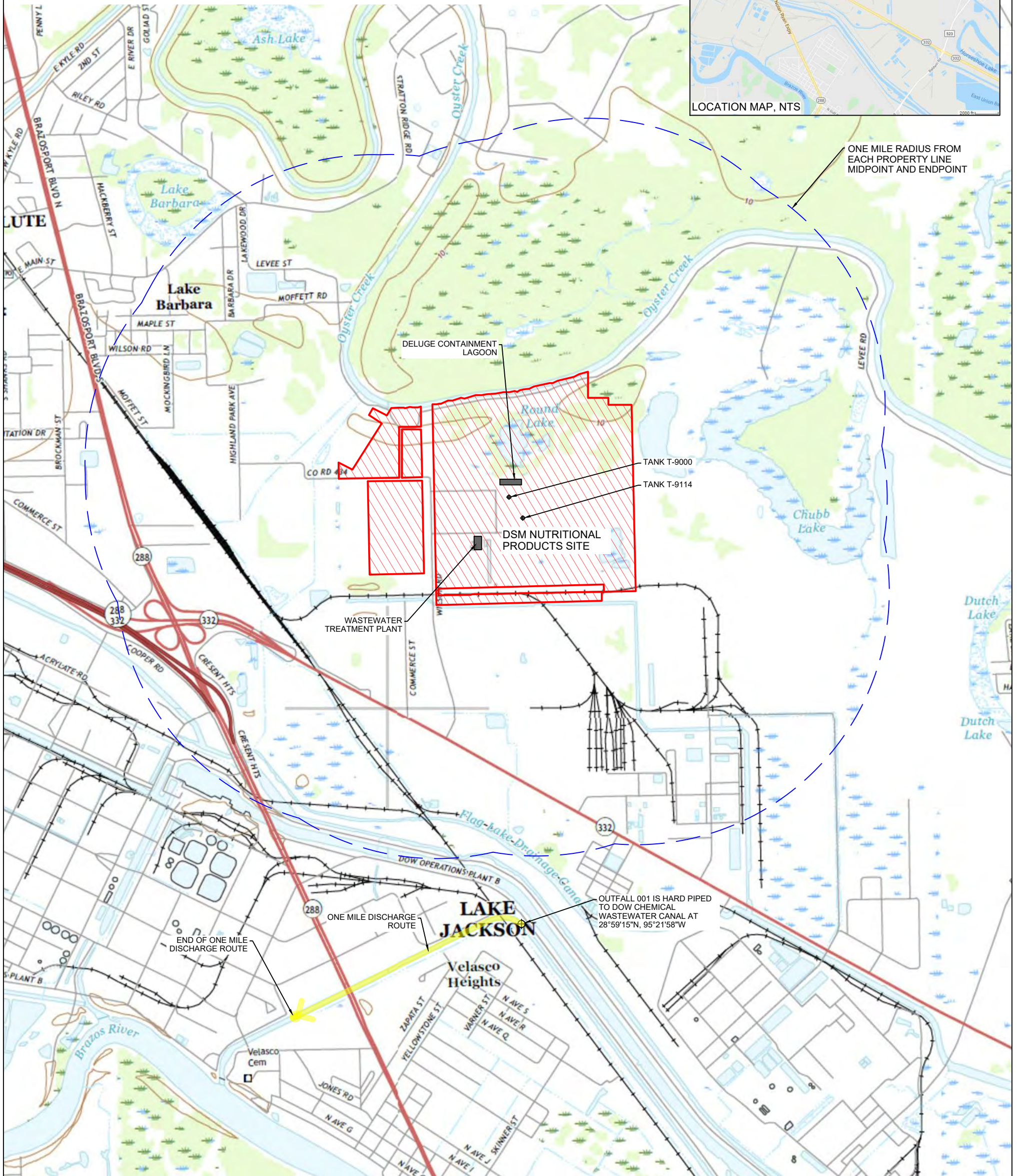
n/a

4. Provide a brief history of the property, and name of the architect/builder, if known.

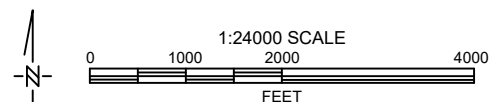
n/a



ONE MILE RADIUS FROM
EACH PROPERTY LINE
MIDPOINT AND ENDPOINT



SOURCE: USGS 7.5' TOPO COMPOSITE OF LAKE JACKSON, OYSTER CREEK
FREEPORT AND JONES CREEK QUADRANGLES 2016



DOCUMENT TITLE:

Attachment 4
Separate USGS Map
DSM Nutritional Products
1000 County Road 227A
Freeport, TX 77541



**GREEN ENVIRONMENTAL
CONSULTING, INC.**

DRAWING NUMBER:
DSM_USGS_061520

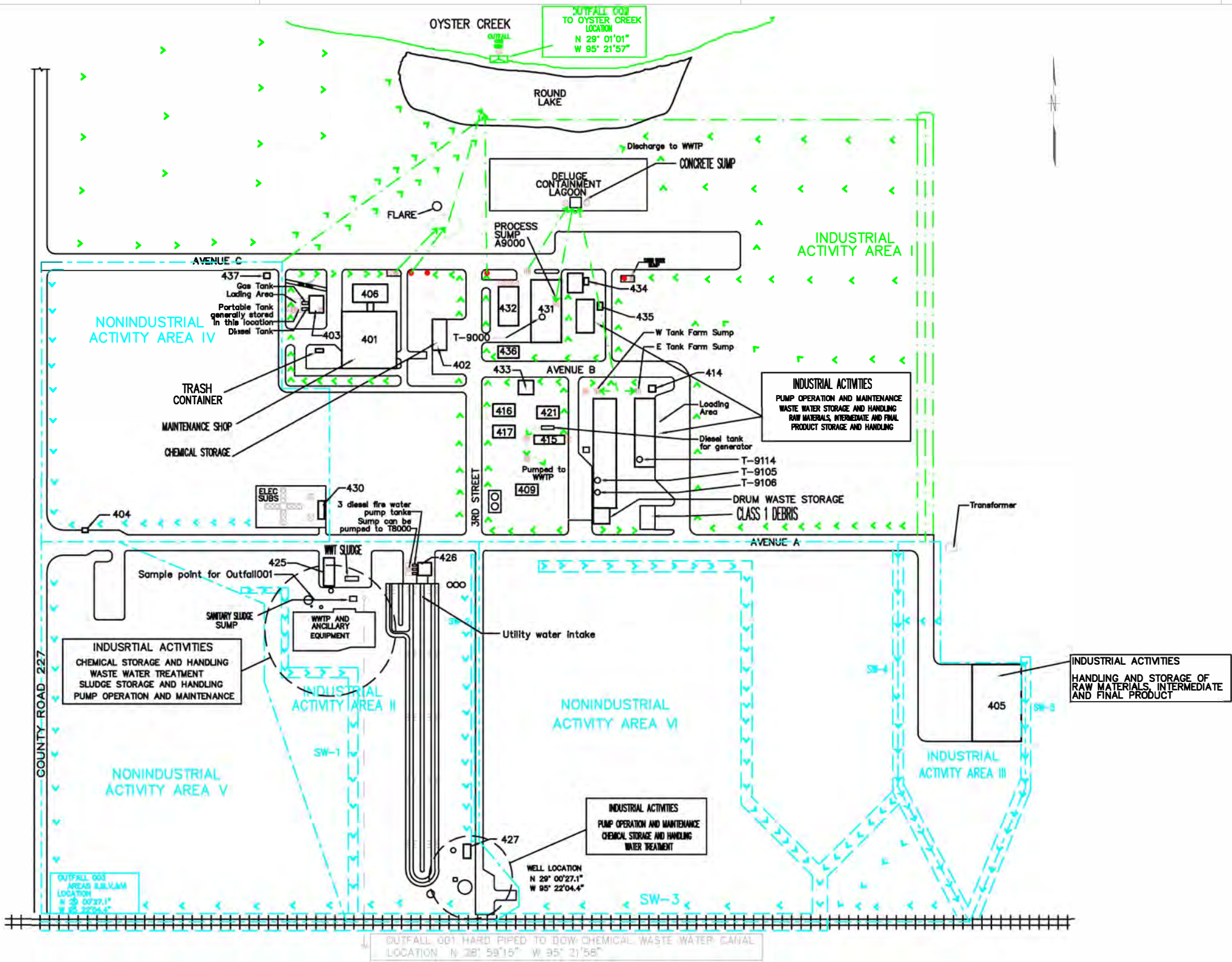
DATE: 6/15/20

DRAWN BY:
DHM

REVISION #:

REVISION DATE:

Attachment 5: Facility Map



BUILDING INDEX	
DESCRIPTION	BLDG NO.
ADMINISTRATION/MAINTENANCE BUILDING	401
VEHICLE BUILDING	402
FUEL STORAGE BUILDING	403
GUARD HOUSE	404
WAREHOUSE	405
LUNCH & LOCKER ROOM BUILDING	406
DEALKALIZER BUILDING	409
CONTROL & SWITCH ROOMS-TANK FARMS	414
CONTROL & SWITCH ROOMS-ENERGY AREA	415
BOILER,NORTH - ENERGY AREA	416
BOILER,SOUTH - ENERGY AREA	417
COOLING TOWER - ENERGY AREA	420
REFRIGERATION SHED	421
WASTE WATER TREATMENT BUILDING	425
FIRE WATER PUMP HOUSE	426
SWITCH & CHLORINATOR BUILDING	427
SUBSTATION BUILDING	430
BETA CAROTENE PRODUCTION BUILDING	431
CONTROL & SWITCH ROOM BUILDING	432
D.I. WATER HOUSE	433
HAZMAT FOAM SYSTEM BUILDING	434
DAY TANK SPRINKLER SYS VALVE HOUSE	435
BC SHIPPING	436
GUARD HOUSE, GATE #2	437

WASTE MANAGEMENT UNITS	
10,000 GALLON CARBON STEEL STORAGE TANK-T9105	
30 YARD ROLL-OFF CONTAINER (WWTP SLUDGE)	
30 YARD ROLL-OFF CONTAINER (PLANT TRASH, WEST SIDE OF PLANT)	
BUILDING 403 - CONTAINER STORAGE AREA	
10,000 GALLON STAINLESS STEEL STORAGE TANK -T9105	
BUILDING 405 BC WAREHOUSE	
SANITARY SLUDGE SUMP (SOUTH END OF WWTP)	
30 YARD ROLL-OFF CONTAINER (SPENT PPE, CLASS 1 DEBRIS)	
BUILDING 402 - CHEMICAL STORAGE AREA	
WWTP (AND ANCILLARY EQUIPMENT)	
MAINTENANCE SHOP (RECYCLE METALS ROLLOFF)	

- LEGEND
- OIL SEPARATORS
 - ▲ SLUICE GATE
 - TRANSFORMER
 - SUMP

PROJECT ENG. DESIGN SUPVR. CHECKED BY DRAWN BY INITIATOR

ENGINEER IN RESPONSIBLE CHARGE	DRAWING TITLE ATTACHMENT 8 - FACILITY MAP FREEPORT MANUFACTURING COMPLEX	PROJECT TITLE TJ P A-1 ROCHE VITAMINS INC. OIL STORAGE, OIL-FILLED EQUIPMENT, AND STORM WATER RUNOFF	SCALE NTS BLDG. NO.
	Roche a division of Hoffmann-La Roche Inc. Belvidere, New Jersey	DRAWING NO. TD-P-CC-0400-01	0

Attachment 6: FIRM

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

Flood elevations on this map are referenced to North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

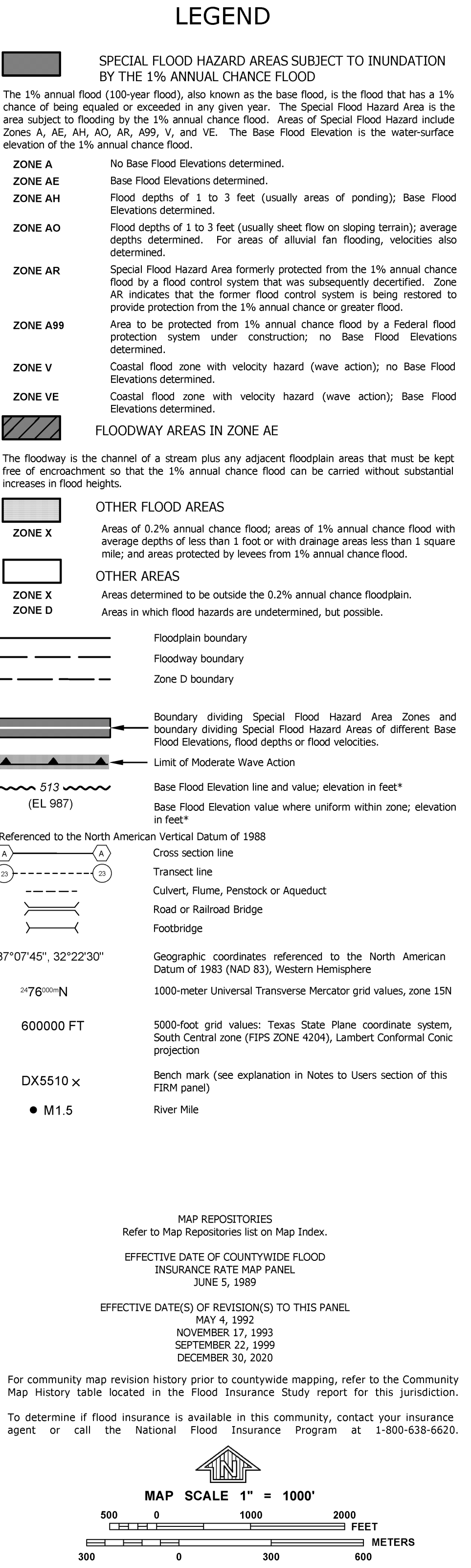
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.


Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program data for each community as well as a listing of the panels on which each community is located.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the Flood Mapping and Insurance eXchange (FMIX) at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at <https://www.fema.gov/business/nfip>.

ATTENTION: The levee, dike, or other structure that impacts flood hazard areas inside this boundary has not been shown to comply with Section 65.10 of the NFIP Regulations. As such, this FIRM panel will be revised at a later date to update the flood hazard information associated with this structure.

The flood hazard data inside the boundary on the FIRM panel has been republished from the previous effective (historic) FIRM for this area, after being converted from NGVD 29 to NAVD 88.



NATIONAL FLOOD INSURANCE PROGRAM	<div style="border: 2px solid black; padding: 5px; margin-bottom: 10px;"> NFIP </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> PANEL 0640K </div>															
	<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <h1 style="margin: 0;">FIRM</h1> <h2 style="margin: 0;">FLOOD INSURANCE RATE MAP</h2> </div>																
	<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <h3 style="margin: 0;">BRAZORIA COUNTY, TEXAS AND INCORPORATED AREAS</h3> </div>																
	<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <h3 style="margin: 0;">PANEL 640 OF 925</h3> </div>																
	(SEE MAP INDEX FOR FIRM PANEL LAYOUT)																
	CONTAINS:																
	<u>COMMUNITY</u> BRAZORIA COUNTY CLUTE, CITY OF FREEPORT, CITY OF OYSTER CREEK, CITY OF	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">NUMBER</th> <th style="text-align: left; border-bottom: 1px solid black;">PANEL</th> <th style="text-align: left; border-bottom: 1px solid black;">SUFFIX</th> </tr> </thead> <tbody> <tr> <td>485458</td> <td>0640</td> <td>K</td> </tr> <tr> <td>480008</td> <td>0640</td> <td>K</td> </tr> <tr> <td>485467</td> <td>0640</td> <td>K</td> </tr> <tr> <td>481255</td> <td>0640</td> <td>K</td> </tr> </tbody> </table>	NUMBER	PANEL	SUFFIX	485458	0640	K	480008	0640	K	485467	0640	K	481255	0640	K
	NUMBER	PANEL	SUFFIX														
	485458	0640	K														
	480008	0640	K														
485467	0640	K															
481255	0640	K															
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.																	
																	
<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <h2 style="margin: 0;">MAP NUMBER</h2> <h2 style="margin: 0;">48039C0640K</h2> </div> <div style="border: 1px solid black; padding: 10px;"> <h2 style="margin: 0;">MAP REVISED</h2> <h2 style="margin: 0;">DECEMBER 30, 2020</h2> </div>																	
Federal Emergency Management Agency																	

Attachment 7: Treatment Process Descriptions

The wastewater treatment system consists of an influent feed tank, a pH adjustment tank, and equalization/aeration first stage basin, second -stage aeration basin, flocculator clarifier, final neutralization tanks, thickener, and filter press. Each of these units and the associated flows are described below.

Tank T-9001 – Tank T-9001 is a 2,430-gallon horizontal steel tank and is the first unit in the wastewater treatment system to receive wastewater from the process unit. This tank primarily discharges to Tank T-9114 but is also equipped with an overflow that exits the top of the tank and deposits wastewater to the adjacent A-9000 (aka T-9000) process sump.

Tank T-9114 – Tank T-9114 is a 64,722-gallon steel vertical tank that receives wastewater from T-9001. Wastewater from this tank flows to T-8000, the influent tank, located in the wastewater treatment area.

Process Sump A-9000 – The process sump is known as both A-9000 and T-9000. This is an inground, rectangular, concrete structure that receives overflows from T-9001 and liquids, primarily condensate and washwater that collects in the process trench. It also receives stormwater drainage from the roof of the process structure. When pumps in the sump are inactive, the process sump equalizes with the two tank farm sumps, which in turn equalize with the DCL.

Deluge Containment Lagoon (DCL) – The DCL is a 2.3 million gallon surface impoundment with in-situ clay construction. It was designed to receive flow from the deluge of fires, but it also receives spill residues and is used to temporarily store wastewater, especially when the wastewater treatment plant is in recycle mode.

Influent Feed Tank - Tank T-8000 receives all of the process water, utility water, and contaminated stormwater. The function of this tank is to separate the oil and scum present in the incoming wastewater streams by decreasing the pH. Its dimensions are 10' x 6' x 6.5' SWD (side water depth) which provides a volume of 2,500 gallons. The tank is equipped with a lever-operated scum skimmer and a ½ HP mixer.

pH Adjustment Tank - Tank T-8001 is used to neutralize the low pH of the wastewater coming from the influent feed tank. The dimensions are 6' x 6' x 4.5' SWD and the volume is approximately 1,200 gallons. Mixing is provided by a ½ HP mixer. Although it is not normal procedure, this tank also has the ability to receive return biosolids from the clarifier.

Backwash Water Tank - The main purpose of the backwash water tank is to hold the water from the filter backwash at the water treatment plant. The backwash water is pumped from the holding tank to the wastewater treatment system at a controlled rate in order to prevent hydraulic shock loads to the biological system. The dimensions are 16' diameter by 12' SWD and a volume of 18,000 gallons. The contents are mixed with a 3 HP mixer.

Equalization/ Aeration Basin - Flow from the pH adjustment tank is routed to T-8002, the first stage equalization/aeration activated sludge tank. If required it can also receive process wastewater, contaminated stormwater, return activated biosolids, and effluent recycle from the final neutralization tank. The equalization tank has a 300,000-gallon capacity and with overall inside dimensions of 90' x 90' at the top and 34' x 34' at the bottom and 12' SWD. The tank is equipped

with four mechanical subsurface aerators.

Aeration Basin - Flow from T-8002 is routed to the aeration basin T-8005 via a transfer pump station. The activated sludge process takes place in this unit. The basin has side slopes of 2:1, top dimensions of 98' x 98', bottom dimensions of 40' x 40' and 12' SWD. The basin is equipped with four mechanical aerators.

Flocculator Clarifier - Flow from T-8002 is routed to this unit next. The dimensions of T-8007, the flocculator clarifier, are 35' diameter by 12' SWD for a volume of 86,400 gallons. This unit separates the activated sludge solids from the aeration basin effluent. Settled solids are continuously removed from the bottom of the tank and pumped back to the two aeration basins to maintain the proper solids concentrations for biological treatment.

Excess biosolids are pumped to the biosolids holding tank for thickening and then to the belt filter press for dewatering.

Neutralization Tank - Flow from the flocculator clarifier enters the neutralization tank, T-8008, for pH adjustment. The tank is 10' x 5' x 7' SWD and has a volume of 2,600 gallons. A ½ HP mixer is provided. The neutralization tank also receives the treated sanitary effluent from the package plant and recycles from the effluent tank. Although it is not normal procedure, the tank can also receive cooling tower/boiler blowdown and dealkylizer water. The tank contents overflow to the effluent tank.

Effluent Tank - The main purpose of this tank, T-8012, is to hold the treated wastewater to verify if the quality specified in the discharge permit has been achieved throughout the treatment processes before being pumped to the Dow Canal. Also, the effluent tank provides a reservoir for the belt press filter press washwater. The tank is 10' x 5' x 7' SWD providing a volume of 2,600 gallons.

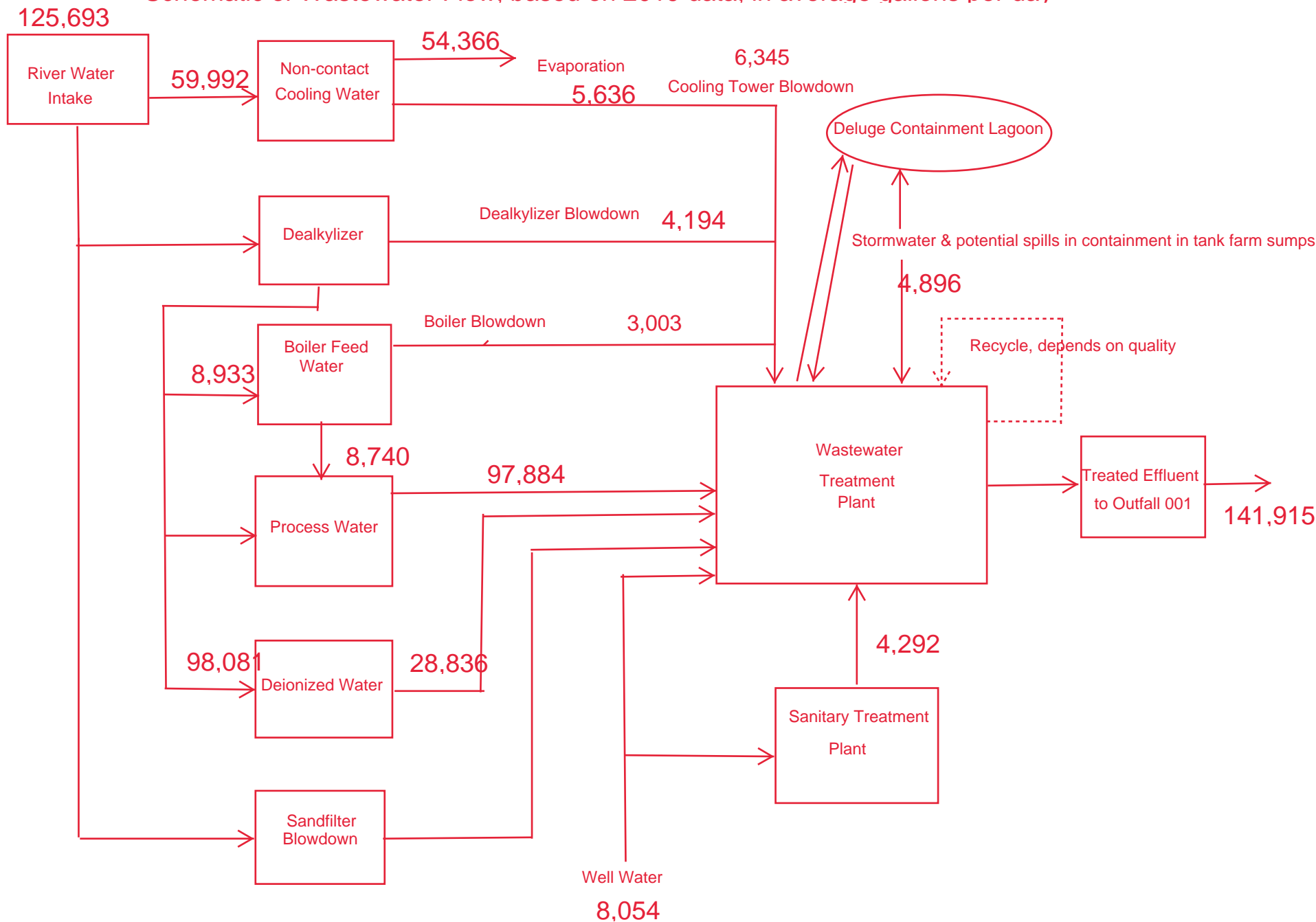
Gravity Thickener/Biosolids Holding Tank - This tank, T-8014, receives the waste activated biosolids from the flocculator clarifier for concentrations by gravity settling and provides digestion prior to biosolids dewatering. This tank is 20' in diameter by 14' SWD and has a volume of 28,200 gallons. The biosolids are pumped out through the bottom to the tank to the belt filter press. The supernatant is pumped out from the top of the tank back to the aeration basins or influent feed tank.

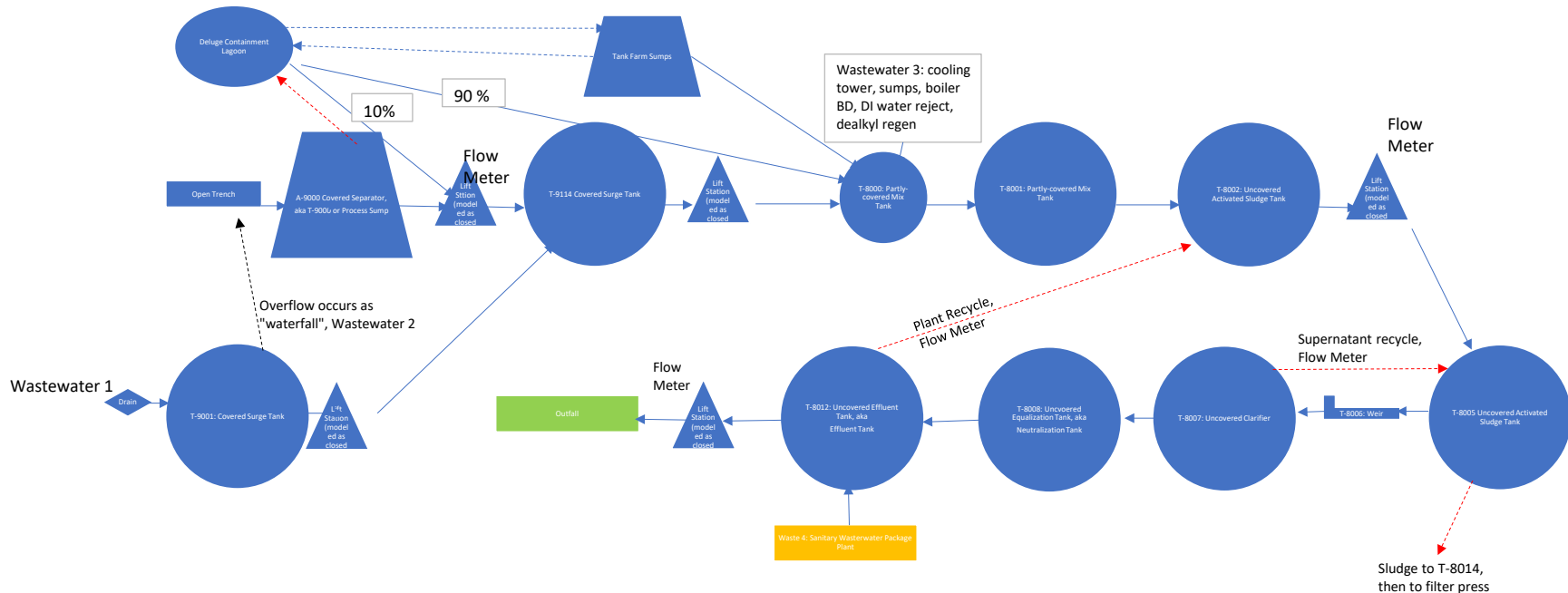
Belt Filter Press - This is an Ashbrook-Simon-Hartley unit. Biosolids from the biosolids holding tank are pumped to the belt filter press for dewatering. The cake from the belt press is collected by the biosolids conveyor and then sent to the roll-off box for disposal.

Sanitary Package WWTP - The sanitary package wastewater treatment plant has a capacity of 10,000 gallons per day, and can handle up to 200 plant employees per day. Effluent from this package unit enters the wastewater treatment system at T-8012.

Attachment 8: Flow Schematic with Water Balance

Schematic of Wastewater Flow, based on 2019 data, in average gallons per day

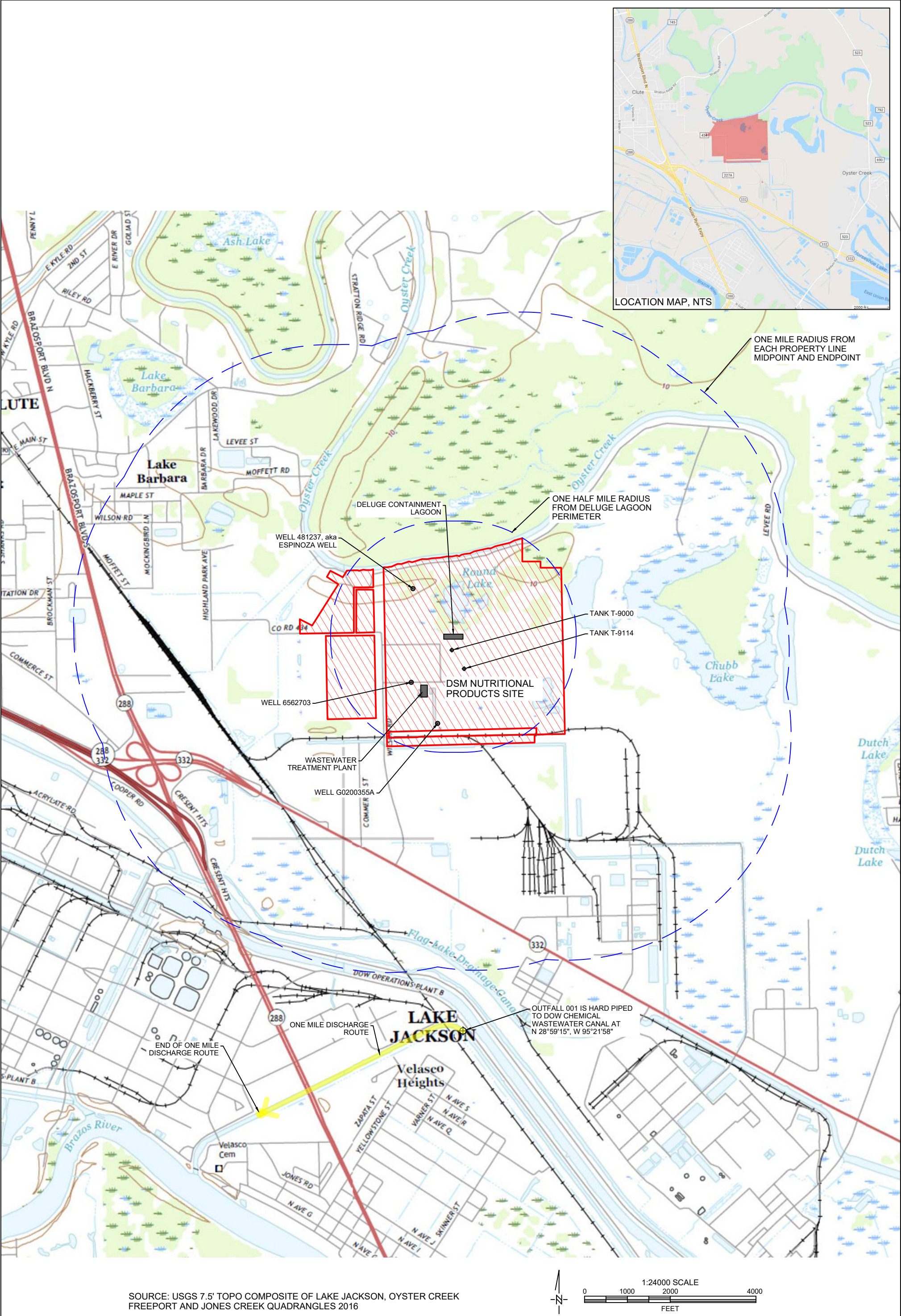




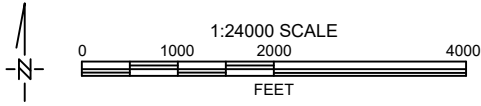
Wastewater 1 is process water only, which includes columns, vac pack overflows, vac steam pumps.

Wastewater 2 consists of spills, dealkyl water used for cooling in water jackets, condensate from cold pieces of equipment, stormwater that collects in process trench.


Attachment 9: USGS Map Showing Nearby Water Wells



SOURCE: USGS 7.5' TOPO COMPOSITE OF LAKE JACKSON, OYSTER CREEK
FREEPORT AND JONES CREEK QUADRANGLES 2016



DOCUMENT TITLE:
Attachment 9
Water Wells Located within 1/2 Mile
DSM Nutritional Products
1000 County Road 227A
Freeport, TX 77541

 GREEN ENVIRONMENTAL CONSULTING, INC.	
DRAWING NUMBER: DSM_USGS_061924	DATE: 6/19/24
DRAWN BY: DHM	REVISION #: REVISION DATE:

Attachment 10: Water Well Reports

Prepared for:
GREEN ENVIRONMENTAL CONSULTING, INC.-Austin
2902 Clarice Ct.
Austin, TX 78757



Water Well Report

DSM

1000 County Rd 227A

Freeport, TX

Brazoria County

PO #: DSM TPDES permit renewal

ES-144152

Wednesday, June 12, 2024

Table of Contents



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Geographic Summary



Location

Brazoria County, TX

Coordinates

Lat/Long in Degrees Minutes Seconds 29° 0' 46.46", -95° 22' 1.89"

Lat/Long in Decimal Degrees 29.012906, -95.367192

X/Y in NAD83 / UTM Zone 15N 269429.317897203, 3211726.44202282

Elevation

Subject Property lies 5.91 feet above sea level.

Zip Codes Searched

Search Distance	Zip Codes
-----------------	-----------

Subject Property	77541
------------------	-------

0.5 miles	77541
-----------	-------

Topos Searched

Search Distance	Topo Name
-----------------	-----------

Subject Property	Oyster Creek (1974)
------------------	---------------------

0.5 miles	Oyster Creek (1974), Lake Jackson (1974)
-----------	--

Water Well Summary



Datasets Searched	Distance	Total
US Water Well (WW)	0.5	0
TX Groundwater Supply (GWS)	0.5	1
TX Harris/Galveston Subsidence District (HGSD)	0.5	0
TX Historical Waterwell (HIST)	0.5	0
TX Public Water Supply (PWS)	0.5	1
TX Submitted Drillers Report (SDR)	0.5	1
Total Wells Found		3

Summary Map - 0.5 Mile Radius



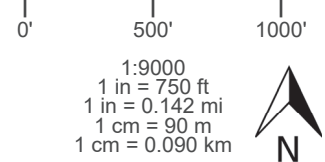
© MapTiler © OpenStreetMap contributors

DSM

● Single Water Well ● Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

- ★ Subject Site
- Search Buffer
- Texas Quad Index



NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Topographic Overlay Map - 0.5 Mile Radius



Basemap courtesy of U.S. Geological Survey

DSM

● Single Water Well ● Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

★ Subject Site
□ Search Buffer

Subject Property Quad Name(s)
See Geographic Summary

0' 500' 1000'

1:9000
1 in = 750 ft
1 in = 0.142 mi
1 cm = 90 m
1 cm = 0.090 km



NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Current Imagery Overlay Map - 0.5 Mile Radius



DSM

● Single Water Well ● Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

★ Subject Site
□ Search Buffer

0' 500' 1000'

1:9000
1 in = 750 ft
1 in = 0.142 mi
1 cm = 90 m
1 cm = 0.090 km



NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Zip Code Map - 0.5 Mile Radius



DSM

Single Water Well Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

- ★ Subject Site
- Search Buffer
- Zip Code Boundary

0' 500' 1000'

1:9000
1 in = 750 ft
1 in = 0.142 mi
1 cm = 90 m
1 cm = 0.090 km



NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Water Well Summary



Map ID	Source ID	Dataset	Owner	Well Type	Drill Depth	Static Level	Completion Date	Distance	Elevation	Details Page #
1	6562703	GWS	DSM Nutritional Products	Industrial	300		1979-01-01	0.27mi SW	+2.36 ft	10
3	G0200355A	PWS	DSM NUTRITIONAL PRODUCTS	Public Supply	300		1979-01-01	0.39mi S	+0.62 ft	14
2	481237	SDR	Alfredo Espinoza	Domestic	220	70	2018-05-26	0.28mi NW	+1.48 ft	15

End of Water Well Summary

GWS - Groundwater Supply

Source: Texas Water Development Board

Map ID: 1

Well Number: 6562703

GWS - Groundwater Supply

Banks ID: 6562703

Well Address: TX

Rel. Loc.: 0.27mi SW

Completion Date: 1979-01-01

Drill Depth: 300.0

Owner: DSM Nutritional Products

Elevation: 8.27 ft (+2.36 ft)

County: Brazoria

Aquifer Code: 112CHCT

Driller:

Drilling Start Date:

Drilling Method:

Well Type: Withdrawal of Water

End of GWS Section

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6562703
County	Brazoria
River Basin	San Jacinto-Brazos
Groundwater Management Area	14
Regional Water Planning Area	H - Region H
Groundwater Conservation District	Brazoria County GCD
Latitude (decimal degrees)	29.010001
Latitude (degrees minutes seconds)	29° 00' 36" N
Longitude (decimal degrees)	-95.37
Longitude (degrees minutes seconds)	095° 22' 12" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	112CHCT - Chicot Aquifer
Aquifer	Gulf Coast
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	9
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	300
Well Depth Source	Another Government Agency
Drilling Start Date	
Drilling End Date	0/0/1979
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Industrial
Water Level Observation	None
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	DSM Nutritional Products
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	G0200355A
Groundwater Conservation District Well Number	
Owner Well Number	1
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Commission on Environmental Quality
Created Date	3/24/2010
Last Update Date	7/25/2016

Remarks

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (<https://www.twdb.texas.gov/groundwater/data/gwdb rpt.asp>) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

PWS - Public Water Supply

Map ID: 3	Source: TCEQ	
Water Source ID: G0200355A	PWS - Public Water Supply	Banks ID: G0200355A
Well Address: TX	Rel. Loc.: 0.39mi S	
Completion Date: 1979-01-01	Drill Depth: 300.0	
Owner: DSM NUTRITIONAL PRODUCTS	Elevation: 6.53 ft (+0.62 ft)	

Pws Id:	0200355
Hyperlink:	Go to webpage
Fips Cd:	039
Ccn:	
System Status:	ACTIVE
Source Status:	OPERATIONAL
Responsible Party:	CHRISTOPHER J KELLY
Responseible Party Address:	1000 COUNTY ROAD 227
Responseible Party City:	FREEPORT
Responseible Party State:	TX
Responseible Party Zip:	775413027
Phone:	9793735034
Tinwsys Number:	529

End of PWS Section

SDR - Submitted Drillers Report

Source: Texas Water Development Board

Map ID: 2

Well Report Tracking Number:
481237

SDR - Submitted Drillers Report

Banks ID: 481237

Well Address: 18244 CR 319, Brazoria, TX 77442

Rel. Loc.: 0.28mi NW

Completion Date: 2018-05-26

Drill Depth: 220.0

Owner: Alfredo Espinoza

Elevation: 7.38 ft (+1.48 ft)

Number Of Wells Drilled:	1
Elevation:	
Type Of Work:	New Well
Drilling Start Date:	2018-05-25
Company Name:	MARAL DRILLING
Driller Name:	Martin Almazan
Commentary:	

Bore Hole Completion

Well Report Tracking Number:	481237
Bore Hole Completion:	Other
Bore Hole Completion Other Desc:	Cement

Bore Hole Info

Well Report Tracking Number:	481237
Diameter:	7
Top Depth:	0
Bottom Depth:	220

Drilling Method

Well Report Tracking Number:	481237
Drilling Method:	Mud (Hydraulic) Rotary
Drilling Method Other Desc:	

Levels

Well Report Tracking Number:	481237
Measurement:	70

End of SDR Section**End of Water Well Details Section**

STATE OF TEXAS WELL REPORT for Tracking #481237

Owner:	Alfredo Espinoza	Owner Well #:	No Data
Address:	18244 CR 319 Brazoria, TX 77442	Grid #:	65-62-7
Well Location:	18244 CR 319 Brazoria, TX 77442	Latitude:	29° 00' 57.6" N
Well County:	Brazoria	Longitude:	095° 22' 12" W
		Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Domestic

Drilling Start Date: **5/25/2018** Drilling End Date: **5/26/2018**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	7	0	220

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Cement**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks & material)</i>
Annular Seal Data:	0	180	Cement 24 Bags/Sacks

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other
concentrated contamination (ft.): **None**

Distance to Septic Tank (ft.): **None**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level:	70 ft. below land surface, and 25 GPM artesian flow on 2018-05-26	Measurement Method:	Weighted Line
Packers:	Plastic at 180 ft.		
Type of Pump:	Submersible		
Well Tests:	Jetted	Yield: 25 GPM with 10 ft. drawdown after 5 hours	

Water Quality:

Strata Depth (ft.)	Water Type
180 - 220	Fresh

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which
contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **MARAL DRILLING**
2621 S. GARDENIA
PHARR, TX 78577

Driller Name: **Martin Almazan**

License Number: **52001**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	3	Top Soil
3	70	Clay
70	100	Sand
100	180	Clay
180	220	Sand

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Blank	New Plastic (PVC)	40	0	180
4	Screen	New Plastic (PVC)	40 0	180	220

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

Dataset Descriptions and Sources



Dataset	Source	Dataset Description	Update Schedule	Requested Date	Received Date	Update Date	Source Update Date
HIST - Historical Waterwell (TX)	TCEQ	This dataset contains all historical water well records searched from the TCEQ Public Water Well Viewer. Banks Environmental Data plots each well record based on location information found on the log.	Historical				
GWS - Groundwater Supply (TX)	Texas Water Development Board	This dataset contains water well records contained within Texas Water Development Board Groundwater Database.	Quarterly	2024-01-16	2024-01-16	2024-03-26	2024-01-16
WW - Water Well (US)	U.S. Geological Survey	This dataset contains groundwater well records from the U.S. Geological Survey.	Quarterly	2024-05-14	2024-05-14	2024-06-11	2024-05-14
HGSD - Harris/Galveston District (TX)	Harris/Galveston/Fort Bend Subsidence Districts	This dataset contains all groundwater well records compiled by Harris Galveston Subsidence District/Fort Bend Subsidence District.	Quarterly	2024-01-03	2024-01-03	2024-04-19	2024-01-03
PWS - Public Water Supply (TX)	TCEQ	This dataset contains a collection of records from Texas Water Districts, Public Drinking Water Systems and Water and Sewer Utilities who submit information to the TCEQ.	Quarterly	2024-01-16	2024-01-16	2024-04-15	2024-01-16
SDR - Submitted Drillers Report (TX)	Texas Water Development Board	This dataset contains water well records from the Texas Water Development Board Submitted Drillers Reports Database.	Quarterly	2024-02-14	2024-02-14	2024-04-05	2024-02-14

Disclaimer



The Banks Environmental Data Water Well Report was prepared from existing state water well databases and/or additional file data/records research conducted at the state agency and the U.S. Geological Survey. Banks Environmental Data has performed a thorough and diligent search of all groundwater well information provided and recorded. All mapped locations are based on information obtained from the source. Although Banks performs quality assurance and quality control on all research projects, we recognize that any inaccuracies of the records and mapped well locations could possibly be traced to the appropriate regulatory authority or the actual driller. It may be possible that some water well schedules and logs have never been submitted to the regulatory authority by the water driller and, thus, may explain the possible unaccountability of privately drilled wells. It is uncertain if the above listing provides 100% of the existing wells within the area of review. Therefore, Banks Environmental Data cannot fully guarantee the accuracy of the data or well location(s) of those maps and records maintained by the regulatory authorities.



Texas Water Development Board
Well Schedule

groundwater resources
division

State Well Number: **65-62-703** Previous Well Number: County: **Brazoria** **39**

Latitude (dms): **290036** Longitude (dms): **952212** Coordinate Accuracy: **Global Positioning System - GPS**

River Basin: **San Jacinto-Brazos Rivers** GMA: **14** RWPA: **H** GCD: **Brazoria County GCD**

Owner: **DSM Nutritional
Products**

Driller:

Aquifer ID: **Gulf Coast**

Aquifer Code: **112CHCT**

Depth (ft): **300**

Elevation (ft): **9**

**CHICOT
AQUIFER**

Source of Depth: **Another Government
Agency**

Source of Elevation: **Digital Elevation
Model -DEM**

Date Drilled: **00/00/1979**

Well Type: **Withdrawal of Water**

Type of Lift: **Submersible Pump**

Power: **Electric Motor**

Horsepower:

Construction:

Completion:

Casing Material:

Screen Material:

CASING INTERVALS:
Casing/Blank Pipe (C)
Well Screen/Slotted Zone (S)
Open Hole (O)

Dia. (in.)	Top (ft.)	Bottom (ft.)
---------------	--------------	-----------------

WATER USE

Primary: **Industrial**

Secondary: **Domestic**

Tertiary:

Water Levels:

Water Quality: **N**

Other Data:

Logs:

REMARKS:

Owners well #1. TCEQ ID #0200355A.

Reporting Agency: **TWC/TNRCC/TCEQ**

Date Collected or Reported: **03/24/2010**

Recorded by:

D.R. Jones

New

Attachment 11: Potential for Migration from Pond

Information on Nearby Groundwater and Wells

The Deluge Containment Lagoon (DCL) exists to receive wastewater in the event of significant adverse events and is not used on a regular basis for the storage of wastewater.

Data on the liner of the DCL is not available. However, it is believed that the DCL is approximately 11 feet deep and the liner is constructed of *in situ* clay.

The nearest wells to the DCL are located on the DSM site. DSM operates one well for the supply of drinking water, Well G0200355A. Little data is available on the well, and what is available is in Attachment 10. The well has a depth of 300 feet, and is believed to be cased at the lower elevations of the well for the water supply. A second well, 6562703, is also located on DSM property and is used to provide process water. It is also drilled to a depth of 300 feet, and is believed to be cased at the lower elevation for the water supply.

Well 481237, referred to as the Espinoza well on the figure in Attachment 9, is also located on the DSM property. This well is not currently used by DSM. This well draws water from a depth of 70 feet below ground surface. Most importantly, the well log, indicates that clays underlie the ground surface from a depth of 3 to 70 feet, with the first sand layer not occurring until 70 feet below ground surface. The presence of the extensive clay layer on the site indicates that the opportunity for contaminants to migrate through the 70 feet of clay to groundwater is extremely unlikely.

Attachment 12: Cooling Tower and Boiler Blowdown Treatment Chemical SDSs



SAFETY DATA SHEET

KLARAID* PC1192

Note: this chemical is used in the Raw water clarifier, and that water is then used in the cooling tower.

1. Identification

Product identifier KLARAID PC1192
Other means of identification None.
Recommended use Coagulant
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Serious eye damage/eye irritation Category 2
OSHA defined hazards Not classified.

Label elements



Signal word Warning
Hazard statement Causes serious eye irritation.
Precautionary statement
Prevention Wear eye/face protection. Wash thoroughly after handling.
Response If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage Store away from incompatible materials.
Disposal Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC) None known.
Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
N,N-Dimethyl-N-2-propenyl-2-propen- 1-amonium chloride homopolymer	26062-79-3	10 - 20

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
4. First-aid measures	
Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.
7. Handling and storage	
Precautions for safe handling	Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.
8. Exposure controls/personal protection	
Occupational exposure limits	This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit.
Biological limit values	No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear suitable protective clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Color	Yellow
Physical state	Liquid
Odor	Mild
Odor threshold	Not available.
pH (concentrated product)	6.3
pH in aqueous solution	6.2 (5% SOL.)
Melting point/freezing point	30 °F (-1 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.03
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.

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Decomposition temperature	Not available.
Viscosity	168 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Pour point	35 °F (2 °C)
Specific gravity	1.032
VOC	0 % (ASTM 3960-93)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Hydrogen chloride, oxides of carbon and nitrogen evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
KLARAID PC1192 (CAS Mixture)		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
N,N-Dimethyl-N-2-propenyl-2-propen-1-ammonium chloride homopolymer (CAS 26062-79-3)		
Acute		
Oral		
LD50	Rat	3000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.**Specific target organ toxicity - single exposure** Not classified.**Specific target organ toxicity - repeated exposure** Not classified.**Aspiration hazard** Based on available data, the classification criteria are not met.**12. Ecological information****Ecotoxicity**

Product		Species	Test Results
KLARAID PC1192 (CAS Mixture)			
	LC50	Ceriodaphnia	9.3 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
		Fathead Minnow	3.8 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
		Mysid Shrimp	628.5 mg/l, Static Renewal Bioassay, 48 hour
	LOEL	Ceriodaphnia	2 mg/l, Chronic Bioassay, 7 day
		Fathead Minnow	2 mg/l, Chronic Bioassay, 7 day
	NOEL	Ceriodaphnia	6.25 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
			1 mg/l, Chronic Bioassay, 7 day
		Fathead Minnow	2.5 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
			1 mg/l, Chronic Bioassay, 7 day
		Mysid Shrimp	125 mg/l, Static Renewal Bioassay, 48 hour
		Sheepshead Minnow	2000 mg/l, Static Renewal Bioassay, 96 hour
Aquatic			
Crustacea	LC50	Daphnia magna	32 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
	NOEL	Daphnia magna	15.6 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
Fish	LC50	Rainbow Trout	14.1 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
	NOEL	Rainbow Trout	10 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Other adverse effects	Not available.		
Persistence and degradability			
- COD (mgO2/g)	270		
- BOD 5 (mgO2/g)	0		
- BOD 28 (mgO2/g)	7		
- Closed Bottle Test (% Degradation in 28 days)	3		
- Zahn-Wellens Test (% Degradation in 28 days)	6		
- TOC (mg C/g)	90		

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13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	Not regulated as dangerous goods. Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.	
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.	
SARA 304 Emergency release notification	Not regulated.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not regulated.	
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No	
SARA 302 Extremely hazardous substance	Not listed.	
SARA 311/312 Hazardous chemical	Yes	
SARA 313 (TRI reporting)	Not regulated.	
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Not regulated.	
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)	Not regulated.	
Safe Drinking Water Act (SDWA)	Not regulated.	
Inventory status		
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration 21 CFR 176.170 (components of paper and paperboard in contact with aqueous and fatty foods)

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. Other information, including date of preparation or last revision

Issue date Oct-20-2014

Revision date Dec-16-2017

Version # 3.1

List of abbreviations

CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

GENGARD* GN8300

1. Identification

Product identifier	GENGARD GN8300
Other means of identification	None.
Recommended use	Corrosion inhibitor
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.
Precautionary statement	
Prevention	Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Phosphoric Acid	7664-38-2	60 - 80

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Acidic. Corrosive to skin or eyes. Do not mix with alkaline material. Do not breathe mist or vapor. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Do not get in eyes, on skin, or on clothing. Use care in handling/storage.
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**Conditions for safe storage,
including any incompatibilities**

Store locked up. Store in corrosive resistant container with a resistant inner liner. Contact with metals may release flammable hydrogen gas. Keep only in the original container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	PEL	1 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m ³
	TWA	1 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s)

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color Colorless to light yellow

Physical state Liquid

Odor Mild

Odor threshold Not available.

pH (concentrated product) < 1

pH in aqueous solution 1.2 (5% SOL.)

Melting point/freezing point < -30 °F (< -34 °C)

Initial boiling point and boiling range Not available

Flash point Not applicable

Evaporation rate < 1 (Ether = 1)

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Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	15 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	> 1 (Air = 1)
Relative density	1.58
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	19 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	0 (Estimated)
Pour point	< -25 °F (< -32 °C)
Specific gravity	1.58

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Contact with metals may release flammable hydrogen gas. Contact with strong bases may cause a violent reaction releasing heat. Avoid contact with strong oxidizers.
Incompatible materials	Strong oxidizing agents. Metals.
Hazardous decomposition products	Oxides of carbon and phosphorus evolved in fire.

11. Toxicological information

Information on likely routes of exposure	
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Information on toxicological effects	
Acute toxicity	May cause respiratory irritation.

Product	Species	Test Results
GENGARD GN8300 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	3650 mg/kg. (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	2040 mg/kg. (Calculated according to GHS additivity formula)

Components	Species	Test Results
Phosphoric Acid (CAS 7664-38-2)		
Acute		
Dermal		
LD50	Rabbit	2740 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not available	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not available	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified
Aspiration hazard	Not an aspiration hazard. Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity			
Product		Species	Test Results
GENGARD GN8300 (CAS Mixture)			
	5% Mortality	Ceriodaphnia	500 mg/L, Static Screen, 48 hour, (pH adjusted)
	85% Mortality	Ceriodaphnia	2500 mg/L, Static Screen, 48 hour, (pH adjusted)
	LC50	Fathead Minnow	4200 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Fathead Minnow	2100 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
Aquatic			
Crustacea	LC50	Daphnia magna	3540 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)

Product	Species	Test Results
NOEL	Daphnia magna	2100 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
* Estimates for product may be based on additional component data not shown.		
Bioaccumulative potential	No information available	
Mobility in soil	No data available	
Other adverse effects	Not available	
13. Disposal considerations		
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations	
Local disposal regulations	Dispose in accordance with all applicable regulations.	
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company	
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).	
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.	
14. Transport information		
DOT		
UN number	UN1805	
UN proper shipping name	PHOSPHORIC ACID SOLUTION, RQ	
Transport hazard class(es)		
Class	8	
Subsidiary risk	-	
Packing group	III	
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling	
ERG number	154	
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification		
IATA		
UN number	UN1805	
UN proper shipping name	PHOSPHORIC ACID SOLUTION	
Transport hazard class(es)		
Class	8	
Subsidiary risk	-	
Packing group	III	
Environmental hazards	No	
ERG Code	154	
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.	
IMDG		
UN number	UN1805	
UN proper shipping name	PHOSPHORIC ACID SOLUTION, RQ	
Transport hazard class(es)		
Class	8	
Subsidiary risk	-	
Packing group	III	
Environmental hazards		
Marine pollutant	No	
EmS	F-A,S-B	
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.	

DOT



IATA; IMDG



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Phosphoric Acid (CAS 7664-38-2)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)

Hazardous substance

Safe Drinking Water Act (SDWA)

Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Phosphoric Acid (CAS 7664-38-2)

High priority

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

NSF Registered and/or meets	Registration No. – 142961
USDA (according to 1998	Category Code(s):
guidelines):	G5 Cooling and retort water treatment products
	G7 Boiler, steam line treatment products – nonfood contact

US state regulations**US - Massachusetts RTK - Substance List**

Phosphoric Acid (CAS 7664-38-2)

US - Pennsylvania RTK - Hazardous Substances

Phosphoric Acid (CAS 7664-38-2)

US - Rhode Island RTK

Phosphoric Acid (CAS 7664-38-2)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Phosphoric Acid (CAS 7664-38-2)

US. New Jersey Worker and Community Right-to-Know Act

Phosphoric Acid (CAS 7664-38-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Phosphoric Acid (CAS 7664-38-2)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Oct-29-2014

Revision date Apr-06-2016

Version # 2.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
ACGIH: American Conference of Governmental Industrial Hygienists
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Prepared by

This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

CORTROL* IS3000

1. Identification

Product identifier CORTROL IS3000
Other means of identification None.
Recommended use Water based dissolved oxygen scavenger
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Serious eye damage/eye irritation Category 2B
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Causes eye irritation. May cause respiratory irritation.

Precautionary statement

Prevention Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area.

Response If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Sodium bisulphite	7631-90-5	20 - 40

Components	CAS #	Percent
Cobalt chloride	7646-79-9	0 - 0.1
Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.	
4. First-aid measures		
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Give oxygen if necessary. Call a POISON CENTER or doctor/physician if you feel unwell.	
Skin contact	Remove contaminated clothing. Wash thoroughly with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.	
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.	
Most important symptoms/effects, acute and delayed	Irritation of eyes and mucous membranes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation. Skin irritation.	
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.	
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.	
5. Fire-fighting measures		
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).	
Unsuitable extinguishing media	Water. Do not use water jet as an extinguisher, as this will spread the fire.	
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.	
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.	
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.	
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.	
General fire hazards	No unusual fire or explosion hazards noted.	
6. Accidental release measures		
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.	
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.	
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.	
7. Handling and storage		
Precautions for safe handling	Avoid breathing mist or vapor. Avoid contact with eyes. Avoid prolonged exposure. Vent carefully before opening. Sulfur dioxide can be formed during the normal use and handling of this product. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.	

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation. Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Cobalt chloride (CAS 7646-79-9)	TWA	0.02 mg/m3
Sodium bisulphite (CAS 7631-90-5)	TWA	5 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium bisulphite (CAS 7631-90-5)	TWA	5 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles and face shield are recommended. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color Pink

Physical state Liquid

Odor Strong

Odor threshold Not available.

pH (concentrated product) 3.2

pH in aqueous solution 3.5 (5% SOL.)

Melting point/freezing point 18 °F (-8 °C)

Initial boiling point and boiling range 220 °F (104 °C)

Flash point > 200 °F (> 93 °C) P-M(CC)

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.26
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	7 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Pour point	23 °F (-5 °C)
Specific gravity	1.261
VOC	0 % (Calculated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Protect from freezing.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Elemental oxides

11. Toxicological information**Information on likely routes of exposure**

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Prolonged or repeated contact may cause irritation.
Eye contact	Causes eye irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics	Irritation of eyes and mucous membranes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation. Skin irritation.
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Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
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Product	Species	Test Results
CORTROL IS3000 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Product	Species	Test Results
<i>Inhalation</i> LC50	Rat	495.5 mg/l/4h, (Calculated according to GHS additivity formula)
<i>Oral</i> LD50	Rat	4191 mg/kg, (Calculated according to GHS additivity formula)
Components	Species	Test Results
Cobalt chloride (CAS 7646-79-9)		
<i>Acute</i>		
<i>Dermal</i> LD50	Rabbit	> 2000 mg/kg
<i>Oral</i> LD50	Rat	537 mg/kg
Sodium bisulphite (CAS 7631-90-5)		
<i>Acute</i>		
<i>Dermal</i> LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i> LC50	Rat	> 5.5 mg/l, 4 Hour
<i>Oral</i> LD50	Rat	1420 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Sodium bisulphite (CAS 7631-90-5) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Not available.

Aspiration hazard May be harmful if swallowed and enters airways. Based on available data, the classification criteria are not met.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product	Species	Test Results
CORTROL IS3000 (CAS Mixture)		
LC50	Fathead Minnow	210 mg/L, Acute Toxicity, 96 hour, (Estimated)

Product		Species	Test Results
	NOEL	Fathead Minnow	150 mg/L, Acute Toxicity, 96 hour, (Estimated)
Aquatic Crustacea	0% Mortality	Daphnia magna	100 mg/L, Static Screen, 48 hour
	100% Mortality	Daphnia magna	500 mg/L, Static Screen, 48 hour
	LC50	Daphnia magna	204 mg/L, Acute Toxicity, 48 hour, (Estimated)
	NOEL	Daphnia magna	150 mg/L, Acute Toxicity, 48 hour, (Estimated)
Fish	0% Mortality	Rainbow Trout	500 mg/L, Static Screen, 48 hour
	100% Mortality	Rainbow Trout	1000 mg/L, Static Screen, 48 hour
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Other adverse effects	Not available.		
Persistence and degradability	No data is available on the degradability of this product.		
- COD (mgO2/g)	54 (calculated data)		

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	
UN number	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (SODIUM BISULFITE), RQ(SODIUM BISULFITE)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	171
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	
IATA	
Not regulated as dangerous goods.	
IMDG	
Not regulated as dangerous goods.	



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Cobalt chloride (CAS 7646-79-9)

Listed.

Sodium bisulphite (CAS 7631-90-5)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Cobalt chloride (CAS 7646-79-9)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration

ALL ingredients in this product are authorized in 21CFR173.310 for use as boiler water additives where the steam may contact food.

NSF Registered and/or meets USDA (according to 1998 guidelines):

Registration No. – 141465

Category Code(s):

G5 - Cooling and retort water treatment products

G6 - Boiler treatment products, steam line products – food contact

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Sodium bisulphite (CAS 7631-90-5)

US - Pennsylvania RTK - Hazardous Substances

Cobalt chloride (CAS 7646-79-9) Listed.

Sodium bisulphite (CAS 7631-90-5) Listed.

US - Rhode Island RTK

Sodium bisulphite (CAS 7631-90-5)

US. New Jersey Worker and Community Right-to-Know Act

Cobalt chloride (CAS 7646-79-9) Listed.

Sodium bisulphite (CAS 7631-90-5) Listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Cobalt chloride (CAS 7646-79-9) LISTED

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. Other information, including date of preparation or last revision

Issue date Oct-17-2014

Revision date Dec-16-2017

Version # 2.1

List of abbreviations CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code

References: No data available

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information Composition/information on ingredients: Composition comments
First-aid measures: Skin contact
Exposure controls/personal protection: Appropriate engineering controls
Physical & Chemical Properties: Multiple Properties
Transport Information: Material Transportation Information
Other information, including date of preparation or last revision: Bibliography
Other information, including date of preparation or last revision: Prepared by
GHS: Classification

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

STEAMATE* NA702

1. Identification

Product Identifier STEAMATE NA702
Other means of identification None.
Recommended use Condensate return line treatment
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, dermal	Category 3
	Acute toxicity, inhalation	Category 3
	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Reproductive toxicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word

Danger

Hazard statement

Flammable liquid and vapor. Toxic if inhaled. Toxic in contact with skin. Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation. Suspected of damaging fertility or the unborn child.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash hands thoroughly after handling. Avoid breathing mist/vapors/spray. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area.

Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use appropriate media for extinction.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	43% of the mixture consists of component(s) of unknown acute dermal toxicity.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
2-Diethylaminoethanol	100-37-8	40 - 60
Cyclohexylamine	108-91-8	20 - 40

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
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4. First-aid measures

Inhalation	Move to fresh air. If breathing stops, provide artificial respiration. Get medical attention immediately.
Skin contact	Take off contaminated clothing and wash before reuse. Wash off with soap and water. Get medical attention immediately.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention immediately.
Ingestion	If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting. If vomiting occurs naturally have victim lean forward to reduce risk of burns to mouth, throat and lungs. Call a physician or poison control center immediately.
Most important symptoms/effects, acute and delayed	Corrosive effects. May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause temporary blindness and severe eye damage.
Indication of immediate medical attention and special treatment needed	Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Corrosive liquid. Oxides of carbon and nitrogen evolved in fire.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
General fire hazards	Flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors and spray mists. Avoid contact with spilled material. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Remove sources of ignition. Ventilate the area. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Flush with plenty of water.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Prevent from entering sewers or the immediate environment. Accidental release of large quantities into the aquatic environment may harm aquatic organisms. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

7. Handling and storage**Precautions for safe handling**

Flammable. Avoid heat, sparks, open flames and other ignition sources. Adequate ventilation required especially during initial opening. Use only containers which are compatible with the substance. Bond containers during filling or discharge when performed at temperatures at or above the product flash point. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities

Keep away from all sources of ignition. Store in tightly closed original container in a dry, cool and well-ventilated place. Do not freeze. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
2-Diethylaminoethanol (CAS 100-37-8)	PEL	50 mg/m3 10 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Diethylaminoethanol (CAS 100-37-8)	TWA	2 ppm
Cyclohexylamine (CAS 108-91-8)	TWA	10 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2-Diethylaminoethanol (CAS 100-37-8)	TWA	50 mg/m3 10 ppm
Cyclohexylamine (CAS 108-91-8)	TWA	40 mg/m3 10 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines**US ACGIH Threshold Limit Values: Skin designation**

2-Diethylaminoethanol (CAS 100-37-8) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

2-Diethylaminoethanol (CAS 100-37-8) Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Bulk tanks should be vented externally.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Splash proof chemical goggles. Face shield.

Skin protection**Hand protection**

Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear suitable protective clothing. Chemical resistant apron. Wash off after each use. Replace as necessary.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Material name: STEAMATE® NA702

Version number: 2.1

9. Physical and chemical properties

Appearance

Color Light yellow

Physical state Liquid

Odor Amine

Odor threshold Not available.

pH (concentrated product) 12.6

Melting point/freezing point < -29 °F (< -34 °C)

Initial boiling point and boiling range Not available.

Flash point 117 °F (47 °C) SETA(CC)

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density (Air = 1)

Relative density 0.89

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 20 cps

Viscosity temperature 70 °F (21 °C)

Other information

Specific gravity 0.895

VOC 95 % (Calculated)

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Avoid heat, sparks, open flames and other ignition sources. Protect from freezing.

Incompatible materials Strong oxidizing substances. Contact with oxidizers may cause fire. Bases, alkalies (organic).

Hazardous decomposition products Oxides of carbon, nitrogen, and sulphur evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation Toxic by inhalation. Inhalation of vapors/mists/aerosols may cause eye, nose, throat and lung irritation.

Skin contact Toxic in contact with skin. Causes severe skin burns.

Eye contact Causes severe eye burns. Risk of serious damage to eyes.

Ingestion Harmful if swallowed. Ingestion may cause severe irritation of the mouth, the esophagus and the gastrointestinal tract.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms on skin may develop from redness and itching with development to burns due to corrosion. Symptoms on eyes may develop from tearing with development into severe irritation and/or burns due to corrosion. Permanent eye damage including blindness could result. Symptoms on ingestion may develop from discomfort with development into severe irritation and/or burns due to corrosion.

Information on toxicological effects

Acute toxicity Toxic in contact with skin. Toxic by inhalation. Harmful if swallowed.

Product	Species	Test Results
STEAMATE NA702 (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	497 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	7.89 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	348 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
2-Diethylaminoethanol (CAS 100-37-8)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Guinea Pig	885 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 4.5 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1300 mg/kg
Cyclohexylamine (CAS 108-91-8)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	277 mg/kg
<i>Oral</i>		
LD50	Rat	156 mg/kg

Skin corrosion/irritation Causes skin burns.

Serious eye damage/eye irritation Causes severe eye burns.

Respiratory or skin sensitization

Respiratory sensitization This product is not expected to cause respiratory sensitization.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity Not classified.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure May cause irritation to the respiratory system.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Based on available data, the classification criteria are not met.

Material name: STEAMATE* NA702

Version number: 2.1

Chronic effects

No evidence of potential chronic effects.

12. Ecological information**Ecotoxicity**

Product	Species	Test Results
STEAMATE NA702 (CAS Mixture)	LC50	Fathead Minnow
	NOEL	Fathead Minnow
Aquatic Crustacea	LC50	Daphnia magna
	NOEL	Daphnia magna

758 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)

500 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)

319 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)

125 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)

Bioaccumulative potential Not available.**Partition coefficient n-octanol / water (log Kow)**

2-Diethylaminoethanol 0.05

Cyclohexylamine 1.49

Bioconcentration factor (BCF)

2-Diethylaminoethanol < 6.1

Mobility in soil Not available.**Other adverse effects** Not available.**Persistence and degradability**- COD (mgO₂/g) 2386 (calculated data)- BOD 5 (mgO₂/g) 1 (calculated data)- BOD 28 (mgO₂/g) 329 (calculated data)

- Closed Bottle Test (%) 12 (calculated data)

Degradation in 28 days)

- Zahn-Wellens Test (%) 35 (calculated data)

Degradation in 28 days)

- TOC (mg C/g) 593 (calculated data)

13. Disposal considerations**Disposal instructions** Dispose of contents/container in accordance with local/regional/national/international regulations. Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.**Hazardous waste code** D001 = Ignitable; D002= Corrosive
The complete waste code should be assigned in discussion with the waste disposal company.**Waste from residues / unused products** Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.**14. Transport information****DOT****UN number** UN2734**UN proper shipping name** Amines, liquid, corrosive, flammable, n.o.s. (DIETHYLAMINOETHANOL (DEAE), CYCLOHEXYLAMINE)**Transport hazard class(es)****Class** 8**Subsidiary risk** 3**Packing group** II**Special precautions for user** Not available.**ERG number** 132

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

Material name: STEAMATE* NA702

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IATA

UN number UN2734
UN proper shipping name Amines, liquid, corrosive, flammable, n.o.s. (DIETHYLAMINOETHANOL (DEAE), CYCLOHEXYLAMINE)
Transport hazard class(es)
Class 8
Subsidiary risk 3
Packing group II
Environmental hazards No.
ERG Code 132
Special precautions for user Not available.
Some containers may not be approved under IATA, please check BOL for exact container classification.

IMDG

UN number UN2734
UN proper shipping name AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (DIETHYLAMINOETHANOL (DEAE), CYCLOHEXYLAMINE)
Transport hazard class(es)
Class 8
Subsidiary risk 3
Packing group II
Environmental hazards
Marine pollutant No.
EmS F-E, S-C
Special precautions for user Not available.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.
SARA 304 Emergency release notification
Cyclohexylamine (CAS 108-91-8) 10000 LBS
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - Yes
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Cyclohexylamine	108-91-8	10000	10000		

SARA 311/312 Hazardous chemical
 Yes

SARA 313 (TRI reporting)
 Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Cyclohexylamine (CAS 108-91-8)

Safe Drinking Water Act (SDWA)
 Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration ALL ingredients in this product are authorized in 21CFR173.310 for use as boiler water additives where the steam may contact food.

NSF Registered and/or meets USDA (according to 1998 guidelines):
 Registration No. – 146008
 Category Code(s):
 G5 Cooling and retort water treatment products
 G6 Boiler treatment products, steam line products – food contact

US state regulations**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

ACETALDEHYDE (CAS 75-07-0)	Listed: April 1, 1988
Aniline (CAS 62-53-3)	Listed: January 1, 1990

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

2-Diethylaminoethanol (CAS 100-37-8)
 Cyclohexylamine (CAS 108-91-8)

US - Pennsylvania RTK - Hazardous Substances

2-Diethylaminoethanol (CAS 100-37-8)	Listed.
Cyclohexylamine (CAS 108-91-8)	Listed.

US - Rhode Island RTK

2-Diethylaminoethanol (CAS 100-37-8)
 Cyclohexylamine (CAS 108-91-8)

US. New Jersey Worker and Community Right-to-Know Act

2-Diethylaminoethanol (CAS 100-37-8)	Listed.
Cyclohexylamine (CAS 108-91-8)	Listed.

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US. Pennsylvania Worker and Community Right-to-Know Law

2-Diethylaminoethanol (CAS 100-37-8)

Hazardous substance

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

16. Other information, including date of preparation or last revision

Issue date Sep-26-2014

Revision date Dec-16-2017

Version # 2.1

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
LD50: Lethal Dose, 50%
NFPA: National Fire Protection Association

References: No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information Transport Information: Material Transportation Information

Other information, including date of preparation or last revision: Prepared by

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

SODIUM HYPOCHLORITE

1. Identification

Product Identifier	SODIUM HYPOCHLORITE
Other means of identification	
L code	L1228
Recommended use	Field test reagent
Recommended restrictions	None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 2 Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.

Label elements



Signal word	Warning
Hazard statement	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
Precautionary statement	
Prevention	Wear eye/face protection. Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves.
Response	If on skin: Wash with plenty of water/. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor// if you feel unwell. Specific treatment (see on this label). If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Sodium hypochlorite	7681-52-9	1 - 2.5

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician immediately. Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray. Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p>
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage. Contains an oxidiser. Avoid all contact with reducing agents, oils, greases, organics and acids. Do not allow to dry.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Keep containers closed when not in use. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation. Do not freeze. Store in a cool, well-ventilated area, away from combustibles. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Sodium hypochlorite (CAS 7681-52-9)	STEL	2 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. Adequate ventilation to maintain air contaminants below exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection

Splash proof chemical goggles.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. neoprene gloves Wash off after each use. Replace as necessary.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece. If air-purifying respirator use is appropriate, use a respirator with acid gas cartridges and dust/mist prefilters. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color

Straw colored

Physical state

Liquid

Odor

Chlorine

Odor threshold

Not available.

pH (concentrated product)

9.5

Melting point/freezing point

Not available.

Initial boiling point and boiling range

Not available.

Flash point

> 200 °F (> 93 °C) P-M(CC)

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not available.

Material name: SODIUM HYPOCHLORITE

Version number: 3.1

Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	(Air = 1)
Relative density	Not available.
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Viscosity temperature	70 °F (21 °C)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials. None under normal conditions.
Incompatible materials	Strong oxidizing agents. Decomposes dry (175-245°C) or wet (24°C) with release of chlorine. Reacts with oxidizers. Friction, heat or other sources of ignition may cause a violent reaction releasing heat and toxic fumes. Contact with reducing agents or flammable/combustible material may cause fire or explosion.
Hazardous decomposition products	Chlorine. and Hydrogen chloride.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
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Product	Species	Test Results
SODIUM HYPOCHLORITE (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	> 5 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Sodium hypochlorite (CAS 7681-52-9)		
Acute		
Dermal		
LD50	Rabbit	> 20000 mg/kg
Inhalation		
LC50	Rat	> 5.25 mg/L, 4 Hour
Oral		
LD50	Rat	8900 mg/kg
* Estimates for product may be based on additional component data not shown.		
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not available.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Sodium hypochlorite (CAS 7681-52-9)	3 Not classifiable as to carcinogenicity to humans.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Not regulated.		
US. National Toxicology Program (NTP) Report on Carcinogens		
Not listed.		
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	May cause respiratory irritation.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not available.	
Chronic effects	Prolonged inhalation may be harmful.	
12. Ecological information		
Ecotoxicity	No ecotoxicity data noted for the ingredient(s).	
Bioaccumulative potential	No data available.	
Mobility in soil	No data available.	
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	
Persistence and degradability	No data is available on the degradability of this product.	
13. Disposal considerations		
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.	
Local disposal regulations	Dispose in accordance with all applicable regulations.	
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.	
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).	
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.	

14. Transport information

DOT

Not regulated as dangerous goods.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hypochlorite (CAS 7681-52-9) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

Material name: SODIUM HYPOCHLORITE

Version number: 3.1

US - Massachusetts RTK - Substance List

Sodium hypochlorite (CAS 7681-52-9)

US - Pennsylvania RTK - Hazardous Substances

Sodium hypochlorite (CAS 7681-52-9)

Listed.

US - Rhode Island RTK

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Sodium hypochlorite (CAS 7681-52-9)

Listed.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. Other information, including date of preparation or last revision**Issue date** Mar-16-2015**Revision date** Dec-24-2017**Version #** 3.1**List of abbreviations**

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
LD50: Lethal Dose, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code

References: No data available

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).



SAFETY DATA SHEET

SPECTRUS* NX1100

1. Identification

Product identifier	SPECTRUS NX1100
Other means of identification	None.
Recommended use	Biocide
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	May be corrosive to metals. Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation.
Precautionary statement	
Prevention	Wear eye/face protection. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. Wash hands thoroughly after handling. Keep only in original container. Do not breathe mist or vapor. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area.

Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
2-Bromo-2-nitropropane-1,3-diol (Bronopol)	52-51-7	2.5 - 10
Magnesium nitrate	10377-60-3	2.5 - 10
Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	55965-84-9	2.5 - 10
Magnesium chloride	7786-30-3	1 - 2.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
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4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Do not induce vomiting. Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed. Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In case of fire and/or explosion do not breathe fumes. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient.

Environmental precautions Avoid discharge into drains, water courses or onto the ground. Prevent from entering sewers or the immediate environment.

7. Handling and storage

Precautions for safe handling Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Corrosive liquid. Do not breathe vapors or spray mist.

Conditions for safe storage, including any incompatibilities Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep container tightly closed in a dry and well-ventilated place. Store at temperatures below 35°C. Use approved containers only. Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits No exposure limits noted for ingredient(s).

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Eye wash facilities and emergency shower must be available when handling this product. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Color	Colorless to yellow green
Physical state	Liquid

Odor None

Odor threshold Not available.

pH (concentrated product) 3

pH in aqueous solution 3.7 (5% SOL.)

Melting point/freezing point 24 °F (-4 °C)

Initial boiling point and boiling range 220 °F (104 °C)

Flash point Not applicable.

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 18 mm Hg

Vapor pressure temp. 70 °F (21 °C)

Vapor density < 1 (Air = 1)

Relative density 1.11

Relative density temperature 70 °F (21 °C)

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 10 cps

Viscosity temperature 70 °F (21 °C)

Other information

Percent volatile 0

Pour point 29 °F (-2 °C)

Specific gravity 1.107

10. Stability and reactivity

Reactivity May be corrosive to metals.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Contact with incompatible materials.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Hydrogen bromide, bromine gas, hydrogen chloride, chlorine gas, oxides of carbon and nitrogen evolved in fire. Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation Harmful if inhaled. May cause irritation to the respiratory system.

Skin contact Causes severe skin burns. May cause an allergic skin reaction.

Material name: SPECTRUS® NX1100

Version number: 10.0

Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity	Harmful if swallowed. Harmful if inhaled. May cause an allergic skin reaction. May cause respiratory irritation.
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Product	Species	Test Results
SPECTRUS NX1100 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 1 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1030 mg/kg
Components	Species	Test Results
2-Bromo-2-nitropropane-1,3-diol (Bronopol) (CAS 52-51-7)		
Acute		
<i>Dermal</i>		
LD50	Rat	1600 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 0.59 mg/l, 4 Hour, (Aerosol toxicity)
<i>Oral</i>		
LD50	Rat	324 mg/kg
Magnesium chloride (CAS 7786-30-3)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg
Magnesium nitrate (CAS 10377-60-3)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg
<i>Oral</i>		
LD50	Rat	5400 mg/kg
Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one (CAS 55965-84-9)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	90 mg/kg
<i>Inhalation</i>		
LC50	Rat	0.33 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	67 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin burns.
Serious eye damage/eye irritation	Corrosive to eyes. Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.

Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classified.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not listed	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met. Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
SPECTRUS NX1100 (CAS Mixture)			
	LC50	Ceriodaphnia	4.7 mg/l, Static Renewal Bioassay, 48 hour
		Fathead Minnow	3.5 mg/l, Static Renewal Bioassay, 96 hour
		Menidia beryllina (Silversides)	15.9 mg/l, Static Renewal Bioassay, 96 hour
		Mysid Shrimp	40.5 mg/l, Static Renewal Bioassay, 48 hour
		Sheepshead Minnow	26.7 mg/l, Static Renewal Bioassay, 96 hour
	NOEL	Ceriodaphnia	0.63 mg/l, Static Renewal Bioassay, 48 hour
		Fathead Minnow	1.8 mg/l, Static Renewal Bioassay, 96 hour
		Menidia beryllina (Silversides)	12.5 mg/l, Static Renewal Bioassay, 96 hour
		Mysid Shrimp	18 mg/l, Static Renewal Bioassay, 48 hour
		Sheepshead Minnow	15.5 mg/l, Static Renewal Bioassay, 96 hour
Aquatic			
Crustacea	LC50	Daphnia magna	5 mg/l, Static Renewal Bioassay, 48 hour
	NOEL	Daphnia magna	2.5 mg/l, Static Renewal Bioassay, 48 hour
Fish	LC50	Rainbow Trout	7.2 mg/l, Static Renewal Bioassay, 96 hour
	NOEL	Rainbow Trout	3.1 mg/l, Static Renewal Bioassay, 96 hour
Components		Species	Test Results
2-Bromo-2-nitropropane-1,3-diol (Bronopol) (CAS 52-51-7)			
Aquatic	EC50	Daphnia Magna	1.4 mg/l, 48 hour
	LC50	Rainbow Trout	41 mg/l, 96 hour

Bioaccumulative potential Not bioaccumulating (Refers to active component) 2-Bromo-2-nitropropane-1,3-diol

Partition coefficient n-octanol / water (log Kow)

Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one 0.486

Mobility in soil	No data available.
Other adverse effects	Nutrients: N = 8.03 mg/g
Persistence and degradability	
- COD (mgO2/g)	78 (calculated data)
- BOD 5 (mgO2/g)	2 (calculated data)
- BOD 28 (mgO2/g)	4 (calculated data)
- Closed Bottle Test (% Degradation in 28 days)	2 (calculated data)
- Zahn-Wellens Test (% Degradation in 28 days)	8 (calculated data)
- TOC (mg C/g)	29 (calculated data)

13. Disposal considerations

Disposal instructions	Dispose of in approved pesticide facility or according to label instructions. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. Incinerate the material under controlled conditions in an approved incinerator.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company. D002= Corrosive
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Dispose of in approved pesticide facility or according to label instructions. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	153
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	

IATA

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	Yes
ERG Code	153
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN3265
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One), MARINE POLLUTANT
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II

Environmental hazards

Marine pollutant

Yes

EmS

F-A, S-B

Special precautions for user

Read safety instructions, SDS and emergency procedures before handling.

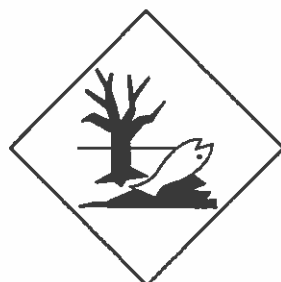
DOT



IATA; IMDG



Marine pollutant



15. Regulatory information

US federal regulations

This is an EPA registered biocide and is exempt from TSCA inventory requirements. See FIFRA registry number. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

Material name: SPECTRUS® NX1100

Version number: 100

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Magnesium nitrate	10377-60-3	2.5 - 10

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA)
Section 112(r) (40 CFR 68.130)

Hazardous substance

Safe Drinking Water Act
(SDWA)

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

FIFRA registration number 3876-151

TSCA This is an EPA registered biocide and is exempt from TSCA inventory requirements.

FIFRA hazard statement This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER
 Corrosive
 Causes irreversible eye damage
 Causes skin burns
 Harmful if swallowed or absorbed through the skin
 Harmful if inhaled
 Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals
 This pesticide is toxic to fish and aquatic organisms

Food and drug administration 21 CFR 176.300 & 176.170 (slimicides and as a preservative)

NSF Registered and/or meets Registration No. - 141064

USDA (according to 1998 Category Code(s):
guidelines): G5 Cooling and retort water treatment products
 G7 Boiler, steam line treatment products - nonfood contact

US state regulations**US - Massachusetts RTK - Substance List**

Magnesium nitrate (CAS 10377-60-3)

US - Pennsylvania RTK - Hazardous Substances

Magnesium nitrate (CAS 10377-60-3)

US - Rhode Island RTK

Magnesium nitrate (CAS 10377-60-3)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Magnesium chloride (CAS 7786-30-3)

Magnesium nitrate (CAS 10377-60-3)

US. New Jersey Worker and Community Right-to-Know Act

Magnesium nitrate (CAS 10377-60-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Magnesium nitrate (CAS 10377-60-3)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance
Sulphuric acid (CAS 7664-93-9) Listed: March 14, 2003
US - California Proposition 65 - CRT: Listed date/Developmental toxin
No ingredient listed.
US - California Proposition 65 - CRT: Listed date/Female reproductive toxin
No ingredient listed.
US - California Proposition 65 - CRT: Listed date/Male reproductive toxin
No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Jul-03-2014
Revision date Dec-19-2016
Version # 10.0
List of abbreviations CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
EC50: Effect Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
References: CNS 15030
UN Transportation Regulations Safety data sheets of raw materials.
Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Revision information This document has undergone significant changes and should be reviewed in its entirety.
Prepared by This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).
* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

SOLUS AP24

1. Identification

Product identifier	SOLUS AP24
Other means of identification	None.
Recommended use	Internal boiler water treatment
Recommended restrictions	None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.

Label elements

Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Wash thoroughly after handling.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container to an approved facility.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin contact	Wash thoroughly with soap and water. Remove contaminated clothing. Wash clothing separately before reuse. Get medical attention if irritation develops and persists.

Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Do not feed anything by mouth to an unconscious or convulsive victim. Do NOT induce vomiting!
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.
7. Handling and storage	
Precautions for safe handling	Avoid prolonged exposure.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
8. Exposure controls/personal protection	
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Not available.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear suitable protective clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Color Yellow to amber

Physical state Liquid

Odor Slight ammonia

Odor threshold Not available.

pH (concentrated product) 12.3

pH in aqueous solution 11 (5% SOL.)

Melting point/freezing point 28 °F (-2 °C)

Initial boiling point and boiling range 220 °F (104 °C)

Flash point Not applicable.

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 18 mm Hg

Vapor pressure temp. 70 °F (21 °C)

Vapor density < 1 (Air = 1)

Relative density 1.09

Relative density temperature 70 °F (21 °C)

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 22 cps

Viscosity temperature 70 °F (21 °C)

Other information

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

Pour point 33 °F (1 °C)

Specific gravity 1.087

VOC 0 % (Estimated)

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Contact with incompatible materials.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Oxides of carbon, nitrogen, phosphorus, and sulphur evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to respiratory organs.
Skin contact	Prolonged or repeated contact may cause irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause slight gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
SOLUS AP24 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization This product is not expected to cause respiratory sensitization.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Based on available data, the classification criteria are not met.

12. Ecological information

Ecotoxicity

Product	Species	Test Results
SOLUS AP24 (CAS Mixture)		
LC50	Fathead Minnow	> 5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)

Product		Species	Test Results
	NOEL	Fathead Minnow	5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)
Aquatic Crustacea	LC50	Daphnia magna	3674 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	2500 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)
Fish	LC50	Rainbow Trout	> 5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)
	NOEL	Rainbow Trout	5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)

Bioaccumulative potential

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration ALL ingredients in this product are authorized in 21CFR173.310 for use as boiler water additives where the steam may contact food.
The maximum level of Solus AP24 permitted in the boiler water where steam contacts food is 625 ppm.

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 152247
Category Code(s):
G5 Cooling and retort water treatment products G6 Boiler treatment products, steam line products – food contact

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date Jan-20-2015
Revision date Dec-19-2017
Version # 6.1

Material name: SOLUS AP24
Version number: 6.1

List of abbreviations

CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
LD50: Lethal Dose, 50%
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References:

No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information

Hazard(s) identification: Supplemental information
Physical & Chemical Properties: Multiple Properties
Toxicological information: Acute toxicity
Other information, including date of preparation or last revision: Prepared by

Prepared by

This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).



SAFETY DATA SHEET

GENGARD* GN8203

1. Identification

Product identifier	GENGARD GN8203
Other means of identification	None.
Recommended use	Corrosion inhibitor
Recommended restrictions	None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.
Precautionary statement	
Prevention	Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Sodium hydroxide	1310-73-2	2.5 - 10
Chlorotolyltriazole sodium salt	202420-04-0	1 - 2.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.
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7. Handling and storage

Precautions for safe handling	Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage. Take precautions to minimize foaming.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation. Do not freeze. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles. Face shield.
Skin protection	
Hand protection	Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color	Amber to dark brown
Physical state	Liquid
Odor	Slight ammonia
Odor threshold	Not available.
pH (concentrated product)	13.5
pH in aqueous solution	12.3 (5% SOL.)

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Melting point/freezing point	19 °F (-7 °C)
Initial boiling point and boiling range	212 °F (100 °C)
Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.2
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	35 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Pour point	24 °F (-4 °C)
Specific gravity	1.197
VOC	0 % (Estimated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. None under normal conditions.
Incompatible materials	Strong acids. Strong oxidizing agents.
Hazardous decomposition products	Hydrogen chloride, oxides of carbon and nitrogen evolved in fire.

11. Toxicological information

Information on likely routes of exposure	
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Information on toxicological effects	
Acute toxicity	May cause respiratory irritation.

Product	Species	Test Results
GENGARD GN8203 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Components	Species	Test Results
Chlorotolyltriazole sodium salt (CAS 202420-04-0)		
Acute		
Dermal		
LD50	Rat	> 5000 mg/kg
Oral		
LD50	Rat	3100 mg/kg
Sodium hydroxide (CAS 1310-73-2)		
Acute		
Dermal		
LD50	Rabbit	1350 mg/kg
Oral		
LD50	Rabbit	> 500 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity			
Product	Species	Test Results	
GENGARD GN8203 (CAS Mixture)			
LC50	Fathead Minnow	276 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)	
	Menidia beryllina (Silversides)	400 mg/L, Estimated Acute Toxicity, 96 hour, (Similar Product)	

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Product		Species	Test Results
		Mysid Shrimp	300 mg/L, Estimated Acute Toxicity, 96 hour, (Similar Product)
	NOEL	Fathead Minnow	125 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
Aquatic Crustacea	LC50	Daphnia magna	911 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	500 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
Fish	LC50	Rainbow Trout	273 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Rainbow Trout	200 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)

Components		Species	Test Results
Chlorotolyltriazole sodium salt (CAS 202420-04-0)			
Aquatic			
Algae	EbC50	Algae	6.84 mg/l
	ErC50	Algae	18.6 mg/l
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Other adverse effects	Not available.		
Persistence and degradability	No data is available on the degradability of this product.		
- COD (mgO2/g)	275 (calculated data)		
- BOD 5 (mgO2/g)	21 (calculated data)		
- BOD 28 (mgO2/g)	43 (calculated data)		
- Closed Bottle Test (% Degradation in 28 days)	14 (calculated data)		
- TOC (mg C/g)	86 (calculated data)		

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	
UN number	UN1760
UN proper shipping name	Corrosive liquids, n.o.s. (CHLOROTOLYLTRIAZOLE SODIUM SALT, Sodium hydroxide), RQ(Sodium hydroxide)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II

Material name: GENGARD® GN8203
Version number: 4.2

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ERG number 154

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number UN1760

UN proper shipping name Corrosive liquid, n.o.s. (CHLOROTOLYLTRIAZOLE SODIUM SALT, Sodium hydroxide)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards No.

ERG Code 154

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1760

UN proper shipping name CORROSIVE LIQUID, N.O.S. (CHLOROTOLYLTRIAZOLE SODIUM SALT, Sodium hydroxide), RQ(Sodium hydroxide)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards

Marine pollutant No.

EmS F-A, S-B

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Material name: GENGARD® GN8203

Version number: 4.2

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130) Hazardous substance

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 148465
Category Code(s):
G5 Cooling and retort water treatment products G7 Boiler, steam line treatment products – nonfood contact

US state regulations**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

US - Pennsylvania RTK - Hazardous Substances

Sodium hydroxide (CAS 1310-73-2) Listed.

US - Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide (CAS 1310-73-2) Listed.

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date Nov-02-2014

Revision date Dec-20-2017

Version # 4.2

Material name: GENGARD® GN8203

Version number: 4.2

List of abbreviations

CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References:

No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information

Physical & Chemical Properties: Multiple Properties

Prepared by

This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.

SAFETY DATA SHEET

FLOGARD* POT6101

1. Identification

Product identifier FLOGARD POT6101
Other means of identification None.
Recommended use Corrosion inhibitor
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Harmful if swallowed. May be corrosive to metals. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Keep only in original container. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear protective gloves.

Response IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Absorb spillage to prevent material-damage.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Phosphoric Acid	7664-38-2	20 - 40
Zinc sulphate	7733-02-0	10 - 20

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch or walk through spilled material. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Prevent entry into waterways, sewer, basements or confined areas. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Environmental precautions Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Acidic. Do not mix with alkaline material. Corrosive to metal. Do not get this material in contact with eyes. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in original tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	PEL	1 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Eye wash fountain and emergency showers are recommended. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color Colorless

Physical state Liquid

Odor None

Odor threshold Not available.

pH (concentrated product) 1.4

Melting point/freezing point -13 °F (-25 °C)

Initial boiling point and boiling range 220 °F (104 °C)

Flash point Not applicable.

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Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.4
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	10 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Pour point	-18 °F (-28 °C)
Specific gravity	1.398
VOC	0 % (Calculated)

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with metals may release flammable hydrogen gas. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Metals.
Hazardous decomposition products	Oxides of sulphur evolved in fire. Oxides of phosphorus evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	Harmful if swallowed. May cause respiratory irritation.
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Product	Species	Test Results
FLOGARD POT6101 (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	1136 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Phosphoric Acid (CAS 7664-38-2)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	2740 mg/kg
<i>Oral</i>		
LD50	Rat	300 mg/kg
Zinc sulphate (CAS 7733-02-0)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	1710 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classified.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity			
Product		Species	Test Results
FLOGARD POT6101 (CAS Mixture)			
LC50		Fathead Minnow	16 mg/L, Acute Toxicity, 96 hour, (Estimated)
NOEL		Fathead Minnow	6.3 mg/L, Acute Toxicity, 96 hour, (Estimated)

Material name: FLOGARD* POT6101

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Product	Species		Test Results
Aquatic Crustacea	LC50	Daphnia magna	3.8 mg/L, Static Acute Bioassay, 48 hour
	NOEL	Daphnia magna	3.2 mg/L, Static Acute Bioassay, 48 hour
Fish	LC50	Rainbow Trout	21.3 mg/L, Static Acute Bioassay, 96 hour
	NOEL	Rainbow Trout	15.5 mg/L, Static Acute Bioassay, 96 hour

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

No data available

- COD (mgO₂/g) No information available.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D002: Waste Corrosive material [pH ≤2 or ≥12.5, or corrosive to steel]
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN3264

UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (PHOSPHORIC ACID, ZINC SULFATE), RQ

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ERG number 154

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number UN3264

UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (PHOSPHORIC ACID, ZINC SULFATE)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards Yes

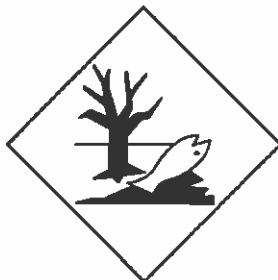
ERG Code 154

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN3264

UN proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (PHOSPHORIC ACID, ZINC SULFATE), RQ, MARINE POLLUTANT

Transport hazard class(es)**Class** 8**Subsidiary risk** -**Packing group** II**Environmental hazards****Marine pollutant** Yes**EmS** F-A, S-B**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**DOT****IATA; IMDG****Marine pollutant****General information**

IMDG Regulated Marine Pollutant.

15. Regulatory information**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Phosphoric Acid (CAS 7664-38-2)

Listed.

Zinc sulphate (CAS 7733-02-0)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Zinc sulphate	7733-02-0	10 - 20

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration The ingredients in this product are Generally Recognized As Safe by FDA for direct addition to human food.

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 140825
Category Code(s):
G5 Cooling and retort water treatment products
G7 Boiler, steam line treatment products – nonfood contact

US state regulations**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Phosphoric Acid (CAS 7664-38-2)

Zinc sulphate (CAS 7733-02-0)

US - Pennsylvania RTK - Hazardous Substances

Phosphoric Acid (CAS 7664-38-2)

Listed.

Zinc sulphate (CAS 7733-02-0)

Listed.

US - Rhode Island RTK

Phosphoric Acid (CAS 7664-38-2)

US. New Jersey Worker and Community Right-to-Know Act

Phosphoric Acid (CAS 7664-38-2)

Listed.

Zinc sulphate (CAS 7733-02-0)

Listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Zinc sulphate (CAS 7733-02-0)

LISTED

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date	Nov-01-2014
Revision date	Dec-16-2017
Version #	1.1
List of abbreviations	CAS: Chemical Abstract Service Registration Number TWA: Time Weighted Average STEL: Short Term Exposure Limit LD50: Lethal Dose, 50% LC50: Lethal Concentration, 50% NOEL: No Observed Effect Level COD: Chemical Oxygen Demand BOD: Biochemical Oxygen Demand TOC: Total Organic Carbon IATA: International Air Transport Association IMDG: International Maritime Dangerous Goods Code ACGIH: American Conference of Governmental Industrial Hygienists TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
References:	No data available
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Revision information	Physical & Chemical Properties: Multiple Properties
Prepared by	This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).
* Trademark of SUEZ. May be registered in one or more countries.	

Attachment 13: Laboratory Information

Attachment 13 – Laboratory Information

Most constituents were analyzed by Enthalpy Analytical, located at 2525 West Bellfort, Suite 175, Houston, TX 77054. The contact at Enthalpy is Laura L. Graber, Client Services/Technical Director, 1-713-666-4674, laura.graber@enthalpy.com.

Because of short hold times that could not be met by a third-party lab, DSM's inhouse lab analyzed for dissolved oxygen, total residual chlorine, pH, and temperature. The contact at DSM is Trampas Welch, trampas.welch@dsm-firmenich.com.

Enthalpy contracted A&B Labs at 10100 East Freeway, Suite 100, Houston, TX 77029 to run the analytical tests listed below. The contact at A&B is Senthilkumar Sevukan, VP of Operations, 1-713-453-6060.

- Total Kjeldahl Nitrogen (TKN), EPA Method 351.2
- Volatile and semi-volatile organics, EPA 625.1
- Nonylphenol, ASTM D7065-11
- Mercury, EPA 1631E

Attachment 1: Core Data Form



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.)		
<input type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input checked="" type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)		<input type="checkbox"/> 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 602496499		RN 101190221

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)		8/1/2024	
<input type="checkbox"/> New Customer <input checked="" type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership					
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)					
<i>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).</i>					
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)				<i>If new Customer, enter previous Customer below:</i>	
DSM Nutritional Products, LLC					
7. TX SOS/CPA Filing Number		8. TX State Tax ID (11 digits)		9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
800189929		12740851444		274085144	2191211
11. Type of Customer:		<input checked="" type="checkbox"/> Corporation		<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Other:	
12. Number of Employees				13. Independently Owned and Operated?	
<input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input checked="" type="checkbox"/> 501 and higher				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following					
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Owner & Operator <input type="checkbox"/> Other:					
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant					
15. Mailing Address:					
1000 County Road 227A					
City	Freeport	State	TX	ZIP	77541
ZIP + 4					
16. Country Mailing Information (if outside USA)			17. E-Mail Address (if applicable)		
18. Telephone Number		19. Extension or Code		20. Fax Number (if applicable)	

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If 'New Regulated Entity' is selected, a new permit application is also required.)								
<input type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input checked="" type="checkbox"/> Update to Regulated Entity Information								
<i>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).</i>								
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)								
DSM Nutritional Products								
23. Street Address of the Regulated Entity: (No PO Boxes)	1000 County Road 227A							
	City	Freeport	State	TX	ZIP	77541	ZIP + 4	
24. County								

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

25. Description to Physical Location:										
26. Nearest City						State			Nearest ZIP Code	
<i>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).</i>										
27. Latitude (N) In Decimal:						28. Longitude (W) In Decimal:				
Degrees	Minutes		Seconds		Degrees	Minutes		Seconds		
29	0		44.136 N		95	22		9.192 W		
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)				
2833				325411						
33. What is the Primary Business of this entity? (Do not repeat the SIC or NAICS description.)										
Manufacture of beta carotene										
34. Mailing Address:	1000 County Road 227A									
	City	Freeport	State	TX	ZIP	77541	ZIP + 4			
35. E-Mail Address:										
36. Telephone Number			37. Extension or Code			38. Fax Number (if applicable)				
(979) 373-5000						() -				

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.

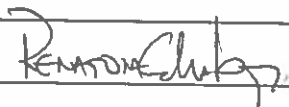
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input checked="" type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:
	WQ0002216000			

SECTION IV: Preparer Information

40. Name:	Karen Miller			41. Title:	Senior Engineer
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address		
(512) 468-7325		() -	kmiller@green-envi.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:	DSM Nutritional Products, LLC		Job Title:	Site Manager	
Name (In Print):	Renato S Lopes			Phone:	(843) 356- 7943
Signature:				Date:	08/14/2024

Attachment 6: FIRM

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Texas State Plane South Central Zone (FIPS zone 4204). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to North American **Vertical Datum** of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSM-C, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was derived from multiple sources. Base map files were provided in digital format by Texas Natural Resources Information Systems (TNIRIS) StratMap, National Oceanic and Atmospheric Administration (NOAA), National Geodetic Survey (NGS), Velasco Drainage District, and the Brazoria County Appraisal District.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

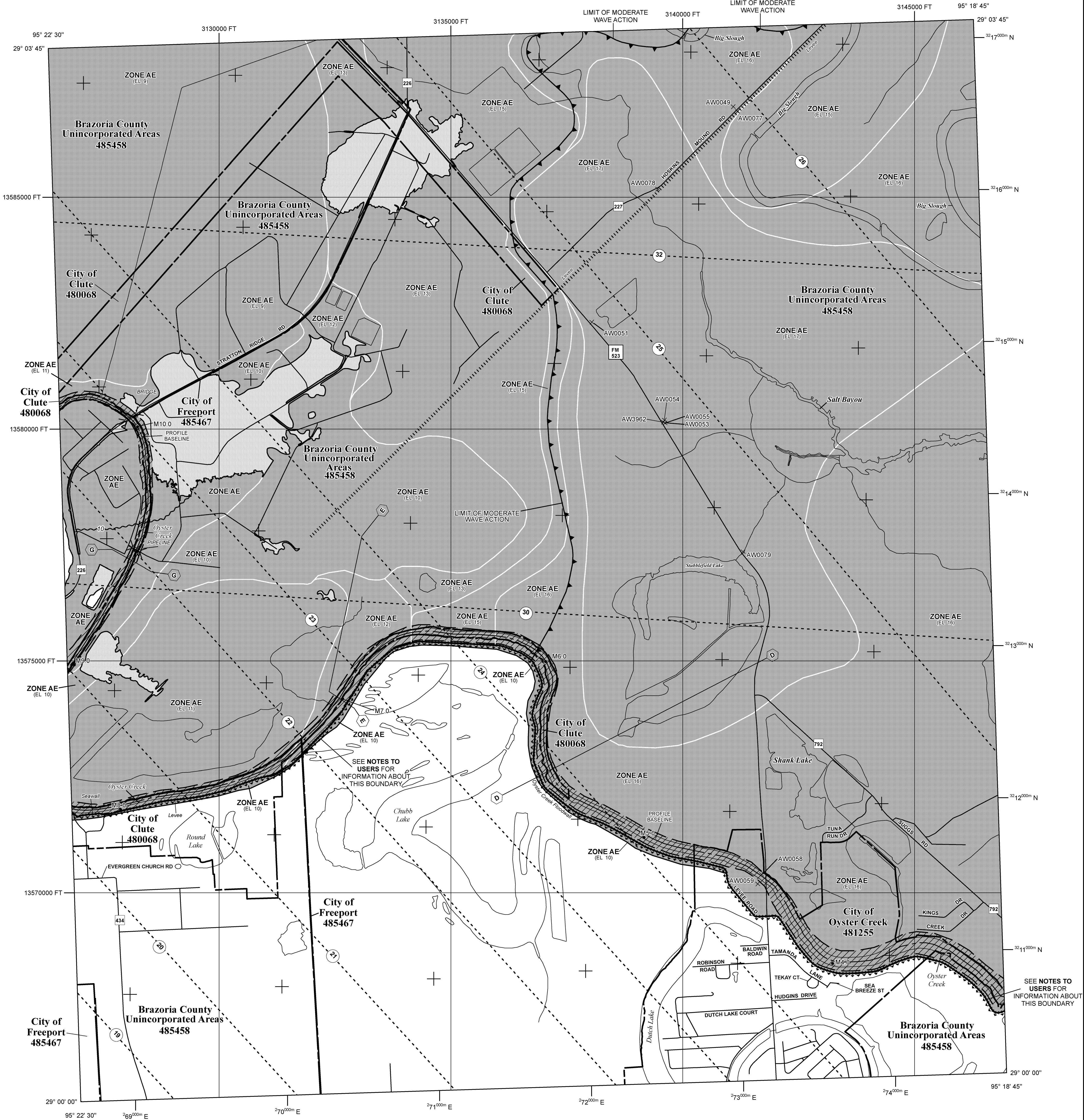
For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the Flood Mapping and Insurance eXchange (FMIX) at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <https://www.fema.gov/business/nfip>.

LIMIT OF MODERATE WAVE ACTION: The AE Zone category has been divided by a **Limit of Moderate Wave Action (LIMWA)**. The LIMWA represents the approximate landward limit of the 1.5-foot breaking wave. Base flood conditions between the VE Zone and the LIMWA will be similar to, but less severe than those in the VE Zone.

ATTENTION: The levee, dike, or other structure that impacts flood hazard areas inside this boundary has not been shown to comply with Section 65.10 of the NFIP Regulations. As such, this FIRM panel will be revised at a later date to update the flood hazard information associated with this structure.

The flood hazard data inside the boundary on the FIRM panel has been republished from the previous effective (historic) FIRM for this area, after being converted from NGVD 29 to NAVD 88.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

- OTHER FLOOD AREAS**
 - ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
 - ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
 - ZONE D** Areas in which flood hazards are undetermined, but possible.

- Floodplain boundary**
- Floodway boundary**
- Zone D boundary**
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.**
- Limit of Moderate Wave Action**
- Base Flood Elevation line and value; elevation in feet***
- Base Flood Elevation value where uniform within zone; elevation in feet***

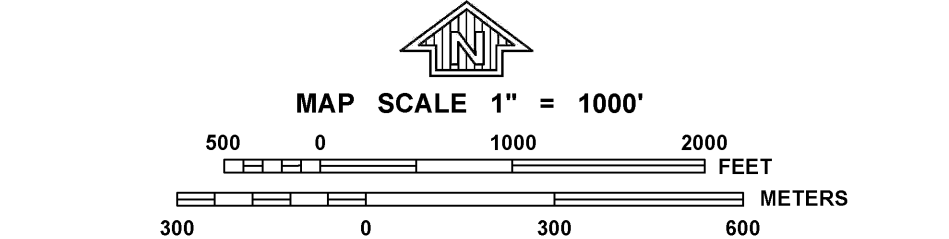
- * Referenced to the North American Vertical Datum of 1988**
- Cross section line**
- Transect line**
- Culvert, Flume, Penstock or Aqueduct**
- Road or Railroad Bridge**
- Footbridge**
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere**
- 1000-meter Universal Transverse Mercator grid values, zone 15N**

- 600000 FT** 5000-foot grid values: Texas State Plane coordinate system, South Central zone (FIPS ZONE 4204), Lambert Conformal Conic projection
- DX5510 x** Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5** River Mile

- MAP REPOSITORIES**
Refer to Map Repositories list on Map Index.
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP PANEL**
JUNE 5, 1989
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**
MAY 4, 1992
NOVEMBER 17, 1993
SEPTEMBER 22, 1999
DECEMBER 30, 2020

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.



NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0640K
FIRM
FLOOD INSURANCE RATE MAP
BRAZORIA COUNTY, TEXAS
AND INCORPORATED AREAS
PANEL 640 OF 925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BRAZORIA COUNTY	485458	0640	K
CLUTE, CITY OF	480068	0640	K
FREEPORT, CITY OF	485467	0640	K
OYSTER CREEK, CITY OF	481255	0640	K

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
48039C0640K
MAP REVISED
DECEMBER 30, 2020
Federal Emergency Management Agency

Attachment 7: Treatment Process Descriptions

The wastewater treatment system consists of an influent feed tank, a pH adjustment tank, and equalization/aeration first stage basin, second -stage aeration basin, flocculator clarifier, final neutralization tanks, thickener, and filter press. Each of these units and the associated flows are described below.

Tank T-9001 – Tank T-9001 is a 2,430-gallon horizontal steel tank and is the first unit in the wastewater treatment system to receive wastewater from the process unit. This tank primarily discharges to Tank T-9114 but is also equipped with an overflow that exits the top of the tank and deposits wastewater to the adjacent A-9000 (aka T-9000) process sump.

Tank T-9114 – Tank T-9114 is a 64,722-gallon steel vertical tank that receives wastewater from T-9001. Wastewater from this tank flows to T-8000, the influent tank, located in the wastewater treatment area.

Process Sump A-9000 – The process sump is known as both A-9000 and T-9000. This is an inground, rectangular, concrete structure that receives overflows from T-9001 and liquids, primarily condensate and washwater that collects in the process trench. It also receives stormwater drainage from the roof of the process structure. When pumps in the sump are inactive, the process sump equalizes with the two tank farm sumps, which in turn equalize with the DCL.

Deluge Containment Lagoon (DCL) – The DCL is a 2.3 million gallon surface impoundment with in-situ clay construction. It was designed to receive flow from the deluge of fires, but it also receives spill residues and is used to temporarily store wastewater, especially when the wastewater treatment plant is in recycle mode.

Influent Feed Tank - Tank T-8000 receives all of the process water, utility water, and contaminated stormwater. The function of this tank is to separate the oil and scum present in the incoming wastewater streams by decreasing the pH. Its dimensions are 10' x 6' x 6.5' SWD (side water depth) which provides a volume of 2,500 gallons. The tank is equipped with a lever-operated scum skimmer and a ½ HP mixer.

pH Adjustment Tank - Tank T-8001 is used to neutralize the low pH of the wastewater coming from the influent feed tank. The dimensions are 6' x 6' x 4.5' SWD and the volume is approximately 1,200 gallons. Mixing is provided by a ½ HP mixer. Although it is not normal procedure, this tank also has the ability to receive return biosolids from the clarifier.

Backwash Water Tank - The main purpose of the backwash water tank is to hold the water from the filter backwash at the water treatment plant. The backwash water is pumped from the holding tank to the wastewater treatment system at a controlled rate in order to prevent hydraulic shock loads to the biological system. The dimensions are 16' diameter by 12' SWD and a volume of 18,000 gallons. The contents are mixed with a 3 HP mixer.

Equalization/ Aeration Basin - Flow from the pH adjustment tank is routed to T-8002, the first stage equalization/aeration activated sludge tank. If required it can also receive process wastewater, contaminated stormwater, return activated biosolids, and effluent recycle from the final neutralization tank. The equalization tank has a 300,000-gallon capacity and with overall inside dimensions of 90' x 90' at the top and 34' x 34' at the bottom and 12' SWD. The tank is equipped

with four mechanical subsurface aerators.

Aeration Basin - Flow from T-8002 is routed to the aeration basin T-8005 via a transfer pump station. The activated sludge process takes place in this unit. The basin has side slopes of 2:1, top dimensions of 98' x 98', bottom dimensions of 40' x 40' and 12' SWD. The basin is equipped with four mechanical aerators.

Flocculator Clarifier - Flow from T-8002 is routed to this unit next. The dimensions of T-8007, the flocculator clarifier, are 35' diameter by 12' SWD for a volume of 86,400 gallons. This unit separates the activated sludge solids from the aeration basin effluent. Settled solids are continuously removed from the bottom of the tank and pumped back to the two aeration basins to maintain the proper solids concentrations for biological treatment.

Excess biosolids are pumped to the biosolids holding tank for thickening and then to the belt filter press for dewatering.

Neutralization Tank - Flow from the flocculator clarifier enters the neutralization tank, T-8008, for pH adjustment. The tank is 10' x 5' x 7' SWD and has a volume of 2,600 gallons. A ½ HP mixer is provided. The neutralization tank also receives the treated sanitary effluent from the package plant and recycles from the effluent tank. Although it is not normal procedure, the tank can also receive cooling tower/boiler blowdown and dealkylizer water. The tank contents overflow to the effluent tank.

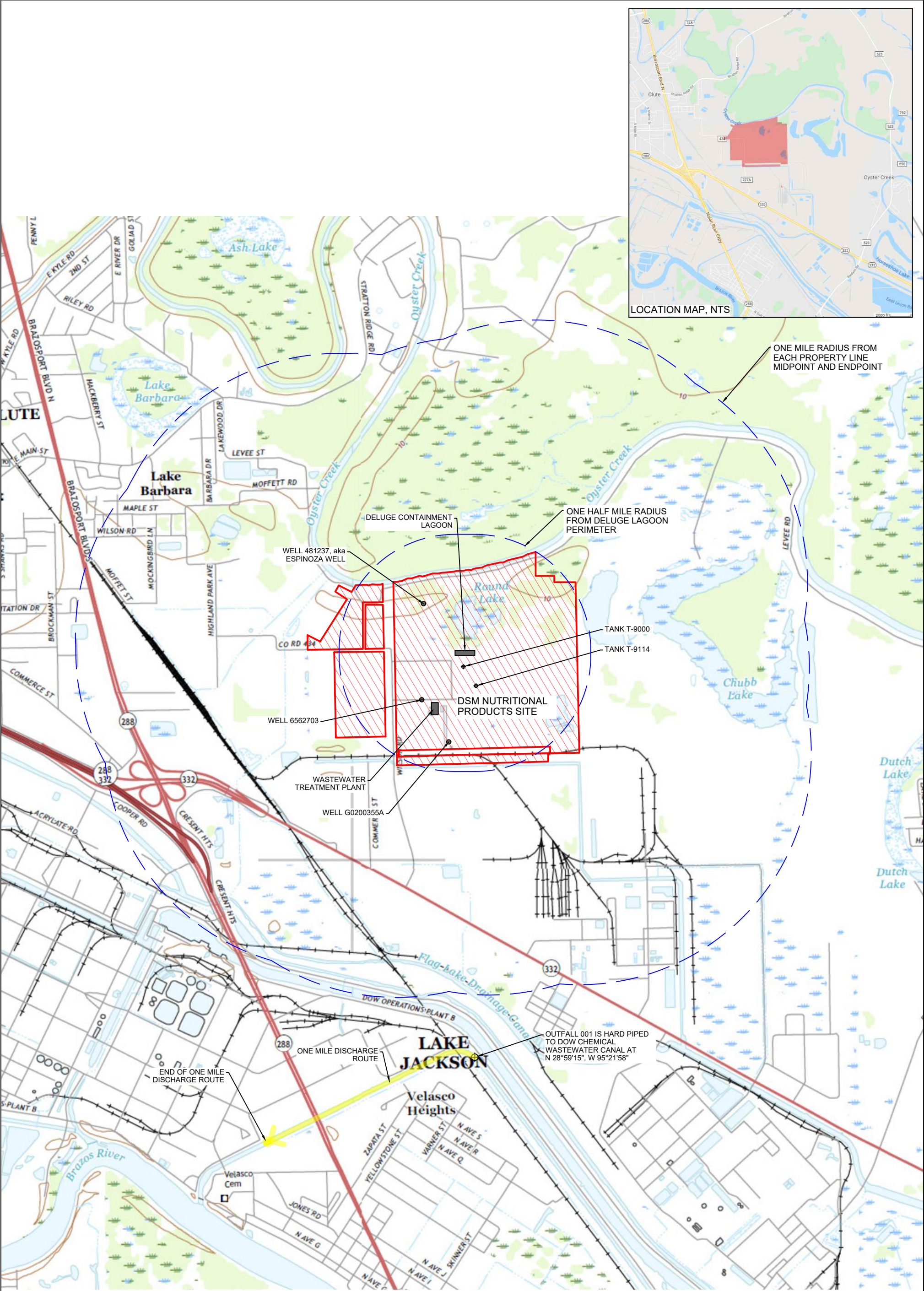
Effluent Tank - The main purpose of this tank, T-8012, is to hold the treated wastewater to verify if the quality specified in the discharge permit has been achieved throughout the treatment processes before being pumped to the Dow Canal. Also, the effluent tank provides a reservoir for the belt press filter press washwater. The tank is 10' x 5' x 7' SWD providing a volume of 2,600 gallons.

Gravity Thickener/Biosolids Holding Tank - This tank, T-8014, receives the waste activated biosolids from the flocculator clarifier for concentrations by gravity settling and provides digestion prior to biosolids dewatering. This tank is 20' in diameter by 14' SWD and has a volume of 28,200 gallons. The biosolids are pumped out through the bottom to the tank to the belt filter press. The supernatant is pumped out from the top of the tank back to the aeration basins or influent feed tank.

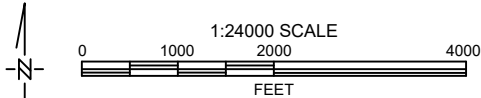
Belt Filter Press - This is an Ashbrook-Simon-Hartley unit. Biosolids from the biosolids holding tank are pumped to the belt filter press for dewatering. The cake from the belt press is collected by the biosolids conveyor and then sent to the roll-off box for disposal.

Sanitary Package WWTP - The sanitary package wastewater treatment plant has a capacity of 10,000 gallons per day, and can handle up to 200 plant employees per day. Effluent from this package unit enters the wastewater treatment system at T-8012.


Attachment 9: USGS Map Showing Nearby Water Wells



SOURCE: USGS 7.5' TOPO COMPOSITE OF LAKE JACKSON, OYSTER CREEK
FREEPORT AND JONES CREEK QUADRANGLES 2016



DOCUMENT TITLE:
Attachment 9
Water Wells Located within 1/2 Mile
DSM Nutritional Products
1000 County Road 227A
Freeport, TX 77541

 GREEN ENVIRONMENTAL CONSULTING, INC.	
DRAWING NUMBER: DSM_USGS_061924	DATE: 6/19/24
DRAWN BY: DHM	REVISION #: REVISION DATE:

Attachment 10: Water Well Reports

Prepared for:
GREEN ENVIRONMENTAL CONSULTING, INC.-Austin
2902 Clarice Ct.
Austin, TX 78757



Water Well Report

DSM

1000 County Rd 227A

Freeport, TX

Brazoria County

PO #: DSM TPDES permit renewal

ES-144152

Wednesday, June 12, 2024

Table of Contents



Geographic Summary	3
Water Well Dataset Summary	4
Summary Map - 0.5 Mile Radius	5
Topographic Overlay Map - 0.5 Mile Radius	6
Current Imagery Overlay Map - 0.5 Mile Radius	7
Zip Code Map - 0.5 Mile Radius	8
Water Well Summary	9
Water Well Details	10
Dataset Descriptions	18
Disclaimer	19

Geographic Summary



Location

Brazoria County, TX

Coordinates

Lat/Long in Degrees Minutes Seconds 29° 0' 46.46", -95° 22' 1.89"

Lat/Long in Decimal Degrees 29.012906, -95.367192

X/Y in NAD83 / UTM Zone 15N 269429.317897203, 3211726.44202282

Elevation

Subject Property lies 5.91 feet above sea level.

Zip Codes Searched

Search Distance	Zip Codes
-----------------	-----------

Subject Property	77541
------------------	-------

0.5 miles	77541
-----------	-------

Topos Searched

Search Distance	Topo Name
-----------------	-----------

Subject Property	Oyster Creek (1974)
------------------	---------------------

0.5 miles	Oyster Creek (1974), Lake Jackson (1974)
-----------	--

Water Well Summary



Datasets Searched	Distance	Total
US Water Well (WW)	0.5	0
TX Groundwater Supply (GWS)	0.5	1
TX Harris/Galveston Subsidence District (HGSD)	0.5	0
TX Historical Waterwell (HIST)	0.5	0
TX Public Water Supply (PWS)	0.5	1
TX Submitted Drillers Report (SDR)	0.5	1
Total Wells Found		3

Summary Map - 0.5 Mile Radius



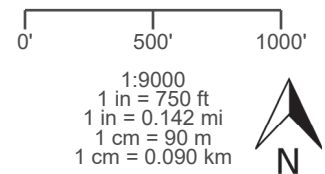
© MapTiler © OpenStreetMap contributors

DSM

● Single Water Well ● Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

- ★ Subject Site
- Search Buffer
- Texas Quad Index



NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Topographic Overlay Map - 0.5 Mile Radius



Basemap courtesy of U.S. Geological Survey

DSM

● Single Water Well ● Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

★ Subject Site
□ Search Buffer

Subject Property Quad Name(s)
See Geographic Summary

0' 500' 1000'

1:9000
1 in = 750 ft
1 in = 0.142 mi
1 cm = 90 m
1 cm = 0.090 km



NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Current Imagery Overlay Map - 0.5 Mile Radius



DSM

● Single Water Well ● Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

★ Subject Site
□ Search Buffer

0' 500' 1000'

1:9000
1 in = 750 ft
1 in = 0.142 mi
1 cm = 90 m
1 cm = 0.090 km



NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Zip Code Map - 0.5 Mile Radius



DSM

● Single Water Well ● Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

- ★ Subject Site
- Search Buffer
- Zip Code Boundary

0' 500' 1000'

1:9000
1 in = 750 ft
1 in = 0.142 mi
1 cm = 90 m
1 cm = 0.090 km



NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Water Well Summary



Map ID	Source ID	Dataset	Owner	Well Type	Drill Depth	Static Level	Completion Date	Distance	Elevation	Details Page #
1	6562703	GWS	DSM Nutritional Products	Industrial	300		1979-01-01	0.27mi SW	+2.36 ft	10
3	G0200355A	PWS	DSM NUTRITIONAL PRODUCTS	Public Supply	300		1979-01-01	0.39mi S	+0.62 ft	14
2	481237	SDR	Alfredo Espinoza	Domestic	220	70	2018-05-26	0.28mi NW	+1.48 ft	15

End of Water Well Summary

GWS - Groundwater Supply

Source: Texas Water Development Board

Map ID: 1

Well Number: 6562703

GWS - Groundwater Supply

Banks ID: 6562703

Well Address: TX

Rel. Loc.: 0.27mi SW

Completion Date: 1979-01-01

Drill Depth: 300.0

Owner: DSM Nutritional Products

Elevation: 8.27 ft (+2.36 ft)

County: Brazoria

Aquifer Code: 112CHCT

Driller:

Drilling Start Date:

Drilling Method:

Well Type: Withdrawal of Water

End of GWS Section

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6562703
County	Brazoria
River Basin	San Jacinto-Brazos
Groundwater Management Area	14
Regional Water Planning Area	H - Region H
Groundwater Conservation District	Brazoria County GCD
Latitude (decimal degrees)	29.010001
Latitude (degrees minutes seconds)	29° 00' 36" N
Longitude (decimal degrees)	-95.37
Longitude (degrees minutes seconds)	095° 22' 12" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	112CHCT - Chicot Aquifer
Aquifer	Gulf Coast
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	9
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	300
Well Depth Source	Another Government Agency
Drilling Start Date	
Drilling End Date	0/0/1979
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Industrial
Water Level Observation	None
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	DSM Nutritional Products
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	G0200355A
Groundwater Conservation District Well Number	
Owner Well Number	1
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Commission on Environmental Quality
Created Date	3/24/2010
Last Update Date	7/25/2016

Remarks

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (<https://www.twdb.texas.gov/groundwater/data/gwdb rpt.asp>) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

PWS - Public Water Supply

Map ID: 3	Source: TCEQ	
Water Source ID: G0200355A	PWS - Public Water Supply	Banks ID: G0200355A
Well Address: TX	Rel. Loc.: 0.39mi S	
Completion Date: 1979-01-01	Drill Depth: 300.0	
Owner: DSM NUTRITIONAL PRODUCTS	Elevation: 6.53 ft (+0.62 ft)	

Pws Id:	0200355
Hyperlink:	Go to webpage
Fips Cd:	039
Ccn:	
System Status:	ACTIVE
Source Status:	OPERATIONAL
Responsible Party:	CHRISTOPHER J KELLY
Responseible Party Address:	1000 COUNTY ROAD 227
Responseible Party City:	FREEPORT
Responseible Party State:	TX
Responseible Party Zip:	775413027
Phone:	9793735034
Tinwsys Number:	529

End of PWS Section

SDR - Submitted Drillers Report

Source: Texas Water Development Board

Map ID: 2

Well Report Tracking Number:
481237

SDR - Submitted Drillers Report

Banks ID: 481237

Well Address: 18244 CR 319, Brazoria, TX 77442

Rel. Loc.: 0.28mi NW

Completion Date: 2018-05-26

Drill Depth: 220.0

Owner: Alfredo Espinoza

Elevation: 7.38 ft (+1.48 ft)

Number Of Wells Drilled:	1
Elevation:	
Type Of Work:	New Well
Drilling Start Date:	2018-05-25
Company Name:	MARAL DRILLING
Driller Name:	Martin Almazan
Commentary:	

Bore Hole Completion

Well Report Tracking Number:	481237
Bore Hole Completion:	Other
Bore Hole Completion Other Desc:	Cement

Bore Hole Info

Well Report Tracking Number:	481237
Diameter:	7
Top Depth:	0
Bottom Depth:	220

Drilling Method

Well Report Tracking Number:	481237
Drilling Method:	Mud (Hydraulic) Rotary
Drilling Method Other Desc:	

Levels

Well Report Tracking Number:	481237
Measurement:	70

End of SDR Section**End of Water Well Details Section**

STATE OF TEXAS WELL REPORT for Tracking #481237

Owner:	Alfredo Espinoza	Owner Well #:	No Data
Address:	18244 CR 319 Brazoria, TX 77442	Grid #:	65-62-7
Well Location:	18244 CR 319 Brazoria, TX 77442	Latitude:	29° 00' 57.6" N
Well County:	Brazoria	Longitude:	095° 22' 12" W
		Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Domestic

Drilling Start Date: **5/25/2018** Drilling End Date: **5/26/2018**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	7	0	220

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Cement**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks & material)</i>
Annular Seal Data:	0	180	Cement 24 Bags/Sacks

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other
concentrated contamination (ft.): **None**

Distance to Septic Tank (ft.): **None**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level:	70 ft. below land surface, and 25 GPM artesian flow on 2018-05-26	Measurement Method:	Weighted Line
Packers:	Plastic at 180 ft.		
Type of Pump:	Submersible		
Well Tests:	Jetted	Yield: 25 GPM with 10 ft. drawdown after 5 hours	

Water Quality:

Strata Depth (ft.)	Water Type
180 - 220	Fresh

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which
contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **MARAL DRILLING**
2621 S. GARDENIA
PHARR, TX 78577

Driller Name: **Martin Almazan**

License Number: **52001**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	3	Top Soil
3	70	Clay
70	100	Sand
100	180	Clay
180	220	Sand

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Blank	New Plastic (PVC)	40	0	180
4	Screen	New Plastic (PVC)	40 0	180	220

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

Dataset Descriptions and Sources



Dataset	Source	Dataset Description	Update Schedule	Requested Date	Received Date	Update Date	Source Update Date
HIST - Historical Waterwell (TX)	TCEQ	This dataset contains all historical water well records searched from the TCEQ Public Water Well Viewer. Banks Environmental Data plots each well record based on location information found on the log.	Historical				
GWS - Groundwater Supply (TX)	Texas Water Development Board	This dataset contains water well records contained within Texas Water Development Board Groundwater Database.	Quarterly	2024-01-16	2024-01-16	2024-03-26	2024-01-16
WW - Water Well (US)	U.S. Geological Survey	This dataset contains groundwater well records from the U.S. Geological Survey.	Quarterly	2024-05-14	2024-05-14	2024-06-11	2024-05-14
HGSD - Harris/Galveston District (TX)	Harris/Galveston/Fort Bend Subsidence Districts	This dataset contains all groundwater well records compiled by Harris Galveston Subsidence District/Fort Bend Subsidence District.	Quarterly	2024-01-03	2024-01-03	2024-04-19	2024-01-03
PWS - Public Water Supply (TX)	TCEQ	This dataset contains a collection of records from Texas Water Districts, Public Drinking Water Systems and Water and Sewer Utilities who submit information to the TCEQ.	Quarterly	2024-01-16	2024-01-16	2024-04-15	2024-01-16
SDR - Submitted Drillers Report (TX)	Texas Water Development Board	This dataset contains water well records from the Texas Water Development Board Submitted Drillers Reports Database.	Quarterly	2024-02-14	2024-02-14	2024-04-05	2024-02-14

Disclaimer



The Banks Environmental Data Water Well Report was prepared from existing state water well databases and/or additional file data/records research conducted at the state agency and the U.S. Geological Survey. Banks Environmental Data has performed a thorough and diligent search of all groundwater well information provided and recorded. All mapped locations are based on information obtained from the source. Although Banks performs quality assurance and quality control on all research projects, we recognize that any inaccuracies of the records and mapped well locations could possibly be traced to the appropriate regulatory authority or the actual driller. It may be possible that some water well schedules and logs have never been submitted to the regulatory authority by the water driller and, thus, may explain the possible unaccountability of privately drilled wells. It is uncertain if the above listing provides 100% of the existing wells within the area of review. Therefore, Banks Environmental Data cannot fully guarantee the accuracy of the data or well location(s) of those maps and records maintained by the regulatory authorities.



Texas Water Development Board
Well Schedule

groundwater resources
division

State Well Number: **65-62-703** Previous Well Number: County: **Brazoria** **39**

Latitude (dms): **290036** Longitude (dms): **952212** Coordinate Accuracy: **Global Positioning System - GPS**

River Basin: **San Jacinto-Brazos Rivers** GMA: **14** RWPA: **H** GCD: **Brazoria County GCD**

Owner: **DSM Nutritional
Products**

Driller:

Aquifer ID: **Gulf Coast**

Aquifer Code: **112CHCT**

Depth (ft): **300**

Elevation (ft): **9**

**CHICOT
AQUIFER**

Source of Depth: **Another Government
Agency**

Source of Elevation: **Digital Elevation
Model -DEM**

Date Drilled: **00/00/1979**

Well Type: **Withdrawal of Water**

Type of Lift: **Submersible Pump**

Power: **Electric Motor**

Horsepower:

Construction:

Completion:

Casing Material:

Screen Material:

CASING INTERVALS:
Casing/Blank Pipe (C)
Well Screen/Slotted Zone (S)
Open Hole (O)

Dia. (in.)	Top (ft.)	Bottom (ft.)
---------------	--------------	-----------------

WATER USE

Primary: **Industrial**

Secondary: **Domestic**

Tertiary:

Water Levels:

Water Quality: **N**

Other Data:

Logs:

REMARKS:

Owners well #1. TCEQ ID #0200355A.

Reporting Agency: **TWC/TNRCC/TCEQ**

Date Collected or Reported: **03/24/2010**

Recorded by:

D.R. Jones

New

Attachment 11: Potential for Migration from Pond

Information on Nearby Groundwater and Wells

The Deluge Containment Lagoon (DCL) exists to receive wastewater in the event of significant adverse events and is not used on a regular basis for the storage of wastewater.

Data on the liner of the DCL is not available. However, it is believed that the DCL is approximately 11 feet deep and the liner is constructed of *in situ* clay.

The nearest wells to the DCL are located on the DSM site. DSM operates one well for the supply of drinking water, Well G0200355A. Little data is available on the well, and what is available is in Attachment 10. The well has a depth of 300 feet, and is believed to be cased at the lower elevations of the well for the water supply. A second well, 6562703, is also located on DSM property and is used to provide process water. It is also drilled to a depth of 300 feet, and is believed to be cased at the lower elevation for the water supply.

Well 481237, referred to as the Espinoza well on the figure in Attachment 9, is also located on the DSM property. This well is not currently used by DSM. This well draws water from a depth of 70 feet below ground surface. Most importantly, the well log, indicates that clays underlie the ground surface from a depth of 3 to 70 feet, with the first sand layer not occurring until 70 feet below ground surface. The presence of the extensive clay layer on the site indicates that the opportunity for contaminants to migrate through the 70 feet of clay to groundwater is extremely unlikely.

Attachment 12: Cooling Tower and Boiler Blowdown Treatment Chemical SDSs



SAFETY DATA SHEET

KLARAID* PC1192

Note: this chemical is used in the Raw water clarifier, and that water is then used in the cooling tower.

1. Identification

Product identifier KLARAID PC1192
Other means of identification None.
Recommended use Coagulant
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Serious eye damage/eye irritation Category 2
OSHA defined hazards Not classified.

Label elements



Signal word Warning
Hazard statement Causes serious eye irritation.
Precautionary statement
Prevention Wear eye/face protection. Wash thoroughly after handling.
Response If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage Store away from incompatible materials.
Disposal Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC) None known.
Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
N,N-Dimethyl-N-2-propenyl-2-propen- 1-amonium chloride homopolymer	26062-79-3	10 - 20

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
4. First-aid measures	
Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.
7. Handling and storage	
Precautions for safe handling	Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.
8. Exposure controls/personal protection	
Occupational exposure limits	This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit.
Biological limit values	No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear suitable protective clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Color	Yellow
Physical state	Liquid
Odor	Mild
Odor threshold	Not available.
pH (concentrated product)	6.3
pH in aqueous solution	6.2 (5% SOL.)
Melting point/freezing point	30 °F (-1 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.03
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.

Material name: KLARAID® PC1192

Version number: 3.1

Decomposition temperature	Not available.
Viscosity	168 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Pour point	35 °F (2 °C)
Specific gravity	1.032
VOC	0 % (ASTM 3960-93)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Hydrogen chloride, oxides of carbon and nitrogen evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics
Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
KLARAID PC1192 (CAS Mixture)		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
N,N-Dimethyl-N-2-propenyl-2-propen-1-ammonium chloride homopolymer (CAS 26062-79-3)		
Acute		
Oral		
LD50	Rat	3000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization This product is not expected to cause respiratory sensitization.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.**Specific target organ toxicity - single exposure** Not classified.**Specific target organ toxicity - repeated exposure** Not classified.**Aspiration hazard** Based on available data, the classification criteria are not met.**12. Ecological information****Ecotoxicity**

Product		Species	Test Results
KLARAID PC1192 (CAS Mixture)			
	LC50	Ceriodaphnia	9.3 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
		Fathead Minnow	3.8 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
		Mysid Shrimp	628.5 mg/l, Static Renewal Bioassay, 48 hour
	LOEL	Ceriodaphnia	2 mg/l, Chronic Bioassay, 7 day
		Fathead Minnow	2 mg/l, Chronic Bioassay, 7 day
	NOEL	Ceriodaphnia	6.25 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
			1 mg/l, Chronic Bioassay, 7 day
		Fathead Minnow	2.5 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
			1 mg/l, Chronic Bioassay, 7 day
		Mysid Shrimp	125 mg/l, Static Renewal Bioassay, 48 hour
		Sheepshead Minnow	2000 mg/l, Static Renewal Bioassay, 96 hour
Aquatic			
Crustacea	LC50	Daphnia magna	32 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
	NOEL	Daphnia magna	15.6 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
Fish	LC50	Rainbow Trout	14.1 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
	NOEL	Rainbow Trout	10 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Other adverse effects	Not available.		
Persistence and degradability			
- COD (mgO2/g)	270		
- BOD 5 (mgO2/g)	0		
- BOD 28 (mgO2/g)	7		
- Closed Bottle Test (% Degradation in 28 days)	3		
- Zahn-Wellens Test (% Degradation in 28 days)	6		
- TOC (mg C/g)	90		

Material name: KLARAID® PC1192

Version number: 3.1

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13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	Not regulated as dangerous goods. Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.	
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.	
SARA 304 Emergency release notification	Not regulated.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not regulated.	
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No	
SARA 302 Extremely hazardous substance	Not listed.	
SARA 311/312 Hazardous chemical	Yes	
SARA 313 (TRI reporting)	Not regulated.	
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Not regulated.	
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)	Not regulated.	
Safe Drinking Water Act (SDWA)	Not regulated.	
Inventory status		
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration 21 CFR 176.170 (components of paper and paperboard in contact with aqueous and fatty foods)

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. Other information, including date of preparation or last revision

Issue date Oct-20-2014

Revision date Dec-16-2017

Version # 3.1

List of abbreviations

CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

GENGARD* GN8300

1. Identification

Product identifier	GENGARD GN8300
Other means of identification	None.
Recommended use	Corrosion inhibitor
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.
Precautionary statement	
Prevention	Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Phosphoric Acid	7664-38-2	60 - 80

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Acidic. Corrosive to skin or eyes. Do not mix with alkaline material. Do not breathe mist or vapor. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Do not get in eyes, on skin, or on clothing. Use care in handling/storage.
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**Conditions for safe storage,
including any incompatibilities**

Store locked up. Store in corrosive resistant container with a resistant inner liner. Contact with metals may release flammable hydrogen gas. Keep only in the original container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	PEL	1 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m ³
	TWA	1 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s)

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Color Colorless to light yellow

Physical state Liquid

Odor Mild

Odor threshold Not available.

pH (concentrated product) < 1

pH in aqueous solution 1.2 (5% SOL.)

Melting point/freezing point < -30 °F (< -34 °C)

Initial boiling point and boiling range Not available

Flash point Not applicable

Evaporation rate < 1 (Ether = 1)

Material name GENGARD® GN8300

Version number 2.0

Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	15 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	> 1 (Air = 1)
Relative density	1.58
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	19 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	0 (Estimated)
Pour point	< -25 °F (< -32 °C)
Specific gravity	1.58

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Contact with metals may release flammable hydrogen gas. Contact with strong bases may cause a violent reaction releasing heat. Avoid contact with strong oxidizers.
Incompatible materials	Strong oxidizing agents. Metals.
Hazardous decomposition products	Oxides of carbon and phosphorus evolved in fire.

11. Toxicological information

Information on likely routes of exposure	
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Information on toxicological effects	
Acute toxicity	May cause respiratory irritation.

Product	Species	Test Results
GENGARD GN8300 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	3650 mg/kg. (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	2040 mg/kg. (Calculated according to GHS additivity formula)

Components	Species	Test Results
Phosphoric Acid (CAS 7664-38-2)		
Acute		
Dermal		
LD50	Rabbit	2740 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not available	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not available	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified
Aspiration hazard	Not an aspiration hazard. Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity			
Product		Species	Test Results
GENGARD GN8300 (CAS Mixture)			
	5% Mortality	Ceriodaphnia	500 mg/L, Static Screen, 48 hour, (pH adjusted)
	85% Mortality	Ceriodaphnia	2500 mg/L, Static Screen, 48 hour, (pH adjusted)
	LC50	Fathead Minnow	4200 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Fathead Minnow	2100 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
Aquatic			
Crustacea	LC50	Daphnia magna	3540 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)

Product	Species	Test Results
NOEL	Daphnia magna	2100 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
* Estimates for product may be based on additional component data not shown.		
Bioaccumulative potential	No information available	
Mobility in soil	No data available	
Other adverse effects	Not available	
13. Disposal considerations		
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations	
Local disposal regulations	Dispose in accordance with all applicable regulations.	
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company	
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).	
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.	
14. Transport information		
DOT		
UN number	UN1805	
UN proper shipping name	PHOSPHORIC ACID SOLUTION, RQ	
Transport hazard class(es)		
Class	8	
Subsidiary risk	-	
Packing group	III	
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling	
ERG number	154	
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification		
IATA		
UN number	UN1805	
UN proper shipping name	PHOSPHORIC ACID SOLUTION	
Transport hazard class(es)		
Class	8	
Subsidiary risk	-	
Packing group	III	
Environmental hazards	No	
ERG Code	154	
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.	
IMDG		
UN number	UN1805	
UN proper shipping name	PHOSPHORIC ACID SOLUTION, RQ	
Transport hazard class(es)		
Class	8	
Subsidiary risk	-	
Packing group	III	
Environmental hazards		
Marine pollutant	No	
EmS	F-A,S-B	
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.	

DOT



IATA; IMDG



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Phosphoric Acid (CAS 7664-38-2)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)

Hazardous substance

Safe Drinking Water Act (SDWA)

Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Phosphoric Acid (CAS 7664-38-2)

High priority

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

NSF Registered and/or meets USDA (according to 1998 guidelines):	Registration No. – 142961 Category Code(s): G5 Cooling and retort water treatment products G7 Boiler, steam line treatment products – nonfood contact
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US state regulations**US - Massachusetts RTK - Substance List**

Phosphoric Acid (CAS 7664-38-2)

US - Pennsylvania RTK - Hazardous Substances

Phosphoric Acid (CAS 7664-38-2)

US - Rhode Island RTK

Phosphoric Acid (CAS 7664-38-2)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Phosphoric Acid (CAS 7664-38-2)

US. New Jersey Worker and Community Right-to-Know Act

Phosphoric Acid (CAS 7664-38-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Phosphoric Acid (CAS 7664-38-2)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Oct-29-2014

Revision date Apr-06-2016

Version # 2.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
ACGIH: American Conference of Governmental Industrial Hygienists
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Prepared by

This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

CORTROL* IS3000

1. Identification

Product identifier CORTROL IS3000
Other means of identification None.
Recommended use Water based dissolved oxygen scavenger
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
 4636 Somerton Road
 Treviso, PA 19053
 T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Serious eye damage/eye irritation Category 2B
 Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Causes eye irritation. May cause respiratory irritation.

Precautionary statement

Prevention Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area.

Response If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Sodium bisulphite	7631-90-5	20 - 40

Components	CAS #	Percent
Cobalt chloride	7646-79-9	0 - 0.1
Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.	
4. First-aid measures		
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Give oxygen if necessary. Call a POISON CENTER or doctor/physician if you feel unwell.	
Skin contact	Remove contaminated clothing. Wash thoroughly with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.	
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.	
Most important symptoms/effects, acute and delayed	Irritation of eyes and mucous membranes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation. Skin irritation.	
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.	
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.	
5. Fire-fighting measures		
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).	
Unsuitable extinguishing media	Water. Do not use water jet as an extinguisher, as this will spread the fire.	
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.	
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.	
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.	
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.	
General fire hazards	No unusual fire or explosion hazards noted.	
6. Accidental release measures		
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.	
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.	
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.	
7. Handling and storage		
Precautions for safe handling	Avoid breathing mist or vapor. Avoid contact with eyes. Avoid prolonged exposure. Vent carefully before opening. Sulfur dioxide can be formed during the normal use and handling of this product. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.	

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation. Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Cobalt chloride (CAS 7646-79-9)	TWA	0.02 mg/m3
Sodium bisulphite (CAS 7631-90-5)	TWA	5 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium bisulphite (CAS 7631-90-5)	TWA	5 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles and face shield are recommended. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color Pink

Physical state Liquid

Odor Strong

Odor threshold Not available.

pH (concentrated product) 3.2

pH in aqueous solution 3.5 (5% SOL.)

Melting point/freezing point 18 °F (-8 °C)

Initial boiling point and boiling range 220 °F (104 °C)

Flash point > 200 °F (> 93 °C) P-M(CC)

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.26
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	7 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Pour point	23 °F (-5 °C)
Specific gravity	1.261
VOC	0 % (Calculated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Protect from freezing.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Elemental oxides

11. Toxicological information**Information on likely routes of exposure**

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Prolonged or repeated contact may cause irritation.
Eye contact	Causes eye irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics	Irritation of eyes and mucous membranes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation. Skin irritation.
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Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
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Product	Species	Test Results
CORTROL IS3000 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Product	Species	Test Results
<i>Inhalation</i> LC50	Rat	495.5 mg/l/4h, (Calculated according to GHS additivity formula)
<i>Oral</i> LD50	Rat	4191 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Cobalt chloride (CAS 7646-79-9)		
<i>Acute</i>		
<i>Dermal</i> LD50	Rabbit	> 2000 mg/kg
<i>Oral</i> LD50	Rat	537 mg/kg
Sodium bisulphite (CAS 7631-90-5)		
<i>Acute</i>		
<i>Dermal</i> LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i> LC50	Rat	> 5.5 mg/l, 4 Hour
<i>Oral</i> LD50	Rat	1420 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Sodium bisulphite (CAS 7631-90-5) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Not available.

Aspiration hazard May be harmful if swallowed and enters airways. Based on available data, the classification criteria are not met.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product	Species	Test Results
CORTROL IS3000 (CAS Mixture)		
LC50	Fathead Minnow	210 mg/L, Acute Toxicity, 96 hour, (Estimated)

Product		Species	Test Results
	NOEL	Fathead Minnow	150 mg/L, Acute Toxicity, 96 hour, (Estimated)
Aquatic Crustacea	0% Mortality	Daphnia magna	100 mg/L, Static Screen, 48 hour
	100% Mortality	Daphnia magna	500 mg/L, Static Screen, 48 hour
	LC50	Daphnia magna	204 mg/L, Acute Toxicity, 48 hour, (Estimated)
	NOEL	Daphnia magna	150 mg/L, Acute Toxicity, 48 hour, (Estimated)
Fish	0% Mortality	Rainbow Trout	500 mg/L, Static Screen, 48 hour
	100% Mortality	Rainbow Trout	1000 mg/L, Static Screen, 48 hour
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Other adverse effects	Not available.		
Persistence and degradability	No data is available on the degradability of this product.		
- COD (mgO2/g)	54 (calculated data)		

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	
UN number	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (SODIUM BISULFITE), RQ(SODIUM BISULFITE)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	171
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	
IATA	
Not regulated as dangerous goods.	
IMDG	
Not regulated as dangerous goods.	



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Cobalt chloride (CAS 7646-79-9)

Listed.

Sodium bisulphite (CAS 7631-90-5)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Cobalt chloride (CAS 7646-79-9)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration

ALL ingredients in this product are authorized in 21CFR173.310 for use as boiler water additives where the steam may contact food.

NSF Registered and/or meets USDA (according to 1998 guidelines):

Registration No. – 141465

Category Code(s):

G5 - Cooling and retort water treatment products

G6 - Boiler treatment products, steam line products – food contact

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Sodium bisulphite (CAS 7631-90-5)

US - Pennsylvania RTK - Hazardous Substances

Cobalt chloride (CAS 7646-79-9) Listed.

Sodium bisulphite (CAS 7631-90-5) Listed.

US - Rhode Island RTK

Sodium bisulphite (CAS 7631-90-5)

US. New Jersey Worker and Community Right-to-Know Act

Cobalt chloride (CAS 7646-79-9) Listed.

Sodium bisulphite (CAS 7631-90-5) Listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Cobalt chloride (CAS 7646-79-9) LISTED

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. Other information, including date of preparation or last revision

Issue date Oct-17-2014

Revision date Dec-16-2017

Version # 2.1

List of abbreviations CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code

References: No data available

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information Composition/information on ingredients: Composition comments
First-aid measures: Skin contact
Exposure controls/personal protection: Appropriate engineering controls
Physical & Chemical Properties: Multiple Properties
Transport Information: Material Transportation Information
Other information, including date of preparation or last revision: Bibliography
Other information, including date of preparation or last revision: Prepared by
GHS: Classification

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

STEAMATE* NA702

1. Identification

Product Identifier STEAMATE NA702
Other means of identification None.
Recommended use Condensate return line treatment
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, dermal	Category 3
	Acute toxicity, inhalation	Category 3
	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Reproductive toxicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word

Danger

Hazard statement

Flammable liquid and vapor. Toxic if inhaled. Toxic in contact with skin. Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation. Suspected of damaging fertility or the unborn child.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash hands thoroughly after handling. Avoid breathing mist/vapors/spray. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area.

Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use appropriate media for extinction.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	43% of the mixture consists of component(s) of unknown acute dermal toxicity.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
2-Diethylaminoethanol	100-37-8	40 - 60
Cyclohexylamine	108-91-8	20 - 40

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
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4. First-aid measures

Inhalation	Move to fresh air. If breathing stops, provide artificial respiration. Get medical attention immediately.
Skin contact	Take off contaminated clothing and wash before reuse. Wash off with soap and water. Get medical attention immediately.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention immediately.
Ingestion	If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting. If vomiting occurs naturally have victim lean forward to reduce risk of burns to mouth, throat and lungs. Call a physician or poison control center immediately.
Most important symptoms/effects, acute and delayed	Corrosive effects. May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause temporary blindness and severe eye damage.
Indication of immediate medical attention and special treatment needed	Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Corrosive liquid. Oxides of carbon and nitrogen evolved in fire.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
General fire hazards	Flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors and spray mists. Avoid contact with spilled material. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Remove sources of ignition. Ventilate the area. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Flush with plenty of water.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Prevent from entering sewers or the immediate environment. Accidental release of large quantities into the aquatic environment may harm aquatic organisms. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

7. Handling and storage**Precautions for safe handling**

Flammable. Avoid heat, sparks, open flames and other ignition sources. Adequate ventilation required especially during initial opening. Use only containers which are compatible with the substance. Bond containers during filling or discharge when performed at temperatures at or above the product flash point. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities

Keep away from all sources of ignition. Store in tightly closed original container in a dry, cool and well-ventilated place. Do not freeze. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
2-Diethylaminoethanol (CAS 100-37-8)	PEL	50 mg/m3 10 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Diethylaminoethanol (CAS 100-37-8)	TWA	2 ppm
Cyclohexylamine (CAS 108-91-8)	TWA	10 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2-Diethylaminoethanol (CAS 100-37-8)	TWA	50 mg/m3 10 ppm
Cyclohexylamine (CAS 108-91-8)	TWA	40 mg/m3 10 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines**US ACGIH Threshold Limit Values: Skin designation**

2-Diethylaminoethanol (CAS 100-37-8) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

2-Diethylaminoethanol (CAS 100-37-8) Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Bulk tanks should be vented externally.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Splash proof chemical goggles. Face shield.

Skin protection**Hand protection**

Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear suitable protective clothing. Chemical resistant apron. Wash off after each use. Replace as necessary.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Material name: STEAMATE® NA702

Version number: 2.1

9. Physical and chemical properties

Appearance

Color Light yellow

Physical state Liquid

Odor Amine

Odor threshold Not available.

pH (concentrated product) 12.6

Melting point/freezing point < -29 °F (< -34 °C)

Initial boiling point and boiling range Not available.

Flash point 117 °F (47 °C) SETA(CC)

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density (Air = 1)

Relative density 0.89

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 20 cps

Viscosity temperature 70 °F (21 °C)

Other information

Specific gravity 0.895

VOC 95 % (Calculated)

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Avoid heat, sparks, open flames and other ignition sources. Protect from freezing.

Incompatible materials Strong oxidizing substances. Contact with oxidizers may cause fire. Bases, alkalies (organic).

Hazardous decomposition products Oxides of carbon, nitrogen, and sulphur evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation Toxic by inhalation. Inhalation of vapors/mists/aerosols may cause eye, nose, throat and lung irritation.

Skin contact Toxic in contact with skin. Causes severe skin burns.

Eye contact Causes severe eye burns. Risk of serious damage to eyes.

Ingestion Harmful if swallowed. Ingestion may cause severe irritation of the mouth, the esophagus and the gastrointestinal tract.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms on skin may develop from redness and itching with development to burns due to corrosion. Symptoms on eyes may develop from tearing with development into severe irritation and/or burns due to corrosion. Permanent eye damage including blindness could result. Symptoms on ingestion may develop from discomfort with development into severe irritation and/or burns due to corrosion.

Information on toxicological effects

Acute toxicity Toxic in contact with skin. Toxic by inhalation. Harmful if swallowed.

Product	Species	Test Results
STEAMATE NA702 (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	497 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	7.89 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	348 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
2-Diethylaminoethanol (CAS 100-37-8)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Guinea Pig	885 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 4.5 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1300 mg/kg
Cyclohexylamine (CAS 108-91-8)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	277 mg/kg
<i>Oral</i>		
LD50	Rat	156 mg/kg

Skin corrosion/irritation Causes skin burns.

Serious eye damage/eye irritation Causes severe eye burns.

Respiratory or skin sensitization

Respiratory sensitization This product is not expected to cause respiratory sensitization.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity Not classified.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure May cause irritation to the respiratory system.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Based on available data, the classification criteria are not met.

Material name: STEAMATE* NA702

Version number: 2.1

Chronic effects

No evidence of potential chronic effects.

12. Ecological information**Ecotoxicity**

Product	Species	Test Results
STEAMATE NA702 (CAS Mixture)		
LC50	Fathead Minnow	758 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
NOEL	Fathead Minnow	500 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
Aquatic		
Crustacea	Daphnia magna	319 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
NOEL	Daphnia magna	125 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)

Bioaccumulative potential Not available.**Partition coefficient n-octanol / water (log Kow)**

2-Diethylaminoethanol 0.05

Cyclohexylamine 1.49

Bioconcentration factor (BCF)

2-Diethylaminoethanol < 6.1

Mobility in soil Not available.**Other adverse effects** Not available.**Persistence and degradability**- COD (mgO₂/g) 2386 (calculated data)- BOD 5 (mgO₂/g) 1 (calculated data)- BOD 28 (mgO₂/g) 329 (calculated data)

- Closed Bottle Test (%) 12 (calculated data)

Degradation in 28 days)

- Zahn-Wellens Test (%) 35 (calculated data)

Degradation in 28 days)

- TOC (mg C/g) 593 (calculated data)

13. Disposal considerations**Disposal instructions** Dispose of contents/container in accordance with local/regional/national/international regulations. Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.**Hazardous waste code** D001 = Ignitable; D002= Corrosive
The complete waste code should be assigned in discussion with the waste disposal company.**Waste from residues / unused products** Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.**14. Transport information****DOT****UN number** UN2734**UN proper shipping name** Amines, liquid, corrosive, flammable, n.o.s. (DIETHYLAMINOETHANOL (DEAE), CYCLOHEXYLAMINE)**Transport hazard class(es)****Class** 8**Subsidiary risk** 3**Packing group** II**Special precautions for user** Not available.**ERG number** 132

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number UN2734
UN proper shipping name Amines, liquid, corrosive, flammable, n.o.s. (DIETHYLAMINOETHANOL (DEAE), CYCLOHEXYLAMINE)
Transport hazard class(es)
Class 8
Subsidiary risk 3
Packing group II
Environmental hazards No.
ERG Code 132
Special precautions for user Not available.
Some containers may not be approved under IATA, please check BOL for exact container classification.

IMDG

UN number UN2734
UN proper shipping name AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (DIETHYLAMINOETHANOL (DEAE), CYCLOHEXYLAMINE)
Transport hazard class(es)
Class 8
Subsidiary risk 3
Packing group II
Environmental hazards
Marine pollutant No.
EmS F-E, S-C
Special precautions for user Not available.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.
SARA 304 Emergency release notification
Cyclohexylamine (CAS 108-91-8) 10000 LBS
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
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Cyclohexylamine	108-91-8	10000	10000		
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SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Cyclohexylamine (CAS 108-91-8)

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration ALL ingredients in this product are authorized in 21CFR173.310 for use as boiler water additives where the steam may contact food.

NSF Registered and/or meets USDA (according to 1998 guidelines):
Registration No. – 146008
Category Code(s):
G5 Cooling and retort water treatment products
G6 Boiler treatment products, steam line products – food contact

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

ACETALDEHYDE (CAS 75-07-0) Listed: April 1, 1988

Aniline (CAS 62-53-3) Listed: January 1, 1990

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

2-Diethylaminoethanol (CAS 100-37-8)

Cyclohexylamine (CAS 108-91-8)

US - Pennsylvania RTK - Hazardous Substances

2-Diethylaminoethanol (CAS 100-37-8) Listed.

Cyclohexylamine (CAS 108-91-8) Listed.

US - Rhode Island RTK

2-Diethylaminoethanol (CAS 100-37-8)

Cyclohexylamine (CAS 108-91-8)

US. New Jersey Worker and Community Right-to-Know Act

2-Diethylaminoethanol (CAS 100-37-8) Listed.

Cyclohexylamine (CAS 108-91-8) Listed.

Material name: STEAMATE® NA702

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US. Pennsylvania Worker and Community Right-to-Know Law

2-Diethylaminoethanol (CAS 100-37-8)

Hazardous substance

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

16. Other information, including date of preparation or last revision

Issue date Sep-26-2014

Revision date Dec-16-2017

Version # 2.1

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
LD50: Lethal Dose, 50%
NFPA: National Fire Protection Association

References: No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information Transport Information: Material Transportation Information

Other information, including date of preparation or last revision: Prepared by

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.

SAFETY DATA SHEET

SODIUM HYPOCHLORITE

1. Identification

Product identifier	SODIUM HYPOCHLORITE
Other means of identification	
L code	L1228
Recommended use	Field test reagent
Recommended restrictions	None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Not classified.						
Health hazards	<table> <tr> <td>Skin corrosion/irritation</td><td>Category 2</td></tr> <tr> <td>Serious eye damage/eye irritation</td><td>Category 2</td></tr> <tr> <td>Specific target organ toxicity, single exposure</td><td>Category 3 respiratory tract irritation</td></tr> </table>	Skin corrosion/irritation	Category 2	Serious eye damage/eye irritation	Category 2	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Skin corrosion/irritation	Category 2						
Serious eye damage/eye irritation	Category 2						
Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation						
OSHA defined hazards	Not classified.						

Label elements



Signal word	Warning
Hazard statement	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
Precautionary statement	
Prevention	Wear eye/face protection. Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves.
Response	If on skin: Wash with plenty of water/. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor// if you feel unwell. Specific treatment (see on this label). If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Sodium hypochlorite	7681-52-9	1 - 2.5

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician immediately. Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray. Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p>
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage. Contains an oxidiser. Avoid all contact with reducing agents, oils, greases, organics and acids. Do not allow to dry.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Keep containers closed when not in use. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation. Do not freeze. Store in a cool, well-ventilated area, away from combustibles. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Sodium hypochlorite (CAS 7681-52-9)	STEL	2 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. Adequate ventilation to maintain air contaminants below exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection

Splash proof chemical goggles.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. neoprene gloves Wash off after each use. Replace as necessary.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece. If air-purifying respirator use is appropriate, use a respirator with acid gas cartridges and dust/mist prefilters. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color

Straw colored

Physical state

Liquid

Odor

Chlorine

Odor threshold

Not available.

pH (concentrated product)

9.5

Melting point/freezing point

Not available.

Initial boiling point and boiling range

Not available.

Flash point

> 200 °F (> 93 °C) P-M(CC)

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not available.

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Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	(Air = 1)
Relative density	Not available.
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Viscosity temperature	70 °F (21 °C)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials. None under normal conditions.
Incompatible materials	Strong oxidizing agents. Decomposes dry (175-245°C) or wet (24°C) with release of chlorine. Reacts with oxidizers. Friction, heat or other sources of ignition may cause a violent reaction releasing heat and toxic fumes. Contact with reducing agents or flammable/combustible material may cause fire or explosion.
Hazardous decomposition products	Chlorine. and Hydrogen chloride.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
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Product	Species	Test Results
SODIUM HYPOCHLORITE (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	> 5 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Sodium hypochlorite (CAS 7681-52-9)		
Acute		
Dermal		
LD50	Rabbit	> 20000 mg/kg
Inhalation		
LC50	Rat	> 5.25 mg/L, 4 Hour
Oral		
LD50	Rat	8900 mg/kg
* Estimates for product may be based on additional component data not shown.		
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not available.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Sodium hypochlorite (CAS 7681-52-9)	3 Not classifiable as to carcinogenicity to humans.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Not regulated.		
US. National Toxicology Program (NTP) Report on Carcinogens		
Not listed.		
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	May cause respiratory irritation.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not available.	
Chronic effects	Prolonged inhalation may be harmful.	
12. Ecological information		
Ecotoxicity	No ecotoxicity data noted for the ingredient(s).	
Bioaccumulative potential	No data available.	
Mobility in soil	No data available.	
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	
Persistence and degradability	No data is available on the degradability of this product.	
13. Disposal considerations		
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.	
Local disposal regulations	Dispose in accordance with all applicable regulations.	
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.	
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).	
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.	

14. Transport information

DOT

Not regulated as dangerous goods.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hypochlorite (CAS 7681-52-9) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

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US - Massachusetts RTK - Substance List

Sodium hypochlorite (CAS 7681-52-9)

US - Pennsylvania RTK - Hazardous Substances

Sodium hypochlorite (CAS 7681-52-9) Listed.

US - Rhode Island RTK

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Sodium hypochlorite (CAS 7681-52-9) Listed.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. Other information, including date of preparation or last revision**Issue date** Mar-16-2015**Revision date** Dec-24-2017**Version #** 3.1**List of abbreviations**

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
LD50: Lethal Dose, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code

References: No data available

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).



SAFETY DATA SHEET

SPECTRUS* NX1100

1. Identification

Product identifier	SPECTRUS NX1100
Other means of identification	None.
Recommended use	Biocide
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word

Danger

Hazard statement

May be corrosive to metals. Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention

Wear eye/face protection. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. Wash hands thoroughly after handling. Keep only in original container. Do not breathe mist or vapor. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area.

Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
2-Bromo-2-nitropropane-1,3-diol (Bronopol)	52-51-7	2.5 - 10
Magnesium nitrate	10377-60-3	2.5 - 10
Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	55965-84-9	2.5 - 10
Magnesium chloride	7786-30-3	1 - 2.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
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4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Do not induce vomiting. Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed. Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In case of fire and/or explosion do not breathe fumes. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient.

Environmental precautions Avoid discharge into drains, water courses or onto the ground. Prevent from entering sewers or the immediate environment.

7. Handling and storage

Precautions for safe handling Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Corrosive liquid. Do not breathe vapors or spray mist.

Conditions for safe storage, including any incompatibilities Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep container tightly closed in a dry and well-ventilated place. Store at temperatures below 35°C. Use approved containers only. Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits No exposure limits noted for ingredient(s).

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Eye wash facilities and emergency shower must be available when handling this product. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Color	Colorless to yellow green
Physical state	Liquid

Odor None

Odor threshold Not available.

pH (concentrated product) 3

pH in aqueous solution 3.7 (5% SOL.)

Melting point/freezing point 24 °F (-4 °C)

Initial boiling point and boiling range 220 °F (104 °C)

Flash point Not applicable.

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 18 mm Hg

Vapor pressure temp. 70 °F (21 °C)

Vapor density < 1 (Air = 1)

Relative density 1.11

Relative density temperature 70 °F (21 °C)

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 10 cps

Viscosity temperature 70 °F (21 °C)

Other information

Percent volatile 0

Pour point 29 °F (-2 °C)

Specific gravity 1.107

10. Stability and reactivity

Reactivity May be corrosive to metals.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Contact with incompatible materials.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Hydrogen bromide, bromine gas, hydrogen chloride, chlorine gas, oxides of carbon and nitrogen evolved in fire. Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation Harmful if inhaled. May cause irritation to the respiratory system.

Skin contact Causes severe skin burns. May cause an allergic skin reaction.

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Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity	Harmful if swallowed. Harmful if inhaled. May cause an allergic skin reaction. May cause respiratory irritation.
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Product	Species	Test Results
SPECTRUS NX1100 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 1 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1030 mg/kg
Components	Species	Test Results
2-Bromo-2-nitropropane-1,3-diol (Bronopol) (CAS 52-51-7)		
Acute		
<i>Dermal</i>		
LD50	Rat	1600 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 0.59 mg/l, 4 Hour, (Aerosol toxicity)
<i>Oral</i>		
LD50	Rat	324 mg/kg
Magnesium chloride (CAS 7786-30-3)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg
Magnesium nitrate (CAS 10377-60-3)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg
<i>Oral</i>		
LD50	Rat	5400 mg/kg
Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one (CAS 55965-84-9)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	90 mg/kg
<i>Inhalation</i>		
LC50	Rat	0.33 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	67 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin burns.
Serious eye damage/eye irritation	Corrosive to eyes. Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.

Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classified.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not listed	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met. Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
SPECTRUS NX1100 (CAS Mixture)			
	LC50	Ceriodaphnia	4.7 mg/l, Static Renewal Bioassay, 48 hour
		Fathead Minnow	3.5 mg/l, Static Renewal Bioassay, 96 hour
		Menidia beryllina (Silversides)	15.9 mg/l, Static Renewal Bioassay, 96 hour
		Mysid Shrimp	40.5 mg/l, Static Renewal Bioassay, 48 hour
		Sheepshead Minnow	26.7 mg/l, Static Renewal Bioassay, 96 hour
	NOEL	Ceriodaphnia	0.63 mg/l, Static Renewal Bioassay, 48 hour
		Fathead Minnow	1.8 mg/l, Static Renewal Bioassay, 96 hour
		Menidia beryllina (Silversides)	12.5 mg/l, Static Renewal Bioassay, 96 hour
		Mysid Shrimp	18 mg/l, Static Renewal Bioassay, 48 hour
		Sheepshead Minnow	15.5 mg/l, Static Renewal Bioassay, 96 hour
Aquatic			
Crustacea	LC50	Daphnia magna	5 mg/l, Static Renewal Bioassay, 48 hour
	NOEL	Daphnia magna	2.5 mg/l, Static Renewal Bioassay, 48 hour
Fish	LC50	Rainbow Trout	7.2 mg/l, Static Renewal Bioassay, 96 hour
	NOEL	Rainbow Trout	3.1 mg/l, Static Renewal Bioassay, 96 hour
Components		Species	Test Results
2-Bromo-2-nitropropane-1,3-diol (Bronopol) (CAS 52-51-7)			
Aquatic	EC50	Daphnia Magna	1.4 mg/l, 48 hour
	LC50	Rainbow Trout	41 mg/l, 96 hour

Bioaccumulative potential Not bioaccumulating (Refers to active component) 2-Bromo-2-nitropropane-1,3-diol

Partition coefficient n-octanol / water (log Kow)

Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one 0.486

Mobility in soil	No data available.
Other adverse effects	Nutrients: N = 8.03 mg/g
Persistence and degradability	
- COD (mgO2/g)	78 (calculated data)
- BOD 5 (mgO2/g)	2 (calculated data)
- BOD 28 (mgO2/g)	4 (calculated data)
- Closed Bottle Test (% Degradation in 28 days)	2 (calculated data)
- Zahn-Wellens Test (% Degradation in 28 days)	8 (calculated data)
- TOC (mg C/g)	29 (calculated data)

13. Disposal considerations

Disposal instructions	Dispose of in approved pesticide facility or according to label instructions. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. Incinerate the material under controlled conditions in an approved incinerator.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company. D002= Corrosive
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Dispose of in approved pesticide facility or according to label instructions. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	153
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	

IATA

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	Yes
ERG Code	153
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN3265
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One), MARINE POLLUTANT
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II

Environmental hazards

Marine pollutant

Yes

EmS

F-A, S-B

Special precautions for user

Read safety instructions, SDS and emergency procedures before handling.

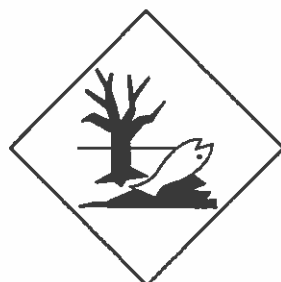
DOT



IATA; IMDG



Marine pollutant



15. Regulatory information

US federal regulations

This is an EPA registered biocide and is exempt from TSCA inventory requirements. See FIFRA registry number. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

Material name: SPECTRUS® NX1100

Version number: 100

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Magnesium nitrate	10377-60-3	2.5 - 10

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA)
Section 112(r) (40 CFR 68.130)

Hazardous substance

Safe Drinking Water Act
(SDWA)

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

FIFRA registration number 3876-151

TSCA This is an EPA registered biocide and is exempt from TSCA inventory requirements.

FIFRA hazard statement This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER
 Corrosive
 Causes irreversible eye damage
 Causes skin burns
 Harmful if swallowed or absorbed through the skin
 Harmful if inhaled
 Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals
 This pesticide is toxic to fish and aquatic organisms

Food and drug administration 21 CFR 176.300 & 176.170 (slimicides and as a preservative)

NSF Registered and/or meets Registration No. - 141064

USDA (according to 1998 Category Code(s):
guidelines): G5 Cooling and retort water treatment products
 G7 Boiler, steam line treatment products - nonfood contact

US state regulations**US - Massachusetts RTK - Substance List**

Magnesium nitrate (CAS 10377-60-3)

US - Pennsylvania RTK - Hazardous Substances

Magnesium nitrate (CAS 10377-60-3)

US - Rhode Island RTK

Magnesium nitrate (CAS 10377-60-3)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Magnesium chloride (CAS 7786-30-3)

Magnesium nitrate (CAS 10377-60-3)

US. New Jersey Worker and Community Right-to-Know Act

Magnesium nitrate (CAS 10377-60-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Magnesium nitrate (CAS 10377-60-3)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance
Sulphuric acid (CAS 7664-93-9) Listed: March 14, 2003
US - California Proposition 65 - CRT: Listed date/Developmental toxin
No ingredient listed.
US - California Proposition 65 - CRT: Listed date/Female reproductive toxin
No ingredient listed.
US - California Proposition 65 - CRT: Listed date/Male reproductive toxin
No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Jul-03-2014
Revision date Dec-19-2016
Version # 10.0
List of abbreviations CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
EC50: Effect Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
References: CNS 15030
UN Transportation Regulations Safety data sheets of raw materials.
Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Revision information This document has undergone significant changes and should be reviewed in its entirety.
Prepared by This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).
* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

SOLUS AP24

1. Identification

Product identifier	SOLUS AP24
Other means of identification	None.
Recommended use	Internal boiler water treatment
Recommended restrictions	None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.

Label elements

Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Wash thoroughly after handling.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container to an approved facility.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin contact	Wash thoroughly with soap and water. Remove contaminated clothing. Wash clothing separately before reuse. Get medical attention if irritation develops and persists.

Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Do not feed anything by mouth to an unconscious or convulsive victim. Do NOT induce vomiting!
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.
7. Handling and storage	
Precautions for safe handling	Avoid prolonged exposure.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
8. Exposure controls/personal protection	
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Not available.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear suitable protective clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Color Yellow to amber

Physical state Liquid

Odor Slight ammonia

Odor threshold Not available.

pH (concentrated product) 12.3

pH in aqueous solution 11 (5% SOL.)

Melting point/freezing point 28 °F (-2 °C)

Initial boiling point and boiling range 220 °F (104 °C)

Flash point Not applicable.

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 18 mm Hg

Vapor pressure temp. 70 °F (21 °C)

Vapor density < 1 (Air = 1)

Relative density 1.09

Relative density temperature 70 °F (21 °C)

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 22 cps

Viscosity temperature 70 °F (21 °C)

Other information

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

Pour point 33 °F (1 °C)

Specific gravity 1.087

VOC 0 % (Estimated)

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Contact with incompatible materials.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Oxides of carbon, nitrogen, phosphorus, and sulphur evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation May cause irritation to respiratory organs.
Skin contact Prolonged or repeated contact may cause irritation.
Eye contact Direct contact with eyes may cause temporary irritation.
Ingestion May cause slight gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
SOLUS AP24 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization This product is not expected to cause respiratory sensitization.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Based on available data, the classification criteria are not met.

12. Ecological information

Ecotoxicity

Product	Species	Test Results
SOLUS AP24 (CAS Mixture)		
LC50	Fathead Minnow	> 5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)

Product		Species	Test Results
	NOEL	Fathead Minnow	5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)
Aquatic Crustacea	LC50	Daphnia magna	3674 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	2500 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)
Fish	LC50	Rainbow Trout	> 5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)
	NOEL	Rainbow Trout	5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)

Bioaccumulative potential

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration ALL ingredients in this product are authorized in 21CFR173.310 for use as boiler water additives where the steam may contact food.
The maximum level of Solus AP24 permitted in the boiler water where steam contacts food is 625 ppm.

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 152247
Category Code(s):
G5 Cooling and retort water treatment products G6 Boiler treatment products, steam line products – food contact

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date Jan-20-2015
Revision date Dec-19-2017
Version # 6.1

Material name: SOLUS AP24

Version number: 6.1

Page: 6 / 7

List of abbreviations

CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
LD50: Lethal Dose, 50%
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References:

No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information

Hazard(s) identification: Supplemental information
Physical & Chemical Properties: Multiple Properties
Toxicological information: Acute toxicity
Other information, including date of preparation or last revision: Prepared by

Prepared by

This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).



SAFETY DATA SHEET

GENGARD* GN8203

1. Identification

Product identifier	GENGARD GN8203
Other means of identification	None.
Recommended use	Corrosion inhibitor
Recommended restrictions	None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.
Precautionary statement	
Prevention	Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients**Mixtures**

Components	CAS #	Percent
Sodium hydroxide	1310-73-2	2.5 - 10
Chlorotolyltriazole sodium salt	202420-04-0	1 - 2.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.
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7. Handling and storage

Precautions for safe handling	Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage. Take precautions to minimize foaming.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation. Do not freeze. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles. Face shield.
Skin protection	
Hand protection	Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color	Amber to dark brown
Physical state	Liquid
Odor	Slight ammonia
Odor threshold	Not available.
pH (concentrated product)	13.5
pH in aqueous solution	12.3 (5% SOL.)

Material name: GENGARD® GN8203

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Melting point/freezing point	19 °F (-7 °C)
Initial boiling point and boiling range	212 °F (100 °C)
Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.2
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	35 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Pour point	24 °F (-4 °C)
Specific gravity	1.197
VOC	0 % (Estimated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. None under normal conditions.
Incompatible materials	Strong acids. Strong oxidizing agents.
Hazardous decomposition products	Hydrogen chloride, oxides of carbon and nitrogen evolved in fire.

11. Toxicological information

Information on likely routes of exposure	
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Information on toxicological effects	
Acute toxicity	May cause respiratory irritation.

Product	Species	Test Results
GENGARD GN8203 (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Components	Species	Test Results
Chlorotolyltriazole sodium salt (CAS 202420-04-0)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rat	> 5000 mg/kg
<i>Oral</i>		
LD50	Rat	3100 mg/kg
Sodium hydroxide (CAS 1310-73-2)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	1350 mg/kg
<i>Oral</i>		
LD50	Rabbit	> 500 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity		
Product	Species	Test Results
GENGARD GN8203 (CAS Mixture)		
LC50	Fathead Minnow	276 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
	Menidia beryllina (Silversides)	400 mg/L, Estimated Acute Toxicity, 96 hour, (Similar Product)

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Product		Species	Test Results
		Mysid Shrimp	300 mg/L, Estimated Acute Toxicity, 96 hour, (Similar Product)
	NOEL	Fathead Minnow	125 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
Aquatic Crustacea	LC50	Daphnia magna	911 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	500 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
Fish	LC50	Rainbow Trout	273 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Rainbow Trout	200 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)

Components		Species	Test Results
Chlorotolyltriazole sodium salt (CAS 202420-04-0)			
Aquatic			
Algae	EbC50	Algae	6.84 mg/l
	ErC50	Algae	18.6 mg/l
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Other adverse effects	Not available.		
Persistence and degradability	No data is available on the degradability of this product.		
- COD (mgO2/g)	275 (calculated data)		
- BOD 5 (mgO2/g)	21 (calculated data)		
- BOD 28 (mgO2/g)	43 (calculated data)		
- Closed Bottle Test (% Degradation in 28 days)	14 (calculated data)		
- TOC (mg C/g)	86 (calculated data)		

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	
UN number	UN1760
UN proper shipping name	Corrosive liquids, n.o.s. (CHLOROTOLYLTRIAZOLE SODIUM SALT, Sodium hydroxide), RQ(Sodium hydroxide)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II

Material name: GENGARD® GN8203
Version number: 4.2

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ERG number 154

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number UN1760

UN proper shipping name Corrosive liquid, n.o.s. (CHLOROTOLYLTRIAZOLE SODIUM SALT, Sodium hydroxide)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards No.

ERG Code 154

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1760

UN proper shipping name CORROSIVE LIQUID, N.O.S. (CHLOROTOLYLTRIAZOLE SODIUM SALT, Sodium hydroxide), RQ(Sodium hydroxide)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards

Marine pollutant No.

EmS F-A, S-B

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Material name: GENGARD® GN8203

Version number: 4.2

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130) Hazardous substance

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 148465
Category Code(s):
G5 Cooling and retort water treatment products G7 Boiler, steam line treatment products – nonfood contact

US state regulations**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

US - Pennsylvania RTK - Hazardous Substances

Sodium hydroxide (CAS 1310-73-2) Listed.

US - Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide (CAS 1310-73-2) Listed.

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date Nov-02-2014

Revision date Dec-20-2017

Version # 4.2

Material name: GENGARD® GN8203

Version number: 4.2

List of abbreviations

CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References:

No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information

Physical & Chemical Properties: Multiple Properties

Prepared by

This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.

SAFETY DATA SHEET

FLOGARD* POT6101

1. Identification

Product identifier FLOGARD POT6101
Other means of identification None.
Recommended use Corrosion inhibitor
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Harmful if swallowed. May be corrosive to metals. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Keep only in original container. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear protective gloves.

Response IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Absorb spillage to prevent material-damage.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Phosphoric Acid	7664-38-2	20 - 40
Zinc sulphate	7733-02-0	10 - 20

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch or walk through spilled material. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Prevent entry into waterways, sewer, basements or confined areas. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Environmental precautions Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Acidic. Do not mix with alkaline material. Corrosive to metal. Do not get this material in contact with eyes. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in original tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	PEL	1 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3

TWA 1 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3

TWA 1 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Eye wash fountain and emergency showers are recommended. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color

Colorless

Physical state

Liquid

Odor

None

Odor threshold

Not available.

pH (concentrated product)

1.4

Melting point/freezing point

-13 °F (-25 °C)

Initial boiling point and boiling range

220 °F (104 °C)

Flash point

Not applicable.

Material name: FLOGARD® POT6101

Version number: 1.1

Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.4
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	10 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Pour point	-18 °F (-28 °C)
Specific gravity	1.398
VOC	0 % (Calculated)

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with metals may release flammable hydrogen gas. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Metals.
Hazardous decomposition products	Oxides of sulphur evolved in fire. Oxides of phosphorus evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	Harmful if swallowed. May cause respiratory irritation.
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Product	Species	Test Results
FLOGARD POT6101 (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	1136 mg/kg, (Calculated according to GHS additivity formula)
Components	Species	Test Results
Phosphoric Acid (CAS 7664-38-2)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	2740 mg/kg
<i>Oral</i>		
LD50	Rat	300 mg/kg
Zinc sulphate (CAS 7733-02-0)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	1710 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classified.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity			
Product		Species	Test Results
FLOGARD POT6101 (CAS Mixture)			
LC50		Fathead Minnow	16 mg/L, Acute Toxicity, 96 hour, (Estimated)
NOEL		Fathead Minnow	6.3 mg/L, Acute Toxicity, 96 hour, (Estimated)

Material name: FLOGARD* POT6101

Version number: 1.1

Product	Species		Test Results
Aquatic Crustacea	LC50	Daphnia magna	3.8 mg/L, Static Acute Bioassay, 48 hour
	NOEL	Daphnia magna	3.2 mg/L, Static Acute Bioassay, 48 hour
Fish	LC50	Rainbow Trout	21.3 mg/L, Static Acute Bioassay, 96 hour
	NOEL	Rainbow Trout	15.5 mg/L, Static Acute Bioassay, 96 hour

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

No data available

- COD (mgO₂/g) No information available.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D002: Waste Corrosive material [pH ≤2 or ≥12.5, or corrosive to steel]
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN3264

UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (PHOSPHORIC ACID, ZINC SULFATE), RQ

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ERG number 154

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number UN3264

UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (PHOSPHORIC ACID, ZINC SULFATE)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards Yes

ERG Code 154

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN3264

UN proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (PHOSPHORIC ACID, ZINC SULFATE), RQ, MARINE POLLUTANT

Transport hazard class(es)

Class 8
Subsidiary risk -

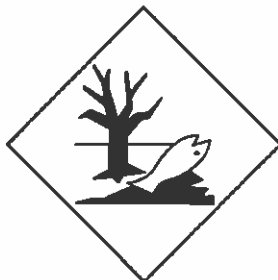
Packing group II

Environmental hazards

Marine pollutant Yes

EmS F-A, S-B

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

DOT**IATA; IMDG****Marine pollutant****General information**

IMDG Regulated Marine Pollutant.

15. Regulatory information**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Phosphoric Acid (CAS 7664-38-2)

Listed.

Zinc sulphate (CAS 7733-02-0)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Zinc sulphate	7733-02-0	10 - 20

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration The ingredients in this product are Generally Recognized As Safe by FDA for direct addition to human food.

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 140825
 Category Code(s):
 G5 Cooling and retort water treatment products
 G7 Boiler, steam line treatment products – nonfood contact

US state regulations**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Phosphoric Acid (CAS 7664-38-2)

Zinc sulphate (CAS 7733-02-0)

US - Pennsylvania RTK - Hazardous Substances

Phosphoric Acid (CAS 7664-38-2)

Listed.

Zinc sulphate (CAS 7733-02-0)

Listed.

US - Rhode Island RTK

Phosphoric Acid (CAS 7664-38-2)

US. New Jersey Worker and Community Right-to-Know Act

Phosphoric Acid (CAS 7664-38-2)

Listed.

Zinc sulphate (CAS 7733-02-0)

Listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Zinc sulphate (CAS 7733-02-0)

LISTED

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date	Nov-01-2014
Revision date	Dec-16-2017
Version #	1.1
List of abbreviations	CAS: Chemical Abstract Service Registration Number TWA: Time Weighted Average STEL: Short Term Exposure Limit LD50: Lethal Dose, 50% LC50: Lethal Concentration, 50% NOEL: No Observed Effect Level COD: Chemical Oxygen Demand BOD: Biochemical Oxygen Demand TOC: Total Organic Carbon IATA: International Air Transport Association IMDG: International Maritime Dangerous Goods Code ACGIH: American Conference of Governmental Industrial Hygienists TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
References:	No data available
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Revision information	Physical & Chemical Properties: Multiple Properties
Prepared by	This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).
* Trademark of SUEZ. May be registered in one or more countries.	

Attachment 13: Laboratory Information

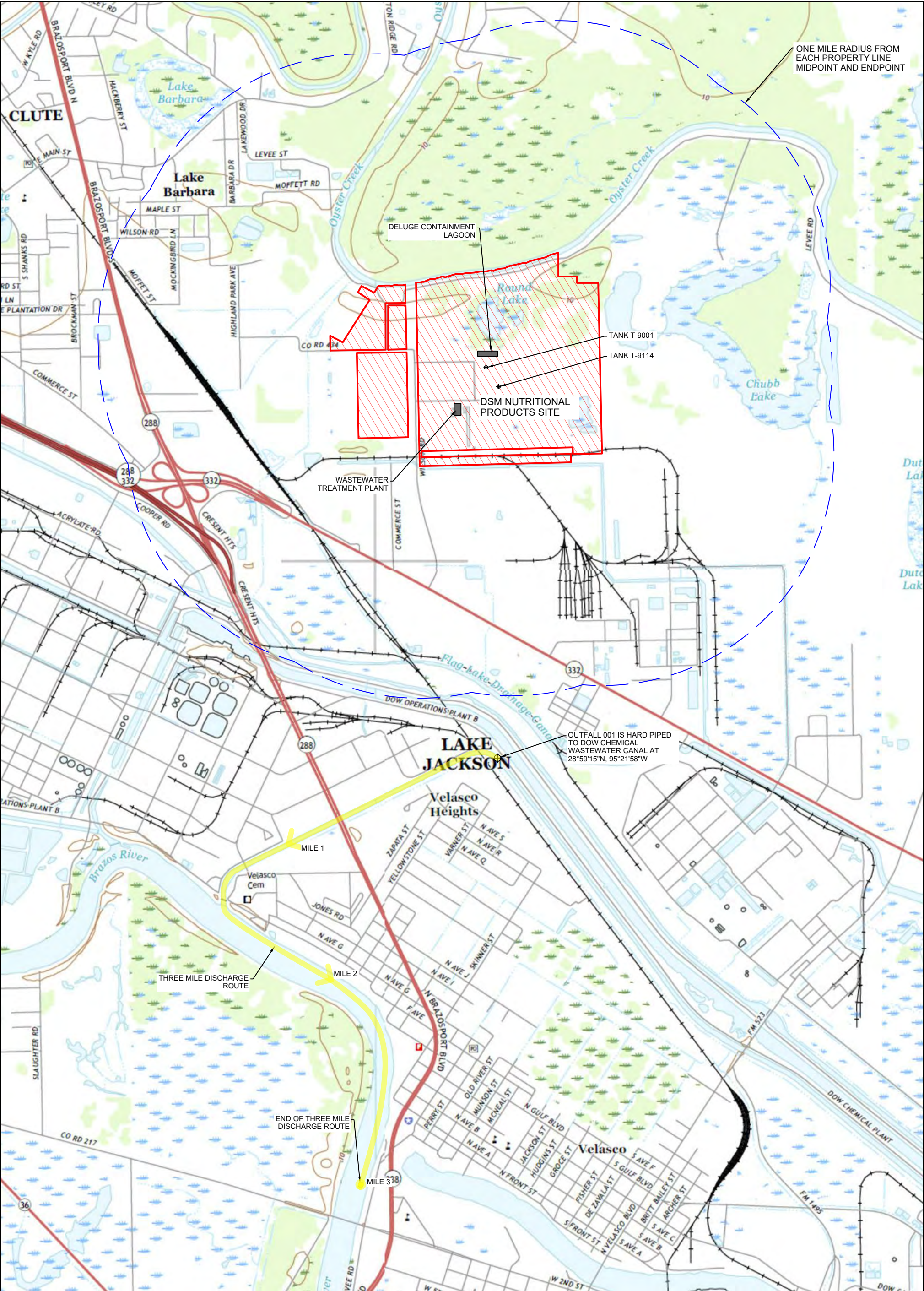
Attachment 13 – Laboratory Information

Most constituents were analyzed by Enthalpy Analytical, located at 2525 West Bellfort, Suite 175, Houston, TX 77054. The contact at Enthalpy is Laura L. Graber, Client Services/Technical Director, 1-713-666-4674, laura.graber@enthalpy.com.

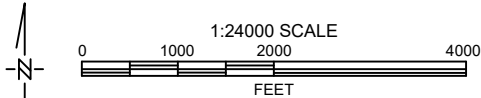
Because of short hold times that could not be met by a third-party lab, DSM's inhouse lab analyzed for dissolved oxygen, total residual chlorine, pH, and temperature. The contact at DSM is Trampas Welch, trampas.welch@dsm-firmenich.com.

Enthalpy contracted A&B Labs at 10100 East Freeway, Suite 100, Houston, TX 77029 to run the analytical tests listed below. The contact at A&B is Senthilkumar Sevukan, VP of Operations, 1-713-453-6060.


- Total Kjeldahl Nitrogen (TKN), EPA Method 351.2
- Volatile and semi-volatile organics, EPA 625.1
- Nonylphenol, ASTM D7065-11
- Mercury, EPA 1631E

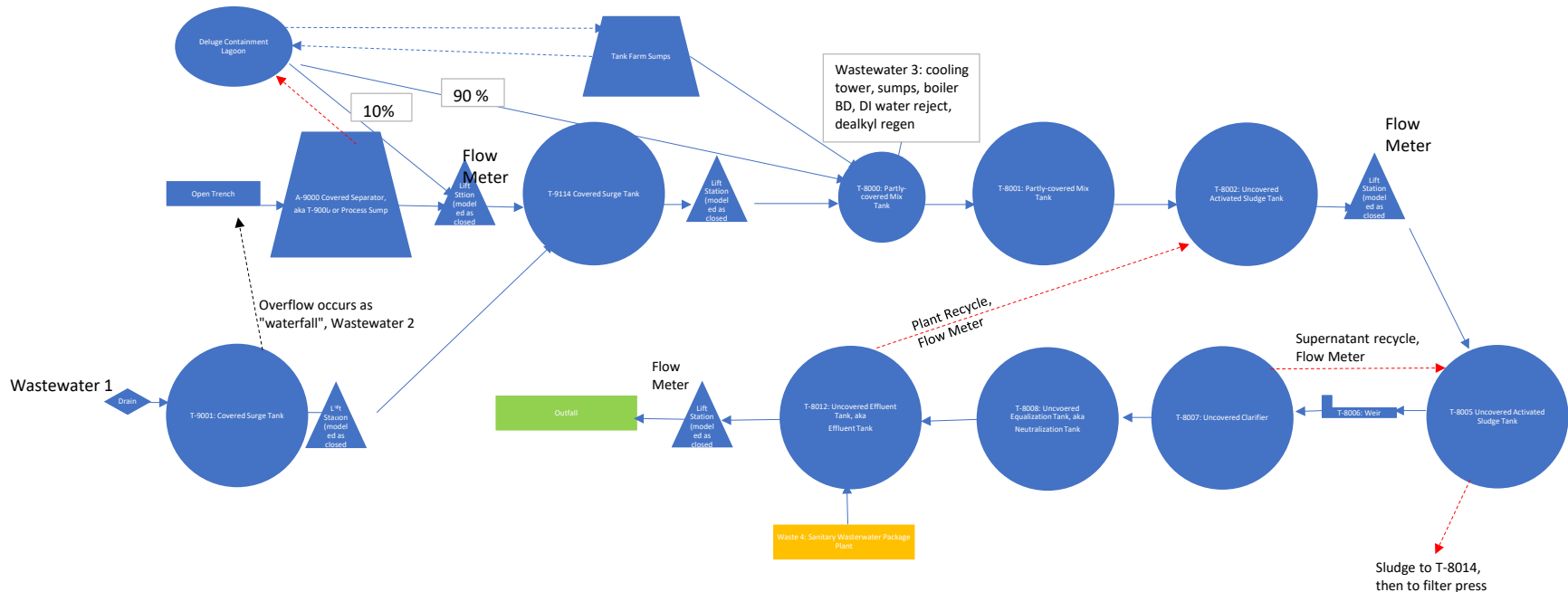


SOURCE: USGS 7.5' TOPO COMPOSITE OF LAKE JACKSON, OYSTER CREEK
FREEPORT AND JONES CREEK QUADRANGLES 2016



DOCUMENT TITLE:
**Attachment
Full Size USGS Map
DSM Nutritional Products
1000 County Road 227A
Freeport, TX 77541**

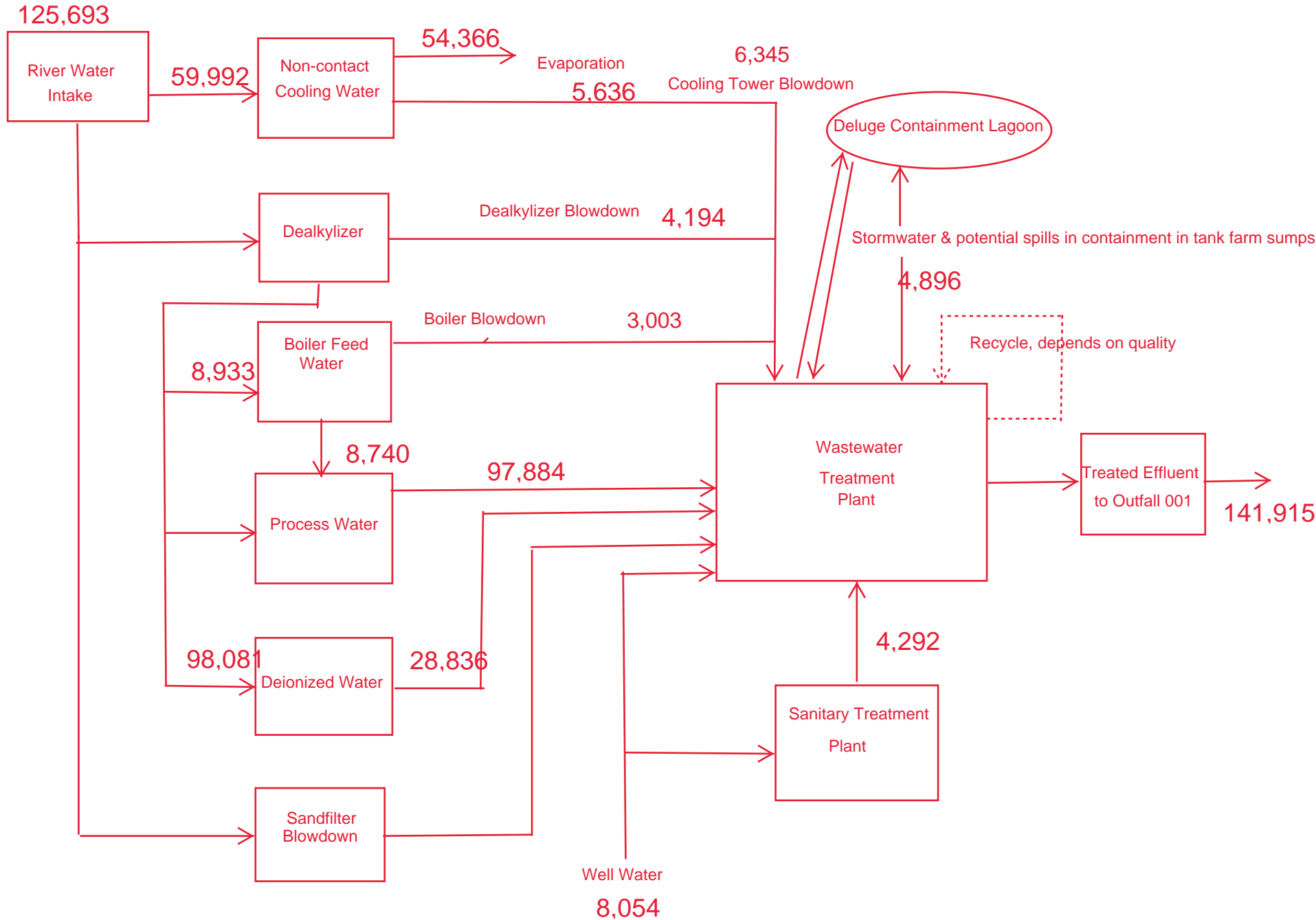
 GREEN ENVIRONMENTAL CONSULTING, INC.	
DRAWING NUMBER: DSM_USGS_061520	DATE: 6/15/20
DRAWN BY: DHM	REVISION #: REVISION DATE:

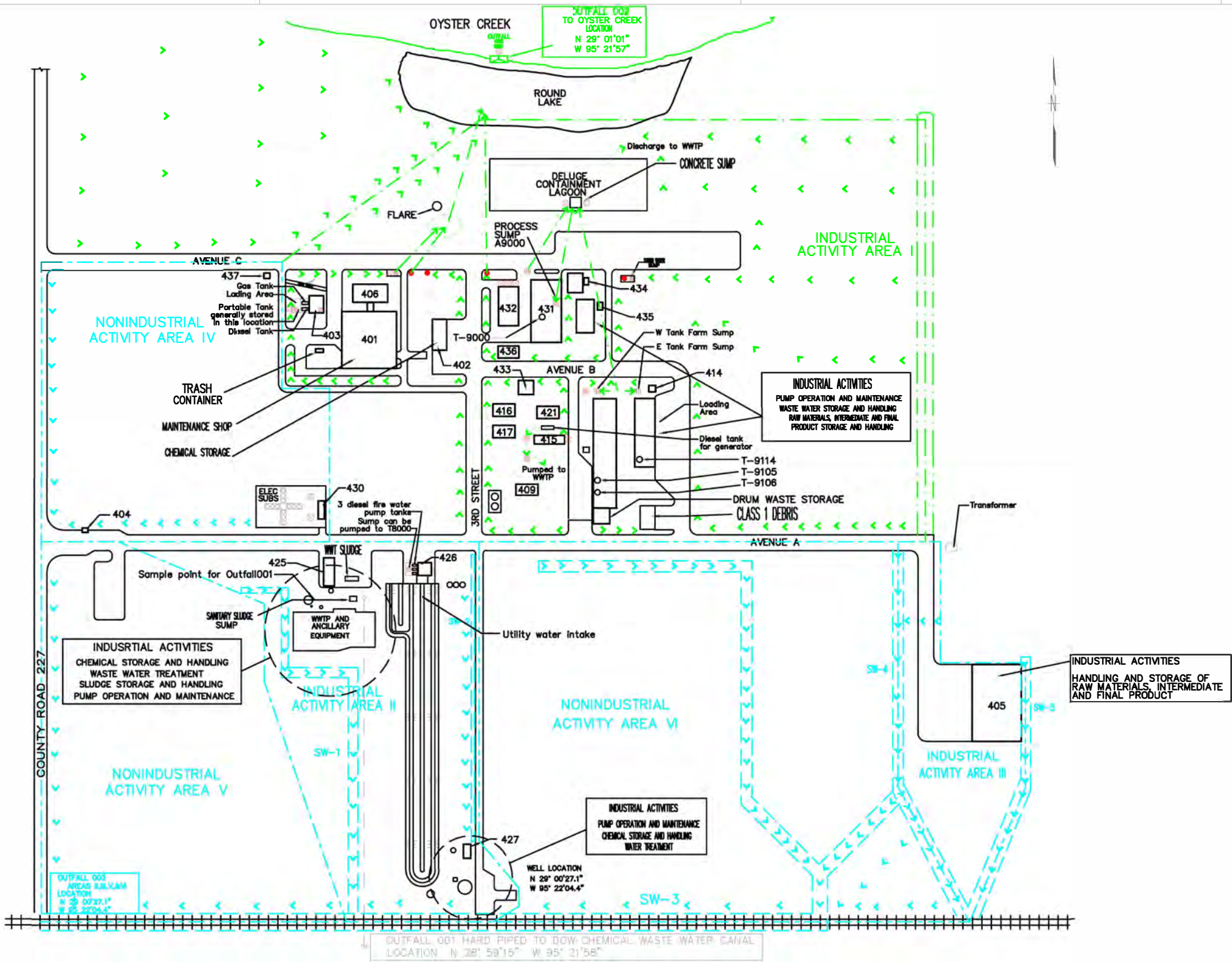


Wastewater 1 is process water only, which includes columns, vac pack overflows, vac steam pumps.

Wastewater 2 consists of spills, dealkyl water used for cooling in water jackets, condensate from cold pieces of equipment, stormwater that collects in process trench.

Schematic of Wastewater Flow, based on 2019 data, in average gallons per day





BUILDING INDEX	
DESCRIPTION	BLDG NO.
ADMINISTRATION/MAINTENANCE BUILDING	401
VEHICLE BUILDING	402
FUEL STORAGE BUILDING	403
GUARD HOUSE	404
WAREHOUSE	405
LUNCH & LOCKER ROOM BUILDING	406
DEALKALIZER BUILDING	409
CONTROL & SWITCH ROOMS-TANK FARMS	414
CONTROL & SWITCH ROOMS-ENERGY AREA	415
BOILER,NORTH - ENERGY AREA	416
BOILER,SOUTH - ENERGY AREA	417
COOLING TOWER - ENERGY AREA	420
REFRIGERATION SHED	421
WASTE WATER TREATMENT BUILDING	425
FIRE WATER PUMP HOUSE	426
SWITCH & CHLORINATOR BUILDING	427
SUBSTATION BUILDING	430
BETA CAROTENE PRODUCTION BUILDING	431
CONTROL & SWITCH ROOM BUILDING	432
D.I. WATER HOUSE	433
HAZMAT FOAM SYSTEM BUILDING	434
DAY TANK SPRINKLER SYS VALVE HOUSE	435
BC SHIPPING	436
GUARD HOUSE, GATE #2	437

WASTE MANAGEMENT UNITS	
10,000 GALLON CARBON STEEL STORAGE TANK-T9106	
30 YARD ROLL-OFF CONTAINER (WWTP SLUDGE)	
30 YARD ROLL-OFF CONTAINER (PLANT TRASH, WEST SIDE OF PLANT)	
BUILDING 403 - CONTAINER STORAGE AREA	
10,000 GALLON STAINLESS STEEL STORAGE TANK -T9105	
BUILDING 405 BC WAREHOUSE	
SANITARY SLUDGE SUMP (SOUTH END OF WWTP)	
30 YARD ROLL-OFF CONTAINER (SPENT PPE, CLASS 1 DEBRIS)	
BUILDING 402 - CHEMICAL STORAGE AREA	
WWTP (AND ANCILLARY EQUIPMENT)	
MAINTENANCE SHOP (RECYCLE METALS ROLLOFF)	

- LEGEND
- OIL SEPARATORS
 - ⊠ SLUICE GATE
 - TRANSFORMER
 - SUMP

PROJECT ENG. DESIGN SUPVR. CHECKED BY DRAWN BY INITIATOR

START DATE

ENGINEER IN RESPONSIBLE CHARGE	DRAWING TITLE ATTACHMENT 8 - FACILITY MAP FREEPORT MANUFACTURING COMPLEX	PROJECT TITLE TJ P A-1 ROCHE VITAMINS INC. OIL STORAGE, OIL-FILLED EQUIPMENT, AND STORM WATER RUNOFF	SCALE NTS BLDG. NO.
	Roche a division of Hoffmann-La Roche Inc. Belvidere, New Jersey	DRAWING NO. TD-P-CC-0400-01	0

**TPDES INDUSTRIAL WASTEWATER PERMIT
RENEWAL APPLICATION**

FOR

dsm-firmenich 

**DSM NUTRITONAL PRODUCTS, LLC
FREEPORT, BRAZORIA COUNTY, TEXAS**

**TPDES PERMIT NO. WQ0002216000
EPA ID NO. TXD083558486
TCEQ CUSTOMER NO. CN602496499
TCEQ REGULATED ENTITY NO. RN101190221**

Submitted to

**Texas Commission on Environmental Quality
Austin, Texas**



Prepared by
GREEN ENVIRONMENTAL CONSULTING, INC.
Houston, Texas

**Project No. DSM023
August 2024**

Extension Letter

From: Leah Whallon Leah.Whallon@Tceq.Texas.Gov
Subject: 180-Day Extension Request to Renew TPDES Permit No. WQ0002216000;TX0064912
Date: August 14, 2024 at 9:15 AM
To: Janet L. Greenberg JGreen@green-envi.com
Cc: Sara McCordic smccordic@green-envi.com, Karen Miller kmiller@green-envi.com, Kinzie Griffin kinzie.griffin@dsm-firmenich.com, Linda S. Kee lkee@green-envi.com, Monica Baez monica.baez@tceq.texas.gov, Matthew Kennington Matthew.Kennington@tceq.texas.gov, Macy Beauchamp Macy.Beauchamp@tceq.texas.gov, Krista Urea Krista.Urea@tceq.texas.gov, WQD-ICIS WQD-ICIS@tceq.texas.gov

Good Morning Janet,

An extension to the application filing deadline is being granted as requested until September 14, 2024. Please see attached for a courtesy copy of the letter. The original will be sent by mail today.

Please let me know if you have any questions.

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

From: Janet L. Greenberg <JGreen@green-envi.com>
Sent: Tuesday, August 13, 2024 2:52 PM
To: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>; WQ-ARPTeam <WQ-ARPTeam@tceq.texas.gov>; Shannon Gibson <Shannon.Gibson@tceq.texas.gov>; Monica Baez <monica.baez@tceq.texas.gov>
Cc: Sara McCordic <smccordic@green-envi.com>; Karen Miller <kmiller@green-envi.com>; Kinzie Griffin <kinzie.griffin@dsm-firmenich.com>; Linda S. Kee <lkee@green-envi.com>
Subject: RE: Re: Fw: question on submittal of renewal - EXTENSION REQUEST

Hello, Leah. DSM Nutritional Products, LLC in Freeport, Texas is in the process of submitting an application to renew TPDES Permit No. WQ0002216000, which expires on February 11, 2025. The renewal application is due for submittal to TCEQ 180 days prior, on August 15, 2024. The application is ready to submit, but the new Site Leader, who needs to sign the application in STEERS, does not yet have a Texas driver's license. On behalf of DSM, we hereby request an extension of 30 days for the submission of this renewal application, to allow the Site Leader time to submit a paper SPA to TCEQ and also obtain a TDL. The application will be promptly submitted in STEERS once he has the authority to sign the application there. Please advise, thank you.

Thanks,

Janet L. Greenberg, P.E.

Administrative Report



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION CHECKLIST

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

APPLICANT NAME: DSM Nutritional Products, LLC

PERMIT NUMBER (If new, leave blank): WQ00 02216000

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

	Y	N		Y	N
Administrative Report 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 8.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Administrative Report 1.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Worksheet 9.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPIF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 10.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Core Data Form	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 11.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Public Involvement Plan Form	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Worksheet 11.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Plain Language Summary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 11.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Technical Report 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 11.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Original USGS Map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Affected Landowners Map	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 3.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Landowner Disk or Labels	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 3.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Flow Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 3.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Site Drawing	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 3.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Original Photographs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 4.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Design Calculations	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 4.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Solids Management Plan	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 5.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Water Balance	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 6.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 7.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

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 the Oil and Gas Exploration and Production Administrative Report ([TCEQ Form-20893 and 20893-inst¹](#)).

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

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

Applicant Name: DSM Nutritional Products, LLC

Permit No.: WQ0002216000

EPA ID No.: TXD083558486

Expiration Date: 2/11/2025

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

☒ Industrial Wastewater (wastewater and stormwater)

☐ Industrial Stormwater (stormwater 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)	<input type="checkbox"/> \$350	<input type="checkbox"/> \$350	<input type="checkbox"/> \$315	<input type="checkbox"/> \$150
Minor facility subject to EPA categorical effluent guidelines (40 CFR Parts 400-471)	<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,250	<input checked="" type="checkbox"/> \$1,215	<input type="checkbox"/> \$150
Major facility	N/A ²	<input type="checkbox"/> \$2,050	<input type="checkbox"/> \$2,015	<input type="checkbox"/> \$450

h. Payment Information

Mailed

Check or money order No.: [Click to enter text.](#)

Check or money order amt.: [Click to enter text.](#)

Named printed on check or money order: [Click to enter text.](#)

Epay

Voucher number: [Click to enter text.](#)

Copy of voucher attachment: [Click to enter text.](#)

Item 2. Applicant Information (Instructions, Pages 26)

a. Customer Number, if applicant is an existing customer: CN602496499

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: DSM Nutritional Products, LLC

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): Lopes/Renato S

Title: Site Manager

Credential: [Click to enter text.](#)

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: Click to enter text.

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): CNClick to enter text.

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: Click to enter text.

Full Name (Last/First Name): Click to enter text.

Title: Click to enter text.

Credential: Click to enter text.

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 one Core Data Form (TCEQ Form 10400) for each customer (applicant and co-applicant(s)) and include as an attachment. If the customer type selected on the Core Data Form is Individual, complete Attachment 1 of the Administrative Report. Attachment: 1

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

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

a. ☒ Administrative Contact . ☒ Technical Contact

Prefix: Ms. Full Name (Last/First Name): Miller/Karen M

Title: Senior Engineer Credential: PE, PG

Organization Name: GREEN Environmental Consulting, Inc.

Mailing Address: 2902 Clarice Ct City/State/Zip: Austin, TX 78757

Phone No: 512-468-7325 Email: kmiller@green-envi.com

b. ☒ Administrative Contact ☒ Technical Contact

Prefix: Ms. Full Name (Last/First Name): Griffin/Kinzie

Title: Environmental Professional Credential:

Organization Name: DSM Nutritional Products, LLC

Mailing Address: 1000 County Road 227A City/State/Zip: Freeport, TX 77541

Phone No: 979-373-5080

Email: Kinzie.griffin@dsm-firmenich.com

Attachment: [Click to enter text.](#)

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): Griffin/Kinzie
Title: Environmental Professional Credential: _____
Organization Name: DSM Nutritional Products, LLC
Mailing Address: 1000 County Road 227A City/State/Zip: Freeport, TX 77541
Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.com
- b. Prefix: Mr. Full Name (Last/First Name): Strack/David
Title: Safety, Health, Environmental Manager - Interim Credential: EIT, CSP, ASP
Organization Name: DSM Nutritional Products, LLC
Mailing Address: 1000 County Road 227A City/State/Zip: Freeport, TX 77541
Phone No: 979-373-5045 Email: david.strack@dsm-firmenich.com
- Attachment: [Click to enter text.](#)

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): Griffin/Kinzie
Title: Environmental Professional Credential: [Click to enter text.](#)
Organization Name: DSM Nutritional Products
Mailing Address: 1000 County Rd 227A City/State/Zip: Freeport, TX 77541
Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.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): Griffin/Kinzie
Title: Environmental Professional Credential: [Click to enter text.](#)
Organization Name: DSM Nutritional Products
Mailing Address: 1000 County Rd 227A City/State/Zip: Freeport, TX 77541
Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.com

Item 9. Notice Information (Instructions, Pages 28)

a. Individual Publishing the Notices

Prefix: Ms. Full Name (Last/First Name): Griffin/Kinzie

Title: Environmental Professional Credential:

Organization Name: DSM Nutritional Products, LLC

Mailing Address: 1000 County Road 227A City/State/Zip: Freeport, TX 77541

Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.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: kinzie.griffin@dsm-firmenich.com

☐ Fax: Click to enter text.

☒ Regular Mail (USPS)

Mailing Address: 1000 County Rd 227A

City/State/Zip Code: Freeport, TX 77541

c. Contact in the Notice

Prefix: Ms. Full Name (Last/First Name): Griffin/Kinzie

Title: Environmental Professional Credential:

Organization Name: DSM Nutritional Products, LLC

Phone No: 979-373-5080 Email: Kinzie.griffin@dsm-firmenich.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: Freeport Branch Public Library Location within the building:
Public notice shelf

Physical Address of Building: 410 N. Brazosport Blvd.

City: Freeport County: Brazoria

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. Plain Language Summary Template – Complete the Plain Language Summary (TCEQ Form 20972) and include as an attachment. Attachment: 2

- g. Complete one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment and include as an attachment. Attachment: n/a

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

- a. TCEQ issued Regulated Entity Number (RN), if available: RN101190221

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 (the name known by the community where located): DSM Nutritional Products Freeport 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: Click to enter text. Full Name (Last/First Name): Click to enter text.

or Organization Name: DSM Nutritional Products

Mailing Address: 1000 County Rd 227A

City/State/Zip: Freeport/TX/77541

Phone No: 979-373-5080

Email: Kinzie.griffin@dsm-firmenich.com

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

- f. Owner of land where treatment facility is or will be: DSM Nutritional Products

Prefix: [Click to enter text.](#) Full Name (Last/First Name): [Click to enter text.](#)

or Organization Name: [DSM Nutritional Products](#)

Mailing Address: [1000 County Rd 227!](#)

City/State/Zip: [Freeport/TX/77541](#)

Phone No: [979-373-5080](#)

Email: [Kinzie.griffin@dsm-firmenich.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: [Click to enter text.](#) Full Name (Last/First Name): [Click to enter text.](#)

or Organization Name: [Click to enter text.](#)

Mailing Address: [Click to enter text.](#)

City/State/Zip: [Click to enter text.](#)

Phone No: [Click to enter text.](#)

Email: [Click to enter text.](#)

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: [Click to enter text.](#)

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

Prefix: [n/a](#) Full Name (Last/First Name): [Click to enter text.](#)

or Organization Name: [Click to enter text.](#)

Mailing Address: [Click to enter text.](#)

City/State/Zip: [Click to enter text.](#)

Phone No: [Click to enter text.](#)

Email: [Click to enter text.](#)

Note: If not the same as the facility owner, attach a long-term lease agreement in effect for at least six years. Attachment: [Click to enter text.](#)

Item 11. TD PES 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

☒ Three-miles downstream information

☒ Applicant's property boundaries

☒ Treatment facility boundaries

☒ Labeled point(s) of discharge

☒ Highlighted discharge route(s)

☐ Effluent disposal site boundaries

☒ All wastewater ponds

☐ Sewage sludge disposal site

☐ New and future construction

Attachment: [3](#)

- 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: [Click to enter text.](#)

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: [Click to enter text.](#)

f. City nearest the outfall(s): Freeport

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

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: [Click to enter text.](#)

- b. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Account no.: [Click to enter text.](#)

Total amount due: [Click to enter text.](#)

- c. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

Enforcement order no.: [Click to enter text.](#)

Amount due: [Click to enter text.](#)

Item 13. Signature Page (Instructions, Page 33)

Permit No: WQ0002216000

Applicant Name: DSM Nutritional Products

Certification: I, Renato S Lopes, 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): Renato S Lopes

Signatory title: Site Manager

Signature: _____

(Use blue ink)

Date: 08/14/2024

Subscribed and Sworn to before me by the said _____

on this 14

day of August

, 2024.

My commission expires on the 9

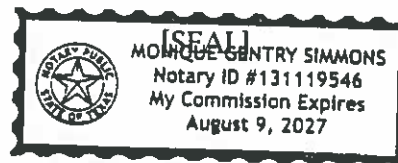
day of August

, 2027.

Monique Gentry Simmons
Notary Public

Brazoria

County, Texas



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: n/a

- b. Check the box next to the format of the landowners list:

☐ Readable/Writeable CD ☐ Four sets of labels

Attachment: n/a

- d. Provide the source of the landowners' names and mailing addresses: n/a

- 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

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: 4

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:** WQ000 [Click to enter text.](#)

1. Check or Money Order Number: [Click to enter text.](#)
2. Check or Money Order Amount: [Click to enter text.](#)
3. Date of Check or Money Order: [Click to enter text.](#)
4. Name on Check or Money Order: [Click to enter text.](#)

5. APPLICATION INFORMATION

Name of Project or Site: [Click to enter text.](#)

Physical Address of Project or Site: [Click to enter text.](#)

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: [Click to enter text.](#)

Staple Check or Money Order in This Space

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): Click to enter text.

Driver's License or State Identification Number: Click to enter text.

Date of Birth: Click to enter text.

Mailing Address: Click to enter text.

City, State, and Zip Code: Click to enter text.

Phone No.: Click to enter text.

Fax No.: Click to enter text.

E-mail Address: Click to enter text.

CN: Click to enter text.

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 Cross Reference List
(See instructions for landowner requirements.)
- ☒ N/A ☐ Landowners Labels or CD-RW attached
(See instructions for landowner requirements.)
- ☒ 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.)*
- ☒ Plain Language Summary

Technical Report



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).

DSM Nutritional Products, SIC 2833, manufactures beta carotene, which is a Vitamin A precursor, via a chemical synthesis process. The facility employs an in-process chemical recovery system for the major organic solvents (methanol, acetone, and methylene chloride) that are used as the raw materials to maximize process efficiency and minimize waste generation.

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

Process wastewater is generated from the use of process equipment, such as water-supplied vacuum pumps, distillation columns, overhead condensers, equipment cooling (tower water). Utility wastewater is generated by cooling tower blowdown, cooling water for compressors, boiler blowdown, and deionized water plant reject flow, as well as regeneration of the Dealkylized Beds.

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
Acetic acid CAS 64-19-7	Etinol CAS 17075-53-5	Beta Carotene CAS 7235-40-7
Acetone CAS 67-64-1		
Acetylene CAS 74-86-2	Vinylol CAS 5208-93-5	C25 Aldehyde
Anhydrous ammonia CAS 7664-41-7		
Beta-Ionone CAS 14901-07-6	Vinyl Salt CAS 1062-12-0	
C10-Dialdehyde CAS 5056-17-7		
Hexane CAS 110-54-3		
Hydrochloric acid CAS 7647-01-0		
Hydrogen CAS 1333-74-0		
Methanol CAS 67-65-1		
Methylene Chloride CAS 75-09-2		
Potassium hydroxide CAS 1310-58-3		
Sodium Hydroxide CAS 1310-73-2		
Sulfuric acid CAS 7664-93-9		
Palladium on calcium carbonate CAS 7440-05-3		
Toluene CAS 108-88-3		
Brine solution CAS 7647-14-5		
Triphenylphosphine CAS 603-53-0		
Pyridine CAS 110-86-1		

d. **Attachment:** [Click to enter text.](#)

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: 5

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

☐ Yes ☒ No

If **yes**, provide background discussion: [Click to enter text.](#)

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: 12/30/2020 FEMA FIRM map

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: [Click to enter text.](#)

Attachment: 6

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: [Click to enter text.](#)

If **no**, provide an approximate date of application submittal to the USACE: [Click to enter text.](#)

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.

The facility's wastewater treatment processes consist of: physical treatment, chemical treatment, and biological treatment. Detailed descriptions of the processes are included in Attachment 7.

- 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: 8

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)	C, E			
Associated Outfall Number	001			
Liner Type (C) (I) (S) or (A)	I			
Alt. Liner Attachment Reference	n/a			
Leak Detection System, Y/N	N			
Groundwater Monitoring Wells, Y/N	N			
Groundwater Monitoring Data Attachment	None			
Pond Bottom Located Above The Seasonal High-Water Table, Y/N	Y			
Length (ft)	340			
Width (ft)	80			
Max Depth From Water Surface (ft), Not Including Freeboard	Approx 11			
Freeboard (ft)	0			
Surface Area (acres)	0.6			
Storage Capacity (gallons)	2.3 million			
40 CFR Part 257, Subpart D, Y/N	N			
Date of Construction	1970s			

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: [Click to enter text.](#)

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: 9

- 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: 10

- 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: 11

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/or 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	29.0075	-95.367777

Outfall Location Description

Outfall No.	Location Description
001	12-inch steel pipe empties into the Dow Canal at the Dow Chemical Plant site. The flow meter is on DSM property.

Outfall No.	Location Description

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

Outfall No.	Description of sampling point
001	Sampling of the outfall occurs on the DSM property at the wastewater treatment plant.

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	0.190	0.390	0.190	0.390	Ongoing

Outfall Discharge – Method and Measurement

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

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	12

Outfall Wastestream Contributions

Outfall No. 001

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Process	0.1	69
Cooling tower blowdown	0.006	4
Sanitary wastewater	0.004	3
Utilities (boiler blowdown, et. al)	0.03	21

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Stormwater	0.005	3

Outfall No. [Click to enter text.](#)

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

Outfall No. [Click to enter text.](#)

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

Attachment: [Click to enter text.](#)

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: 12

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	1	6,345	86,175
Boilers	1	3,003	10,423

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: Product and raw materials are stored outdoors. Plus, the process structure where beta carotene is manufactured is not enclosed. Spills in areas could contact stormwater, which is collected in contained areas and sumps and is then pumped to the wastewater treatment plant for treatment prior to discharge through Outfall 001. Additionally, cooling tower overspray blows onto the ground and collects in low areas while the water seals around the EV flare are emptied onto the ground surface, both of which have the potential to contaminate stormwater that then drains to Round Lake.

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: [Click to enter text.](#)
- 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.
Hauler: Sprint	8836
Disposal facility: Seabreeze Environmental Landfill	H1539

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: [Click to enter text.](#)

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: [Click to enter text.](#)

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA. **Attachment:** [Click to enter text.](#)

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: [Click to enter text.](#)

- 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: [Click to enter text.](#)

- 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)

- 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)

Item 12. Cooling Water (Instructions, Page 46)

- a. Does the facility use or propose to use water for cooling purposes?

☒ Yes ☐ No

If **no**, stop here. If **yes**, complete Items 12.b thru 12.f.

- 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

- 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	COOL-01			
Owner	DSM			
Operator	DSM			

2. Cooling water is/will be obtained from a Public Water Supplier (PWS)

☒ Yes ☐ No

If **no**, continue. If **yes**, provide the PWS Registration No. and stop here: PWS No. TX0200232

3. Cooling water is/will be obtained from a reclaimed water source?

☐ Yes ☐ No

If **no**, continue. If **yes**, provide the Reuse Authorization No. and stop here: [Click to enter text.](#)

4. Cooling water is/will be obtained from an Independent Supplier

☐ Yes ☐ No

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: [Click to enter text.](#)

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 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

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*: [Click to enter text.](#)

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: [Click to enter text.](#)

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: [Click to enter text.](#)

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.

[Click to enter text.](#)

b. Is the facility requesting any **minor amendments** to the permit?

☐ Yes ☒ No

If **yes**, list and describe each change individually.

[Click to enter text.](#)

c. Is the facility requesting any **minor modifications** to the permit?

☐ Yes ☒ No

If **yes**, list and describe each change individually.

Click to enter text.

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: Renato S Lopes

Title: Site Manager

Signature: _____

Date: 08/14/2024

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
Pharmaceutical manufacturing	439

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.

DSM purchases an average of 45 million gallons of water from Dow annually for use in onsite processes. Approximately a sixth of the water is used in non-contact cooling and evaporated from the cooling tower while approximately nine percent is blown down and sent to the WWTP for treatment. A majority, about 65%, of the fresh water from Dow is dealkylized and then used onsite in the boiler, as process water feed, and as feedstock to produce deionized water, which is also used in onsite production. About eight percent of the water treated via dealkylation is blown down for treatment in the WWTP. Approximately seven percent of the incoming fresh water is lost from the boiler to steam and to the onsite flare while about six percent is sent as boiler blowdown to the WWTP for treatment. Approximately 77 percent is used as feedstock to make DI water, most of which is used in the process. More detail of the water flows is shown on Attachment 8.

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
Beta carotene production	439	C	12/1993

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)

- 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): 3/28/2024 – 7/2/2024
- ☒ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- 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: 13

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.: 001

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)	7	8	7	3
CBOD (5-day)	2	3	<2	<2
Chemical oxygen demand	70	58	97	44
Total organic carbon	11.5	11.1	11.8	12.1
Dissolved oxygen	8	9	9	9
Ammonia nitrogen	<0.25	<0.25	<0.25	<0.25
Total suspended solids	18	31	16	13
Nitrate nitrogen	52.6	69.8	55.2	40.1
Total organic nitrogen	0.782	0.642	2.82	2.57
Total phosphorus	5.41	7.40	6.17	5.02
Oil and grease	<5.0	<5.0	<5.0	<5.0
Total residual chlorine	0.06	0.02	0.01	0.08

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Total dissolved solids	1,750	2,020	1,780	1,780
Sulfate	207	216	150	163
Chloride	621	631	601	659
Fluoride	<0.50	<0.50	<0.5	<0.5
Total alkalinity (mg/L as CaCO3)	60	54	80	108
Temperature (°F)	62.2	66.2	66.4	69.3
pH (standard units)	7.8	7.70	7.60	7.90

Table 2 for Outfall No.: 001

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	346	564	277	331	2.5
Antimony, total	0.6	0.8	0.7	0.7	5
Arsenic, total	3.3	4.4	3.7	5.0	0.5
Barium, total	79.5	91.2	54.8	37.2	3
Beryllium, total	<0.4	<0.4	<0.4	<0.4	0.5
Cadmium, total	<0.4	<0.4	<0.4	<0.4	1
Chromium, total	1.1	1.6	0.6	0.7	3
Chromium, hexavalent	4.7	4.7	4.7	4.7	3
Chromium, trivalent	1.1	1.6	0.6	0.7	N/A
Copper, total	16.1	21.1	15.6	14.2	2
Cyanide, available	<9	<9	<9	<9	2/10
Lead, total	<0.4	0.5	<0.4	<0.4	0.5
Mercury, total	0.000966	0.000257000	0.0013	0.00118	0.005/0.0005
Nickel, total	4.2	<0.4	4.0	3.4	2
Selenium, total	<3.2	<0.4	<3.2	<3.2	5
Silver, total	<0.4	<0.4	<0.4	<0.4	0.5
Thallium, total	<0.4	<0.4	<0.4	<0.4	0.5
Zinc, total	40.4	65.3	39.3	39.2	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.: **001**

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	<43	<43	<43	<43	50
Anthracene	<0.35	<1.80	<0.35	<0.35	10
Benzene	<1	<1	<1	<1	10
Benidine	<0.66	<3.30	<0.66	<0.66	50
Benzo(a)anthracene	<0.33	<1.90	<0.38	<0.38	5
Benzo(a)pyrene	<0.85	<4.30	<0.85	<0.85	5
Bis(2-chloroethyl)ether	<0.72	<3.60	<0.72	<0.72	10
Bis(2-ethylhexyl)phthalate	<2.20	11.00	<2.20	<2.20	10
Bromodichloromethane [Dichlorobromomethane]	2	3	<1	2	10
Bromoform	<2	<2	<2	<2	10
Carbon tetrachloride	<2	<2	<2	<2	2
Chlorobenzene	<1	<1	<1	<1	10
Chlorodibromomethane [Dibromochloromethane]	<1	<1	<1	<1	10
Chloroform	<2	4	<2	3	10
Chrysene	<0.57	<2.90	<0.57	<0.57	5
m-Cresol [3-Methylphenol]	<1.30	<6.60	<1.30	<1.30	10
o-Cresol [2-Methylphenol]	<1.00	<5.00	<1.00	<1.00	10
p-Cresol [4-Methylphenol]	<1.30	<6.60	<1.30	<1.30	10
1,2-Dibromoethane	<1	<1	<1	<1	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<0.53	<2.70	<0.53	<0.53	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<0.41	<2.10	<0.41	<0.41	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<0.25	<1.30	<0.25	<0.25	10
3,3'-Dichlorobenzidine	<0.88	<4.40	<0.88	<0.88	5
1,2-Dichloroethane	<1	<1	<1	<1	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
1,1-Dichloroethene [1,1-Dichloroethylene]	<1	<1	<1	<1	10
Dichloromethane [Methylene chloride]	<1	<1	<1	<1	20
1,2-Dichloropropane	<1	<1	<1	<1	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<2	<2	<2	<2	10
2,4-Dimethylphenol	<0.53	<2.70	<0.53	<0.53	10
Di-n-Butyl phthalate	<1.20	<6.10	<1.20	<1.20	10
Ethylbenzene	<1	<1	<1	<1	10
Fluoride	<0.50	<0.50	<0.5	<0.5	500
Hexachlorobenzene	<0.69	<3.50	<0.69	<0.69	5
Hexachlorobutadiene	<0.41	<2.10	<0.41	<0.41	10
Hexachlorocyclopentadiene	<0.35	<1.80	<0.35	<0.35	10
Hexachloroethane	<0.47	<2.40	<0.47	<0.47	20
Methyl ethyl ketone	<4	<4	<4	<4	50
Nitrobenzene	<0.91	<4.60	<0.91	<0.91	10
N-Nitrosodiethylamine	<5.00	25.0	<5.00	<5.00	20
N-Nitroso-di-n-butylamine	<5.00	25	<5.00	<5.00	20
Nonylphenol	<5.00	<25.0	<5.00	<5.00	333
Pentachlorobenzene	<3.00	<15.0	<3.00	<3.00	20
Pentachlorophenol	<0.50	<2.50	<0.50	<0.50	5
Phenanthrene	<0.44	<2.20	<0.44	<0.44	10
Polychlorinated biphenyls (PCBs) (**)	<0.03	<0.03	<0.03	<0.03	0.2
Pyridine	<0.35	<1.80	<0.35	<0.35	20
1,2,4,5-Tetrachlorobenzene	<5.00	25	<5.00	<5.00	20
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	10
Tetrachloroethene [Tetrachloroethylene]	<1	<1	<1	<1	10
Toluene	<1	<1	<1	<1	10
1,1,1-Trichloroethane	<1	<1	<1	<1	10
1,1,2-Trichloroethane	<1	<1	<1	<1	10
Trichloroethene [Trichloroethylene]	<1	<1	<1	<1	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
2,4,5-Trichlorophenol	<0.85	<4.30	<0.85	<0.85	50
TTHM (Total trihalomethanes)	2	7	<2	5	10
Vinyl chloride	<1	<1	<1	<1	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.: **001**

Samples are (check one): ☐ Composite ☒ Grab

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)	n/a	n/a	n/a	n/a	0.010
Enterococci (cfu or MPN/100 mL)	4.0	4.0	42.2	10.4	N/A
<i>E. coli</i> (cfu or MPN/100 mL)	n/a	n/a	n/a	n/a	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.: [Click to enter text.](#)

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 [Fenprothrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Endosulfan I (<i>alpha</i>)					0.01
Endosulfan II (<i>beta</i>)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (<i>alpha</i>)					0.05
Hexachlorocyclohexane (<i>beta</i>)					0.05
Hexachlorocyclohexane (<i>gamma</i>) [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.: **001**

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	<input type="checkbox"/>	<input checked="" type="checkbox"/>					400
Color (PCU)	<input checked="" type="checkbox"/>	<input type="checkbox"/>		15			—
Nitrate-Nitrite (as N)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	52.6				—
Sulfide (as S)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<0.05				—
Sulfite (as SO ₃)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Surfactants	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Boron, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Cobalt, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					0.3
Iron, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.535	0.875	0.425	0.347	7
Magnesium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Manganese, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					0.5
Molybdenum, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					1
Tin, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					5
Titanium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					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
<input type="checkbox"/> Adhesives and Sealants		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Aluminum Forming	467	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Auto and Other Laundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Battery Manufacturing	461	<input type="checkbox"/> Yes	No	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Coal Mining	434	No	No	No	No
<input type="checkbox"/> Coil Coating	465	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Copper Forming	468	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Electric and Electronic Components	469	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Electroplating	413	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Explosives Manufacturing	457	No	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Foundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts A,B,C,E	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts D,F	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Inorganic Chemicals Manufacturing	415	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Iron and Steel Manufacturing	420	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Leather Tanning and Finishing	425	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Mechanical Products Manufacturing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Nonferrous Metals Manufacturing	421,471	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Oil and Gas Extraction - Subparts A, D, E, F, G, H	435	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Ore Mining - Subpart B	440	No	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Organic Chemicals Manufacturing	414	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Paint and Ink Formulation	446,447	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Pesticides	455	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Petroleum Refining	419	<input type="checkbox"/> Yes	No	No	No
<input checked="" type="checkbox"/> Pharmaceutical Preparations	439	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	No
<input type="checkbox"/> Photographic Equipment and Supplies	459	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Plastic and Synthetic Materials Manufacturing	414	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Plastic Processing	463	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Porcelain Enameling	466	No	No	No	No
<input type="checkbox"/> Printing and Publishing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart C	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts F, K	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts I, J, L	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart E	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *
<input type="checkbox"/> Rubber Processing	428	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Soap and Detergent Manufacturing	417	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Steam Electric Power Plants	423	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Textile Mills (Not Subpart C)	410	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Timber Products Processing	429	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> 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.: 001

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	<8				50
Acrylonitrile	<43	<43	<43	<43	50
Benzene	<1	<1	<1	<1	10
Bromoform	<2	<2	<2	<2	10
Carbon tetrachloride	<2	<2	<2	<2	2
Chlorobenzene	<1	<1	<1	<1	10
Chlorodibromomethane	<1	<1	<1	<1	10
Chloroethane	<1				50
2-Chloroethylvinyl ether	<10				10
Chloroform	<2	4	<2	3	10
Dichlorobromomethane [Bromodichloromethane]	2	3	<1	2	10
1,1-Dichloroethane	<1				10
1,2-Dichloroethane	<1	<1	<1	<1	10
1,1-Dichloroethylene [1,1-Dichloroethene]	<1	<1	<1	<1	10
1,2-Dichloropropane	<1	<1	<1	<1	10
1,3-Dichloropropylene [1,3-Dichloropropene]	<2	<2	<2	<2	10
Ethylbenzene	<1	<1	<1	<1	10
Methyl bromide [Bromomethane]	<2				50
Methyl chloride [Chloromethane]	<1				50
Methylene chloride [Dichloromethane]	<1	<1	<1	<1	20
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	10
Tetrachloroethylene [Tetrachloroethene]	<1	<1	<1	<1	10
Toluene	<1	<1	<1	<1	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<1				10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
1,1,1-Trichloroethane	<1	<1	<1	<1	10
1,1,2-Trichloroethane	<1	<1	<1	<1	10
Trichloroethylene [Trichloroethene]	<1	<1	<1	<1	10
Vinyl chloride	<1	<1	<1	<1	10

* Indicate units if different from µg/L.

Table 9 for Outfall No.: 001

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	<0.50				10
2,4-Dichlorophenol	<0.69				10
2,4-Dimethylphenol	<0.53	<2.70	<0.53		10
4,6-Dinitro-o-cresol	<0.66				50
2,4-Dinitrophenol	<1.40				50
2-Nitrophenol	<0.88				20
4-Nitrophenol	<1.10				50
p-Chloro-m-cresol	<0.53				10
Pentachlorophenol	<0.50				5
Phenol	<0.44				10
2,4,6-Trichlorophenol	<0.79				10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: 001

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	<0.28				10
Acenaphthylene	<0.47				10
Anthracene	<0.35	<1.80	<0.35	<0.35	10
Benzidine	<0.66	<3.30	<0.66	<0.66	50
Benzo(a)anthracene	<0.38	<1.90	<0.38	<0.38	5
Benzo(a)pyrene	<0.85	<4.30	<0.85	<0.85	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	<0.57				10
Benzo(ghi)perylene	<0.63				20
Benzo(k)fluoranthene	<0.57				5
Bis(2-chloroethoxy)methane	<0.35				10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Bis(2-chloroethyl)ether	<0.72	<3.60	<0.72	<0.72	10
Bis(2-chloroisopropyl)ether	<0.85				10
Bis(2-ethylhexyl)phthalate	<2.20	11.0	<2.20	<2.20	10
4-Bromophenyl phenyl ether	<0.41				10
Butylbenzyl phthalate	<0.69				10
2-Chloronaphthalene	<0.28				10
4-Chlorophenyl phenyl ether	<0.66				10
Chrysene	<0.57	<2.90	<0.57	<0.57	5
Dibenzo(a,h)anthracene	<0.69				5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<0.41	<2.10	<0.41	<0.41	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<0.53	<2.70	<0.53	<0.53	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<0.25	<1.30	<0.25	<0.25	10
3,3'-Dichlorobenzidine	<0.88	<4.40	<0.88	<0.88	5
Diethyl phthalate	<0.63				10
Dimethyl phthalate	<0.72				10
Di-n-butyl phthalate	<1.20	<6.10	<1.20	<1.20	10
2,4-Dinitrotoluene	<0.97				10
2,6-Dinitrotoluene	<1.20				10
Di-n-octyl phthalate	<2.80				10
1,2-Diphenylhydrazine (as Azobenzene)	<0.22				20
Fluoranthene	<0.44				10
Fluorene	<0.47				10
Hexachlorobenzene	<0.69	<3.50	<0.69	<0.69	5
Hexachlorobutadiene	<0.41	<2.10	<0.41	<0.41	10
Hexachlorocyclopentadiene	<0.35	<1.80	<0.35	<0.35	10
Hexachloroethane	<0.47	<2.40	<0.47	<0.47	20
Indeno(1,2,3-cd)pyrene	<0.22				5
Isophorone	<0.28				10
Naphthalene	<0.31				10
Nitrobenzene	<0.91	<4.60	<0.91	<0.91	10
N-Nitrosodimethylamine	<5.00	25.0	<5.00	<5.00	50

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAI (µg/L)
N-Nitrosodi-n-propylamine	<0.72				20
N-Nitrosodiphenylamine	<0.47				20
Phenanthrene	<0.44	<2.20	<0.44	<0.44	10
Pyrene	<0.57				10
1,2,4-Trichlorobenzene	<0.53				10

* Indicate units if different from µg/L.

Table 11 for Outfall No.: [Click to enter text.](#) Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAI (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
PCB 1232					0.2
PCB 1248					0.2

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
PCB 1260					0.2
PCB 1016					0.2
Toxaphene					0.3

* Indicate units if different from µg/L.

Attachment: [Click to enter text.](#)

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 (Ronnell) 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.: [Click to enter text.](#) 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
1,2,3,4,6,7,8-HpCDD	0.01					50

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
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.: [Click to enter text.](#) 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
Methylene chloride	75-09-2	<4	<4	<4	<4	624.1
Toluene	108-88-3	<4	<4	<4	<4	624.1

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 3.0: LAND APPLICATION OF EFFLUENT

This worksheet **is required** for all applications for a permit to disposal of wastewater by land application (i.e., TLAP)).

Item 1. Type of Disposal System (Instructions, Page 69)

Check the box next to the type of land disposal requested by this application:

- | | |
|--|---|
| <input type="checkbox"/> Irrigation | <input type="checkbox"/> Subsurface application |
| <input type="checkbox"/> Evaporation | <input type="checkbox"/> Subsurface soils absorption |
| <input type="checkbox"/> Evapotranspiration beds | <input type="checkbox"/> Surface application |
| <input type="checkbox"/> Drip irrigation system | <input type="checkbox"/> Other, specify: Click to enter text. |

Item 2. Land Application Area (Instructions, Page 69)

Land Application Area Information

Effluent Application (gallons/day)	Irrigation Acreage (acres)	Describe land use & indicate type(s) of crop(s)	Public Access? (Y/N)

Item 3. Annual Cropping Plan (Instructions, Page 69)

Attach the required cropping plan that includes each of the following:

- Cool and warm season plant species
- Breakdown of acreage and percent of total acreage for each crop
- Crop growing season
- Harvesting method/number of harvests
- Minimum/maximum harvest height
- Crop yield goals
- Soils map
- Nitrogen requirements per crop
- Additional fertilizer requirements
- Supplemental watering requirements
- Crop salt tolerances
- Justification for not removing existing vegetation to be irrigated

Attachment:

Item 4. Well and Map Information (Instructions, Page 70)

- a. Check each box to confirm the required information is shown and labeled on the attached USGS map:

- ☐ The exact boundaries of the land application area
- ☐ On-site buildings
- ☐ Waste-disposal or treatment facilities
- ☐ Effluent storage and tailwater control facilities
- ☐ Buffer zones
- ☐ All surface waters in the state onsite and within 500 feet of the property boundaries
- ☐ All water wells within ½-mile of the disposal site, wastewater ponds, or property boundaries
- ☐ All springs and seeps onsite and within 500 feet of the property boundaries

Attachment: [Click to enter text.](#)

- b. List and cross reference all water wells located on or within 500 feet of the disposal site, wastewater ponds, or property boundaries in the following table. Attach additional pages as necessary to include all of the wells.

Well and Map Information Table

Well ID	Well Use	Producing? Y/N/U	Open, cased, capped, or plugged?	Proposed Best Management Practice

Attachment: [Click to enter text.](#)

- c. Groundwater monitoring wells or lysimeters are/will be installed around the land application site or wastewater ponds.

☐ Yes ☐ No

If **yes**, provide the existing/proposed location of the monitoring wells or lysimeters on the site map attached for Item 4.a. Additionally, attach information on the depth of the wells or lysimeters, sampling schedule, and monitoring parameters for TCEQ review, possible modification, and approval.

Attachment: [Click to enter text.](#)

- d. Attach a short groundwater technical report using *30 TAC § 309.20(a)(4)* as guidance.

Attachment:

Item 5. Soil Map and Soil Information (Instructions, Page 71)

Check each box to confirm that the following information is attached:

- ☐ USDA NRCS Soil Survey Map depicting the area to be used for land application with the locations identified by fields and crops.
- ☐ Breakdown of acreage and percent of total acreage for each soil type.
- ☐ Copies of laboratory soil analyses. **Attachment:** [Click to enter text.](#)

Item 6. Effluent Monitoring Data (Instructions, Page 72)

- a. Completion of Table 14 **is required** for all **renewal** and **major amendment** applications. Complete the table with monitoring data for the previous two years for all parameters regulated in the current permit. An additional table has been provided with blank headers for parameters regulated in the current permit which are not listed in Table 14.

Table 14 for Outfall No.: [Click to enter text.](#)

Samples are (check one): ☐

Composite ☐ Grab

[illegible]

Item 7. Pollutant Analysis (Instructions, Page 72)

- 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): [Click to enter text.](#)
- ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- Complete Tables 15 and 16.

Table 15 for Outfall No.: [Click to enter text.](#) 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)				
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)				

Table 16 for Outfall No.: [Click to enter text.](#) 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					2.5
Antimony, total					5
Arsenic, total					0.5
Barium, total					3

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Beryllium, total					0.5
Cadmium, total					1
Chromium, total					3
Chromium, hexavalent					3
Chromium, trivalent					N/A
Copper, total					2
Cyanide, available					2/10
Lead, total					0.5
Mercury, total					0.005/0.0005
Nickel, total					2
Selenium, total					5
Silver, total					0.5
Thallium, total					0.5
Zinc, total					5.0

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 3.1: SURFACE LAND APPLICATION AND APPLICATION

This worksheet is **required** for all applications for a permit to disposal of wastewater by surface land application or evaporation.

Item 1. Edwards Aquifer (Instructions, Page 73)

- a. Is the facility subject to *30 TAC Chapter 213*, Edwards Aquifer Rules?

☐ Yes ☐ No

If **no**, proceed to Item 2. If **yes**, complete Items 1.b and 1.c.

- b. Check the box next to the subchapter applicable to the facility.

☐ 30 TAC Chapter 213, Subchapter A

☐ 30 TAC Chapter 213, Subchapter B

- c. If *30 TAC Chapter 213, Subchapter A* applies, attach **either**: 1) a Geologic Assessment (if conducted in accordance with *30 TAC § 213.5*) **or** 2) a report that contains the following:

- A description of the surface geological units within the proposed land application site and wastewater pond area.
- The location and extent of any sensitive recharge features in the land application site and wastewater pond area
- A list of any proposed BMPs to protect the recharge features.

Attachment: [Click to enter text.](#)

Item 2. Surface Spray/Irrigation (Instructions, Page 73)

- a. Provide the following information on the irrigation operations:

Area under irrigation (acres): [Click to enter text.](#)

Design application rate (acre-ft/acre/yr): [Click to enter text.](#)

Design application frequency (hours/day): [Click to enter text.](#)

Design application frequency (days/week): [Click to enter text.](#)

Design total nitrogen loading rate (lbs nitrogen/acre/year): [Click to enter text.](#)

Average slope of the application area (percent): [Click to enter text.](#)

Maximum slope of the application area (percent): [Click to enter text.](#)

Irrigation efficiency (percent): [Click to enter text.](#)

Effluent conductivity (mmhos/cm): [Click to enter text.](#)

Soil conductivity (mmhos/cm): [Click to enter text.](#)

Curve number: [Click to enter text.](#)

Describe the application method and equipment: [Click to enter text.](#)

- b. Attach a detailed engineering report which includes a water balance, storage volume calculations, and a nitrogen balance. **Attachment:** [Click to enter text.](#)

Item 3. Evaporation Ponds (Instructions, Page 74)

- a. Daily average effluent flow into ponds: [Click to enter text.](#) gallons per day
- b. Attach a separate engineering report of evaporation calculations for average long-term and worst-case critical conditions. **Attachment:** [Click to enter text.](#)

Item 4. Evapotranspiration Beds (Instructions, Page 74)

- a. Provide the following information on the evapotranspiration beds:
- Number of beds: [Click to enter text.](#)
- Area of bed(s) (acres): [Click to enter text.](#)
- Depth of bed(s) (feet): [Click to enter text.](#)
- Void ratio of soil in the beds: [Click to enter text.](#)
- Storage volume within the beds (include units): [Click to enter text.](#)
- Description of any lining to protect groundwater: [Click to enter text.](#)
- b. Attach a certification by a licensed Texas professional engineer that the liner meets TCEQ requirements. **Attachment:** [Click to enter text.](#)
- c. Attach a separate engineering report with water balance, storage volume calculations, and description of the liner. **Attachment:** [Click to enter text.](#)

Item 5. Overland Flow (Instructions, Page 74)

- a. Provide the following information on the overland flow:
- Area used for application (acres): [Click to enter text.](#)
- Slopes for application area (percent): [Click to enter text.](#)
- Design application rate (gpm/foot of slope width): [Click to enter text.](#)
- Slope length (feet): [Click to enter text.](#)
- Design BOD5 loading rate (lbs BOD5/acre/day): [Click to enter text.](#)
- Design application frequency (hours/day): [Click to enter text.](#)
- Design application frequency (days/week): [Click to enter text.](#)
- b. Attach a separate engineering report with the method of application and design requirements according to 30 TAC § 217.212. **Attachment:** [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 3.2: SUBSURFACE IRRIGATION (NON-DRIP)

This worksheet **is required** for all applications for a permit to disposal of wastewater by subsurface land application.

- ☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 75)

- a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?
- ☐ Yes ☐ No
- b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?
- ☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by *30 TAC § 213.8*. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Subsurface Application (Instructions, Page 75)

- a. Check the box next to the type of subsurface land disposal system requested:
- ☐ Conventional drainfield, beds, or trenches
- ☐ Low pressure dosing
- ☐ Other: [Click to enter text.](#)
- b. Provide the following information on the irrigation operations:
- Application area (acres): [Click to enter text.](#)
- Area of drainfield (square feet): [Click to enter text.](#)
- Application rate (gal/square ft/day): [Click to enter text.](#)
- Depth to groundwater (feet): [Click to enter text.](#)
- Area of trench (square feet): [Click to enter text.](#)
- Dosing duration per area (hours): [Click to enter text.](#)
- Number of beds: [Click to enter text.](#)
- Dosing amount per area (inches/day): [Click to enter text.](#)
- Soil infiltration rate (inches/hour): [Click to enter text.](#)
- Storage volume (gallons): [Click to enter text.](#)
- Area of bed(s) (square feet): [Click to enter text.](#)
- Soil classification: [Click to enter text.](#)
- c. Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation. **Attachment:** [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 3.3: SUBSURFACE AREA DRIP DISPERSAL SYSTEMS

This worksheet is **required** for all applications for a permit to dispose of wastewater using a subsurface area drip dispersal system (SADDs).

- ☐ Check the box to confirm the Class V Injection Well Inventory/Authorization Form (Worksheet 9.0) has been submitted to the TCEQ UIC Permits Team as directed.

Item 1. Edwards Aquifer (Instructions, Page 76)

- a. The subsurface system is/will be located on the Edwards Aquifer Recharge Zone, as mapped by TCEQ?
- ☐ Yes ☐ No
- b. The subsurface system is/will be located on the Edwards Aquifer Transition Zone, as mapped by TCEQ?
- ☐ Yes ☐ No

If **yes** to Item 1.a **or** 1.b, the subsurface system may be prohibited by 30 TAC § 213.8. Contact the Water Quality Assessment Section at (512) 239-4671 for a preapplication meeting.

Item 2. Administrative Information (Instructions, Page 76)

- a. Provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the treatment facility: [Click to enter text.](#)
- b. The owner of the land where the WWTF is/will be located is the same as the owner of the WWTF.
- ☐ Yes ☐ No

If **no**, provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the land where the WWTF is/will be located: [Click to enter text.](#)

- c. Provide the legal name of the owner of the SADDs: [Click to enter text.](#)
- d. The owner of the SADDs is the same as the owner of the WWTF or the site where the WWTF is/will be located.
- ☐ Yes ☐ No

If **no**, identify the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in Item 1.c: [Click to enter text.](#)

- e. Provide the legal name of the owner of the land where the SADDs is located: [Click to enter text.](#)

- f. The owner of the land where the SADDs is/will be located is the same as owner of the WWTF, the site where the WWTF is located, or the owner of the SADDs.

☐ Yes ☐ No

If **no**, provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in item 1.e: [Click to enter text.](#)

Item 3. SADDs (Instructions, Page 77)

- a. Check the box next to the type SADDs requested by this application:

☐ Subsurface drip/trickle irrigation
☐ Surface drip irrigation
☐ Other: [Click to enter text.](#)

- b. Attach a description of the SADDs proposed/used by the facility (see instructions for guidance). **Attachment:** [Click to enter text.](#)

- c. Provide the following information on the SADDs:

Application area (acres): [Click to enter text.](#)

Soil infiltration rate (inches/hour): [Click to enter text.](#)

Average slope of the application area: [Click to enter text.](#)

Maximum slope of the application area: [Click to enter text.](#)

Storage volume (gallons): [Click to enter text.](#)

Major soil series: [Click to enter text.](#)

Depth to groundwater (feet): [Click to enter text.](#)

Effluent conductivity (mmhos/cm): [Click to enter text.](#)

- d. The facility is/will be located west of the boundary shown in 30 TAC § 222.83 **and** using a vegetative cover of non-native grasses over seeded with cool-season grasses.

☐ Yes ☐ No

If **yes**, the facility may propose a hydraulic application rate up to, but not to exceed, 0.1 gal/ft²/day.

- e. The facility is/will be located east of the boundary shown in 30 TAC § 222.83 **or** is the facility proposing any crop other than non-native grasses.

☐ Yes ☐ No

If **yes**, the facility must use the formula in 30 TAC § 222.83 to calculate the maximum hydraulic application rate.

- f. The facility has or plans to submit an alternative method to calculate the hydraulic application rate for approval by the ED.

☐ Yes ☐ No

If **yes**, provide the following information on the hydraulic application rates:

- Hydraulic application rate (gal/square foot/day): [Click to enter text.](#)
- Nitrogen application rate (gal/square foot/day): [Click to enter text.](#)

g. Provide the following dosing information:

Number of doses per day: [Click to enter text.](#)

Dosing duration per area (hours): [Click to enter text.](#)

Rest period between doses (hours): [Click to enter text.](#)

Dosing amount per area (inches/day): [Click to enter text.](#)

Number of zones: [Click to enter text.](#)

h. The system is/will be a surface drip irrigation system using existing native vegetation as a crop?

☐ Yes ☐ No

If **yes**, attach the following information:

- A vegetation survey by a certified arborist describing the percent canopy cover and relative percentage of major overstory and understory plant species.

Attachment: [Click to enter text.](#)

- Attach a separate engineering report using *30 TAC § 309.20, Subchapter C, Land Disposal of Sewage Effluent* as guidance, excluding items b(3)(A) and b(3)(B). Include a description of the schedule of dosing basin rotation.

Attachment: [Click to enter text.](#)

Item 4. Required Plans (Instructions, Page 78)

a. Attach a Soil Evaluation with all information required in *30 TAC § 222.73*.

Attachment: [Click to enter text.](#)

b. Attach a Site Preparation Plan with all information required in *30 TAC § 222.75*.

Attachment: [Click to enter text.](#)

c. Attach a Recharge Feature Plan with all information required in *30 TAC § 222.79*.

Attachment: [Click to enter text.](#)

d. Provide soil sampling and testing with all information required in *30 TAC § 222.157*.

Attachment: [Click to enter text.](#)

Item 5. Flood and Run-On Protection (Instructions, Page 79)

a. Is the existing/proposed SADDs located within the 100-year frequency flood level?

☐ Yes ☐ No

Source: [Click to enter text.](#)

If **yes**, describe how the site will be protected from inundation: [Click to enter text.](#)

b. Is the existing/proposed SADDs within a designated floodway?

☐ Yes ☐ No

If **yes**, attach either the FEMA flood map or alternate information used to make this determination. **Attachment:** [Click to enter text.](#)

Item 6. Surface Waters in The State (Instructions, Page 79)

a. Attach a buffer map which shows the appropriate buffers on surface waters in the state, water wells, and springs/seeps. **Attachment:** [Click to enter text.](#)

b. The facility has or plans to request a buffer variance from water wells or waters in the state?

☐ Yes ☐ No

If **yes**, attach the additional information required in *30 TAC § 222.81(c)*. **Attachment:** [Click to enter text.](#)

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: [Click to enter text.](#)
2. The distance and direction from the outfall to the drinking water supply intake: [Click to enter text.](#)

- 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: [Click to enter text.](#) 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: [Click to enter text.](#)

- 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: [Click to enter text.](#)

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: Dow Chemical Plant A Wastewater Canal

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: Click to enter text.

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Brazos River

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: **Receiving water enters the Brazos River and goes from a large canal to an even larger river.**

- f. General observations of the water body during normal dry weather conditions: **Perennially-flowing manmade drainage canal.**

Date and time of observation: 6/3/2024 at 7:00 am

- g. The water body was influenced by stormwater runoff during observations.

☒ Yes ☒ No

If **yes**, describe how: Water level is higher than normal and at a slightly higher flow rate due to recent rains.

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):

<input type="checkbox"/> oil field activities	<input checked="" type="checkbox"/> urban runoff
<input type="checkbox"/> agricultural runoff	<input type="checkbox"/> septic tanks
<input checked="" type="checkbox"/> upstream discharges	<input type="checkbox"/> other, specify: <u>Click to enter text.</u>

- b. Uses of water body observed or evidence of such uses (check all that apply):

<input type="checkbox"/> livestock watering	<input checked="" type="checkbox"/> industrial water supply
<input type="checkbox"/> non-contact recreation	<input type="checkbox"/> irrigation withdrawal
<input type="checkbox"/> domestic water supply	<input type="checkbox"/> navigation
<input type="checkbox"/> contact recreation	<input type="checkbox"/> picnic/park activities
<input type="checkbox"/> fishing	<input type="checkbox"/> other, specify: <u>Click to enter text.</u>

- 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

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.): [Click to enter text.](#)

Approximate drainage area above the most downstream transect from USGS map or county highway map (square miles): [Click to enter text.](#)

Length of stream evaluated (ft): [Click to enter text.](#)

Number of lateral transects made: [Click to enter text.](#)

Average stream width (ft): [Click to enter text.](#)

Average stream depth (ft): [Click to enter text.](#)

Average stream velocity (ft/sec): [Click to enter text.](#)

Instantaneous stream flow (ft³/sec): [Click to enter text.](#)

Indicate flow measurement method (VERY IMPORTANT – type of meter, floating chip timed over a fixed distance, etc.): [Click to enter text.](#)

Flow fluctuations (i.e., minor, moderate, or severe): [Click to enter text.](#)

Size of pools (i.e., large, small, moderate, or none): [Click to enter text.](#)

Maximum pool depth (ft): [Click to enter text.](#)

Total number of stream bends: [Click to enter text.](#)

Number well defined: [Click to enter text.](#)

Number moderately defined: [Click to enter text.](#)

Number poorly defined: [Click to enter text.](#)

Total number of riffles: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 5.0: SEWAGE SLUDGE MANAGEMENT AND DISPOSAL

The following information **is required** for all TPDES permit applications that meet the conditions as outlined in Technical Report 1.0, Item 7.

Item 1. Sewage Sludge Solids Management Plan (Instructions, Page 84)

a. Is this a new permit application or an amendment permit application?

☐ Yes ☐ No

b. Does or will the facility discharge in the Lake Houston watershed?

☐ Yes ☐ No

If **yes** to either Item 1.a or 1.b, attach a solids management plan. **Attachment:** [Click to enter text.](#)

Item 2. Sewage Sludge Management and Disposal (Instructions, Page 84)

a. Check the box next to the sludge disposal method(s) authorized under the facility's existing permit (check all that apply).

- ☐ Permitted landfill
- ☐ Marketing and distribution by the permittee, attach Form TCEQ-00551
- ☐ Registered land application site, attach Form TCEQ-00565
- ☐ Processed by the permittee, attach Form TCEQ-00744
- ☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744
- ☐ Transported to another WWTP
- ☐ Beneficial land application, attach Form TCEQ-10451
- ☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach the required TCEQ forms as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment: [Click to enter text.](#)

b. Provide the following information for each disposal site:

Disposal site name: [Click to enter text.](#)

TCEQ Permit/Registration Number: [Click to enter text.](#)

County where disposal site is located: [Click to enter text.](#)

c. Method of sewage sludge transportation:

☐ truck ☐ train ☐ pipe ☐ other: [Click to enter text.](#)

TCEQ Hauler Registration Number: [Click to enter text.](#)

d. Sludge is transported as a:

☐ liquid ☐ semi-liquid ☐ semi-solid ☐ solid

e. Purpose of land application: ☐ reclamation ☐ soil conditioning ☐ N/A

f. If sewage sludge is transported to another WWTP for treatment, attach a written statement or copy of contractual agreements confirming that the WWTP identified above will accept and be responsible for the sludge from this facility for the life of the permit (at least 5 years).

Attachment: [Click to enter text.](#)

Item 3. Authorization for Sewage Sludge Disposal (Instructions, Page 85)

If this is a new or major amendment application which requests authorization of a new sewage sludge disposal method, check the new sewage disposal method(s) requested for authorization (check all that apply):

- ☐ Marketing and distribution by the permittee, attach Form TCEQ-00551
- ☐ Processed by the permittee, attach Form TCEQ-00744
- ☐ Surface disposal site (sludge monofill), attach Form TCEQ-00744
- ☐ Beneficial land application, attach Form TCEQ-10451
- ☐ Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach any required TCEQ forms, as directed. Failure to submit the required TCEQ form will result in delays in processing the application.

Attachment: [Click to enter text.](#)

NOTE: New authorization for beneficial land application, incineration, processing, or disposal in the TPDES permit or TLAP **requires a major amendment to the permit.** New authorization for composting may require a major amendment to the permit. See the instructions to determine if a major amendment is required or if authorization for composting can be added through the renewal process.

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 6.0: INDUSTRIAL WASTE CONTRIBUTION

The following information is **required** for all applications for publicly-owned treatment works (POTWs).

For an explanation of the terms used in this worksheet, refer to the General Definitions on pages 4-12 and the Definitions Relating to Pretreatment on pages 13-14 of the Instructions.

Item 1. All POTWs (Instructions, Page 86)

- a. Complete the following table with the number of each type of industrial users (IUs) that discharge to the POTW and the daily average flows from each.

Industrial User Information

Type of Industrial User	Number of Industrial Users	Daily Average Flow (gallons per day)
CIU		
SIU - Non-categorical		
Other IU		

- b. In the past three years, has the POTW experienced treatment plant interference?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, nature of interference, and probable cause(s) and possible source(s) of each interference event. Include the names of the IU(s) that may have caused the interference: [Click to enter text.](#)

- c. In the past three years, has the POTW experienced pass-through?

☐ Yes ☐ No

If **yes**, identify the date(s), duration, pollutants passing through the treatment plant, and probable cause(s) and possible source(s) of each pass-through event. Include the names of the IU(s) that may have caused the pass-through: [Click to enter text.](#)

- d. Does the POTW have, or is it required to develop, an approved pretreatment program?

☐ Yes ☐ No

If **yes**, answer all questions in Item 2 and skip Item 3.

If **no**, skip Item 2 and answer all questions in Item 3 for each SIU and CIU.

Item 2. POTWs With Approved Pretreatment Programs or Those Required To Develop A Pretreatment Program (Instructions, Page 86)

- a. Have there been any substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ) for approval according to 40 CFR § 403.18?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all substantial modifications that have not been submitted to the TCEQ and the purpose of the modifications.

Attachment: [Click to enter text.](#)

- b. Have there been any non-substantial modifications to the POTW's approved pretreatment program that have not been submitted to the Approval Authority (TCEQ)?

☐ Yes ☐ No

If **yes**, include an attachment which identifies all non-substantial modifications that have not been submitted to the TCEQ and the purpose of the modification.

Attachment: [Click to enter text.](#)

- c. List all parameters measured above the MAL in the POTW's effluent monitoring during the last three years:

Effluent Parameters Measured Above the MAL

Pollutant	Concentration	MAL	Units	Date

Attachment: [Click to enter text.](#)

- d. Has any SIU, CIU, or other IU caused or contributed to any other problems (excluding interference or pass-through) at the POTW in the past three years?

☐ Yes ☐ No

If **yes**, provide a description of each episode, including date(s), duration, description of problems, and probable pollutants. Include the name(s) of the SIU(s)/CIU(s)/other IU(s) that may have caused or contributed to any of the problems: [Click to enter text.](#)

Item 3. Significant Industrial User and Categorical Industrial User Information (Instructions, Pages 88-87)

POTWs that **do not** have an approved pretreatment program **are required** to provide the following information for each SIU and CIU:

- a. Mr. or Ms.: [Click to enter text.](#) First/Last Name: [Click to enter text.](#)

Organization Name: [Click to enter text.](#)

SIC Code: [Click to enter text.](#)

Phone number: [Click to enter text.](#)

Email address: [Click to enter text.](#)

Physical Address: [Click to enter text.](#)

City/State/ZIP Code: [Click to enter text.](#)

Attachment: [Click to enter text.](#)

- b. Describe the industrial processes or other activities that affect or contribute to the SIU(s) or CIU(s) discharge (e.g., process and non-process wastewater): [Click to enter text.](#)

c. Provide a description of the principal products(s) or service(s) performed: [Click to enter text.](#)

d. Flow rate information

Flow Rate Information

Effluent Type	Discharge Day (gallons per day)	Discharge Frequency (Continuous, batch, or intermittent)
Process Wastewater		
Non-process Wastewater		

e. Pretreatment Standards

1. Is the SIU or CIU subject to technology-based local limits as defined in the application instructions?

☐ Yes ☐ No

2. Is the SIU subject to categorical pretreatment standards?

☐ Yes ☐ No

If **yes**, provide the category and subcategory or subcategories in the SIUs Subject To Categorical Pretreatment Standards table.

SIUs Subject to Categorical Pretreatment Standards

Category in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR	Subcategory in 40 CFR

f. Has the SIU or CIU caused or contributed to any problem(s) (e.g., interferences, pass through, odors, corrosion, blockages) at the POTW in the past three years?

☐ Yes ☐ No

If **yes**, provide a description of each episode, including dates, duration, description of problems, and probable pollutants, and include the name(s) of the SIU(s)/CIU(s) that may have caused or contributed to the problem(s): [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 7.0: STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

This worksheet is **required** for all TPDES permit applications requesting individual permit coverage for discharges consisting of **either**: 1) solely of stormwater discharges associated with industrial activities, as defined in *40 CFR § 122.26(b)(14)(i-xi)*, **or** 2) stormwater discharges associated with industrial activities and any of the listed allowable non-stormwater discharges, as defined in the MSGP (TXR05000), Part II, Section A, Item 6.

Discharges of stormwater as defined in *40 CFR § 122.26 (b)(13)* are not required to obtain authorization under a TPDES permit (see exceptions at *40 CFR §§ 122.26(a)(1)* and *(9)*). Authorization for discharge may be required from a local municipal separate storm sewer system.

Item 1. Applicability (Instructions, Page 89)

Do discharges from any of the existing/proposed outfalls consist either 1) solely of stormwater discharges associated with industrial activities **or** 2) stormwater discharges associated with industrial activities and any of the allowable non-stormwater discharges?

☐ Yes ☒ No

If **no**, stop here. If **yes**, proceed as directed.

Item 2. Stormwater Coverage (Instructions, Page 89)

List each existing/proposed stormwater outfall at the facility and indicate which type of authorization covers or is proposed to cover discharges.

Authorization Coverage

Outfall	Authorization under MSGP	Authorized Under Individual Permit
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

If **all** existing/proposed outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) are **authorized under the MSGP**, **stop** here.

If **seeking authorization** for any outfalls which discharge stormwater associated with industrial activities (and any of the allowable non-stormwater discharges) **under an individual permit**, **proceed**.

NOTE: The following information is required for each existing/proposed stormwater outfall for which the facility is seeking individual permit authorization under this application

Item 3. Site Map (Instructions, Page 90)

Attach a site map or maps (drawn to scale) of the entire facility with the following information.

- the location of each stormwater outfall to be covered by the permit
- an outline of the drainage area that is within the facility’s boundary and that contributes stormwater to each outfall to be covered by the permit
- connections or discharge points to municipal separate storm sewer systems
- locations of all structures (e.g. buildings, garages, storage tanks)
- structural control devices that are designed to reduce pollution in discharges of stormwater associated with industrial activities
- process wastewater treatment units (including ponds)
- bag house and other air treatment units exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)
- landfills; scrapyards; surface water bodies (including wetlands)
- vehicle and equipment maintenance areas
- physical features of the site that may influence discharges of stormwater associated with industrial activities or contribute a dry weather flow
- locations where spills or leaks of reportable quality (as defined in 30 TAC § 327.4) have occurred during the three years before this application was submitted to obtain coverage under an individual permit
- processing areas, storage areas, material loading/unloading areas, and other locations where significant materials are exposed to stormwater (stormwater runoff, snow melt runoff, and surface runoff and drainage)

☐ Check the box to confirm all above information was provided on the facility site map(s).

Attachment: [Click to enter text.](#)

Item 4. Facility/Site Information (Instructions, Page 90)

- a. Provide the area of impervious surface and the total area drained by each stormwater outfall requested for authorization by this permit application.

Impervious Surfaces

Outfall	Area of Impervious Surface (include units)	Total Area Drained (include units)

- b. Provide the following local area rainfall information and the source of the information.
- Wettest month: [Click to enter text.](#)
- Average rainfall for wettest month (total inches): [Click to enter text.](#)
- 25-year, 24-hour rainfall (inches): [Click to enter text.](#)
- Source: [Click to enter text.](#)
- c. Attach an inventory, or list, of materials currently handled at the facility that may be exposed to precipitation. **Attachment:** [Click to enter text.](#)
- d. Attach narrative descriptions of the industrial processes and activities involving the materials in the above-listed inventory that occur outdoors or in some manner that may result in exposure of the materials to precipitation or runoff (see instructions for guidance). **Attachment:** [Click to enter text.](#)
- e. Describe any BMPs and controls the facility uses/proposes to prevent or effectively reduce pollution in stormwater discharges from the facility: [Click to enter text.](#)

Item 5. Pollutant Analysis (Instructions, Page 91)

- 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): [Click to enter text.](#)
- b. ☐ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- c. Complete Table 17 as directed on page 92 of the Instructions.

Table 17 for Outfall No.: [Click to enter text.](#)

Pollutant	Grab Sample* Maximum (mg/L)	Composite Sample** Maximum (mg/L)	Grab Sample* Average (mg/L)	Composite Sample** Average (mg/L)	Number of Storm Events Sampled	MAL (mg/L)
pH (standard units)	(max)	—	(min)	—		—
Total suspended solids						—
Chemical oxygen demand						—
Total organic carbon						—
Oil and grease						—
Arsenic, total						0.0005
Barium, total						0.003
Cadmium, total						0.001
Chromium, total						0.003
Chromium, trivalent						—
Chromium, hexavalent						0.003
Copper, total						0.002

Item 6. Storm Event Data (Instructions, Page 93)

Provide the following data for the storm event(s) which resulted in the maximum values for the analytical data submitted:

Date of storm event: [Click to enter text.](#)

Duration of storm event (minutes): [Click to enter text.](#)

Total rainfall during storm event (inches): [Click to enter text.](#)

Number of hours the between beginning of the storm measured and the end of the previous measurable storm event (hours): [Click to enter text.](#)

Maximum flow rate during rain event (gallons/minute): [Click to enter text.](#)

Total stormwater flow from rain event (gallons): [Click to enter text.](#)

Provide a description of the method of flow measurement or estimate:

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 8.0: AQUACULTURE

This worksheet **is required** for all TPDES permit applications requesting individual permit coverage for discharges of aquaculture wastewater.

Item 1. Facility/Site Information (Instructions, Page 94)

- a. Complete the following table with information regarding production ponds, raceways, and fabricated tanks at the facility.

Production Pond Descriptions

Number of Ponds	Dimensions (include units)	Area of Each Pond (include units)	Number of Ponds x Area of Ponds (include Units)

Total surface area of all ponds: [Click to enter text.](#)

Raceway Descriptions

Number of Raceways	Dimensions (include units)

Fabricated Tank Descriptions

Number of Tanks	Dimensions (include units)

b. Does the facility have a TPWD-approved emergency plan?

☐ Yes ☐ No

If **yes**, attach a copy of the approved plan.

Attachment: [Click to enter text.](#)

c. Does the facility have an aquatic plant transplant authorization?

☐ Yes ☐ No

If **yes**, attach a copy of the authorization letter.

Attachment: [Click to enter text.](#)

d. Provide the number of aquaculture facilities located within 25-miles of this facility: [Click to enter text.](#)

Item 2. Species Identification (Instructions, Page 95)

Complete the following table regarding each species raised, source, origin, and disease status of the stock. Identify and attach copies of any current relevant authorizations or permits that authorize the species.

Stock Species Information

Species	Source of Stock	Origin of Stock	Disease Status	Authorizations

Attachment: [Click to enter text.](#)

Item 3. Stock Management Plan (Instructions, Page 95)

Attach a detailed stock management plan: [Click to enter text.](#)

Item 4. Water Treatment and Discharge Description (Instructions, Page 96)

Attach a detailed description of the discharge practices and water treatment process(es): [Click to enter text.](#)

Item 5. Solid Waste Management (Instructions, Page 96)

Attach a description of the solid waste-disposal practices: [Click to enter text.](#)

Item 6. Site Assessment Report (Instructions, Page 96)

All new and expanding commercial shrimp facilities located/to be located within the coastal zone must attach a detailed site assessment report which identifies sensitive aquatic habitats within the coastal zone: [Click to enter text.](#)

WORKSHEET 9.0

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CLASS V INJECTION WELL INVENTORY/AUTHORIZATION FORM

Submit the completed form to:

TCEQ
IUC Permits Team
Radioactive Materials Division
MC-233
PO Box 13087
Austin, Texas 78711-3087
512-239-6466

For TCEQ Use Only

Reg. No. _____

Date Received _____

Date Authorized _____

Item 1. General Information (Instructions Page 99)

1. TCEQ Program Area

Program Area (PST, VCP, IHW, etc.): [Click to enter text.](#)

Program ID: [Click to enter text.](#)

Contact Name: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

2. Agent/Consultant Contact Information

Contact Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

3. Owner/Operator Contact Information

☐ Owner ☐ Operator

Owner/Operator Name: [Click to enter text.](#)

Contact Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

4. Facility Contact Information

Facility Name: [Click to enter text.](#)

Address: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Location description (if no address is available): [Click to enter text.](#)

Facility Contact Person: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

5. Latitude and Longitude, in degrees-minutes-seconds

Latitude: [Click to enter text.](#)

Longitude: [Click to enter text.](#)

Method of determination (GPS, TOPO, etc.): [Click to enter text.](#)

Attach topographic quadrangle map as attachment A.

6. Well Information

Type of Well Construction, select one:

- ☐ Vertical Injection
- ☐ Subsurface Fluid Distribution System
- ☐ Infiltration Gallery
- ☐ Temporary Injection Points
- ☐ Other, Specify: [Click to enter text.](#)

Number of Injection Wells: [Click to enter text.](#)

7. Purpose

Detailed Description regarding purpose of Injection System:

[Click to enter text.](#)

Attach a Site Map as Attachment B (Attach the Approved Remediation Plan, if appropriate.)

8. Water Well Driller/Installer

Water Well Driller/Installer Name: [Click to enter text.](#)

City, State, and Zip Code: [Click to enter text.](#)

Phone Number: [Click to enter text.](#)

License Number: [Click to enter text.](#)

Item 2. Proposed Down Hole Design

Attach a diagram signed and sealed by a licensed engineer as Attachment C.

Down Hole Design Table

Name of String	Size	Setting Depth	Sacks Cement/Grout – Slurry Volume – Top of Center	Hole Size	Weight (lbs/ft) PVC/Steel
Casing					
Tubing					
Screen					

Item 3. Proposed Trench System, Subsurface Fluid Distribution System, or Infiltration Gallery

Attach a diagram signed and sealed by a licensed engineer as Attachment D.

System(s) Dimensions: [Click to enter text.](#)

System(s) Construction: [Click to enter text.](#)

Item 4. Site Hydrogeological and Injection Zone Data

1. Name of Contaminated Aquifer: [Click to enter text.](#)

2. Receiving Formation Name of Injection Zone: [Click to enter text.](#)

3. Well/Trench Total Depth: [Click to enter text.](#)

4. Surface Elevation: [Click to enter text.](#)

5. Depth to Ground Water: [Click to enter text.](#)

6. Injection Zone Depth: [Click to enter text.](#)

7. Injection Zone vertically isolated geologically? ☐ Yes ☐ No

Impervious Strata between Injection Zone and nearest Underground Source of Drinking Water:

Name: [Click to enter text.](#)

Thickness: [Click to enter text.](#)

8. Attach a list of contaminants and the levels (ppm) in contaminated aquifer as Attachment E.

9. Attach the Horizontal and Vertical extent of contamination and injection plume as Attachment F.

10. Attach Formation (Injection Zone) Water Chemistry (Background levels) TDS, etc., as Attachment G.

11. Injection Fluid Chemistry in PPM at point of injection. Attach as Attachment H.

12. Lowest Known Depth of Ground Water with < 10,000 PPM TDS: [Click to enter text.](#)

13. Maximum injection Rate/Volume/Pressure: [Click to enter text.](#)

14. Water wells within 1/4 mile radius (attach map as Attachment I): [Click to enter text.](#)

15. Injection wells within 1/4 mile radius (attach map as Attachment J): [Click to enter text.](#)

16. Monitor wells within 1/4 mile radius (attach drillers logs and map as Attachment K): [Click to enter text.](#)

17. Sampling frequency: [Click to enter text.](#)

18. Known hazardous components in injection fluid: [Click to enter text.](#)

Item 5. Site History

1. Type of Facility: [Click to enter text.](#)
2. Contamination Dates: [Click to enter text.](#)
3. Original Contamination (VOCs, TPH, BTEX, etc.) and Concentrations. Attach as Attachment L.
4. Previous Remediation. Attach results of any previous remediation as Attachment M.

NOTE: Authorization Form should be completed in detail and authorization given by the TCEQ before construction, operation, and/or conversion can begin. Attach additional pages as necessary.

Item 6. CLASS V INJECTION WELL DESIGNATIONS

- 5A07 Heat Pump/AC return (IW used for groundwater to heat or cool buildings)
- 5A19 Industrial Cooling Water Return Flow (IW used to cool industrial process equipment)
- 5B22 Salt Water Intrusion Barrier (IW used to inject fluids to prevent the intrusion of salt water into an aquifer)
- 5D02 Stormwater Drainage (IW designed for the disposal of rain water)
- 5D04 Industrial Stormwater Drainage Wells (IW designed for the disposal of rain water associated with industrial facilities)
- 5F01 Agricultural Drainage (IW that receive agricultural runoff)
- 5R21 Aquifer Recharge (IW used to inject fluids to recharge an aquifer)
- 5S23 Subsidence Control Wells (IW used to control land subsidence caused by groundwater withdrawal)
- 5W09 Untreated Sewage
- 5W10 Large Capacity Cesspools (Cesspools that are designed for 5,000 gpd or greater)
- 5W11 Large Capacity Septic systems (Septic systems designed for 5,000 gpd or greater)
- 5W12 WTP disposal
- 5W20 Industrial Process Waste-disposal Wells
- 5W31 Septic System (Well Disposal method)
- 5W32 Septic System Drainfield Disposal
- 5X13 Mine Backfill (IW used to control subsidence, dispose of mining byproducts, or fill sections of a mine)
- 5X25 Experimental Wells (Pilot Test) (IW used to test new technologies or tracer dye studies)
- 5X26 Aquifer Remediation (IW used to clean up, treat, or prevent contamination of a USDW)
- 5X27 Other Wells
- 5X28 Motor Vehicle Waste-disposal Wells (IW used to dispose of waste from a motor vehicle site - These are currently banned)
- 5X29 Abandoned Drinking Water Wells (waste disposal)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 10.0: QUARRIES IN THE JOHN GRAVES SCENIC RIVERWAY

This worksheet is **required** for all applications for individual permits for a municipal solid waste facility or mining facility located within a Water Quality Protection Area in the John Graves Scenic Riverway. **Note: Review 30 TAC §§ 311.71-311.82 thoroughly prior to completing any portion of this worksheet.**

Item 1. Exclusions (Instructions, Page 100)

- a. Is this a municipal solid waste facility?
☐ Yes ☐ No
- b. Has this quarry been in operation since January 1, 1994 without cessation of operation for more than 30 consecutive days and under the same ownership?
☐ Yes ☐ No
- c. Is this a coal mine?
☐ Yes ☐ No
- d. Is this facility mining clay and/or shale for use in manufacturing structural clay products?
☐ Yes ☐ No

If **yes** to **any** above question, **stop here**. The facility is required to maintain documentation, as outlined in 30 TAC § 311.72(c), at the facility to demonstrate the exclusion(s).

Item 2. Location of the Quarry (Instructions, Page 101)

Check the box next to the distance between the quarry and the nearest navigable water body:

- ☐ < 200 feet ☐ 200 feet – 1,500 feet ☐ 1,500 feet – 1 mile ☐ > 1 mile

NOTE: The construction or operation of any new quarry or expansion of any existing quarry is **prohibited** within 200 feet of any water body located within a Water Quality Protection Area in the John Graves Scenic Riverway.

Item 3. Additional Requirements (Instructions, Page 101)

Use the table in the Instructions to determine if additional application requirements apply to the facility based on distance between the quarry and the nearest waterway. Attach as appropriate or enter N/A.

- a. Attach a Restoration Plan: [Click to enter text.](#)
- b. Amount of Financial Assurance for Restoration: \$ [Click to enter text.](#)
Mechanism: [Click to enter text.](#)
- c. Attach a Technical Demonstration: [Click to enter text.](#)
- d. Attach a Reclamation Plan: [Click to enter text.](#)
- e. Amount of Financial Assurance for Reclamation: \$ [Click to enter text.](#)
Mechanism: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.0: COOLING WATER SYSTEM INFORMATION

This worksheet is **required** for all TPDES permit applications that meet the conditions outlined in Technical Report 1.0, Item 12.

Item 1. Cooling Water System Data (Instructions, Page 104)

a. Complete the following table with information regarding the cooling water system.

Cooling Water System Data

Parameter	Volume (include units)
Total DIF	
Total AIF	
Intake Flow Use(s) (%)	
Contact cooling	
Non-contact cooling	
Process Wastewater	
Other	

b. Attach the following information:

1. A narrative description of the design and annual operation of the facility's cooling water system and its relationship to the CWIS(s).
2. A scaled map depicting the location of each CWIS, impoundment, intake pipe, and canals, pipes, or waterways used to convey cooling water to, or within, the cooling water system. Provide the latitude and longitude for each CWIS and any intake pipe(s) on the map. Indicate the position of the intake pipe within the water column.
3. A description of water reuse activities, if applicable, reductions in total water withdrawals, if applicable, and the proportion of the source waterbody withdrawn (on a monthly basis).
4. Design and engineering calculations prepared by a qualified professional and data to support the information provided in above item a.
5. Previous year (a minimum of 12 months) of AIF data.
6. A narrative description of existing or proposed impingement and entrainment technologies or operation measures and a summary of their performance, including, but not limited to, reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.

Attachment: [Click to enter text.](#)

Item 2. Cooling Water Intake Structure(s) Data (Instructions, Page 105)

- a. Complete the following table with information regarding each cooling water intake structure (this includes primary and make-up CWIS(s)).

Cooling Water Intake Structure(s) Data

CWIS ID				
DIF (include units)				
AIF (include units)				
Intake Flow Use(s) (%)				
Contact cooling				
Non-contact cooling				
Process Wastewater				
Other				
Latitude (decimal degrees)				
Longitude (decimal degrees)				

- b. Attach the following information regarding the CWIS(s):
1. A narrative description of the configuration of each CWIS, annual and daily operation, including any seasonal changes, and where it is located in the water body and in the water column.
 2. Engineering calculations for each CWIS.

Attachment: [Click to enter text.](#)

Item 3. Source Water Physical Data (Instructions, Page 105)

- a. Complete the following table with information regarding the CWIS(s) source waterbody (this includes primary and make-up CWIS(s)).

Source Waterbody Data

CWIS ID				
Source Waterbody				
Mean Annual Flow				
Source				

- b. Attach the following information regarding the source waterbody.
1. A narrative description of the source water for each CWIS, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports this determination of the water body type where each cooling water intake structure is located.

2. A narrative description of the source waterbody's hydrological and geomorphological features.
3. Scaled drawings showing the physical configuration of all source water bodies used by the facility, including the source waterbody's hydrological and geomorphological features. **NOTE:** The source waterbody's hydrological and geomorphological features may be included on the map submitted for item 1.b.ii of this worksheet.
4. A description of the methods used to conduct any physical studies to determine the intake's area of influence within the waterbody and the results of such studies.

Attachment: [Click to enter text.](#)

Item 4. Operational Status (Instructions, Page 106)

- a. Is this application for a power production or steam generation facility?

☐ Yes ☐ No

If **no**, proceed to Item 4.b. If **yes**, provide the following information as an attachment:

1. Describe the operating status of each individual unit, including age, capacity utilization rate (or equivalent) for the previous five years (a minimum of 60 months), and any seasonal changes in operation.
2. Describe any extended or unusual outages or other factors which significantly affect current data for flow, impingement, entrainment.
3. Identify any operating unit with a capacity utilization rate of less than 8 percent averaged over a contiguous period of two years (a minimum of 24 months).
4. Describe any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes of fuel type.

Attachment: [Click to enter text.](#)

- b. Process Units

1. Is this application for a facility which has process units that use cooling water (other than for power production or steam generation)?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, continue.

2. Does the facility use or intend to use reductions in flow or changes in operations to meet the requirements of *40 CFR § 125.94(c)*?

☐ Yes ☐ No

If **no**, proceed to Item 4.c. If **yes**, attach descriptions of the following information:

- Individual production processes and product lines
- The operating status, including age of each line and seasonal operation
- Any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors

- Any major upgrades completed within the last 15 years and plans or schedules for decommissioning or replacement of process units or production processes and product lines.

Attachment: [Click to enter text.](#)

c. Is this an application for a nuclear power production facility?

☐ Yes ☐ No

If **no**, proceed to Item 4.d. If **yes**, attach a description of completed, approved, or scheduled upgrades and the Nuclear Regulatory Commission relicensing status for each unit at the facility.

Attachment: [Click to enter text.](#)

d. Is this an application for a manufacturing facility?

☐ Yes ☐ No

If **no**, proceed to Worksheet 11.1. If **yes**, attach descriptions of current and future production schedules and any plans or schedules for any new units planned within the next five years (a minimum of 60 mos)

Attachment: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.1: IMPINGEMENT MORTALITY

This worksheet is **required** for all TPDES permit applications **that meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: [Click to enter text.](#)

Item 1. Impingement Compliance Technology Selection (Instructions, Page 107)

Check the box next to the method of compliance for the Impingement Mortality Standard selected by the facility.

- ☐ Closed-cycle recirculating system(CCRS) [40 CFR § 125.94(c)(1)]
- ☐ 0.5 ft/s Through-Screen Design Velocity [40 CFR § 125.94(c)(2)] – Proceed to Worksheet 11.2
- ☐ 0.5 ft/s Through Screen Actual Velocity [40 CFR § 125.94(c)(3)]
- ☐ Existing offshore velocity cap [40 CFR § 125.94(c)(4)] – Proceed to Worksheet 11.2
- ☐ Modified traveling screens [40 CFR § 125.94(c)(5)]
- ☐ System of technologies [40 CFR § 125.94(c)(6)]
- ☐ Impingement mortality performance standard [40 CFR § 125.94(c)(7)]
- ☐ De minimis rate of impingement [40 CFR § 125.94(c)(11)]
- ☐ Low capacity utilization power-generation facilities [40 CFR § 125.94(c)(12)]

If 0.5 ft/s Through-Screen Design Velocity [40 CFR § 125.94(c)(2)] or existing offshore velocity cap [40 CFR § 125.94(c)(4)] was selected, proceed to Worksheet 11.2. Otherwise, continue to Item 2.

Item 2. Impingement Compliance Technology Information (Instructions, Page 107)

Complete the following sections based on the selection made for item 1 above.

a. CCRS [40 CFR § 125.94(c)(1)]

- ☐ Check this box to confirm the CWS meets the definition of CCRS located at 40 CFR § 125.91(c) and provide a response to the following questions.

1. Does the facility use or propose to use a CWIS to replenish water losses to the CWS?

- ☐ Yes ☐ No

If **no**, proceed to item a.2. If **yes**, provide the following information as an attachment and continue.

- CWIS ID
- 12 months of intake flow data for any CWIS used for make-up intake flows to replenish cooling water losses, excluding intakes for losses due to blowdown, drift, or evaporation.

- A narrative description of any physical or operational measures taken to minimize make-up withdrawals.

Attachment: [Click to enter text.](#)

NOTE: Do not complete a separate Worksheet 11.1 for a make-up CWIS.

2. Does the facility use or propose to use cooling towers?

☐ Yes ☐ No

If **no**, proceed to Worksheet 11.2. If **yes**, provide the following information and proceed to Worksheet 11.2.

- Average number of cycles of concentration (COCs) prior to blowdown:

Average COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Attach COC monitoring data for each cooling tower from the previous year (a minimum of 12 months): [Click to enter text.](#)
- Maximum number of COCs each cooling tower can accomplish based on design of the system.

Calculated COCs Prior to Blowdown

Cooling Tower ID				
COCs				

- Describe conditions that may limit the number of COCs prior to blowdown, if any, including but not limited to permit conditions: [Click to enter text.](#)

b. 0.5 ft/s Through Screen Actual Velocity [40 CFR § 125.94(c)(3)]

Provide daily intake flow measurement monitoring data from the previous year (a minimum of 12 months) as an attachment and proceed to Worksheet 11.2.

Attachment: [Click to enter text.](#)

c. Modified traveling screens [40 CFR § 125.94(c)(5)]

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the modified traveling screens and associated equipment.
2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods
3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: [Click to enter text.](#)

d. System of technologies [40 CFR § 125.94(c)(6)] or impingement mortality performance standard [40 CFR § 125.94(c)(7)]

Provide the following information as an attachment and proceed to Worksheet 11.2.

1. A description of the system of technologies used or proposed for use by the facility to

achieve compliance with the impingement mortality standard.

2. A site-specific impingement technology performance optimization study that includes a narrative description of the biological data collection methods.
3. Biological sampling data from the previous two years (a minimum of 24 months).

Attachment: [Click to enter text.](#)

- e. De minimis rate of impingement [*40 CFR § 125.94(c)(11)*]

Provide the following information and proceed to Worksheet 11.2.

1. Attach monitoring data from the previous year (a minimum of 12 months) of intake flow measured at a frequency of 1/day on days of operation.

Attachment: [Click to enter text.](#)

2. If the rate of impingement caused by the CWIS is extremely low (at an organism or age-one equivalent count), attach supplemental information to Worksheet 11.0, item 1.b.6. to support this determination.

Attachment: [Click to enter text.](#)

- f. Low capacity utilization power-generation facilities [*40 CFR § 125.94(c)(12)*]

Attach monthly utilization data from the previous 2 years (a minimum of 24 months) for each operating unit and proceed to Worksheet 11.2.

Attachment: [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.2: SOURCE WATER BIOLOGICAL DATA

This worksheet is **required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** source waterbody of a CWIS for which a facility has selected an Impingement Mortality Technology Option described at *40 CFR §§ 125.94(c)(1)-(7)*.

Name of source waterbody: [Click to enter text.](#)

Item 1. Species Management (Instructions, Page 109)

- a. The facility has obtained an incidental take permit for its cooling water intake structure(s) from the USFWS or the NMFS.

☐ Yes ☐ No

If yes, attach any information submitted in order to obtain that permit, which may be used to supplement the permit application information requirements of paragraph *40 CFR § 125.95(f)*.

Attachment: [Click to enter text.](#)

- b. Is the facility requesting a waiver from application requirements at *40 CFR § 122.21(r)(4)* in accordance with *40 CFR § 125.95* for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent?

☐ Yes ☐ No

If **yes**, attach a copy of the most recent managed fisheries report to TPWD, or equivalent.

Attachment: [Click to enter text.](#)

- c. There are no federally listed threatened or endangered species or critical habitat designations within the source water body.

☐ True ☐ False

Item 2. Source Water Biological Data (Instructions, Page 109)

New Facilities (Phase I, Track I and II)

- Provide responses to all items in this section and stop.

Existing Facilities (Phase II)

- If the answer to **1.b.** above was **no**, provide responses to all items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **true**, do not complete any items in this section and proceed to Worksheet 11.3.
- If the answer to **1.b.** was **yes** and **1.c.** was **false**, attach a response for any item in this section that is not contained within the most recent TPWD, or equivalent and proceed to Worksheet 11.3.

Attachment: [Click to enter text.](#)

- a. A list of the data requested at *40 CFR § 122.21(r)(4)(ii)* through *(vi)* that are not available, and efforts made to identify sources of the data.
- b. Provide a list of species (or relevant taxa) in the vicinity of the CWIS and identify the following information regarding each species listed.
 - all life stages and their relative abundance,
 - identification of all species and life stages that would be most susceptible to impingement and entrainment,
 - forage base,
 - significance to commercial fisheries,
 - significance to recreational fisheries,
 - primary period of reproduction,
 - larval recruitment, and
 - period of peak abundance for relevant taxa.
- c. Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the CWIS(s).
- d. Identify all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at the CWIS(s).
- e. Documentation of any public participation or consultation with federal or state agencies undertaken.

The following is required for existing facilities only. Include the following information with the above listed attachment.

- f. Identify any protective measures and stabilization activities that have been implemented and provide a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.
- g. A list of fragile species, as defined at *40 CFR § 125.92(m)*, at the facility. The applicant need only identify those species not already identified as fragile at *40 CFR § 125.92(m)*.

NOTE: New units at an existing facility are not required to resubmit this information if the cooling water withdrawals for the operation of the new unit are from an existing intake.

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 11.3: ENTRAINMENT

This worksheet is **required** for all TPDES permit applications that **meet the conditions outlined in Technical Report 1.0, Item 12**. Complete one copy of this worksheet for **each** individual CWIS the facility uses or proposes to use.

CWIS ID: [Click to enter text.](#)

Item 1. Applicability (Instructions, Page 111)

Is the AIF of the CWIS identified above greater than, or equal to, 125 MGD?

☐ Yes ☐ No

- If **no** or the facility has selected **CCRS** [40 CFR § 125.94(c)(1)] for the impingement mortality compliance method, complete Item 2 and stop here.
- If **yes** and the facility is **seeking a waiver** from application requirements in accordance with 40 CFR § 125.95 for any CWIS(s) that withdraw from a man-made reservoir that is stocked and managed by a state or federal natural resources agency or the equivalent, complete item 2 and stop.
- If **yes** and the facility is **not seeking a waiver** from application requirements in accordance with 40 CFR § 125.95, complete item 2 and provide any required and completed studies listed in item 3. For any required studies in item 3 that are not complete, provide a detailed explanation for the delay and an anticipated schedule for completion and submittal.

Item 2. Existing Entrainment Performance Studies (Instructions, Page 111)

Attach any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies.

Attachment: [Click to enter text.](#)

Item 3. Facility Entrainment Performance Studies (Instructions, Page 111)

- Attach an entrainment characterization study, as described at 40 CFR § 122.21(r)(9): [Click to enter text.](#)
- Attach a comprehensive feasibility study, as described as 40 CFR § 122.21(r)(10): [Click to enter text.](#)
- Attach a benefits valuation study, as described as 40 CFR § 122.21(r)(11): [Click to enter text.](#)
- Attach a non-water quality environmental and other impacts study, as described as 40 CFR § 122.21(r)(12): [Click to enter text.](#)
- Attach a peer review analysis, as described as 40 CFR § 122.21(r)(13): [Click to enter text.](#)

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 12.0: OIL AND GAS EXPLORATION, DEVELOPMENT, AND PRODUCTION WASTEWATER DISCHARGES

This worksheet is **required** for all TPDES permit applications that are subject to Effluent Limitation Guidelines in 40 CFR Part 435.

Item 1. Operational Information (Instructions, Page 112)

- a. Is the wastewater from an oil and gas exploration, development, or production facility located west of the 98th meridian?

☐ Yes ☐ No

If yes, continue to the next question. If no, skip to Item 2 relating to Production/Process Data.

- b. Provide justification for how the wastewater is/will be used for agriculture or wildlife propagation.

Click to enter text.

Item 2. Production/Process Data (Instructions, Page 112)

- a. Provide the applicable 40 CFR Part 435 Subpart(s).

Click to enter text.

- b. Describe if the permit being sought is for discharges from exploration, development, production, or for a combination of more than one of those activities.

Click to enter text.

c. Provide information on all waste-streams generated and specify which waste-streams you are requesting to be authorized for discharge.

Wastestreams Generated

Wastestream	Requesting authorization to discharge? (Yes/No)	Volume (MGD)	% of Total Flow

d. Describe how the facility will manage wastestreams for which discharge authorization is not being sought.

Click to enter text.

Attachment: Click to enter text.

e. Provide information on miscellaneous discharges.

Click to enter text.

Attachment: Click to enter text.

- f. List of chemicals that are in use, or will be used, downhole. Provide the category, concentration used/to be used, and purpose of using the chemical. Attach a safety data sheet for each chemical listed.

Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: [Click to enter text.](#)

- g. List of chemicals that are in use, or will be used, to treat the wastewater to be discharged under this authorization. Provide the concentration used/to be used and purpose of using the chemical. Attach a safety data sheet for each chemical listed.

Water Treatment Chemicals List

Category	Chemical Name	Concentration (include units)	Purpose

Attachment: [Click to enter text.](#)

Item 3. Pollutant Analysis (Instructions, Page 113)

Tables 1, 2, 6, and 7 located in Worksheet 2.0 are required. In addition, Table 19 below is required and must be completed for each outfall and submitted with this application. The remaining tables in Worksheet 2.0, are required as applicable.

- 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): [Click to enter text.](#)
- 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:** [Click to enter text.](#)
- d. Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** [Click to enter text.](#)

Table 19 for Outfall No.: [Click to enter text.](#) Samples are (check one): ☐ Composite ☐ Grab

Pollutant	Sample 1 (mg/L)*	Sample 2 (mg/L)*	Sample 3 (mg/L)*	Sample 4 (mg/L)*
Calcium				
Potassium				
Sodium				

*Indicate units if different from mg/L.

Attachment 1: Core Data Form



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.)		
<input type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input checked="" type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)		<input type="checkbox"/> 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 602496499		RN 101190221

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)		8/1/2024	
<input type="checkbox"/> New Customer <input checked="" type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership					
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)					
<i>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).</i>					
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)				<i>If new Customer, enter previous Customer below:</i>	
DSM Nutritional Products, LLC					
7. TX SOS/CPA Filing Number		8. TX State Tax ID (11 digits)		9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
800189929		12740851444		274085144	2191211
11. Type of Customer:		<input checked="" type="checkbox"/> Corporation		<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Other:	
12. Number of Employees				13. Independently Owned and Operated?	
<input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input checked="" type="checkbox"/> 501 and higher				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following					
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Owner & Operator <input type="checkbox"/> Other:					
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant					
15. Mailing Address:					
1000 County Road 227A					
City	Freeport	State	TX	ZIP	77541
ZIP + 4					
16. Country Mailing Information (if outside USA)			17. E-Mail Address (if applicable)		
18. Telephone Number		19. Extension or Code		20. Fax Number (if applicable)	

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If 'New Regulated Entity' is selected, a new permit application is also required.)								
<input type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input checked="" type="checkbox"/> Update to Regulated Entity Information								
<i>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).</i>								
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)								
DSM Nutritional Products								
23. Street Address of the Regulated Entity: (No PO Boxes)	1000 County Road 227A							
	City	Freeport	State	TX	ZIP	77541	ZIP + 4	
24. County								

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

25. Description to Physical Location:							
26. Nearest City				State		Nearest ZIP Code	
<i>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).</i>							
27. Latitude (N) In Decimal:			28. Longitude (W) In Decimal:				
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
29	0	44.136 N	95	22	9.192 W		
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)	
2833				325411			
33. What is the Primary Business of this entity? (Do not repeat the SIC or NAICS description.)							
Manufacture of beta carotene							
34. Mailing Address:	1000 County Road 227A						
	City	Freeport	State	TX	ZIP	77541	ZIP + 4
35. E-Mail Address:							
36. Telephone Number			37. Extension or Code			38. Fax Number (if applicable)	
(979) 373-5000						() -	

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.

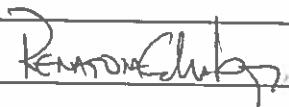
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input checked="" type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:
	WQ0002216000			

SECTION IV: Preparer Information

40. Name:	Karen Miller			41. Title:	Senior Engineer
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address		
(512) 468-7325		() -	kmiller@green-envi.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:	DSM Nutritional Products, LLC		Job Title:	Site Manager	
Name (In Print):	Renato S Lopes			Phone:	(843) 356- 7943
Signature:				Date:	08/14/2024

Attachment 2: Plain Language Summary



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

Plain Language Summary 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 as required by [Title 30, Texas Administrative Code \(30 TAC\), Chapter 39, Subchapter H](#). Applicants may modify the template as necessary to accurately describe their 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 the applicant 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.

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.

DSM Nutritional Products, LLC (CN602496499) operates DSM Nutritional Products (RN101190221), a beta carotene manufacturing facility. The facility is located at 1000 County Road 227A, in Freeport, Brazoria County, Texas 77541. DSM is seeking to renew their TPDES permit application.

Discharges from the facility are expected to contain : total suspended solids, ammonia nitrogen, cyanide, acetone, 4-methyl-2-pentanone, isobutyraldehyde, n-amyl acetate, n-butyl acetate, ethyl acetate, isopropyl acetate, methyl formate, amyl alcohol, ethanol, isopropanol, methanol, methyl cellosolve, dimethyl sulfoxide, triethyl amine, phenol, benzene, toluene, xylenes, n-hexane, n-heptane, methylene chloride, chloroform, 1,2-dichloroethane, tetrahydrofuran, isopropyl ether, diethyl amine, acetonitrile, and enterococci. Treated process wastewater, utility wastewater, water treatment wastes, treated domestic wastewater, and stormwater are treated by physical, chemical, and biological methods, including pH

adjustment, equalization, scum skimmer, aeration, flocculation, clarification, filtration, and chlorination.

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

AGUAS RESIDUALES Introduzca 'INDUSTRIALES' o 'DOMÉSTICAS' aquí /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.

DSM Nutritional Products, LLC ((CN602496499) opera DSM Nutritional Products (RN101190221), una instalación de fabricación de betacaroteno. La instalación está ubicada en 1000 County Road 227A, en Freeport, Condado de Brazoria, Texas 77541. DSM está tratando de renovar su solicitud de permiso TPDES.

Se espera que las descargas de la instalación contengan : sólidos suspendidos totales, nitrógeno amoniacal, cianuro, acetona, 4-metil-2-pentanona, isobutiraldehído, acetato de n-amilo, acetato de n-butilo, acetato de etilo, acetato de isopropilo, formiato de metilo, alcohol amílico, etanol, isopropanol, metanol, metilcelosolve (2-metoxietanol), dimetilsulfóxido, trietilamina, fenol, benceno, tolueno, xilenos, n-hexano, n-heptano, cloruro de metileno, cloroformo, 1,2-dicloroetano, tetrahidrofurano, éter isopropílico, dietil amina, acetonitrilo, y enterococos. Aguas residuales de procesos tratados, aguas residuales de servicios públicos, residuos del tratamiento del agua, aguas residuales domésticas tratadas y aguas pluviales. **están** tratado por métodos físicos, químicos y biológicos, incluidos el ajuste del pH, la ecualización, el espumador, la aireación, la floculación, la clarificación, la filtración y la cloración.

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

Individual Industrial Wastewater 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 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 (RN1000000000), 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.

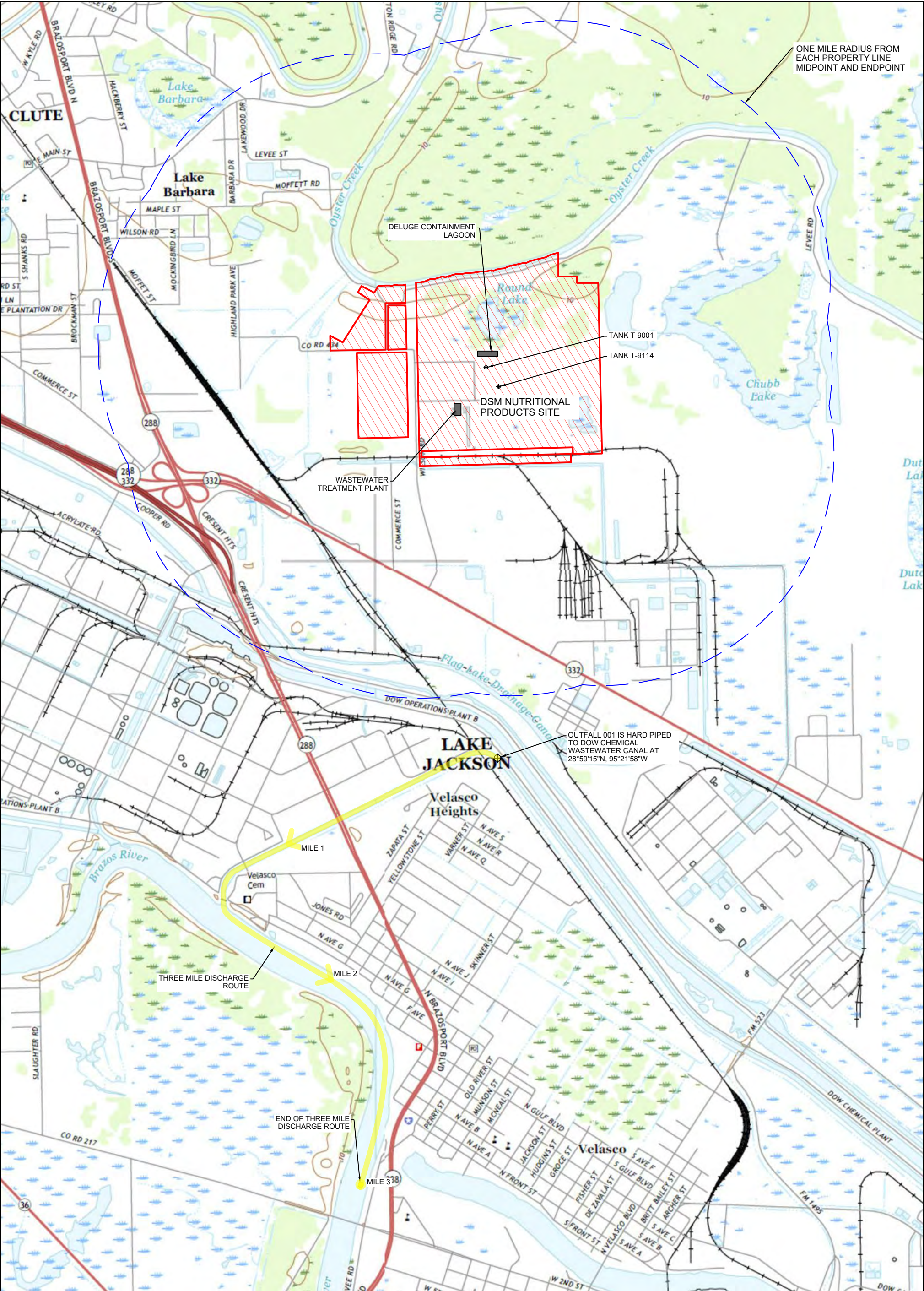
This application is for a renewal to discharge 870,000,000 gallons per day of once through cooling water, auxiliary cooling water, and also authorizes the following waste streams monitored inside the facility (internal outfalls) before it is mixed with the other wastewaters authorized for discharge via 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.

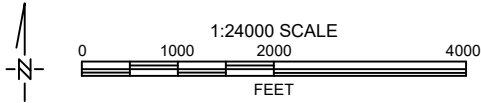
Cooling water and boiler make-up water are supplied by Lake Starr Reservoir. The City of Austin municipal water plant (CN600000000, PWS 00000) supplies the facility’s potable water and serves as an alternate source of boiler make-up water. Water from the Lake Starr Reservoir is withdrawn at the intake 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.

Attachment 3: USGS Map



SOURCE: USGS 7.5' TOPO COMPOSITE OF LAKE JACKSON, OYSTER CREEK
FREEPORT AND JONES CREEK QUADRANGLES 2016



DOCUMENT TITLE:

Attachment
Full Size USGS Map
DSM Nutritional Products
1000 County Road 227A
Freeport, TX 77541



GREEN ENVIRONMENTAL
CONSULTING, INC.

DRAWING NUMBER:

DSM_USGS_061520

DATE:

6/15/20

DRAWN BY:

DHM

REVISION #:

REVISION DATE:

Attachment 4: 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: DSM Nutritional Products

Permit No. WQ00 02216000

EPA ID No. TX 083558486

Address of the project (or a location description that includes street/highway, city/vicinity, and county):

1000 County Rd 227A, Freeport, TX 77541

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: Kinzie Griffin

Credential (P.E, P.G., Ph.D., etc.):

Title: Environmental Professional

Mailing Address: 1000 County Road 227A

City, State, Zip Code: Freeport, TX 77541

Phone No.: 979-373-5080 Ext.:

Fax No.:

E-mail Address: Kinzie.griffin@dsm-firmenich.com

2. List the county in which the facility is located: Brazoria
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.

Discharge at the facility drains via pipeline to the Dow Plant "A" canal, thence to Brazos River Tidal in Segment No. 1201 in the Brazos River Basin

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):

n/a

2. Describe existing disturbances, vegetation, and land use:

Facility is an existing manufacturing site. No construction is proposed as part of this permit renewal.

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:

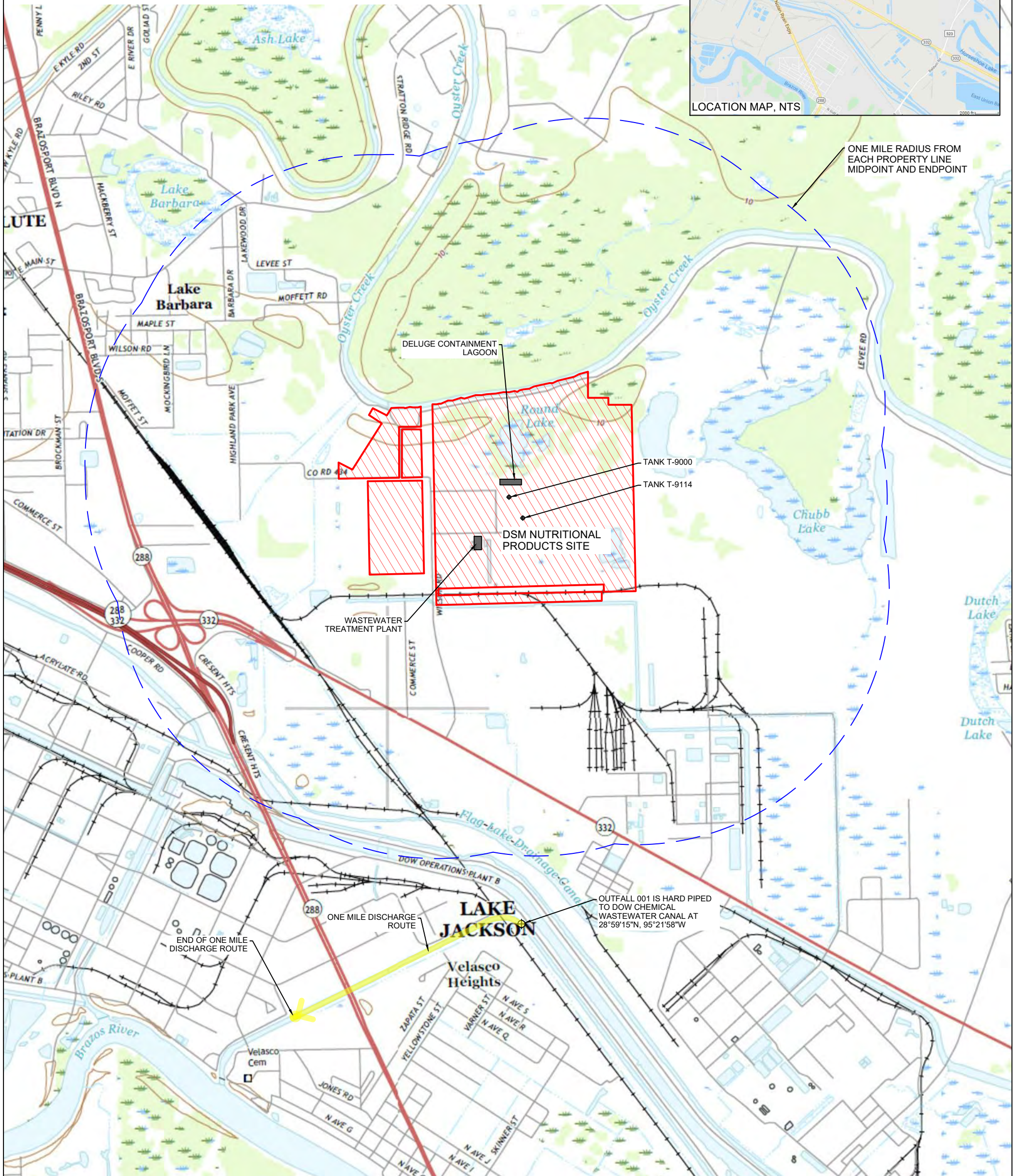
n/a

4. Provide a brief history of the property, and name of the architect/builder, if known.

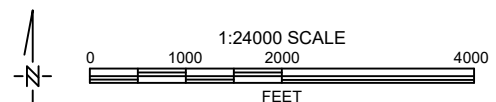
n/a



ONE MILE RADIUS FROM
EACH PROPERTY LINE
MIDPOINT AND ENDPOINT



SOURCE: USGS 7.5' TOPO COMPOSITE OF LAKE JACKSON, OYSTER CREEK
FREEPORT AND JONES CREEK QUADRANGLES 2016



DOCUMENT TITLE:

Attachment 4
Separate USGS Map
DSM Nutritional Products
1000 County Road 227A
Freeport, TX 77541



DRAWING NUMBER:
DSM_USGS_061520

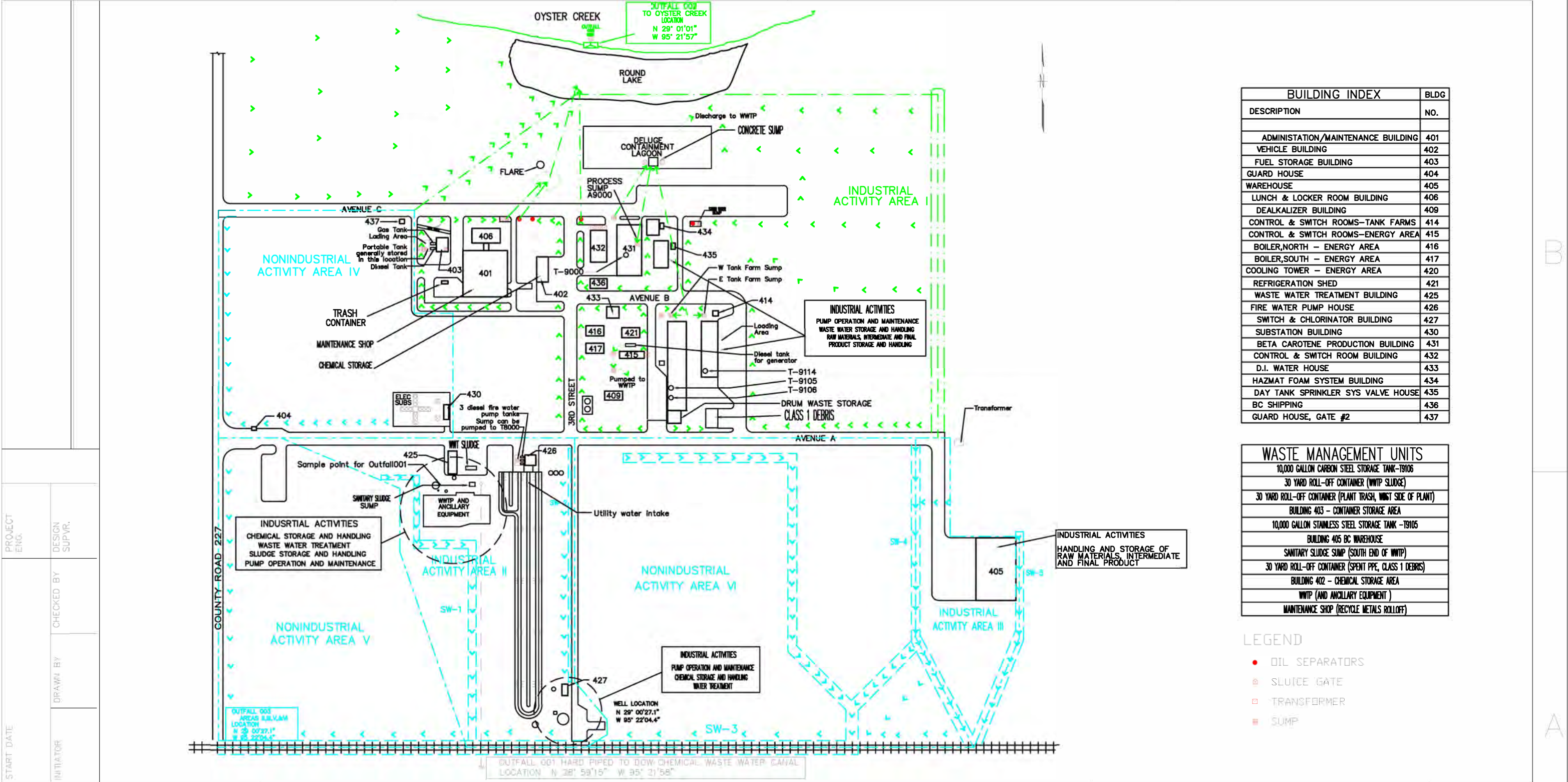
DATE: 6/15/20

DRAWN BY: DHM	REVISION #:
----------------------	---------------------

REVISION DATE:

REVISION DATE:

Attachment 5: Facility Map



Attachment 6: FIRM

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Texas State Plane South Central Zone (FIPS zone 4204). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to North American **Vertical Datum** of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSM-C, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was derived from multiple sources. Base map files were provided in digital format by Texas Natural Resources Information Systems (TNIRIS) StratMap, National Oceanic and Atmospheric Administration (NOAA), National Geodetic Survey (NGS), Velasco Drainage District, and the Brazoria County Appraisal District.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

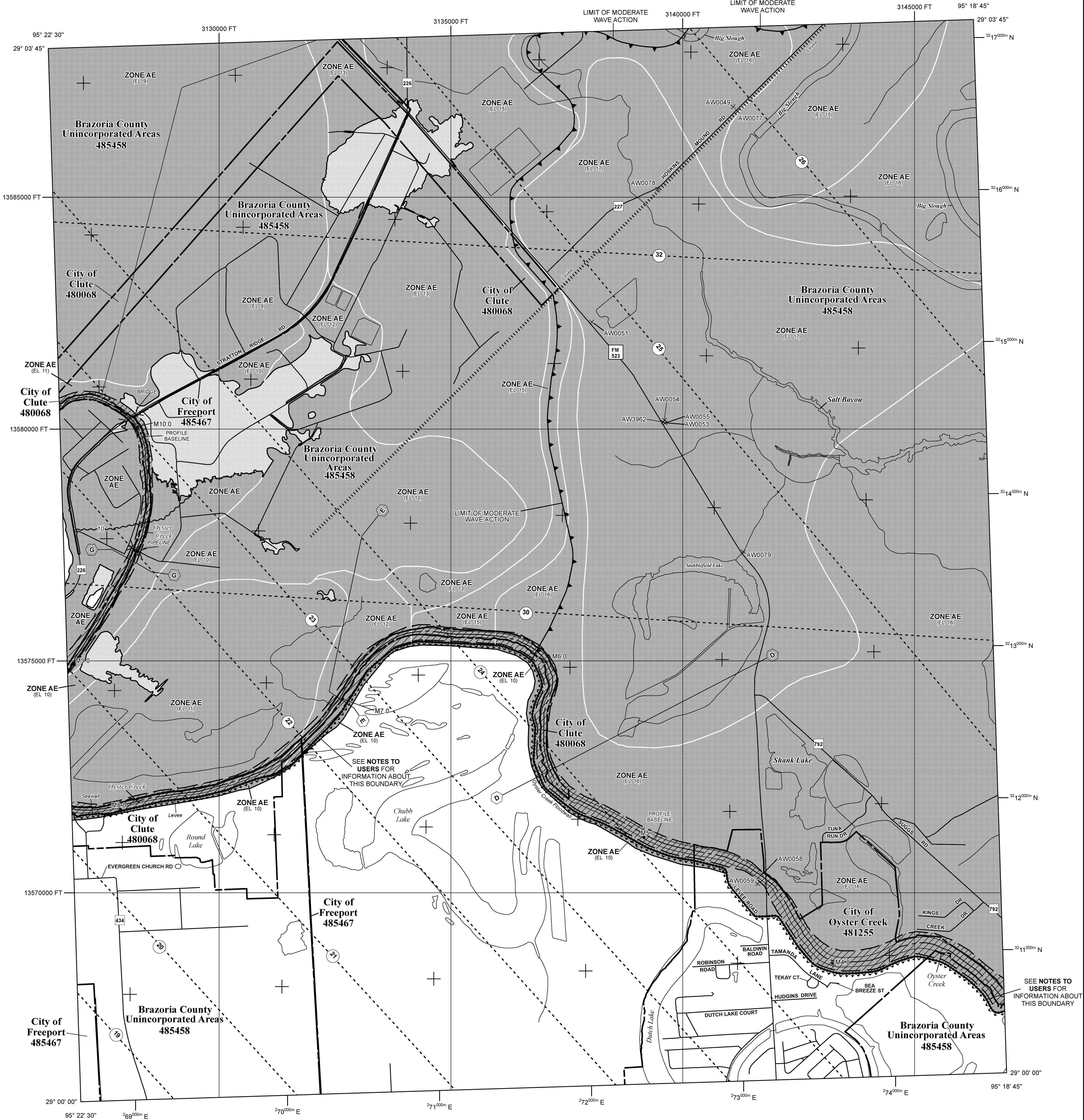
For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the Flood Mapping and Insurance eXchange (FMIX) at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <https://www.fema.gov/business/nfip>.

LIMIT OF MODERATE WAVE ACTION: The AE Zone category has been divided by a **Limit of Moderate Wave Action (LIMWA)**. The LIMWA represents the approximate landward limit of the 1.5-foot breaking wave. Base flood conditions between the VE Zone and the LIMWA will be similar to, but less severe than those in the VE Zone.

ATTENTION: The levee, dike, or other structure that impacts flood hazard areas inside this boundary has not been shown to comply with Section 65.10 of the NFIP Regulations. As such, this FIRM panel will be revised at a later date to update the flood hazard information associated with this structure.

The flood hazard data inside the boundary on the FIRM panel has been republished from the previous effective (historic) FIRM for this area, after being converted from NGVD 29 to NAVD 88.



Attachment 7: Treatment Process Descriptions

The wastewater treatment system consists of an influent feed tank, a pH adjustment tank, and equalization/aeration first stage basin, second -stage aeration basin, flocculator clarifier, final neutralization tanks, thickener, and filter press. Each of these units and the associated flows are described below.

Tank T-9001 – Tank T-9001 is a 2,430-gallon horizontal steel tank and is the first unit in the wastewater treatment system to receive wastewater from the process unit. This tank primarily discharges to Tank T-9114 but is also equipped with an overflow that exits the top of the tank and deposits wastewater to the adjacent A-9000 (aka T-9000) process sump.

Tank T-9114 – Tank T-9114 is a 64,722-gallon steel vertical tank that receives wastewater from T-9001. Wastewater from this tank flows to T-8000, the influent tank, located in the wastewater treatment area.

Process Sump A-9000 – The process sump is known as both A-9000 and T-9000. This is an inground, rectangular, concrete structure that receives overflows from T-9001 and liquids, primarily condensate and washwater that collects in the process trench. It also receives stormwater drainage from the roof of the process structure. When pumps in the sump are inactive, the process sump equalizes with the two tank farm sumps, which in turn equalize with the DCL.

Deluge Containment Lagoon (DCL) – The DCL is a 2.3 million gallon surface impoundment with in-situ clay construction. It was designed to receive flow from the deluge of fires, but it also receives spill residues and is used to temporarily store wastewater, especially when the wastewater treatment plant is in recycle mode.

Influent Feed Tank - Tank T-8000 receives all of the process water, utility water, and contaminated stormwater. The function of this tank is to separate the oil and scum present in the incoming wastewater streams by decreasing the pH. Its dimensions are 10' x 6' x 6.5' SWD (side water depth) which provides a volume of 2,500 gallons. The tank is equipped with a lever-operated scum skimmer and a ½ HP mixer.

pH Adjustment Tank - Tank T-8001 is used to neutralize the low pH of the wastewater coming from the influent feed tank. The dimensions are 6' x 6' x 4.5' SWD and the volume is approximately 1,200 gallons. Mixing is provided by a ½ HP mixer. Although it is not normal procedure, this tank also has the ability to receive return biosolids from the clarifier.

Backwash Water Tank - The main purpose of the backwash water tank is to hold the water from the filter backwash at the water treatment plant. The backwash water is pumped from the holding tank to the wastewater treatment system at a controlled rate in order to prevent hydraulic shock loads to the biological system. The dimensions are 16' diameter by 12' SWD and a volume of 18,000 gallons. The contents are mixed with a 3 HP mixer.

Equalization/ Aeration Basin - Flow from the pH adjustment tank is routed to T-8002, the first stage equalization/aeration activated sludge tank. If required it can also receive process wastewater, contaminated stormwater, return activated biosolids, and effluent recycle from the final neutralization tank. The equalization tank has a 300,000-gallon capacity and with overall inside dimensions of 90' x 90' at the top and 34' x 34' at the bottom and 12' SWD. The tank is equipped

with four mechanical subsurface aerators.

Aeration Basin - Flow from T-8002 is routed to the aeration basin T-8005 via a transfer pump station. The activated sludge process takes place in this unit. The basin has side slopes of 2:1, top dimensions of 98' x 98', bottom dimensions of 40' x 40' and 12' SWD. The basin is equipped with four mechanical aerators.

Flocculator Clarifier - Flow from T-8002 is routed to this unit next. The dimensions of T-8007, the flocculator clarifier, are 35' diameter by 12' SWD for a volume of 86,400 gallons. This unit separates the activated sludge solids from the aeration basin effluent. Settled solids are continuously removed from the bottom of the tank and pumped back to the two aeration basins to maintain the proper solids concentrations for biological treatment.

Excess biosolids are pumped to the biosolids holding tank for thickening and then to the belt filter press for dewatering.

Neutralization Tank - Flow from the flocculator clarifier enters the neutralization tank, T-8008, for pH adjustment. The tank is 10' x 5' x 7' SWD and has a volume of 2,600 gallons. A ½ HP mixer is provided. The neutralization tank also receives the treated sanitary effluent from the package plant and recycles from the effluent tank. Although it is not normal procedure, the tank can also receive cooling tower/boiler blowdown and dealkylizer water. The tank contents overflow to the effluent tank.

Effluent Tank - The main purpose of this tank, T-8012, is to hold the treated wastewater to verify if the quality specified in the discharge permit has been achieved throughout the treatment processes before being pumped to the Dow Canal. Also, the effluent tank provides a reservoir for the belt press filter press washwater. The tank is 10' x 5' x 7' SWD providing a volume of 2,600 gallons.

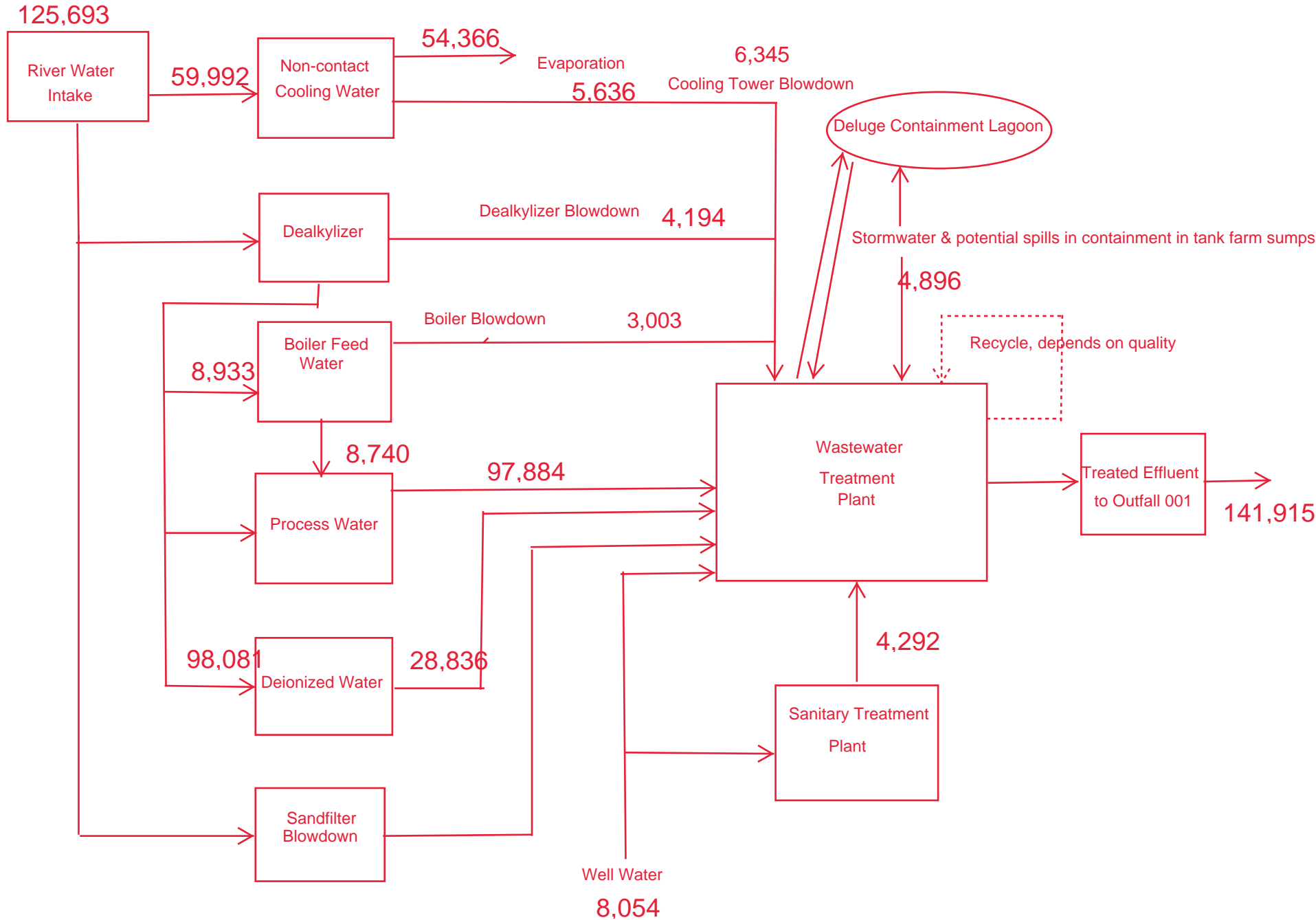
Gravity Thickener/Biosolids Holding Tank - This tank, T-8014, receives the waste activated biosolids from the flocculator clarifier for concentrations by gravity settling and provides digestion prior to biosolids dewatering. This tank is 20' in diameter by 14' SWD and has a volume of 28,200 gallons. The biosolids are pumped out through the bottom to the tank to the belt filter press. The supernatant is pumped out from the top of the tank back to the aeration basins or influent feed tank.

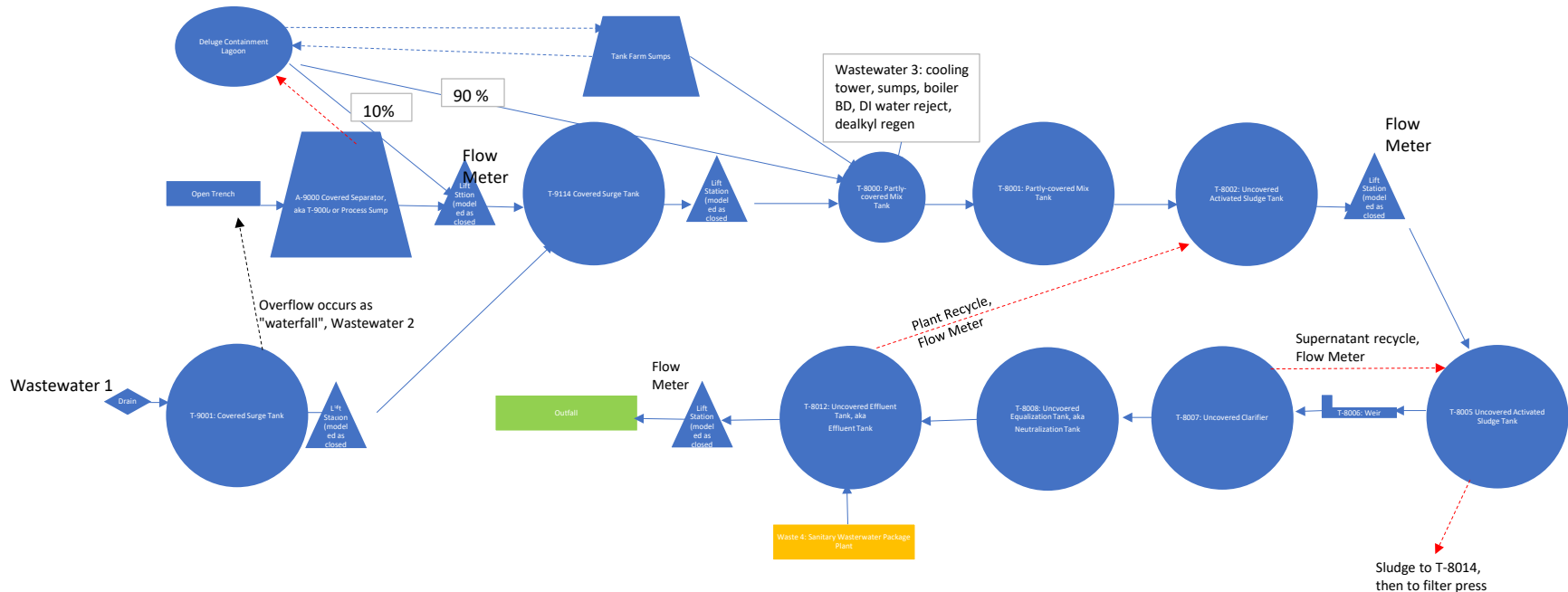
Belt Filter Press - This is an Ashbrook-Simon-Hartley unit. Biosolids from the biosolids holding tank are pumped to the belt filter press for dewatering. The cake from the belt press is collected by the biosolids conveyor and then sent to the roll-off box for disposal.

Sanitary Package WWTP - The sanitary package wastewater treatment plant has a capacity of 10,000 gallons per day, and can handle up to 200 plant employees per day. Effluent from this package unit enters the wastewater treatment system at T-8012.

Attachment 8: Flow Schematic with Water Balance

Schematic of Wastewater Flow, based on 2019 data, in average gallons per day

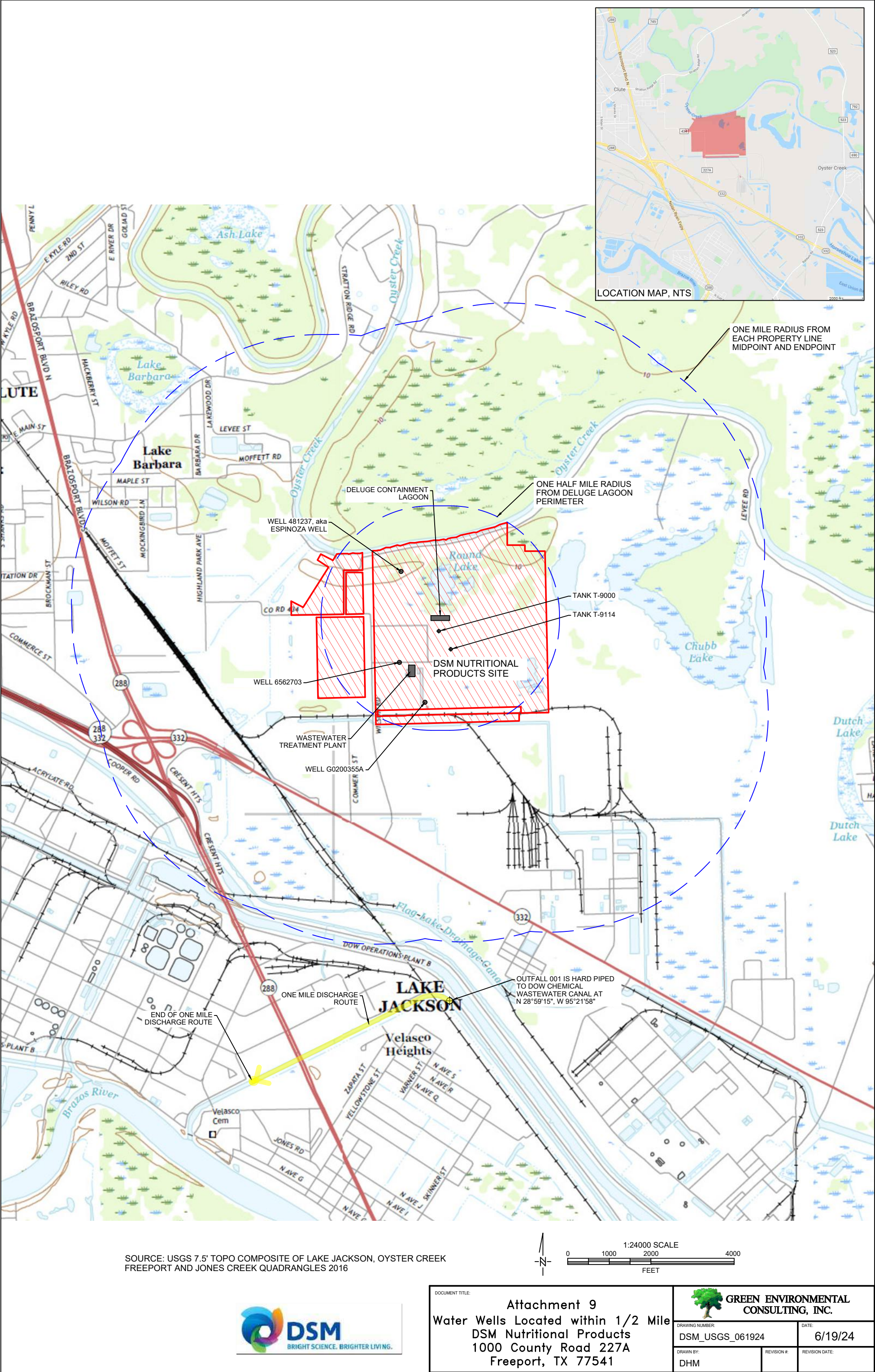




Wastewater 1 is process water only, which includes columns, vac pack overflows, vac steam pumps.

Wastewater 2 consists of spills, dealkyl water used for cooling in water jackets, condensate from cold pieces of equipment, stormwater that collects in process trench.

Attachment 9: USGS Map Showing Nearby Water Wells



Attachment 10: Water Well Reports

Prepared for:
GREEN ENVIRONMENTAL CONSULTING, INC.-Austin
2902 Clarice Ct.
Austin, TX 78757



Water Well Report

DSM

1000 County Rd 227A

Freeport, TX

Brazoria County

PO #: DSM TPDES permit renewal

ES-144152

Wednesday, June 12, 2024

Table of Contents



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Topographic Overlay Map - 0.5 Mile Radius	6
Current Imagery Overlay Map - 0.5 Mile Radius	7
Zip Code Map - 0.5 Mile Radius	8
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Water Well Details	10
Dataset Descriptions	18
Disclaimer	19

Geographic Summary



Location

Brazoria County, TX

Coordinates

Lat/Long in Degrees Minutes Seconds 29° 0' 46.46", -95° 22' 1.89"

Lat/Long in Decimal Degrees 29.012906, -95.367192

X/Y in NAD83 / UTM Zone 15N 269429.317897203, 3211726.44202282

Elevation

Subject Property lies 5.91 feet above sea level.

Zip Codes Searched

Search Distance	Zip Codes
-----------------	-----------

Subject Property	77541
------------------	-------

0.5 miles	77541
-----------	-------

Topos Searched

Search Distance	Topo Name
-----------------	-----------

Subject Property	Oyster Creek (1974)
------------------	---------------------

0.5 miles	Oyster Creek (1974), Lake Jackson (1974)
-----------	--

Water Well Summary



Datasets Searched	Distance	Total
US Water Well (WW)	0.5	0
TX Groundwater Supply (GWS)	0.5	1
TX Harris/Galveston Subsidence District (HGSD)	0.5	0
TX Historical Waterwell (HIST)	0.5	0
TX Public Water Supply (PWS)	0.5	1
TX Submitted Drillers Report (SDR)	0.5	1
Total Wells Found		3

Summary Map - 0.5 Mile Radius



DSM

● Single Water Well ● Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

- ★ Subject Site
- Search Buffer
- Texas Quad Index

0' 500' 1000'

1:9000
1 in = 750 ft
1 in = 0.142 mi
1 cm = 90 m
1 cm = 0.090 km

N

NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Topographic Overlay Map - 0.5 Mile Radius



Basemap courtesy of U.S. Geological Survey

DSM

● Single Water Well ● Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

★ Subject Site
□ Search Buffer

Subject Property Quad Name(s)
See Geographic Summary

0' 500' 1000'

1:9000
1 in = 750 ft
1 in = 0.142 mi
1 cm = 90 m
1 cm = 0.090 km



NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Current Imagery Overlay Map - 0.5 Mile Radius



DSM

● Single Water Well ● Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

★ Subject Site
□ Search Buffer

0' 500' 1000'
1:9000
1 in = 750 ft
1 in = 0.142 mi
1 cm = 90 m
1 cm = 0.090 km



NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Zip Code Map - 0.5 Mile Radius



DSM

● Single Water Well ● Water Well Cluster

US WW, TX GWS, TX HGSD, TX HIST
TX PWS, TX SDR

- ★ Subject Site
- Search Buffer
- Zip Code Boundary

0' 500' 1000'

1:9000
1 in = 750 ft
1 in = 0.142 mi
1 cm = 90 m
1 cm = 0.090 km



NAD83 / UTM Zone 15N
North American Datum 1983
Western Meridian: 96 0' 00" West
Eastern Meridian: 90 0' 00" West
Latitude of Origin: 0 0' 00" North

Water Well Summary



Map ID	Source ID	Dataset	Owner	Well Type	Drill Depth	Static Level	Completion Date	Distance	Elevation	Details Page #
1	6562703	GWS	DSM Nutritional Products	Industrial	300		1979-01-01	0.27mi SW	+2.36 ft	10
3	G0200355A	PWS	DSM NUTRITIONAL PRODUCTS	Public Supply	300		1979-01-01	0.39mi S	+0.62 ft	14
2	481237	SDR	Alfredo Espinoza	Domestic	220	70	2018-05-26	0.28mi NW	+1.48 ft	15

End of Water Well Summary

Map ID 1: GWS



GWS - Groundwater Supply

Map ID: 1	Source: Texas Water Development Board	
Well Number: 6562703	GWS - Groundwater Supply	Banks ID: 6562703
Well Address: TX	Rel. Loc.: 0.27mi SW	
Completion Date: 1979-01-01	Drill Depth: 300.0	
Owner: DSM Nutritional Products	Elevation: 8.27 ft (+2.36 ft)	
County:	Brazoria	
Aquifer Code:	112CHCT	
Driller:		
Drilling Start Date:		
Drilling Method:		
Well Type:	Withdrawal of Water	

End of GWS Section

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6562703
County	Brazoria
River Basin	San Jacinto-Brazos
Groundwater Management Area	14
Regional Water Planning Area	H - Region H
Groundwater Conservation District	Brazoria County GCD
Latitude (decimal degrees)	29.010001
Latitude (degrees minutes seconds)	29° 00' 36" N
Longitude (decimal degrees)	-95.37
Longitude (degrees minutes seconds)	095° 22' 12" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	112CHCT - Chicot Aquifer
Aquifer	Gulf Coast
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	9
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	300
Well Depth Source	Another Government Agency
Drilling Start Date	
Drilling End Date	0/0/1979
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Industrial
Water Level Observation	None
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	DSM Nutritional Products
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	G0200355A
Groundwater Conservation District Well Number	
Owner Well Number	1
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Commission on Environmental Quality
Created Date	3/24/2010
Last Update Date	7/25/2016

Remarks

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (<https://www.twdb.texas.gov/groundwater/data/gwdb rpt.asp>) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

PWS - Public Water Supply

Map ID: 3	Source: TCEQ
Water Source ID: G0200355A	PWS - Public Water Supply
	Banks ID: G0200355A
Well Address: TX	Rel. Loc.: 0.39mi S
Completion Date: 1979-01-01	Drill Depth: 300.0
Owner: DSM NUTRITIONAL PRODUCTS	Elevation: 6.53 ft (+0.62 ft)

Pws Id:	0200355
Hyperlink:	Go to webpage
Fips Cd:	039
Ccn:	
System Status:	ACTIVE
Source Status:	OPERATIONAL
Responsible Party:	CHRISTOPHER J KELLY
Responseible Party Address:	1000 COUNTY ROAD 227
Responseible Party City:	FREEPORT
Responseible Party State:	TX
Responseible Party Zip:	775413027
Phone:	9793735034
Tinwsys Number:	529

End of PWS Section

SDR - Submitted Drillers Report

Source: Texas Water Development Board

Map ID: 2

Well Report Tracking Number:
481237

SDR - Submitted Drillers Report

Banks ID: 481237

Well Address: 18244 CR 319, Brazoria, TX 77442

Rel. Loc.: 0.28mi NW

Completion Date: 2018-05-26

Drill Depth: 220.0

Owner: Alfredo Espinoza

Elevation: 7.38 ft (+1.48 ft)

Number Of Wells Drilled:	1
Elevation:	
Type Of Work:	New Well
Drilling Start Date:	2018-05-25
Company Name:	MARAL DRILLING
Driller Name:	Martin Almazan
Commentary:	

Bore Hole Completion

Well Report Tracking Number:	481237
Bore Hole Completion:	Other
Bore Hole Completion Other Desc:	Cement

Bore Hole Info

Well Report Tracking Number:	481237
Diameter:	7
Top Depth:	0
Bottom Depth:	220

Drilling Method

Well Report Tracking Number:	481237
Drilling Method:	Mud (Hydraulic) Rotary
Drilling Method Other Desc:	

Levels

Well Report Tracking Number:	481237
Measurement:	70

End of SDR Section**End of Water Well Details Section**

STATE OF TEXAS WELL REPORT for Tracking #481237

Owner:	Alfredo Espinoza	Owner Well #:	No Data
Address:	18244 CR 319 Brazoria, TX 77442	Grid #:	65-62-7
Well Location:	18244 CR 319 Brazoria, TX 77442	Latitude:	29° 00' 57.6" N
Well County:	Brazoria	Longitude:	095° 22' 12" W
		Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Domestic

Drilling Start Date: **5/25/2018** Drilling End Date: **5/26/2018**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	7	0	220

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Cement**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks & material)</i>
Annular Seal Data:	0	180	Cement 24 Bags/Sacks

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other
concentrated contamination (ft.): **None**

Distance to Septic Tank (ft.): **None**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level:	70 ft. below land surface, and 25 GPM artesian flow on 2018-05-26	Measurement Method:	Weighted Line
Packers:	Plastic at 180 ft.		
Type of Pump:	Submersible		
Well Tests:	Jetted	Yield: 25 GPM with 10 ft. drawdown after 5 hours	

Water Quality:

Strata Depth (ft.)	Water Type
180 - 220	Fresh

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which
contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **MARAL DRILLING**
2621 S. GARDENIA
PHARR, TX 78577

Driller Name: **Martin Almazan**

License Number: **52001**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	3	Top Soil
3	70	Clay
70	100	Sand
100	180	Clay
180	220	Sand

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Blank	New Plastic (PVC)	40	0	180
4	Screen	New Plastic (PVC)	40 0	180	220

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

Dataset Descriptions and Sources



Dataset	Source	Dataset Description	Update Schedule	Requested Date	Received Date	Update Date	Source Update Date
HIST - Historical Waterwell (TX)	TCEQ	This dataset contains all historical water well records searched from the TCEQ Public Water Well Viewer. Banks Environmental Data plots each well record based on location information found on the log.	Historical				
GWS - Groundwater Supply (TX)	Texas Water Development Board	This dataset contains water well records contained within Texas Water Development Board Groundwater Database.	Quarterly	2024-01-16	2024-01-16	2024-03-26	2024-01-16
WW - Water Well (US)	U.S. Geological Survey	This dataset contains groundwater well records from the U.S. Geological Survey.	Quarterly	2024-05-14	2024-05-14	2024-06-11	2024-05-14
HGSD - Harris/Galveston Subsidence District (TX)	Harris/Galveston/Fort Bend Subsidence Districts	This dataset contains all groundwater well records compiled by Harris Galveston Subsidence District/Fort Bend Subsidence District.	Quarterly	2024-01-03	2024-01-03	2024-04-19	2024-01-03
PWS - Public Water Supply (TX)	TCEQ	This dataset contains a collection of records from Texas Water Districts, Public Drinking Water Systems and Water and Sewer Utilities who submit information to the TCEQ.	Quarterly	2024-01-16	2024-01-16	2024-04-15	2024-01-16
SDR - Submitted Drillers Report (TX)	Texas Water Development Board	This dataset contains water well records from the Texas Water Development Board Submitted Drillers Reports Database.	Quarterly	2024-02-14	2024-02-14	2024-04-05	2024-02-14

Disclaimer



The Banks Environmental Data Water Well Report was prepared from existing state water well databases and/or additional file data/records research conducted at the state agency and the U.S. Geological Survey. Banks Environmental Data has performed a thorough and diligent search of all groundwater well information provided and recorded. All mapped locations are based on information obtained from the source. Although Banks performs quality assurance and quality control on all research projects, we recognize that any inaccuracies of the records and mapped well locations could possibly be traced to the appropriate regulatory authority or the actual driller. It may be possible that some water well schedules and logs have never been submitted to the regulatory authority by the water driller and, thus, may explain the possible unaccountability of privately drilled wells. It is uncertain if the above listing provides 100% of the existing wells within the area of review. Therefore, Banks Environmental Data cannot fully guarantee the accuracy of the data or well location(s) of those maps and records maintained by the regulatory authorities.



Texas Water Development Board
Well Schedule

groundwater resources
division

State Well Number: **65-62-703** Previous Well Number: County: **Brazoria** **39**

Latitude (dms): **290036** Longitude (dms): **952212** Coordinate Accuracy: **Global Positioning System - GPS**

River Basin: **San Jacinto-Brazos Rivers** GMA: **14** RWPA: **H** GCD: **Brazoria County GCD**

Owner: **DSM Nutritional
Products**

Driller:

Aquifer ID: **Gulf Coast**

Aquifer Code: **112CHCT**

Depth (ft): **300**

Elevation (ft): **9**

**CHICOT
AQUIFER**

Source of Depth: **Another Government
Agency**

Source of Elevation: **Digital Elevation
Model -DEM**

Date Drilled: **00/00/1979**

Well Type: **Withdrawal of Water**

Type of Lift: **Submersible Pump**

Power: **Electric Motor**

Horsepower:

Construction:

Completion:

Casing Material:

Screen Material:

CASING INTERVALS:
Casing/Blank Pipe (C)
Well Screen/Slotted Zone (S)
Open Hole (O)

Dia. (in.)	Top (ft.)	Bottom (ft.)
---------------	--------------	-----------------

WATER USE

Primary: **Industrial**

Secondary: **Domestic**

Tertiary:

Water Levels:

Water Quality: **N**

Other Data:

Logs:

REMARKS:

Owners well #1. TCEQ ID #0200355A.

Reporting Agency: **TWC/TNRCC/TCEQ**

Date Collected or Reported: **03/24/2010**

Recorded by:

D.R. Jones

New

Attachment 11: Potential for Migration from Pond

Information on Nearby Groundwater and Wells

The Deluge Containment Lagoon (DCL) exists to receive wastewater in the event of significant adverse events and is not used on a regular basis for the storage of wastewater.

Data on the liner of the DCL is not available. However, it is believed that the DCL is approximately 11 feet deep and the liner is constructed of *in situ* clay.

The nearest wells to the DCL are located on the DSM site. DSM operates one well for the supply of drinking water, Well G0200355A. Little data is available on the well, and what is available is in Attachment 10. The well has a depth of 300 feet, and is believed to be cased at the lower elevations of the well for the water supply. A second well, 6562703, is also located on DSM property and is used to provide process water. It is also drilled to a depth of 300 feet, and is believed to be cased at the lower elevation for the water supply.

Well 481237, referred to as the Espinoza well on the figure in Attachment 9, is also located on the DSM property. This well is not currently used by DSM. This well draws water from a depth of 70 feet below ground surface. Most importantly, the well log, indicates that clays underlie the ground surface from a depth of 3 to 70 feet, with the first sand layer not occurring until 70 feet below ground surface. The presence of the extensive clay layer on the site indicates that the opportunity for contaminants to migrate through the 70 feet of clay to groundwater is extremely unlikely.

Attachment 12: Cooling Tower and Boiler Blowdown Treatment Chemical SDSs



SAFETY DATA SHEET

KLARAID* PC1192

Note: this chemical is used in the Raw water clarifier, and that water is then used in the cooling tower.

1. Identification

Product identifier KLARAID PC1192
Other means of identification None.
Recommended use Coagulant
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Serious eye damage/eye irritation Category 2
OSHA defined hazards Not classified.

Label elements



Signal word Warning
Hazard statement Causes serious eye irritation.
Precautionary statement
Prevention Wear eye/face protection. Wash thoroughly after handling.
Response If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage Store away from incompatible materials.
Disposal Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC) None known.
Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
N,N-Dimethyl-N-2-propenyl-2-propen- 1-amonium chloride homopolymer	26062-79-3	10 - 20

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
4. First-aid measures	
Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.
7. Handling and storage	
Precautions for safe handling	Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.
8. Exposure controls/personal protection	
Occupational exposure limits	This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit.
Biological limit values	No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear suitable protective clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Color	Yellow
Physical state	Liquid
Odor	Mild
Odor threshold	Not available.
pH (concentrated product)	6.3
pH in aqueous solution	6.2 (5% SOL.)
Melting point/freezing point	30 °F (-1 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.03
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.

Material name: KLARAID® PC1192

Version number: 3.1

Decomposition temperature	Not available.
Viscosity	168 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Pour point	35 °F (2 °C)
Specific gravity	1.032
VOC	0 % (ASTM 3960-93)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Hydrogen chloride, oxides of carbon and nitrogen evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
KLARAID PC1192 (CAS Mixture)		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
N,N-Dimethyl-N-2-propenyl-2-propen-1-ammonium chloride homopolymer (CAS 26062-79-3)		
Acute		
Oral		
LD50	Rat	3000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.**Specific target organ toxicity - single exposure** Not classified.**Specific target organ toxicity - repeated exposure** Not classified.**Aspiration hazard** Based on available data, the classification criteria are not met.**12. Ecological information****Ecotoxicity**

Product		Species	Test Results
KLARAID PC1192 (CAS Mixture)			
	LC50	Ceriodaphnia	9.3 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
		Fathead Minnow	3.8 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
		Mysid Shrimp	628.5 mg/l, Static Renewal Bioassay, 48 hour
	LOEL	Ceriodaphnia	2 mg/l, Chronic Bioassay, 7 day
		Fathead Minnow	2 mg/l, Chronic Bioassay, 7 day
	NOEL	Ceriodaphnia	6.25 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
			1 mg/l, Chronic Bioassay, 7 day
		Fathead Minnow	2.5 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
			1 mg/l, Chronic Bioassay, 7 day
		Mysid Shrimp	125 mg/l, Static Renewal Bioassay, 48 hour
		Sheepshead Minnow	2000 mg/l, Static Renewal Bioassay, 96 hour
Aquatic			
Crustacea	LC50	Daphnia magna	32 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
	NOEL	Daphnia magna	15.6 mg/l, Static Acute Bioassay, 48 hour, (With Humic Acid)
Fish	LC50	Rainbow Trout	14.1 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
	NOEL	Rainbow Trout	10 mg/l, Static Acute Bioassay, 96 hour, (With Humic Acid)
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Other adverse effects	Not available.		
Persistence and degradability			
- COD (mgO2/g)	270		
- BOD 5 (mgO2/g)	0		
- BOD 28 (mgO2/g)	7		
- Closed Bottle Test (% Degradation in 28 days)	3		
- Zahn-Wellens Test (% Degradation in 28 days)	6		
- TOC (mg C/g)	90		

Material name: KLARAID® PC1192

Version number: 3.1

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	Not regulated as dangerous goods. Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.	
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.	
SARA 304 Emergency release notification	Not regulated.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not regulated.	
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No	
SARA 302 Extremely hazardous substance	Not listed.	
SARA 311/312 Hazardous chemical	Yes	
SARA 313 (TRI reporting)	Not regulated.	
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List	Not regulated.	
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)	Not regulated.	
Safe Drinking Water Act (SDWA)	Not regulated.	
Inventory status		
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration 21 CFR 176.170 (components of paper and paperboard in contact with aqueous and fatty foods)

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. Other information, including date of preparation or last revision

Issue date Oct-20-2014

Revision date Dec-16-2017

Version # 3.1

List of abbreviations

CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

GENGARD* GN8300

1. Identification

Product identifier	GENGARD GN8300
Other means of identification	None.
Recommended use	Corrosion inhibitor
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.
Precautionary statement	
Prevention	Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Phosphoric Acid	7664-38-2	60 - 80

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Acidic. Corrosive to skin or eyes. Do not mix with alkaline material. Do not breathe mist or vapor. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Do not get in eyes, on skin, or on clothing. Use care in handling/storage.
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**Conditions for safe storage,
including any incompatibilities**

Store locked up. Store in corrosive resistant container with a resistant inner liner. Contact with metals may release flammable hydrogen gas. Keep only in the original container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	PEL	1 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m ³
	TWA	1 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m ³
	TWA	1 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s)

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Suitable gloves can be recommended by the glove supplier. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color Colorless to light yellow

Physical state Liquid

Odor Mild

Odor threshold Not available.

pH (concentrated product) < 1

pH in aqueous solution 1.2 (5% SOL.)

Melting point/freezing point < -30 °F (< -34 °C)

Initial boiling point and boiling range Not available

Flash point Not applicable

Evaporation rate < 1 (Ether = 1)

Material name GENGARD® GN8300

Version number 2.0

Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	15 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	> 1 (Air = 1)
Relative density	1.58
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	19 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	0 (Estimated)
Pour point	< -25 °F (< -32 °C)
Specific gravity	1.58

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Contact with metals may release flammable hydrogen gas. Contact with strong bases may cause a violent reaction releasing heat. Avoid contact with strong oxidizers.
Incompatible materials	Strong oxidizing agents. Metals.
Hazardous decomposition products	Oxides of carbon and phosphorus evolved in fire.

11. Toxicological information

Information on likely routes of exposure	
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Information on toxicological effects	
Acute toxicity	May cause respiratory irritation.

Product	Species	Test Results
GENGARD GN8300 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	3650 mg/kg. (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	2040 mg/kg. (Calculated according to GHS additivity formula)

Components	Species	Test Results
Phosphoric Acid (CAS 7664-38-2)		
Acute		
Dermal		
LD50	Rabbit	2740 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not available	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not available	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard. Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity			
Product		Species	Test Results
GENGARD GN8300 (CAS Mixture)			
	5% Mortality	Ceriodaphnia	500 mg/L, Static Screen, 48 hour, (pH adjusted)
	85% Mortality	Ceriodaphnia	2500 mg/L, Static Screen, 48 hour, (pH adjusted)
	LC50	Fathead Minnow	4200 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Fathead Minnow	2100 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
Aquatic			
Crustacea	LC50	Daphnia magna	3540 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)

Product	Species	Test Results
NOEL	Daphnia magna	2100 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
* Estimates for product may be based on additional component data not shown.		
Bioaccumulative potential	No information available	
Mobility in soil	No data available	
Other adverse effects	Not available	
13. Disposal considerations		
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations	
Local disposal regulations	Dispose in accordance with all applicable regulations.	
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company	
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).	
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.	
14. Transport information		
DOT		
UN number	UN1805	
UN proper shipping name	PHOSPHORIC ACID SOLUTION, RQ	
Transport hazard class(es)		
Class	8	
Subsidiary risk	-	
Packing group	III	
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling	
ERG number	154	
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification		
IATA		
UN number	UN1805	
UN proper shipping name	PHOSPHORIC ACID SOLUTION	
Transport hazard class(es)		
Class	8	
Subsidiary risk	-	
Packing group	III	
Environmental hazards	No	
ERG Code	154	
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.	
IMDG		
UN number	UN1805	
UN proper shipping name	PHOSPHORIC ACID SOLUTION, RQ	
Transport hazard class(es)		
Class	8	
Subsidiary risk	-	
Packing group	III	
Environmental hazards		
Marine pollutant	No	
EmS	F-A,S-B	
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.	

DOT



IATA; IMDG



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Phosphoric Acid (CAS 7664-38-2)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)

Hazardous substance

Safe Drinking Water Act (SDWA)

Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Phosphoric Acid (CAS 7664-38-2)

High priority

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

NSF Registered and/or meets USDA (according to 1998 guidelines):	Registration No. – 142961 Category Code(s): G5 Cooling and retort water treatment products G7 Boiler, steam line treatment products – nonfood contact
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US state regulations**US - Massachusetts RTK - Substance List**

Phosphoric Acid (CAS 7664-38-2)

US - Pennsylvania RTK - Hazardous Substances

Phosphoric Acid (CAS 7664-38-2)

US - Rhode Island RTK

Phosphoric Acid (CAS 7664-38-2)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Phosphoric Acid (CAS 7664-38-2)

US. New Jersey Worker and Community Right-to-Know Act

Phosphoric Acid (CAS 7664-38-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Phosphoric Acid (CAS 7664-38-2)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Oct-29-2014

Revision date Apr-06-2016

Version # 2.0

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
ACGIH: American Conference of Governmental Industrial Hygienists
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References: No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Prepared by

This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

CORTROL* IS3000

1. Identification

Product identifier CORTROL IS3000
Other means of identification None.
Recommended use Water based dissolved oxygen scavenger
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Serious eye damage/eye irritation Category 2B
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
OSHA defined hazards Not classified.

Label elements



Signal word Warning
Hazard statement Causes eye irritation. May cause respiratory irritation.
Precautionary statement
Prevention Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area.
Response If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC) None known.
Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Sodium bisulphite	7631-90-5	20 - 40

Components	CAS #	Percent
Cobalt chloride	7646-79-9	0 - 0.1
Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.	
4. First-aid measures		
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Give oxygen if necessary. Call a POISON CENTER or doctor/physician if you feel unwell.	
Skin contact	Remove contaminated clothing. Wash thoroughly with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.	
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.	
Most important symptoms/effects, acute and delayed	Irritation of eyes and mucous membranes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation. Skin irritation.	
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.	
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.	
5. Fire-fighting measures		
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).	
Unsuitable extinguishing media	Water. Do not use water jet as an extinguisher, as this will spread the fire.	
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.	
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.	
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.	
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.	
General fire hazards	No unusual fire or explosion hazards noted.	
6. Accidental release measures		
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors or mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.	
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.	
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.	
7. Handling and storage		
Precautions for safe handling	Avoid breathing mist or vapor. Avoid contact with eyes. Avoid prolonged exposure. Vent carefully before opening. Sulfur dioxide can be formed during the normal use and handling of this product. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.	

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation. Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Cobalt chloride (CAS 7646-79-9)	TWA	0.02 mg/m3
Sodium bisulphite (CAS 7631-90-5)	TWA	5 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium bisulphite (CAS 7631-90-5)	TWA	5 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles and face shield are recommended. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color Pink

Physical state Liquid

Odor Strong

Odor threshold Not available.

pH (concentrated product) 3.2

pH in aqueous solution 3.5 (5% SOL.)

Melting point/freezing point 18 °F (-8 °C)

Initial boiling point and boiling range 220 °F (104 °C)

Flash point > 200 °F (> 93 °C) P-M(CC)

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.26
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	7 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Pour point	23 °F (-5 °C)
Specific gravity	1.261
VOC	0 % (Calculated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Protect from freezing.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Elemental oxides

11. Toxicological information**Information on likely routes of exposure**

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Prolonged or repeated contact may cause irritation.
Eye contact	Causes eye irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics	Irritation of eyes and mucous membranes. Exposed individuals may experience eye tearing, redness, and discomfort. May cause respiratory irritation. Skin irritation.
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Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
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Product	Species	Test Results
CORTROL IS3000 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Product	Species	Test Results
<i>Inhalation</i> LC50	Rat	495.5 mg/l/4h, (Calculated according to GHS additivity formula)
<i>Oral</i> LD50	Rat	4191 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Cobalt chloride (CAS 7646-79-9)		
<i>Acute</i>		
<i>Dermal</i> LD50	Rabbit	> 2000 mg/kg
<i>Oral</i> LD50	Rat	537 mg/kg
Sodium bisulphite (CAS 7631-90-5)		
<i>Acute</i>		
<i>Dermal</i> LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i> LC50	Rat	> 5.5 mg/l, 4 Hour
<i>Oral</i> LD50	Rat	1420 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Sodium bisulphite (CAS 7631-90-5) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause respiratory irritation.

Specific target organ toxicity - repeated exposure Not available.

Aspiration hazard May be harmful if swallowed and enters airways. Based on available data, the classification criteria are not met.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity

Product	Species	Test Results
CORTROL IS3000 (CAS Mixture)		
LC50	Fathead Minnow	210 mg/L, Acute Toxicity, 96 hour, (Estimated)

Product		Species	Test Results
	NOEL	Fathead Minnow	150 mg/L, Acute Toxicity, 96 hour, (Estimated)
Aquatic Crustacea	0% Mortality	Daphnia magna	100 mg/L, Static Screen, 48 hour
	100% Mortality	Daphnia magna	500 mg/L, Static Screen, 48 hour
	LC50	Daphnia magna	204 mg/L, Acute Toxicity, 48 hour, (Estimated)
	NOEL	Daphnia magna	150 mg/L, Acute Toxicity, 48 hour, (Estimated)
Fish	0% Mortality	Rainbow Trout	500 mg/L, Static Screen, 48 hour
	100% Mortality	Rainbow Trout	1000 mg/L, Static Screen, 48 hour
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Other adverse effects	Not available.		
Persistence and degradability	No data is available on the degradability of this product.		
- COD (mgO2/g)	54 (calculated data)		

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	
UN number	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (SODIUM BISULFITE), RQ(SODIUM BISULFITE)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	171
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	
IATA	
Not regulated as dangerous goods.	
IMDG	
Not regulated as dangerous goods.	



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Cobalt chloride (CAS 7646-79-9)

Listed.

Sodium bisulphite (CAS 7631-90-5)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Cobalt chloride (CAS 7646-79-9)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration

ALL ingredients in this product are authorized in 21CFR173.310 for use as boiler water additives where the steam may contact food.

NSF Registered and/or meets USDA (according to 1998 guidelines):

Registration No. – 141465

Category Code(s):

G5 - Cooling and retort water treatment products

G6 - Boiler treatment products, steam line products – food contact

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Sodium bisulphite (CAS 7631-90-5)

US - Pennsylvania RTK - Hazardous Substances

Cobalt chloride (CAS 7646-79-9) Listed.

Sodium bisulphite (CAS 7631-90-5) Listed.

US - Rhode Island RTK

Sodium bisulphite (CAS 7631-90-5)

US. New Jersey Worker and Community Right-to-Know Act

Cobalt chloride (CAS 7646-79-9) Listed.

Sodium bisulphite (CAS 7631-90-5) Listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Cobalt chloride (CAS 7646-79-9) LISTED

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. Other information, including date of preparation or last revision

Issue date Oct-17-2014

Revision date Dec-16-2017

Version # 2.1

List of abbreviations CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code

References: No data available

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information Composition/information on ingredients: Composition comments
First-aid measures: Skin contact
Exposure controls/personal protection: Appropriate engineering controls
Physical & Chemical Properties: Multiple Properties
Transport Information: Material Transportation Information
Other information, including date of preparation or last revision: Bibliography
Other information, including date of preparation or last revision: Prepared by
GHS: Classification

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

STEAMATE* NA702

1. Identification

Product Identifier STEAMATE NA702
Other means of identification None.
Recommended use Condensate return line treatment
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, dermal	Category 3
	Acute toxicity, inhalation	Category 3
	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Reproductive toxicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word

Danger

Hazard statement

Flammable liquid and vapor. Toxic if inhaled. Toxic in contact with skin. Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation. Suspected of damaging fertility or the unborn child.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash hands thoroughly after handling. Avoid breathing mist/vapors/spray. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area.

Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use appropriate media for extinction.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	43% of the mixture consists of component(s) of unknown acute dermal toxicity.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
2-Diethylaminoethanol	100-37-8	40 - 60
Cyclohexylamine	108-91-8	20 - 40

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
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4. First-aid measures

Inhalation	Move to fresh air. If breathing stops, provide artificial respiration. Get medical attention immediately.
Skin contact	Take off contaminated clothing and wash before reuse. Wash off with soap and water. Get medical attention immediately.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention immediately.
Ingestion	If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting. If vomiting occurs naturally have victim lean forward to reduce risk of burns to mouth, throat and lungs. Call a physician or poison control center immediately.
Most important symptoms/effects, acute and delayed	Corrosive effects. May cause severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause temporary blindness and severe eye damage.
Indication of immediate medical attention and special treatment needed	Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Corrosive liquid. Oxides of carbon and nitrogen evolved in fire.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
General fire hazards	Flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors and spray mists. Avoid contact with spilled material. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Remove sources of ignition. Ventilate the area. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Flush with plenty of water.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Prevent from entering sewers or the immediate environment. Accidental release of large quantities into the aquatic environment may harm aquatic organisms. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

7. Handling and storage**Precautions for safe handling**

Flammable. Avoid heat, sparks, open flames and other ignition sources. Adequate ventilation required especially during initial opening. Use only containers which are compatible with the substance. Bond containers during filling or discharge when performed at temperatures at or above the product flash point. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities

Keep away from all sources of ignition. Store in tightly closed original container in a dry, cool and well-ventilated place. Do not freeze. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
2-Diethylaminoethanol (CAS 100-37-8)	PEL	50 mg/m3 10 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Diethylaminoethanol (CAS 100-37-8)	TWA	2 ppm
Cyclohexylamine (CAS 108-91-8)	TWA	10 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2-Diethylaminoethanol (CAS 100-37-8)	TWA	50 mg/m3 10 ppm
Cyclohexylamine (CAS 108-91-8)	TWA	40 mg/m3 10 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines**US ACGIH Threshold Limit Values: Skin designation**

2-Diethylaminoethanol (CAS 100-37-8) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

2-Diethylaminoethanol (CAS 100-37-8) Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Bulk tanks should be vented externally.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Splash proof chemical goggles. Face shield.

Skin protection**Hand protection**

Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear suitable protective clothing. Chemical resistant apron. Wash off after each use. Replace as necessary.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Material name: STEAMATE® NA702

Version number: 2.1

9. Physical and chemical properties

Appearance

Color Light yellow

Physical state Liquid

Odor Amine

Odor threshold Not available.

pH (concentrated product) 12.6

Melting point/freezing point < -29 °F (< -34 °C)

Initial boiling point and boiling range Not available.

Flash point 117 °F (47 °C) SETA(CC)

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density (Air = 1)

Relative density 0.89

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 20 cps

Viscosity temperature 70 °F (21 °C)

Other information

Specific gravity 0.895

VOC 95 % (Calculated)

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Avoid heat, sparks, open flames and other ignition sources. Protect from freezing.

Incompatible materials Strong oxidizing substances. Contact with oxidizers may cause fire. Bases, alkalies (organic).

Hazardous decomposition products Oxides of carbon, nitrogen, and sulphur evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation Toxic by inhalation. Inhalation of vapors/mists/aerosols may cause eye, nose, throat and lung irritation.

Skin contact Toxic in contact with skin. Causes severe skin burns.

Eye contact Causes severe eye burns. Risk of serious damage to eyes.

Ingestion Harmful if swallowed. Ingestion may cause severe irritation of the mouth, the esophagus and the gastrointestinal tract.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms on skin may develop from redness and itching with development to burns due to corrosion. Symptoms on eyes may develop from tearing with development into severe irritation and/or burns due to corrosion. Permanent eye damage including blindness could result. Symptoms on ingestion may develop from discomfort with development into severe irritation and/or burns due to corrosion.

Information on toxicological effects

Acute toxicity Toxic in contact with skin. Toxic by inhalation. Harmful if swallowed.

Product	Species	Test Results
STEAMATE NA702 (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	497 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	7.89 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	348 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
2-Diethylaminoethanol (CAS 100-37-8)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Guinea Pig	885 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 4.5 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1300 mg/kg
Cyclohexylamine (CAS 108-91-8)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	277 mg/kg
<i>Oral</i>		
LD50	Rat	156 mg/kg

Skin corrosion/irritation Causes skin burns.

Serious eye damage/eye irritation Causes severe eye burns.

Respiratory or skin sensitization

Respiratory sensitization This product is not expected to cause respiratory sensitization.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity Not classified.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure May cause irritation to the respiratory system.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Based on available data, the classification criteria are not met.

Material name: STEAMATE* NA702

Version number: 2.1

Chronic effects

No evidence of potential chronic effects.

12. Ecological information**Ecotoxicity**

Product	Species	Test Results
STEAMATE NA702 (CAS Mixture)	LC50	Fathead Minnow
	NOEL	Fathead Minnow
Aquatic Crustacea	LC50	Daphnia magna
	NOEL	Daphnia magna

758 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)

500 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)

319 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)

125 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)

Bioaccumulative potential Not available.**Partition coefficient n-octanol / water (log Kow)**

2-Diethylaminoethanol 0.05

Cyclohexylamine 1.49

Bioconcentration factor (BCF)

2-Diethylaminoethanol < 6.1

Mobility in soil Not available.**Other adverse effects** Not available.**Persistence and degradability**- COD (mgO₂/g) 2386 (calculated data)- BOD 5 (mgO₂/g) 1 (calculated data)- BOD 28 (mgO₂/g) 329 (calculated data)

- Closed Bottle Test (%) 12 (calculated data)

Degradation in 28 days)

- Zahn-Wellens Test (%) 35 (calculated data)

Degradation in 28 days)

- TOC (mg C/g) 593 (calculated data)

13. Disposal considerations**Disposal instructions** Dispose of contents/container in accordance with local/regional/national/international regulations. Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.**Hazardous waste code** D001 = Ignitable; D002= Corrosive
The complete waste code should be assigned in discussion with the waste disposal company.**Waste from residues / unused products** Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.**14. Transport information****DOT****UN number** UN2734**UN proper shipping name** Amines, liquid, corrosive, flammable, n.o.s. (DIETHYLAMINOETHANOL (DEAE), CYCLOHEXYLAMINE)**Transport hazard class(es)****Class** 8**Subsidiary risk** 3**Packing group** II**Special precautions for user** Not available.**ERG number** 132

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number UN2734
UN proper shipping name Amines, liquid, corrosive, flammable, n.o.s. (DIETHYLAMINOETHANOL (DEAE), CYCLOHEXYLAMINE)
Transport hazard class(es)
Class 8
Subsidiary risk 3
Packing group II
Environmental hazards No.
ERG Code 132
Special precautions for user Not available.
Some containers may not be approved under IATA, please check BOL for exact container classification.

IMDG

UN number UN2734
UN proper shipping name AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. (DIETHYLAMINOETHANOL (DEAE), CYCLOHEXYLAMINE)
Transport hazard class(es)
Class 8
Subsidiary risk 3
Packing group II
Environmental hazards
Marine pollutant No.
EmS F-E, S-C
Special precautions for user Not available.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.
SARA 304 Emergency release notification
Cyclohexylamine (CAS 108-91-8) 10000 LBS
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - Yes
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Cyclohexylamine	108-91-8	10000	10000		

SARA 311/312 Hazardous chemical
 Yes

SARA 313 (TRI reporting)
 Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Cyclohexylamine (CAS 108-91-8)

Safe Drinking Water Act (SDWA)
 Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration ALL ingredients in this product are authorized in 21CFR173.310 for use as boiler water additives where the steam may contact food.

NSF Registered and/or meets USDA (according to 1998 guidelines):
 Registration No. – 146008
 Category Code(s):
 G5 Cooling and retort water treatment products
 G6 Boiler treatment products, steam line products – food contact

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

ACETALDEHYDE (CAS 75-07-0) Listed: April 1, 1988

Aniline (CAS 62-53-3) Listed: January 1, 1990

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

2-Diethylaminoethanol (CAS 100-37-8)

Cyclohexylamine (CAS 108-91-8)

US - Pennsylvania RTK - Hazardous Substances

2-Diethylaminoethanol (CAS 100-37-8) Listed.

Cyclohexylamine (CAS 108-91-8) Listed.

US - Rhode Island RTK

2-Diethylaminoethanol (CAS 100-37-8)

Cyclohexylamine (CAS 108-91-8)

US. New Jersey Worker and Community Right-to-Know Act

2-Diethylaminoethanol (CAS 100-37-8) Listed.

Cyclohexylamine (CAS 108-91-8) Listed.

Material name: STEAMATE® NA702

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US. Pennsylvania Worker and Community Right-to-Know Law

2-Diethylaminoethanol (CAS 100-37-8)

Hazardous substance

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

16. Other information, including date of preparation or last revision

Issue date Sep-26-2014

Revision date Dec-16-2017

Version # 2.1

List of abbreviations

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
LD50: Lethal Dose, 50%
NFPA: National Fire Protection Association

References: No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information Transport Information: Material Transportation Information

Other information, including date of preparation or last revision: Prepared by

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.



SAFETY DATA SHEET

SODIUM HYPOCHLORITE

1. Identification

Product Identifier	SODIUM HYPOCHLORITE
Other means of identification	
L code	L1228
Recommended use	Field test reagent
Recommended restrictions	None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 2 Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.

Label elements



Signal word	Warning
Hazard statement	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
Precautionary statement	
Prevention	Wear eye/face protection. Avoid breathing mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves.
Response	If on skin: Wash with plenty of water/. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor// if you feel unwell. Specific treatment (see on this label). If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Sodium hypochlorite	7681-52-9	1 - 2.5

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician immediately. Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray. Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p>
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage. Contains an oxidiser. Avoid all contact with reducing agents, oils, greases, organics and acids. Do not allow to dry.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Keep containers closed when not in use. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation. Do not freeze. Store in a cool, well-ventilated area, away from combustibles. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Sodium hypochlorite (CAS 7681-52-9)	STEL	2 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. Adequate ventilation to maintain air contaminants below exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection

Splash proof chemical goggles.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing. neoprene gloves Wash off after each use. Replace as necessary.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece. If air-purifying respirator use is appropriate, use a respirator with acid gas cartridges and dust/mist prefilters. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color

Straw colored

Physical state

Liquid

Odor

Chlorine

Odor threshold

Not available.

pH (concentrated product)

9.5

Melting point/freezing point

Not available.

Initial boiling point and boiling range

Not available.

Flash point

> 200 °F (> 93 °C) P-M(CC)

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not available.

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Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	(Air = 1)
Relative density	Not available.
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Viscosity temperature	70 °F (21 °C)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials. None under normal conditions.
Incompatible materials	Strong oxidizing agents. Decomposes dry (175-245°C) or wet (24°C) with release of chlorine. Reacts with oxidizers. Friction, heat or other sources of ignition may cause a violent reaction releasing heat and toxic fumes. Contact with reducing agents or flammable/combustible material may cause fire or explosion.
Hazardous decomposition products	Chlorine. and Hydrogen chloride.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
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Product	Species	Test Results
SODIUM HYPOCHLORITE (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	> 5 mg/l, 4 Hours, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Sodium hypochlorite (CAS 7681-52-9)		
Acute		
Dermal		
LD50	Rabbit	> 20000 mg/kg
Inhalation		
LC50	Rat	> 5.25 mg/L, 4 Hour
Oral		
LD50	Rat	8900 mg/kg
* Estimates for product may be based on additional component data not shown.		
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not available.	
Skin sensitization	This product is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Sodium hypochlorite (CAS 7681-52-9)	3 Not classifiable as to carcinogenicity to humans.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Not regulated.		
US. National Toxicology Program (NTP) Report on Carcinogens		
Not listed.		
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	May cause respiratory irritation.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not available.	
Chronic effects	Prolonged inhalation may be harmful.	
12. Ecological information		
Ecotoxicity	No ecotoxicity data noted for the ingredient(s).	
Bioaccumulative potential	No data available.	
Mobility in soil	No data available.	
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	
Persistence and degradability	No data is available on the degradability of this product.	
13. Disposal considerations		
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.	
Local disposal regulations	Dispose in accordance with all applicable regulations.	
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.	
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).	
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.	

14. Transport information

DOT

Not regulated as dangerous goods.

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hypochlorite (CAS 7681-52-9) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

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US - Massachusetts RTK - Substance List

Sodium hypochlorite (CAS 7681-52-9)

US - Pennsylvania RTK - Hazardous Substances

Sodium hypochlorite (CAS 7681-52-9) Listed.

US - Rhode Island RTK

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Sodium hypochlorite (CAS 7681-52-9) Listed.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. Other information, including date of preparation or last revision**Issue date** Mar-16-2015**Revision date** Dec-24-2017**Version #** 3.1**List of abbreviations**

CAS: Chemical Abstract Service Registration Number
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
LD50: Lethal Dose, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code

References: No data available

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

Prepared by This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).



SAFETY DATA SHEET

SPECTRUS* NX1100

1. Identification

Product identifier	SPECTRUS NX1100
Other means of identification	None.
Recommended use	Biocide
Recommended restrictions	None known.

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word

Danger

Hazard statement

May be corrosive to metals. Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention

Wear eye/face protection. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. Wash hands thoroughly after handling. Keep only in original container. Do not breathe mist or vapor. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area.

Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
2-Bromo-2-nitropropane-1,3-diol (Bronopol)	52-51-7	2.5 - 10
Magnesium nitrate	10377-60-3	2.5 - 10
Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one	55965-84-9	2.5 - 10
Magnesium chloride	7786-30-3	1 - 2.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments	Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.
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4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Do not induce vomiting. Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed. Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In case of fire and/or explosion do not breathe fumes. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient.

Environmental precautions Avoid discharge into drains, water courses or onto the ground. Prevent from entering sewers or the immediate environment.

7. Handling and storage

Precautions for safe handling Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Corrosive liquid. Do not breathe vapors or spray mist.

Conditions for safe storage, including any incompatibilities Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep container tightly closed in a dry and well-ventilated place. Store at temperatures below 35°C. Use approved containers only. Protect from freezing. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits No exposure limits noted for ingredient(s).

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Eye wash facilities and emergency shower must be available when handling this product. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Color	Colorless to yellow green
Physical state	Liquid

Odor None

Odor threshold Not available.

pH (concentrated product) 3

pH in aqueous solution 3.7 (5% SOL.)

Melting point/freezing point 24 °F (-4 °C)

Initial boiling point and boiling range 220 °F (104 °C)

Flash point Not applicable.

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 18 mm Hg

Vapor pressure temp. 70 °F (21 °C)

Vapor density < 1 (Air = 1)

Relative density 1.11

Relative density temperature 70 °F (21 °C)

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 10 cps

Viscosity temperature 70 °F (21 °C)

Other information

Percent volatile 0

Pour point 29 °F (-2 °C)

Specific gravity 1.107

10. Stability and reactivity

Reactivity May be corrosive to metals.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Contact with incompatible materials.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Hydrogen bromide, bromine gas, hydrogen chloride, chlorine gas, oxides of carbon and nitrogen evolved in fire. Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation Harmful if inhaled. May cause irritation to the respiratory system.

Skin contact Causes severe skin burns. May cause an allergic skin reaction.

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Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

Information on toxicological effects

Acute toxicity	Harmful if swallowed. Harmful if inhaled. May cause an allergic skin reaction. May cause respiratory irritation.
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Product	Species	Test Results
SPECTRUS NX1100 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 1 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1030 mg/kg
Components	Species	Test Results
2-Bromo-2-nitropropane-1,3-diol (Bronopol) (CAS 52-51-7)		
Acute		
<i>Dermal</i>		
LD50	Rat	1600 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 0.59 mg/l, 4 Hour, (Aerosol toxicity)
<i>Oral</i>		
LD50	Rat	324 mg/kg
Magnesium chloride (CAS 7786-30-3)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg
Magnesium nitrate (CAS 10377-60-3)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg
<i>Oral</i>		
LD50	Rat	5400 mg/kg
Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one (CAS 55965-84-9)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	90 mg/kg
<i>Inhalation</i>		
LC50	Rat	0.33 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	67 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin burns.
Serious eye damage/eye irritation	Corrosive to eyes. Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.

Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classified.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not listed	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met. Aspiration of this product may cause the same corrosiveness/irritation impacts as if it were ingested.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity

Product		Species	Test Results
SPECTRUS NX1100 (CAS Mixture)			
	LC50	Ceriodaphnia	4.7 mg/l, Static Renewal Bioassay, 48 hour
		Fathead Minnow	3.5 mg/l, Static Renewal Bioassay, 96 hour
		Menidia beryllina (Silversides)	15.9 mg/l, Static Renewal Bioassay, 96 hour
		Mysid Shrimp	40.5 mg/l, Static Renewal Bioassay, 48 hour
		Sheepshead Minnow	26.7 mg/l, Static Renewal Bioassay, 96 hour
	NOEL	Ceriodaphnia	0.63 mg/l, Static Renewal Bioassay, 48 hour
		Fathead Minnow	1.8 mg/l, Static Renewal Bioassay, 96 hour
		Menidia beryllina (Silversides)	12.5 mg/l, Static Renewal Bioassay, 96 hour
		Mysid Shrimp	18 mg/l, Static Renewal Bioassay, 48 hour
		Sheepshead Minnow	15.5 mg/l, Static Renewal Bioassay, 96 hour
Aquatic			
Crustacea	LC50	Daphnia magna	5 mg/l, Static Renewal Bioassay, 48 hour
	NOEL	Daphnia magna	2.5 mg/l, Static Renewal Bioassay, 48 hour
Fish	LC50	Rainbow Trout	7.2 mg/l, Static Renewal Bioassay, 96 hour
	NOEL	Rainbow Trout	3.1 mg/l, Static Renewal Bioassay, 96 hour
Components		Species	Test Results
2-Bromo-2-nitropropane-1,3-diol (Bronopol) (CAS 52-51-7)			
Aquatic	EC50	Daphnia Magna	1.4 mg/l, 48 hour
	LC50	Rainbow Trout	41 mg/l, 96 hour

Bioaccumulative potential Not bioaccumulating (Refers to active component) 2-Bromo-2-nitropropane-1,3-diol

Partition coefficient n-octanol / water (log Kow)

Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one 0.486

Mobility in soil	No data available.
Other adverse effects	Nutrients: N = 8.03 mg/g
Persistence and degradability	
- COD (mgO2/g)	78 (calculated data)
- BOD 5 (mgO2/g)	2 (calculated data)
- BOD 28 (mgO2/g)	4 (calculated data)
- Closed Bottle Test (% Degradation in 28 days)	2 (calculated data)
- Zahn-Wellens Test (% Degradation in 28 days)	8 (calculated data)
- TOC (mg C/g)	29 (calculated data)

13. Disposal considerations

Disposal instructions	Dispose of in approved pesticide facility or according to label instructions. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. Incinerate the material under controlled conditions in an approved incinerator.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company. D002= Corrosive
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Dispose of in approved pesticide facility or according to label instructions. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
ERG number	153
Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.	

IATA

UN number	UN3265
UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	Yes
ERG Code	153
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN3265
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2-Bromo-2-Nitropropane-1,3-Diol, 5-Chloro-2-Methyl-4-Isothiazolin-3-One Mixture With 2-Methyl-4-Isothiazolin-3-One), MARINE POLLUTANT
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II

Environmental hazards

Marine pollutant

Yes

EmS

F-A, S-B

Special precautions for user

Read safety instructions, SDS and emergency procedures before handling.

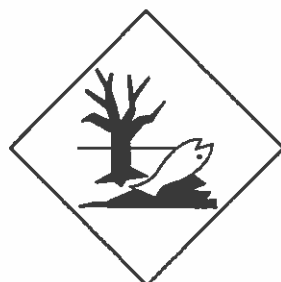
DOT



IATA; IMDG



Marine pollutant



15. Regulatory information

US federal regulations

This is an EPA registered biocide and is exempt from TSCA inventory requirements. See FIFRA registry number. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

Material name: SPECTRUS® NX1100

Version number: 100

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Magnesium nitrate	10377-60-3	2.5 - 10

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA)
Section 112(r) (40 CFR 68.130)

Hazardous substance

Safe Drinking Water Act
(SDWA)

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

FIFRA registration number 3876-151

TSCA This is an EPA registered biocide and is exempt from TSCA inventory requirements.

FIFRA hazard statement This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER
 Corrosive
 Causes irreversible eye damage
 Causes skin burns
 Harmful if swallowed or absorbed through the skin
 Harmful if inhaled
 Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals
 This pesticide is toxic to fish and aquatic organisms

Food and drug administration 21 CFR 176.300 & 176.170 (slimicides and as a preservative)

NSF Registered and/or meets Registration No. - 141064

USDA (according to 1998 Category Code(s):
guidelines): G5 Cooling and retort water treatment products
 G7 Boiler, steam line treatment products - nonfood contact

US state regulations**US - Massachusetts RTK - Substance List**

Magnesium nitrate (CAS 10377-60-3)

US - Pennsylvania RTK - Hazardous Substances

Magnesium nitrate (CAS 10377-60-3)

US - Rhode Island RTK

Magnesium nitrate (CAS 10377-60-3)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Magnesium chloride (CAS 7786-30-3)

Magnesium nitrate (CAS 10377-60-3)

US. New Jersey Worker and Community Right-to-Know Act

Magnesium nitrate (CAS 10377-60-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Magnesium nitrate (CAS 10377-60-3)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance
Sulphuric acid (CAS 7664-93-9) Listed: March 14, 2003
US - California Proposition 65 - CRT: Listed date/Developmental toxin
No ingredient listed.
US - California Proposition 65 - CRT: Listed date/Female reproductive toxin
No ingredient listed.
US - California Proposition 65 - CRT: Listed date/Male reproductive toxin
No ingredient listed.

16. Other information, including date of preparation or last revision

Issue date Jul-03-2014
Revision date Dec-19-2016
Version # 10.0
List of abbreviations CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
EC50: Effect Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
References: CNS 15030
UN Transportation Regulations Safety data sheets of raw materials.
Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Revision information This document has undergone significant changes and should be reviewed in its entirety.
Prepared by This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).
* Trademark of General Electric Company. May be registered in one or more countries.



SAFETY DATA SHEET

SOLUS AP24

1. Identification

Product identifier	SOLUS AP24
Other means of identification	None.
Recommended use	Internal boiler water treatment
Recommended restrictions	None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Not classified.

Label elements

Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Wash thoroughly after handling.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container to an approved facility.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin contact	Wash thoroughly with soap and water. Remove contaminated clothing. Wash clothing separately before reuse. Get medical attention if irritation develops and persists.

Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Do not feed anything by mouth to an unconscious or convulsive victim. Do NOT induce vomiting!
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release measures	
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	<p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.
7. Handling and storage	
Precautions for safe handling	Avoid prolonged exposure.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
8. Exposure controls/personal protection	
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Not available.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear suitable protective clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties**Appearance**

Color Yellow to amber

Physical state Liquid

Odor Slight ammonia

Odor threshold Not available.

pH (concentrated product) 12.3

pH in aqueous solution 11 (5% SOL.)

Melting point/freezing point 28 °F (-2 °C)

Initial boiling point and boiling range 220 °F (104 °C)

Flash point Not applicable.

Evaporation rate < 1 (Ether = 1)

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 18 mm Hg

Vapor pressure temp. 70 °F (21 °C)

Vapor density < 1 (Air = 1)

Relative density 1.09

Relative density temperature 70 °F (21 °C)

Solubility(ies)

Solubility (water) 100 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 22 cps

Viscosity temperature 70 °F (21 °C)

Other information

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

Pour point 33 °F (1 °C)

Specific gravity 1.087

VOC 0 % (Estimated)

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization does not occur.

Conditions to avoid Contact with incompatible materials.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Oxides of carbon, nitrogen, phosphorus, and sulphur evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation May cause irritation to respiratory organs.
Skin contact Prolonged or repeated contact may cause irritation.
Eye contact Direct contact with eyes may cause temporary irritation.
Ingestion May cause slight gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
SOLUS AP24 (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Oral		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization This product is not expected to cause respiratory sensitization.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Based on available data, the classification criteria are not met.

12. Ecological information

Ecotoxicity

Product	Species	Test Results
SOLUS AP24 (CAS Mixture)		
LC50	Fathead Minnow	> 5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)

Product		Species	Test Results
	NOEL	Fathead Minnow	5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)
Aquatic Crustacea	LC50	Daphnia magna	3674 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	2500 mg/l, Static Acute Bioassay, 48 hour, (pH adjusted)
Fish	LC50	Rainbow Trout	> 5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)
	NOEL	Rainbow Trout	5000 mg/l, Static Bioassay with 48-Hour Renewal, 96 hour, (pH adjusted)

Bioaccumulative potential

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration ALL ingredients in this product are authorized in 21CFR173.310 for use as boiler water additives where the steam may contact food.
The maximum level of Solus AP24 permitted in the boiler water where steam contacts food is 625 ppm.

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 152247
Category Code(s):
G5 Cooling and retort water treatment products G6 Boiler treatment products, steam line products – food contact

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Not regulated.

US - Pennsylvania RTK - Hazardous Substances

Not regulated.

US - Rhode Island RTK

Not regulated.

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date Jan-20-2015
Revision date Dec-19-2017
Version # 6.1

Material name: SOLUS AP24
Version number: 6.1

List of abbreviations

CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
NOEL: No Observed Effect Level
STEL: Short Term Exposure Limit
LC50: Lethal Concentration, 50%
TWA: Time Weighted Average
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
LD50: Lethal Dose, 50%
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References:

No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information

Hazard(s) identification: Supplemental information
Physical & Chemical Properties: Multiple Properties
Toxicological information: Acute toxicity
Other information, including date of preparation or last revision: Prepared by

Prepared by

This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).



SAFETY DATA SHEET

GENGARD* GN8203

1. Identification

Product identifier	GENGARD GN8203
Other means of identification	None.
Recommended use	Corrosion inhibitor
Recommended restrictions	None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.
Precautionary statement	
Prevention	Keep only in original container. Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients**Mixtures**

Components	CAS #	Percent
Sodium hydroxide	1310-73-2	2.5 - 10
Chlorotolyltriazole sodium salt	202420-04-0	1 - 2.5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.
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7. Handling and storage

Precautions for safe handling	Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage. Take precautions to minimize foaming.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS). Store in accordance with local/regional/national/international regulation. Do not freeze. If frozen, thaw completely and mix thoroughly prior to use.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Splash proof chemical goggles. Face shield.
Skin protection	
Hand protection	Chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color	Amber to dark brown
Physical state	Liquid
Odor	Slight ammonia
Odor threshold	Not available.
pH (concentrated product)	13.5
pH in aqueous solution	12.3 (5% SOL.)

Material name: GENGARD® GN8203

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Melting point/freezing point	19 °F (-7 °C)
Initial boiling point and boiling range	212 °F (100 °C)
Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.2
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	35 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Pour point	24 °F (-4 °C)
Specific gravity	1.197
VOC	0 % (Estimated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. None under normal conditions.
Incompatible materials	Strong acids. Strong oxidizing agents.
Hazardous decomposition products	Hydrogen chloride, oxides of carbon and nitrogen evolved in fire.

11. Toxicological information

Information on likely routes of exposure	
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
Information on toxicological effects	
Acute toxicity	May cause respiratory irritation.

Product	Species	Test Results
GENGARD GN8203 (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Components	Species	Test Results
Chlorotolyltriazole sodium salt (CAS 202420-04-0)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rat	> 5000 mg/kg
<i>Oral</i>		
LD50	Rat	3100 mg/kg
Sodium hydroxide (CAS 1310-73-2)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	1350 mg/kg
<i>Oral</i>		
LD50	Rabbit	> 500 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity			
Product	Species		Test Results
GENGARD GN8203 (CAS Mixture)			
LC50	Fathead Minnow		276 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
	Menidia beryllina (Silversides)		400 mg/L, Estimated Acute Toxicity, 96 hour, (Similar Product)

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Product		Species	Test Results
		Mysid Shrimp	300 mg/L, Estimated Acute Toxicity, 96 hour, (Similar Product)
	NOEL	Fathead Minnow	125 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
Aquatic Crustacea	LC50	Daphnia magna	911 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
	NOEL	Daphnia magna	500 mg/L, Static Renewal Bioassay, 48 hour, (pH adjusted)
Fish	LC50	Rainbow Trout	273 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)
	NOEL	Rainbow Trout	200 mg/L, Static Renewal Bioassay, 96 hour, (pH adjusted)

Components		Species	Test Results
Chlorotolyltriazole sodium salt (CAS 202420-04-0)			
Aquatic			
Algae	EbC50	Algae	6.84 mg/l
	ErC50	Algae	18.6 mg/l
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Other adverse effects	Not available.		
Persistence and degradability	No data is available on the degradability of this product.		
- COD (mgO2/g)	275 (calculated data)		
- BOD 5 (mgO2/g)	21 (calculated data)		
- BOD 28 (mgO2/g)	43 (calculated data)		
- Closed Bottle Test (% Degradation in 28 days)	14 (calculated data)		
- TOC (mg C/g)	86 (calculated data)		

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	
UN number	UN1760
UN proper shipping name	Corrosive liquids, n.o.s. (CHLOROTOLYLTRIAZOLE SODIUM SALT, Sodium hydroxide), RQ(Sodium hydroxide)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II

Material name: GENGARD® GN8203
Version number: 4.2

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ERG number 154

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number UN1760

UN proper shipping name Corrosive liquid, n.o.s. (CHLOROTOLYLTRIAZOLE SODIUM SALT, Sodium hydroxide)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards No.

ERG Code 154

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1760

UN proper shipping name CORROSIVE LIQUID, N.O.S. (CHLOROTOLYLTRIAZOLE SODIUM SALT, Sodium hydroxide), RQ(Sodium hydroxide)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards

Marine pollutant No.

EmS F-A, S-B

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

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Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130) Hazardous substance

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 148465
Category Code(s):
G5 Cooling and retort water treatment products G7 Boiler, steam line treatment products – nonfood contact

US state regulations**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

US - Pennsylvania RTK - Hazardous Substances

Sodium hydroxide (CAS 1310-73-2)

Listed.

US - Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide (CAS 1310-73-2)

Listed.

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date Nov-02-2014

Revision date Dec-20-2017

Version # 4.2

Material name: GENGARD® GN8203

Version number: 4.2

List of abbreviations

CAS: Chemical Abstract Service Registration Number
ACGIH: American Conference of Governmental Industrial Hygienists
TWA: Time Weighted Average
STEL: Short Term Exposure Limit
LD50: Lethal Dose, 50%
LC50: Lethal Concentration, 50%
NOEL: No Observed Effect Level
COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand
TOC: Total Organic Carbon
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods Code
TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.

References:

No data available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information

Physical & Chemical Properties: Multiple Properties

Prepared by

This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).

* Trademark of SUEZ. May be registered in one or more countries.

SAFETY DATA SHEET

FLOGARD* POT6101

1. Identification

Product identifier FLOGARD POT6101
Other means of identification None.
Recommended use Corrosion inhibitor
Recommended restrictions None known.

Company/undertaking identification

SUEZ WTS USA, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Harmful if swallowed. May be corrosive to metals. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention Keep only in original container. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear protective gloves.

Response IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Absorb spillage to prevent material-damage.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Components	CAS #	Percent
Phosphoric Acid	7664-38-2	20 - 40
Zinc sulphate	7733-02-0	10 - 20

Composition comments Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this SDS for our assessment of the potential hazards of this formulation.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch or walk through spilled material. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Prevent entry into waterways, sewer, basements or confined areas. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Environmental precautions Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Acidic. Do not mix with alkaline material. Corrosive to metal. Do not get this material in contact with eyes. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in original tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	PEL	1 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Phosphoric Acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Eye wash fountain and emergency showers are recommended. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Glove selection must take into account any solvents and other hazards present.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Color Colorless

Physical state Liquid

Odor None

Odor threshold Not available.

pH (concentrated product) 1.4

Melting point/freezing point -13 °F (-25 °C)

Initial boiling point and boiling range 220 °F (104 °C)

Flash point Not applicable.

Material name: FLOGARD® POT6101

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Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	< 1 (Air = 1)
Relative density	1.4
Relative density temperature	70 °F (21 °C)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	10 cps
Viscosity temperature	70 °F (21 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Pour point	-18 °F (-28 °C)
Specific gravity	1.398
VOC	0 % (Calculated)

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with metals may release flammable hydrogen gas. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Metals.
Hazardous decomposition products	Oxides of sulphur evolved in fire. Oxides of phosphorus evolved in fire.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	Harmful if swallowed. May cause respiratory irritation.
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Product	Species	Test Results
FLOGARD POT6101 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	1136 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
Phosphoric Acid (CAS 7664-38-2)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	2740 mg/kg
<i>Oral</i>		
LD50	Rat	300 mg/kg
Zinc sulphate (CAS 7733-02-0)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg
<i>Oral</i>		
LD50	Rat	1710 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	This product is not expected to cause respiratory sensitization.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classified.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Not listed.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not regulated.	
US. National Toxicology Program (NTP) Report on Carcinogens	
Not listed.	
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity			
Product		Species	Test Results
FLOGARD POT6101 (CAS Mixture)			
LC50		Fathead Minnow	16 mg/L, Acute Toxicity, 96 hour, (Estimated)
NOEL		Fathead Minnow	6.3 mg/L, Acute Toxicity, 96 hour, (Estimated)

Material name: FLOGARD* POT6101

Version number: 1.1

Product	Species		Test Results
Aquatic Crustacea	LC50	Daphnia magna	3.8 mg/L, Static Acute Bioassay, 48 hour
	NOEL	Daphnia magna	3.2 mg/L, Static Acute Bioassay, 48 hour
Fish	LC50	Rainbow Trout	21.3 mg/L, Static Acute Bioassay, 96 hour
	NOEL	Rainbow Trout	15.5 mg/L, Static Acute Bioassay, 96 hour

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects Not available.

Persistence and degradability

No data available

- COD (mgO₂/g) No information available.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D002: Waste Corrosive material [pH ≤2 or ≥12.5, or corrosive to steel]
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN3264

UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (PHOSPHORIC ACID, ZINC SULFATE), RQ

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ERG number 154

Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.

IATA

UN number UN3264

UN proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (PHOSPHORIC ACID, ZINC SULFATE)

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group II

Environmental hazards Yes

ERG Code 154

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN3264

UN proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (PHOSPHORIC ACID, ZINC SULFATE), RQ, MARINE POLLUTANT

Transport hazard class(es)

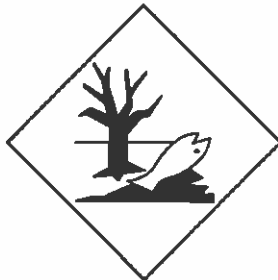
Class 8
Subsidiary risk -
Packing group II

Environmental hazards

Marine pollutant Yes

EmS F-A, S-B

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

DOT**IATA; IMDG****Marine pollutant****General information**

IMDG Regulated Marine Pollutant.

15. Regulatory information**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Phosphoric Acid (CAS 7664-38-2)

Listed.

Zinc sulphate (CAS 7733-02-0)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Zinc sulphate	7733-02-0	10 - 20

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Food and drug administration The ingredients in this product are Generally Recognized As Safe by FDA for direct addition to human food.

NSF Registered and/or meets USDA (according to 1998 guidelines): Registration No. – 140825
Category Code(s):
G5 Cooling and retort water treatment products
G7 Boiler, steam line treatment products – nonfood contact

US state regulations**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

No ingredient listed.

US - Massachusetts RTK - Substance List

Phosphoric Acid (CAS 7664-38-2)

Zinc sulphate (CAS 7733-02-0)

US - Pennsylvania RTK - Hazardous Substances

Phosphoric Acid (CAS 7664-38-2)

Listed.

Zinc sulphate (CAS 7733-02-0)

Listed.

US - Rhode Island RTK

Phosphoric Acid (CAS 7664-38-2)

US. New Jersey Worker and Community Right-to-Know Act

Phosphoric Acid (CAS 7664-38-2)

Listed.

Zinc sulphate (CAS 7733-02-0)

Listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Zinc sulphate (CAS 7733-02-0)

LISTED

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date	Nov-01-2014
Revision date	Dec-16-2017
Version #	1.1
List of abbreviations	CAS: Chemical Abstract Service Registration Number TWA: Time Weighted Average STEL: Short Term Exposure Limit LD50: Lethal Dose, 50% LC50: Lethal Concentration, 50% NOEL: No Observed Effect Level COD: Chemical Oxygen Demand BOD: Biochemical Oxygen Demand TOC: Total Organic Carbon IATA: International Air Transport Association IMDG: International Maritime Dangerous Goods Code ACGIH: American Conference of Governmental Industrial Hygienists TSRN indicates a Trade Secret Registry Number is used in place of the CAS number.
References:	No data available
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Revision information	Physical & Chemical Properties: Multiple Properties
Prepared by	This SDS has been prepared by SUEZ Regulatory Department (1-215-355-3300).
* Trademark of SUEZ. May be registered in one or more countries.	

Attachment 13: Laboratory Information

Attachment 13 – Laboratory Information

Most constituents were analyzed by Enthalpy Analytical, located at 2525 West Bellfort, Suite 175, Houston, TX 77054. The contact at Enthalpy is Laura L. Graber, Client Services/Technical Director, 1-713-666-4674, laura.graber@enthalpy.com.

Because of short hold times that could not be met by a third-party lab, DSM's inhouse lab analyzed for dissolved oxygen, total residual chlorine, pH, and temperature. The contact at DSM is Trampas Welch, trampas.welch@dsm-firmenich.com.

Enthalpy contracted A&B Labs at 10100 East Freeway, Suite 100, Houston, TX 77029 to run the analytical tests listed below. The contact at A&B is Senthilkumar Sevukan, VP of Operations, 1-713-453-6060.

- Total Kjeldahl Nitrogen (TKN), EPA Method 351.2
- Volatile and semi-volatile organics, EPA 625.1
- Nonylphenol, ASTM D7065-11
- Mercury, EPA 1631E