

**Equistar Chemicals, LP
Channelview North Complex
TPDES WQ0000391000 Application 2019**

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Reference Key

- AR1.0 Administrative Report 1.0
- AR1.1 Administrative Report 1.1
- TR Technical Report
- SPIF Supplemental Permit Information Form
- W# Worksheet #

RECEIVED
DEC 30 2019
Water Quality Applications Team

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

TCEQ INDUSTRIAL WASTEWATER PERMIT APPLICATION

INDUSTRIAL ADMINISTRATIVE REPORT

Complete and submit this checklist with the application.

APPLICANT NAME: Equistar Chemicals, LP

PERMIT NUMBER: WQ0000391000

Check Y for each of the following items included in this application. If an item was not included, check N.

	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 checked="" type="checkbox"/>	<input 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"/>
Technical Report 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 11.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Worksheet 11.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 2.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Worksheet 11.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 3.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Original USGS Map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 3.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Affected Landowners Map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 3.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Landowner Disk or Labels	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 3.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Flow Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 4.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site Drawing	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 4.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Original Photographs	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 5.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Solids Management Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 6.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Water Balance	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 7.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

For Commission Use Only:

Segment Number: _____ County: _____ Expiration Date: _____
 Proposed/Current Permit Number: _____ Region: _____

INDUSTRIAL ADMINISTRATIVE REPORT 1.0

The following information **is required** for **all** applications for TPDES permits and TLAPs.

1. TYPE OF APPLICATION AND FEES (Instructions, Page 21)

a. Permit No.: WQ0000391000 Expiration Date: July 1, 2020

EPA ID No.: TX0003531

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

- | | |
|--|---|
| <input type="checkbox"/> New TPDES permit
<input checked="" type="checkbox"/> Major amendment with renewal
<input type="checkbox"/> Renewal with changes
<input type="checkbox"/> Minor amendment without renewal
<input type="checkbox"/> Stormwater only discharge | <input type="checkbox"/> New TLAP permit
<input type="checkbox"/> Major amendment without renewal
<input type="checkbox"/> Renewal without changes
<input type="checkbox"/> Minor modification without renewal |
|--|---|

c. If applying for an **amendment** or **modification** of a permit, describe the request in detail: See Item 13 in the Technical Report.

d. Application Fee

Check the box next to the amount submitted for the application fee:

EPA Classification	New	Major Amendment (With or Without Renewal)	Renewal (With or Without Changes)	Minor Amendment/ Minor Modification (Without Renewal)
Minor facility not subject to EPA categorical effluent guidelines (<i>40 CFR Parts 400-471</i>)	<input type="checkbox"/> \$350	<input type="checkbox"/> \$350	<input type="checkbox"/> \$315	<input type="checkbox"/> \$150
Minor facility subject to EPA categorical effluent guidelines (<i>40 CFR Parts 400-471</i>)	<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,250	<input type="checkbox"/> \$1,215	<input type="checkbox"/> \$150
Major facility	N/A *	<input checked="" type="checkbox"/> \$2,050	<input type="checkbox"/> \$2,015	<input type="checkbox"/> \$450

* All facilities are designated as minors until formally classified as a major by EPA.

e. Payment Information:

Mailed Check or money order number: N/A

 Check or money order amount: N/A

 Named printed on check or money order: N/A

ePAY Voucher number: N/A

Copy of voucher attached? Yes **Attachment:** A-6 Fee Payment Receipts (total of \$2,100.00, an additional \$50 is required because there are more than 100 adjacent landowners)

2. APPLICANT INFORMATION (Instructions, Pages 21-22)

a. Facility Owner (Owner of the facility must apply for the permit.)

- Provide the legal name of the entity (applicant) applying for this permit: Equistar Chemicals, LP
(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.)
- If the applicant is currently a customer with the TCEQ, provide the Customer Number, which can be located using the [TCEQ's Central Registry Customer Search](#)¹: CN600124705
- Provide the name and title of the person signing the application. The person must be an executive official meeting signatory requirements in 30 TAC § 305.44.

Mr. Ms. First/Last Name: Christopher M. Cain

Title: Site Manager Credential: See Attachment A-2 for delegation of authority for signature.

b. Co-applicant Information

- Provide the legal name of the co-applicant applying for this permit, if applicable: N/A
(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.)
- If the co-applicant is currently a customer with the TCEQ, provide the Customer Number, which can be located using the [TCEQ's Central Registry Customer Search](#): CN [REDACTED]
- Provide the name and title of the person signing the application. The person must be an executive official meeting signatory requirements in 30 TAC § 305.44.

Mr. Ms. First/Last Name: [REDACTED]

Title: [REDACTED] Credential: [REDACTED]

- Provide a brief description of the need for a co-permittee: [REDACTED]

c. Core Data Form

Complete the Core Data Form for each customer 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: A-1 Core Data Form

3. APPLICATION CONTACT INFORMATION (Instructions, Page 22)

If the TCEQ needs additional information regarding this application, who should be contacted?

- a. Mr. Ms. First/Last Name: Nancy Ross Credential: [REDACTED]
- Organization Name: Equistar Chemicals, LP Title: Senior Environmental Engineer
- Mailing Address: P.O. Box 777 City/State/ZIP Code: Channelview, TX
77530-0777
- Phone No.: 281-452-8722 Fax No.: N/A E-mail: Nancy.Ross@lyondellbasell.com
- Check one or both: Administrative Contact Technical Contact

¹ <http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch>

b. Mr. Ms. First/Last Name: N/A Credential:
Organization Name: Title:
Mailing Address: City/State/ZIP Code:
Phone No.: Fax No.: E-mail:
Check one or both: Administrative Contact Technical Contact
Attachment: N/A

4. PERMIT CONTACT INFORMATION (Instructions, Page 22)

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

a. Mr. Ms. First/Last Name: Nancy Ross Credential:
Organization Name: Equistar Chemicals, LP Title: Senior Environmental Engineer
Mailing Address: P.O. Box 777 City/State/ZIP Code: Channelview, TX
77530-0777 E-mail: Nancy.Ross@lyondellbasell.com
Phone No.: 281-452-8722 Fax No.: N/A

b. Mr. Ms. First/Last Name: Scott Mayo Credential:
Organization Name: Equistar Chemicals, LP Title: Environmental Manager
Mailing Address: P.O. Box 777 City/State/ZIP Code: Channelview, TX
77530-0777 E-mail:
Phone No.: 281-452-8109 Fax No.: N/A
Randall.Mayo@lyondellbasell.com
Attachment: N/A

5. BILLING CONTACT INFORMATION (Instructions, Page 22)

The permittee is responsible for paying the annual fee. The annual fee will be assessed to 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.

Mr. Ms. First/Last Name: Nancy Ross Credential:
Organization Name: Equistar Chemicals, LP Title: Senior Environmental Engineer
Mailing Address: P.O. Box 777 City/State/ZIP Code: Channelview, TX
77530-0777 E-mail: Nancy.Ross@lyondellbasell.com
Phone No.: 281-452-8722 Fax No.: N/A

6. DMR/MER CONTACT INFORMATION (Instructions, Page 22)

Provide the name and mailing address of the person delegated to receive and submit DMRs or MERs.

Mr. Ms. First/Last Name: Nancy Ross Credential:
Organization Name: Equistar Chemicals, LP Title: Senior Environmental Engineer
Mailing Address: P.O. Box 777 City/State/ZIP Code: Channelview, TX
77530-0777 E-mail: Nancy.Ross@lyondellbasell.com
Phone No.: 281-452-8722 Fax No.: N/A

DMR data must be submitted through the [NetDMR²](#) system. An electronic reporting account can be established once the facility has obtained the permit number.

7. NOTICE INFORMATION (Instructions, Pages 23-24)

a. Individual Publishing the Notices

Mr. Ms. First/Last Name: Nancy Ross Credential:
Organization Name: Equistar Chemicals, LP Title: Senior Environmental Engineer
Mailing Address: P.O. Box 777 City/State/ZIP Code: Channelview, TX
77530-0777
Phone No.: 281-452-8722 Fax No.: N/A E-mail: Nancy.Ross@lyondellbasell.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: Nancy.Ross@lyondellbasell.com
 Fax:
 Regular Mail (USPS)
Mailing Address: City/State/ZIP Code:

c. Contact in the Notice

Mr. Ms. First/Last Name: Nancy Ross Credential:
Organization Name: Equistar Chemicals, LP Title: Senior Environmental Engineer
Phone No.: 281-452-8722 Fax No.: N/A E-mail:
Nancy.Ross@lyondellbasell.com

d. Public Place Information

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

Public building name: North Channel Harris County Library Location within the building: Reference Desk

Physical Address of Building: 15741 Wallisville Road

City: Houston County: Harris

e. Bilingual Notice Requirements:

This information **is required** for **new, major amendment, and renewal applications**. It is not required for minor amendment or minor modification 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.

Please call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine whether an alternative language notices are required.

² <https://www.tceq.texas.gov/permitting/netdmr>

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
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

8. REGULATED ENTITY AND PERMITTED SITE INFORMATION (Instructions Pages 24-25)

If the site of your business 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 Registry³](#) to determine the RN or to see if the larger site may already be registered as a regulated site:

If the site is found, provide the assigned RN and the information for the site to be authorized through this application below. The site information for this authorization may vary from the larger site information.

- a. TCEQ issued Regulated Entity Number (RN): RN100542281
- b. Name of project or site (the name known by the community where located): Equistar Chemicals Channelview Complex
- c. Is the location address of the facility in the existing permit the same?
- Yes No
- d. 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.
- e. Owner of treatment facility: Equistar Chemicals, LP
Ownership of Facility: Public Private Both Federal
- f. Owner of land where treatment facility is or will be:
Mr. Ms. First/Last or Organization Name: Equistar Chemicals, LP
Mailing Address: P.O. Box 777 City/State/ZIP Code: Channelview, TX
77530-0777
Phone No.: 281-862-5026 Fax No.: N/A E-mail:
Christopher.Cain@lyondellbasell.com

³ <http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=regent.RNSearch>

If not the same as the facility owner, there must be 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):

Mr. Ms. First/Last or Organization Name: N/A

Mailing Address: City/State/ZIP Code:

Phone No.: Fax No.: E-mail:

If not the same as the facility owner, there must be a long-term lease agreement in effect for at least six years. **Attachment:**

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

Mr. Ms. First/Last or Organization Name: N/A

Mailing Address: City/State/ZIP Code:

Phone No.: Fax No.: E-mail:

If not the same as the facility owner, there must be a long-term lease agreement in effect for at least six years. **Attachment:**

(This information is required only if authorization is sought in the permit for sludge disposal on property owned or controlled by the applicant.)

9. **TDPES DISCHARGE/TLAP DISPOSAL INFORMATION** **(Instructions, Pages 25-28)**

a. Is the facility located on or does the treated effluent cross American Indian 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.

- | | |
|--|---|
| <input checked="" type="checkbox"/> One-mile radius and three-miles downstream information | <input type="checkbox"/> Effluent disposal site boundaries |
| <input checked="" type="checkbox"/> Applicant's property boundaries | <input checked="" type="checkbox"/> All wastewater ponds |
| <input checked="" type="checkbox"/> Treatment facility boundaries | <input type="checkbox"/> Sewage sludge disposal site |
| <input checked="" type="checkbox"/> Labeled point(s) of discharge and highlighted discharge route(s) | <input type="checkbox"/> New and future construction |
| | <input checked="" type="checkbox"/> Attachment: <u>A-3 USGS Map</u> |

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

Yes No N/A

If **no**, or a **new** application, please give an accurate description:

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

Yes No N/A

If **no**, or a **new or amendment** applications, provide an accurate description: The discharge route for Outfall 003 is not correct in the existing permit and the correct description is provided here. The descriptions for all other outfalls are correct. Via Outfalls 001, 002, and 004 to drainage ditches; thence to Wallisville Gully; thence to the San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin; via Outfall 003 to a drainage ditch; thence to Harris County Flood Control District (HCFCD) Ditch G103-03-02; thence to San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River

Basin; via Outfall 005 directly to the San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin; and via Outfall 006 to Harris County Flood Control District (HCFCD) Ditch G103-07-05; thence to the San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin.

- e. City nearest the outfall(s): Channelview
- f. County in which the outfalls(s) is/are located: Harris
- g. 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, provide copies of letters that show proof of contact and the approval letter upon receipt.

Attachment: Equistar submitted two discharge applications to the Harris County Flood Control District (HCFCD) in November 2012 and after discussion with HCFCD resent these applications in January 2013. To Equistar's knowledge, no action was taken by the HCFCD on these applications. In December 2019, Equistar contacted Mr. Roberto Vega of the HCFCD about this issue and he instructed Equistar to submit a new application. Equistar expects to submit this application in January 2020.

- h. 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. Harris, Galveston, Chambers, Brazoria, Jefferson
- i. For **TLAPs**, is the location of the effluent disposal site in the existing permit accurate?
 Yes No N/A
- If **no**, or if this a **new or amendment** application, provide an accurate description:
- j. City nearest the disposal site: N/A
- k. County in which the disposal site is located: N/A
- l. Disposal Site Latitude: N/A Longitude: N/A
- m. For **TLAPs**, describe how effluent is/will be routed from the treatment facility to the disposal site: N/A
- n. For **TLAPs**, identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: N/A

10. MISCELLANEOUS INFORMATION (Instructions, Page 28)

- 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: N/A
- b. Do you owe any fees to the TCEQ?
 Yes No
If **yes**, provide the following:

- Acct. No.: N/A

- Amt. due: N/A

c. Do you owe any penalties to the TCEQ?

Yes No

If **yes**, provide the following:

- Enforcement Order No.: N/A

- Amt. due: N/A

11. SIGNATURE PAGE (Instructions, Page 29)

Permit No: WQ0000391000

Applicant Name: Equistar Chemicals, LP

Certification:

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.

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): Christopher M. Cain

Signatory title: Site Manager

Signature:  Date: 12/20/2019
(Use blue ink)

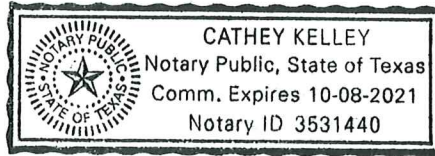
Subscribed and Sworn to before me by the said Christopher M. Cain
on this 20th day of December, 2019.
My commission expires on the 8th day of October, 2021.

Cathy Kelley
Notary Public

[SEAL]



Karris
County, Texas



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

INDUSTRIAL ADMINISTRATIVE REPORT 1.1

The following information is required for **new** and **amendment** applications.

1. AFFECTED LANDOWNER INFORMATION (Instructions, Pages 30-32)

- a. Attach a landowners 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 monofill) is located.

Attachment: A-4-1 Landowner Map

- b. Check the box next to the format of the landowners list:
- Readable/Writeable CD Four sets of labels
- c. Check this box to confirm a separate list with the landowners' names and mailing addresses cross-referenced to the landowners map has been attached.

Attachment: A-4-2 Landowner List

- d. Provide the source of the landowners' names and mailing addresses: Harris County Appraisal District
- 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

2. ORIGINAL PHOTOGRAPHS (Instructions, Page 32)

Provide original ground level photographs. Indicate with checkmarks that the following information is provided.

- 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: A-5 Outfall Photos (Note: There are no photos of Outfall 007 [storm water from concrete batch plant] because it has not been started up and also because its location is variable, depending on where a construction project is located.)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
SUPPLEMENTAL PERMIT INFORMATION FORM
(SPIF)

FOR AGENCIES REVIEWING 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 33)

The SPIF must be completed as a separate document. The TCEQ will mail a copy of the SPIF to each agency as required by the TCEQ agreement with EPA. If any of the items are not completely addressed or further information is needed, you will be contacted to provide the information before the permit is issued. Each item must be completely addressed.

Do not refer to a response of any item in the permit application form. Each attachment must be provided with this form separately from the administrative report of the application. The application will not be declared administratively complete without this form being completed in its entirety including all attachments.

The following applies to all applications:

1. Permittee Name: Equistar Chemicals, LP

2. Permit No.: WQ0000391000

EPA ID No.: TX0003531

3. Address of the project (location description that includes street/highway, city/vicinity, and county):
8280 Sheldon Road, Channelview, Harris County, Texas 77530

4. Provide the name, address, phone and fax number, and email address of an individual that can be contacted to answer specific questions about the property.

First/Last Name: Nancy Ross

Title: Senior Environmental Engineer

Credential:

Organization Name: Equistar Chemicals, LP

Mailing Address: P.O. Box 777
77530-0777

City/State/ZIP Code: Channelview, TX

Phone No.: 281-452-8722

Fax No.: N/A

E-mail: Nancy.Ross@lyondellbasell.com

5. List the county in which the facility is located: Harris

6. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property: N/A
7. 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: Via Outfalls 001, 002, and 004 to drainage ditches; thence to Wallisville Gully; thence to the San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin; via Outfall 003 to a drainage ditch; thence to Harris County Flood Control District (HCFCD) Ditch G103-03-02; thence to San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin; via Outfall 005 directly to the San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin; and via Outfall 006 to Harris County Flood Control District (HCFCD) Ditch G103-07-05; thence to the San Jacinto River Tidal in Segment No. 1001 of the San Jacinto River Basin.
8. 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.)

Attachment: SPIF-1 USGS Map

9. Provide original photographs of any structures 50 years or older on the property.

Attachment: The original facility was constructed in 1957. Several of the tanks, drums, exchangers, and towers that were originally constructed are still in use today. Also, five of the original field houses are still in use as office buildings and warehouses. As manufacturing processes change at the site, older structures have been modified or removed. Photos can be provided of the buildings upon request.

10. 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

11. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features): Construction of two C4 sphere tanks, concrete foundation, a firewater tank, concrete containment basin, and an electrical substation within a 6.84-acre plot at the Channelview North Complex will be completed in 2020. Grasses and small trees were disturbed during the land clearing for construction; no wetlands or waters of the U.S. were disturbed. Project construction will also include cut and fill activities, installation of a chain-link fence, and installation of two driveways within the North Complex. Piping for feedstock, finished product, potable water, firewater, nitrogen, and steam will be fed from the East Plant via overhead pipe racks within the North Complex. A portion of the firewater piping will be installed below ground at approximately 3 feet deep. The main power going to the electrical substation will also originate from East Plant. The C4 pipeline from the spheres will feed into the Olefins Plant located within the North Complex. The deepest excavation will be at approximately 6 feet deep for the containment basin.
12. Describe existing disturbances, vegetation, and land use: Land use is industrial. Ground cover throughout consists of stabilized road base, concrete, and grass.

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

AMENDMENTS TO TPDES PERMITS

13. List construction dates of all buildings and structures on the property: Initial construction at the site was 1957. Additional buildings and process units were added in subsequent years.
14. Provide a brief history of the property, and name of the architect/builder, if known: The facility was initially constructed by Texas Butadiene Chemical Corporation in 1957.

TECHNICAL REPORT 1.0

INDUSTRIAL

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, refer to the [Instructions for Completing the Industrial Wastewater Permit Application](#)¹ available on the TCEQ website.

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.

1. FACILITY/SITE INFORMATION (Instructions, Pages 34-35)

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

The Equistar Chemicals, LP Channelview North Complex produces bulk and commodity organic chemicals and thermoplastic resins. Applicable SIC codes are 2813, 2821, 2822, and 2869.

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

See Attachment T-1 Facility Description.

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

Materials List

Raw Materials	Intermediate Products	Final Products
<u>See Attachment T-1 Facility Description, Table 1 Raw Materials, Intermediates, and Products.</u>		

Attachment: T-1 Facility Description, Table 1 Raw Materials, Intermediates, and Products.

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

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

Attachment: T-3-1 Facility Map, T-3-2 Storm Water Outfall Map, T-3-3 Barge Loading Area

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

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

Yes No

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

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

Yes No

List source(s) used to determine 100-year frequency flood plain: 48201C0730M

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

Attachment: N/A

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

Yes No N/A (renewal only)

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

Yes No

If **yes**, provide the permit number: N/A

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

2. TREATMENT SYSTEM (Instructions, Page 35)

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

See Attachment T-1 Facility Description.

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: T-1 Facility Description, Figure 1 Wastewater Flow Balance, Figure 2 Wastewater Flow Diagram

3. IMPOUNDMENTS (Instructions, Pages 35-37)

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 35-37, 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:

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 #1 East Basin	Pond #2 Pond 1-A	Pond #3 Pond 1-B	Pond #4 Pond 2-A
Use Designation: (T) (D) (C) or (E)	T	C	C	C
Associated Outfall Number	001	001	001	001
Liner Type (C) (I) (S) or (A)	A	A	A	A
Alt. Liner Attachment Reference	12-inch compacted clay	12-inch compacted clay	12-inch compacted clay	12-inch compacted clay
Leak Detection System, Y/N	N	N	N	N
Groundwater Monitoring Wells, Y/N	N	N	N	N
Groundwater Monitoring Data Attachment	N/A	N/A	N/A	N/A
Pond Bottom Located Above The Seasonal High-Water Table, Y/N	Not known	Not known	Not known	Not known
Length (ft)	450	204	204	204
Width (ft)	120	214	102	214
Max Depth From Water Surface (ft), Not Including Freeboard	10	4	4	4
Freeboard (ft)	2	3	3	3
Surface Area (acres)	1.24	1.00	0.48	1.00
Storage Capacity (gallons)	2,640,000	1,300,000	532,000	1,300,000
40 CFR Part 257, Subpart D, Y/N	N	N	N	N
Date of Construction	1960s	Mid-1970s	Mid-1970s	Late-1970s

Impoundment Information

Parameter	Pond #5 Pond 2-B	Pond #6 HTC Pond	Pond #7 Barge Dock Pond	Pond #8
Use Designation: (T) (D) (C) or (E)	C	C	C	
Associated Outfall Number	001	006	005	
Liner Type (C) (I) (S) or (A)	A	A	A	
Alt. Liner Attachment Reference	12-inch compacted clay	12-inch compacted clay	In situ soil	
Leak Detection System, Y/N	N	N	N	
Groundwater Monitoring Wells, Y/N	N	N	N	
Groundwater Monitoring Data Attachment	N/A	N/A	N/A	
Pond Bottom Located Above The Seasonal High-Water Table, Y/N	Not known	Not known	Not known	
Length (ft)	204	375	Variable	
Width (ft)	102	104	Variable	
Max Depth From Water Surface (ft), not including freeboard	4	7	4	
Freeboard (ft)	3	3	2	
Surface Area (acres)	0.48	0.9	1.9	
Storage Capacity (gallons)	532,000	1,757,000	2,000,000	
40 CFR Part 257, Subpart D, Y/N	N	N	N	
Date of Construction	Late-1970s	1/12/2012	Between 1996-1998	

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**.

i. Liner data

Yes No Not yet designed

ii. Leak detection system or groundwater monitoring data

Yes No Not yet designed

iii. Groundwater impacts

Yes No Not yet designed

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

Attachment: N/A. There are no new or proposed impoundments.

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 1/2-mile of the impoundments.

Attachment: N/A

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

Attachment: N/A

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

Attachment: N/A

4. OUTFALL/DISPOSAL METHOD INFORMATION (Instructions, Pages 38-39)

Complete the following tables to describe the location and wastewater discharge or disposal operations for each outfall for discharge operations 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 Latitude and Longitude

Outfall Number	Latitude-decimal degrees	Longitude-decimal degrees
001	29.833441	-95.106399
101	29.833636	-95.115921
201	29.834005	-95.107723
002	29.830115	-95.107521
003	29.823203	-95.126175
003A	29.821787	-95.124312
003B	29.822350	-95.122517
003C	29.824416	-95.120143
004	29.833444	-95.106398
005	29.816470	-95.098278
006	29.839109	-95.114685
Outfall 006 is currently authorized under MSGP TXR05BR93. The outfall is also authorized but not activated under TPDES WQ0000391000, and Equistar requests that this option be retained in WQ0000391000.		
007	N/A. This outfall is for storm water from a concrete batch plant (none currently active) associated with construction activities and its location would vary by construction project.	

Outfall Location Description

Outfall Number	Location Description
001	Where commingled wastewaters are discharged prior to entering the on-site, unnamed drainage ditch
101	At the exit of the septic chlorinator no. 1 and prior to commingling with other wastewaters.
201	At the exit of the septic chlorinator no. 2 and prior to commingling with other wastewaters.
002	In the plant drainage ditch on the west side of the sludge lagoons where groundwater seepage, storm water, and other authorized wastewaters are discharged.
003	At the southwest section of the plant, adjacent to Sheldon Road
003A	At the southwest section of the plant, adjacent to Wallisville Road
003B	At the southwest section of the plant, east of Outfall 003A and adjacent to Wallisville Road
003C	At the southwest section of the plant, east of Outfall 003B and adjacent to Wallisville Road
004	Where intermittent discharges to an unnamed drainage ditch occur near the northeast corner of the plant site, adjacent to Outfall 001
005	Where intermittent discharges occur from the barge dock area
006	At the outlet (48-inch drain) of the storm water impoundment at the HTC
007	At the discharge point of storm water runoff from the concrete batch plant located in the construction area and prior to combining with other storm water runoff or wastewaters

Description of Sampling Points (if different from Outfall location)

Outfall Number	Description of Sampling Point
All outfalls	Same as outfall location

Outfall Flow Information – Permitted and Proposed

Outfall Number	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	8.9	N/A (Report)	8.9	N/A (Report)	N/A
101	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	N/A
201	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	N/A
002	Intermittent and flow-variable	Intermittent and flow-variable	Flow-variable	Flow-variable	N/A
003	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	N/A
003A	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	N/A
003B	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	N/A
003C	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	N/A
004	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	N/A
005	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	N/A
006	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	N/A
007	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	Intermittent and flow-variable	N/A

Outfall Discharge – Method and Measurement

Outfall Number	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
001	N	Y	Bowlus flume
101	Y	N	Estimate / Open channel flume
201	Y	N	Estimate / Coriolis flow meter
002	N	Y	Estimate
003	N	Y	Estimate
003A	N	Y	Estimate
003B	N	Y	Estimate
003C	N	Y	Estimate
004	N	Y	Estimate
005	N	Y	Estimate
006	N	Y	Estimate
007	N	Y	Estimate

Outfall Discharge – Flow Characteristics

Outfall Number	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	31	12
101	Y	N	N	Variable	Variable	Variable
201	Y	N	N	Variable	Variable	Variable
002	N	Y	N	24	31	12
003	Y	N	N	Variable	Variable	Variable
003A	Y	N	N	Variable	Variable	Variable
003B	Y	N	N	Variable	Variable	Variable
003C	Y	N	N	Variable	Variable	Variable
004	Y	N	N	Variable	Variable	Variable
005	Y	N	N	Variable	Variable	Variable
006	Y	N	N	Variable	Variable	Variable
007	Y	N	N	Variable	Variable	Variable

Wastestream Contributions

Outfall No.: All outfalls

Contributing Wastestreams	Volume (MGD)	% of Total Flow
See Attachment T-1 Facility Description, Table 2 Wastewater Sources by Outfall and Table 3 Wastewater Flows by Outfall.		

Outfall No.: N/A

Outfall No.: N/A

Attachment: N/A

5. BLOWDOWN AND ONCE-THROUGH COOLING WATER DISCHARGES (Instructions, Page 39)

a. Does the facility use/propose to use any cooling towers which discharge blowdown or other wastestreams to the outfall(s)?

Yes No

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

b. Does the facility use or plan to use any boilers that discharge blowdown or other wastestreams to the outfall(s)?

Yes No

c. Does or will the facility discharge once-through cooling water to the outfall(s)?

Yes No

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

d. If **yes** to Items 5.a, 5.b, **or** 5.c, attach the 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.

Attach a summary of this information in addition to the submittal of the SDS for each specific wastestream and the associated chemical additives and specify which outfalls are affected.

Attachment: T-4 Treatment Chemicals and SDSs

e. Cooling Towers and Boilers

If **yes** to either Item 5.a **or** 5.b, complete the following table.

Cooling Towers and Boilers

Type of Unit	Number of Units	Dly Avg Blowdown (gallons/day)	Dly Max Blowdown (gallons/day)
Cooling Towers	6	2,500,000	3,000,000
Boilers	Equistar has no boilers; however, EIF CoGen has 4 boilers. Blowdown from the EIF boilers is included in the cooling tower blowdown flow rates.		

6. STORMWATER MANAGEMENT (Instructions, Pages 39-40)

Are there any existing/proposed outfalls which 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 some manner which may result in exposure of the activities or materials to stormwater: See Attachment T-1 Facility Description.

7. DOMESTIC SEWAGE, SEWAGE SLUDGE, AND SEPTAGE MANAGEMENT AND DISPOSAL (Instructions, Page 40)

- 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 is 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:** Some domestic wastewater is collected in on-site portable toilets during construction/maintenance work and transported off-site for treatment.
- 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.
Texas Outhouse	22739
Gulf Coast Authority Washburn Tunnel Facility (Vince Bayou Receiving Station)	WQ0001740000

8. IMPROVEMENTS OR COMPLIANCE/ENFORCEMENT REQUIREMENTS (Instructions, Page 40)

- a. Is the permittee currently required to meet any implementation schedule for compliance or enforcement?
- Yes No
- b. Has the permittee completed or planned for any improvements or construction projects?
- Yes No
- c. If **yes** to either 8.a or 8.b, provide a brief summary of the requirements and a status update: N/A

9. TOXICITY TESTING (Instructions, Page 41)

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: Routine biomonitoring tests and reporting are required by the current TPDES permit.

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA.

Attachment: N/A

10. OFF-SITE/THIRD PARTY WASTES (Instructions, Page 41)

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 **no**, proceed to Item 11. If **yes**, provide responses to Items 10.b through 10.d below.

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: Attachment T-1 Facility Description

c. Is or will wastewater from another TCEQ, NPDES, or TPDES permitted facility commingled with this facility's wastewater after final treatment and prior to discharge via the final outfall/point of disposal?

Yes No

If **yes**, provide the name, address, and TCEQ, NPDES, or TPDES permit number of the contributing facility and a copy of any agreements or contracts relating to this activity.

Attachment: N/A

d. Is this facility a POTW that accepts/will accept process wastewater from any SIU and has/is required to have an approved pretreatment program under the NPDES/TPDES program?

Yes No

If **yes**, **Worksheet 6.0** of this application **is required**.

11. RADIOACTIVE MATERIALS (Instructions, Pages 41-42)

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	Concentration (pCi/L)
N/A	

- b. Does the applicant or anyone at the facility have any knowledge or reason to believe that radioactive materials may be present in the discharge, including naturally occurring radioactive materials in the source waters or on the facility property?

Yes No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L. Do not include information provided in response to Item 11.a.

Radioactive Materials Present in the Discharge

Radioactive Material	Concentration (pCi/L)
NORM can be present in equipment used to manages gases such as natural gas, ethylene, and propylene. Radium 226 and Radium 228 can be present in the NORM equipment. NORM accumulates on the sides of vessels (e.g., elbows, valves) as scale. If the vessel/pipe is taken out of service and tests positive for NORM, it is removed and replaced with new material. If the equipment will be reused, (e.g., a pump), it will be sent off-site for cleaning and service. No NORM is intentionally washed down to wastewater treatment.	N/A

12. COOLING WATER (Instructions, Pages 42-43)

- 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

- i. 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	Intakes on Lake Houston (S1010013C, S1010013D, S1010013E – IDs in TCEQ’s PWS database)
Owner	City of Houston
Operator	Coastal Water Authority

- ii. 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: TX1010013

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

Yes No

If **no**, proceed to Item 12.d. If **yes**, contact the Industrial Permits Team to determine what application materials are required. Attach copies of the correspondence with the TCEQ and any required application materials, as stipulated in the correspondence with the TCEQ.

Attachment: [REDACTED]

d. 316(b) General Criteria

i. The CWIS(s) have or will have a cumulative design intake flow of 2 MGD or greater

Yes No

ii. At least 25% of the total water withdrawn by the CWIS is/will be used exclusively for cooling purposes on an annual average basis

Yes No

iii. The facility withdraws/proposes 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*: [REDACTED]

If **yes** to all three questions in Item 12.d, the facility is subject to 316(b). 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 316(b). Proceed to Item 12.e.

e. The facility is **not subject** to 316(b) **and uses/proposes to use cooling towers**.

Yes No

If **yes**, stop here. If **no**, complete Worksheet 11.o, Items 1(a), 1(b)(i-iii) and (vi), 2(b)(i), and 3(a) to allow for a determination based upon BPJ.

f. Phase I vs Phase II Facilities

i. Existing facility (Phase II)

Yes No

If **yes**, complete Worksheets 11.o through 11.3, as applicable. Otherwise, continue.

ii. New Facility – (Phase I)

Yes No

If **yes**, check the box next to the facility's compliance track selection, attach the requested information, and complete Worksheet 11.o, 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: [REDACTED]

NOTE: Item 13 is required only for existing permitted facilities.

13. PERMIT CHANGE REQUESTS (Instructions, Pages 43-44)

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.

1) Reduce the monitoring frequency for Outfall 002 for flow, total organic carbon (TOC), and pH to quarterly, and for oil and grease to annually. 2) Reduce the monitoring frequency for Outfalls 004 and 005 for oil and grease to annually. 3) Add process wastewater and storm water to Outfall 101. 4) Add construction storm water and utility wastewaters to Outfall 001. 5) Removal of completed provisions in Other Requirements Nos. 9, 10, 15, and 16. For additional details, see Attachment T-2 Amendment Requests.

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

Yes No

If **yes**, list and discuss the requested changes.

N/A

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

Yes No

If **yes**, list and discuss the requested changes.

N/A

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).

1. CATEGORICAL INDUSTRIES (Instructions, Pages 47-48)

Is this facility subject to any of the 40 CFR categorical ELGs outlined on page 52 of the instructions?

Yes No

If **no**, this worksheet is not required. If **yes**, provide the appropriate information in the table below.

40 CFR Effluent Guidelines

Industry	40 CFR Part
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414

2. PRODUCTION/PROCESS DATA (Instructions, Page 48)

a. Production Data

Provide the 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.

Percentages of Total Production

Subcategory	Percent of Total Production	Appendix A and B - Metal	Appendix A – Cyanide
Subpart D Thermoplastic Resins	0.2%	N/A	N/A
Subpart F Commodity Organic Chemicals	69.5%	Chromium - Methanol/high pressure synthesis from natural gas via synthetic gas Copper - Isopropanol/catalytic hydrogenation of acetone - Methanol/high pressure synthesis from natural gas via synthetic gas - Methanol/low pressure synthesis from natural gas via synthetic gas Nickel - Methanol/high pressure synthesis from natural gas via synthetic gas - Methanol/low pressure synthesis from natural gas via synthetic gas Zinc - Methanol/low pressure synthesis from natural gas via synthetic gas	
Subpart G Bulk Organic Chemicals	30.3%	N/A	
Subpart I End-of-Pipe Biological Treatment	N/A		

c. Refineries (40 CFR Part 419)

Provide the applicable subcategory and a brief justification.

N/A

3. PROCESS/NON-PROCESS WASTEWATER FLOWS (Instructions, Page 48)

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.

See Attachment T-1 Facility Description, Table 3 Wastewater Flows by Outfall.

4. NEW SOURCE DETERMINATION (Instructions, Page 48)

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
Polybutadiene	414	D	1969
Styrene/Maleic Anhydride Resin*	414	D	1960
Benzene/Toluene	414	F	1975
Ethylene/Propylene	414	F	1974
Isopropanol	414	F	1974
Methanol	414	F	1982
Alkylate	414	G	1957
Isobutylene	414	G	2006
Methyl Tert-Butyl Ether (MTBE)	414	G	1979
* In 2019, the Styrene/Maleic Anhydride (SMA) Unit was permanently shut down and de-inventoried.			

WORKSHEET 4.0 RECEIVING WATERS

This worksheet **is required** for all TPDES permit applications.

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 74)

- 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:

- i. The legal name of the owner of the drinking water supply intake: N/A
 - i. The distance and direction from the outfall to the drinking water supply intake: N/A
- b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.
- Check this box to confirm the above requested information is provided.

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 74)

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: N/A. Outfalls 001 and 004 initially discharge into an unnamed freshwater ditch.

- b. Are there oyster reefs in the vicinity of the discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: N/A

- c. Are there sea grasses within the vicinity of the point of discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: N/A

3. CLASSIFIED SEGMENT (Instructions, Page 74)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

Yes No

If **yes**, stop here. It is not necessary to 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.

4. DESCRIPTION OF IMMEDIATE RECEIVING WATERS (Instructions, Page 75)

a. Name of the immediate receiving waters: Unnamed drainage ditch (Outfalls 001 and 004)

b. Check the appropriate description of the immediate receiving waters:

- | | |
|--|---|
| <input type="checkbox"/> Lake or Pond | <input checked="" type="checkbox"/> Man-Made Channel or Ditch |
| • Surface area (acres): <input type="text"/> | <input type="checkbox"/> Stream or Creek |
| • Average depth of the entire water body (feet): <input type="text"/> | <input type="checkbox"/> Freshwater Swamp or Marsh |
| • Average depth of water body within a 500-foot radius of the discharge point (feet): <input type="text"/> | <input type="checkbox"/> Tidal Stream, Bayou, or Marsh |
| | <input type="checkbox"/> Open Bay |
| | <input type="checkbox"/> Other, specify: <input type="text"/> |

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: 2016 TCEQ TPDES Fact Sheet

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Wallisville Gully, thence to San Jacinto River Tidal

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: The relatively narrow unnamed drainage ditch and Wallisville Gully flow into the much wider San Jacinto River Tidal.

f. General observations of the water body during normal dry weather conditions: Water present in the drainage ditch.

Date and time of observation: 11/4/2019 1:30 PM

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

Yes No

If **yes**, describe how: N/A

5. GENERAL CHARACTERISTICS OF WATER BODY (Instructions, Page 75)

- 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 type="checkbox"/> septic tanks |
| <input type="checkbox"/> agricultural runoff | <input checked="" type="checkbox"/> other, specify: <u>There is no channel upstream of Outfalls 001 and 004; their point of discharge is essentially the beginning of the unnamed drainage ditch.</u> |
| <input type="checkbox"/> upstream discharges | |
| <input type="checkbox"/> urban runoff | |
- b. Uses of water body observed or evidence of such uses (check all that apply):
- livestock watering
 - non-contact recreation
 - domestic water supply
 - contact recreation
 - fishing
 - industrial water supply
 - irrigation withdrawal
 - navigation
 - picnic/park activities
 - other, specify:

- 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

WORKSHEET 4.0 RECEIVING WATERS

This worksheet **is required** for all TPDES permit applications.

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 74)

- 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:

- i. The legal name of the owner of the drinking water supply intake: N/A
 i. The distance and direction from the outfall to the drinking water supply intake: N/A

- b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.

Check this box to confirm the above requested information is provided.

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 74)

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: N/A. Outfall 002 initially discharges into an unnamed freshwater ditch.

- b. Are there oyster reefs in the vicinity of the discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: N/A

- c. Are there sea grasses within the vicinity of the point of discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: N/A

3. CLASSIFIED SEGMENT (Instructions, Page 74)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

Yes No

If **yes**, stop here. It is not necessary to 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.

4. DESCRIPTION OF IMMEDIATE RECEIVING WATERS (Instructions, Page 75)

a. Name of the immediate receiving waters: Unnamed drainage ditch (Outfall 002)

b. Check the appropriate description of the immediate receiving waters:

- | | |
|--|---|
| <input type="checkbox"/> Lake or Pond | <input checked="" type="checkbox"/> Man-Made Channel or Ditch |
| • Surface area (acres): <input type="text"/> | <input type="checkbox"/> Stream or Creek |
| • Average depth of the entire water body (feet): <input type="text"/> | <input type="checkbox"/> Freshwater Swamp or Marsh |
| • Average depth of water body within a 500-foot radius of the discharge point (feet): <input type="text"/> | <input type="checkbox"/> Tidal Stream, Bayou, or Marsh |
| | <input type="checkbox"/> Open Bay |
| | <input type="checkbox"/> Other, specify: <input type="text"/> |

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: 2016 TCEQ TPDES Fact Sheet

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Wallisville Gully, thence to San Jacinto River Tidal

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: The relatively narrow unnamed drainage ditch and Wallisville Gully flow into the much wider San Jacinto River Tidal.

f. General observations of the water body during normal dry weather conditions: Water present in the drainage ditch

Date and time of observation: 11/4/2019 1:30 PM

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

Yes No

If **yes**, describe how: N/A

5. GENERAL CHARACTERISTICS OF WATER BODY (Instructions, Page 75)

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 type="checkbox"/> urban runoff |
| <input type="checkbox"/> agricultural runoff | <input type="checkbox"/> septic tanks |
| <input type="checkbox"/> upstream discharges | <input checked="" type="checkbox"/> other, specify: <u>storm water runoff</u> |

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

- livestock watering
- non-contact recreation
- domestic water supply
- contact recreation
- fishing
- industrial water supply
- irrigation withdrawal
- navigation
- picnic/park activities
- other, specify: storm water drainage

- 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

WORKSHEET 4.0 RECEIVING WATERS

This worksheet **is required** for all TPDES permit applications.

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 74)

- 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:

- i. The legal name of the owner of the drinking water supply intake: N/A
 - i. The distance and direction from the outfall to the drinking water supply intake: N/A
- b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.
- Check this box to confirm the above requested information is provided.

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 74)

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: N/A. Outfalls 003, 003A, 003B, and 003C initially discharge into an unnamed freshwater ditch.

- b. Are there oyster reefs in the vicinity of the discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: N/A

- c. Are there sea grasses within the vicinity of the point of discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: N/A

3. CLASSIFIED SEGMENT (Instructions, Page 74)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

Yes No

If **yes**, stop here. It is not necessary to 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.

4. DESCRIPTION OF IMMEDIATE RECEIVING WATERS (Instructions, Page 75)

a. Name of the immediate receiving waters: Unnamed drainage ditch along Sheldon Road (Outfall 003); unnamed drainage ditch along Wallisville Road (Outfalls 003A, 003B, 003C)

b. Check the appropriate description of the immediate receiving waters:

- | | |
|--|---|
| <input type="checkbox"/> Lake or Pond | <input checked="" type="checkbox"/> Man-Made Channel or Ditch |
| • Surface area (acres): <input type="text"/> | <input type="checkbox"/> Stream or Creek |
| • Average depth of the entire water body (feet): <input type="text"/> | <input type="checkbox"/> Freshwater Swamp or Marsh |
| • Average depth of water body within a 500-foot radius of the discharge point (feet): <input type="text"/> | <input type="checkbox"/> Tidal Stream, Bayou, or Marsh |
| | <input type="checkbox"/> Open Bay |
| | <input type="checkbox"/> Other, specify: <input type="text"/> |

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:

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

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: The relatively narrow unnamed drainage ditches flow into Harris County Flood Control Ditch G103-03-02, thence into the much wider San Jacinto River Tidal.

f. General observations of the water body during normal dry weather conditions: The drainage ditches were dry.

Date and time of observation: 11/4/2019 1:30 PM

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

- Yes No

If **yes**, describe how: N/A

5. GENERAL CHARACTERISTICS OF WATER BODY (Instructions, Page 75)

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 type="checkbox"/> urban runoff |
| <input type="checkbox"/> agricultural runoff | <input type="checkbox"/> septic tanks |
| <input type="checkbox"/> upstream discharges | <input checked="" type="checkbox"/> other, specify: <u>storm water runoff</u> |

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

- livestock watering
- non-contact recreation
- domestic water supply
- contact recreation
- fishing
- industrial water supply
- irrigation withdrawal
- navigation
- picnic/park activities
- other, specify: storm water drainage

- 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

WORKSHEET 4.0 RECEIVING WATERS

This worksheet **is required** for all TPDES permit applications.

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 74)

- 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:

- i. The legal name of the owner of the drinking water supply intake: N/A
 i. The distance and direction from the outfall to the drinking water supply intake: N/A

- b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.

Check this box to confirm the above requested information is provided.

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 74)

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: 640 feet

- b. Are there oyster reefs in the vicinity of the discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: N/A

- c. Are there sea grasses within the vicinity of the point of discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: N/A

3. CLASSIFIED SEGMENT (Instructions, Page 74)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

Yes No

If **yes**, stop here. It is not necessary to 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.

WORKSHEET 4.0 RECEIVING WATERS

This worksheet **is required** for all TPDES permit applications.

1. DOMESTIC DRINKING WATER SUPPLY (Instructions, Page 74)

- 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:

- i. The legal name of the owner of the drinking water supply intake: N/A
 - i. The distance and direction from the outfall to the drinking water supply intake: N/A
- b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.
- Check this box to confirm the above requested information is provided.

2. DISCHARGE INTO TIDALLY INFLUENCED WATERS (Instructions, Page 74)

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: N/A. Outfall 006 initially discharges into Harris County Flood Control District (HCFCD) Ditch G103-07-05.

- b. Are there oyster reefs in the vicinity of the discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: N/A

- c. Are there sea grasses within the vicinity of the point of discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: N/A

3. CLASSIFIED SEGMENT (Instructions, Page 74)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

Yes No

If **yes**, stop here. It is not necessary to 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.

4. DESCRIPTION OF IMMEDIATE RECEIVING WATERS (Instructions, Page 75)

a. Name of the immediate receiving waters: Harris County Flood Control District (HCFCD) Ditch G103-07-05 (Outfall 006)

b. Check the appropriate description of the immediate receiving waters:

- | | |
|--|---|
| <input type="checkbox"/> Lake or Pond | <input checked="" type="checkbox"/> Man-Made Channel or Ditch |
| • Surface area (acres): <input type="text"/> | <input type="checkbox"/> Stream or Creek |
| • Average depth of the entire water body (feet): <input type="text"/> | <input type="checkbox"/> Freshwater Swamp or Marsh |
| • Average depth of water body within a 500-foot radius of the discharge point (feet): <input type="text"/> | <input type="checkbox"/> Tidal Stream, Bayou, or Marsh |
| | <input type="checkbox"/> Open Bay |
| | <input type="checkbox"/> Other, specify: <input type="text"/> |

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:

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

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: The relatively narrow HCFCD ditch flows into the much wider San Jacinto River Tidal.

f. General observations of the water body during normal dry weather conditions: N/A

Date and time of observation: N/A

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

Yes No

If **yes**, describe how: N/A

5. GENERAL CHARACTERISTICS OF WATER BODY (Instructions, Page 75)

a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by any of the following (check all that apply):

- oil field activities
- agricultural runoff
- upstream discharges
- urban runoff
- septic tanks
- other, specify: storm water runoff

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

- livestock watering
- non-contact recreation
- domestic water supply
- contact recreation
- fishing
- industrial water supply
- irrigation withdrawal
- navigation
- picnic/park activities
- other, specify: storm water drainage

- 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

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.

1. SEWAGE SLUDGE SOLIDS MANAGEMENT PLAN (Instructions, Page 78)

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: See Item 2 below.

2. SEWAGE SLUDGE MANAGEMENT AND DISPOSAL (Instructions, Pages 78-79)

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: The domestic sludge is transported off-site for disposal in a landfill. The landfill (shown below) is not part of the facility's existing TPDES permit.

b. Provide the following information for each disposal site:

Disposal site name: Seabreeze Environmental Landfill

TCEQ Permit/Registration Number: H1539

County where disposal site is located: Brazoria

c. Method of sewage sludge transportation: truck train pipe other:

TCEQ Hauler Registration Number: Space City Services (97291)

Sludge is transported as a: liquid semi-liquid semi-solid solid

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

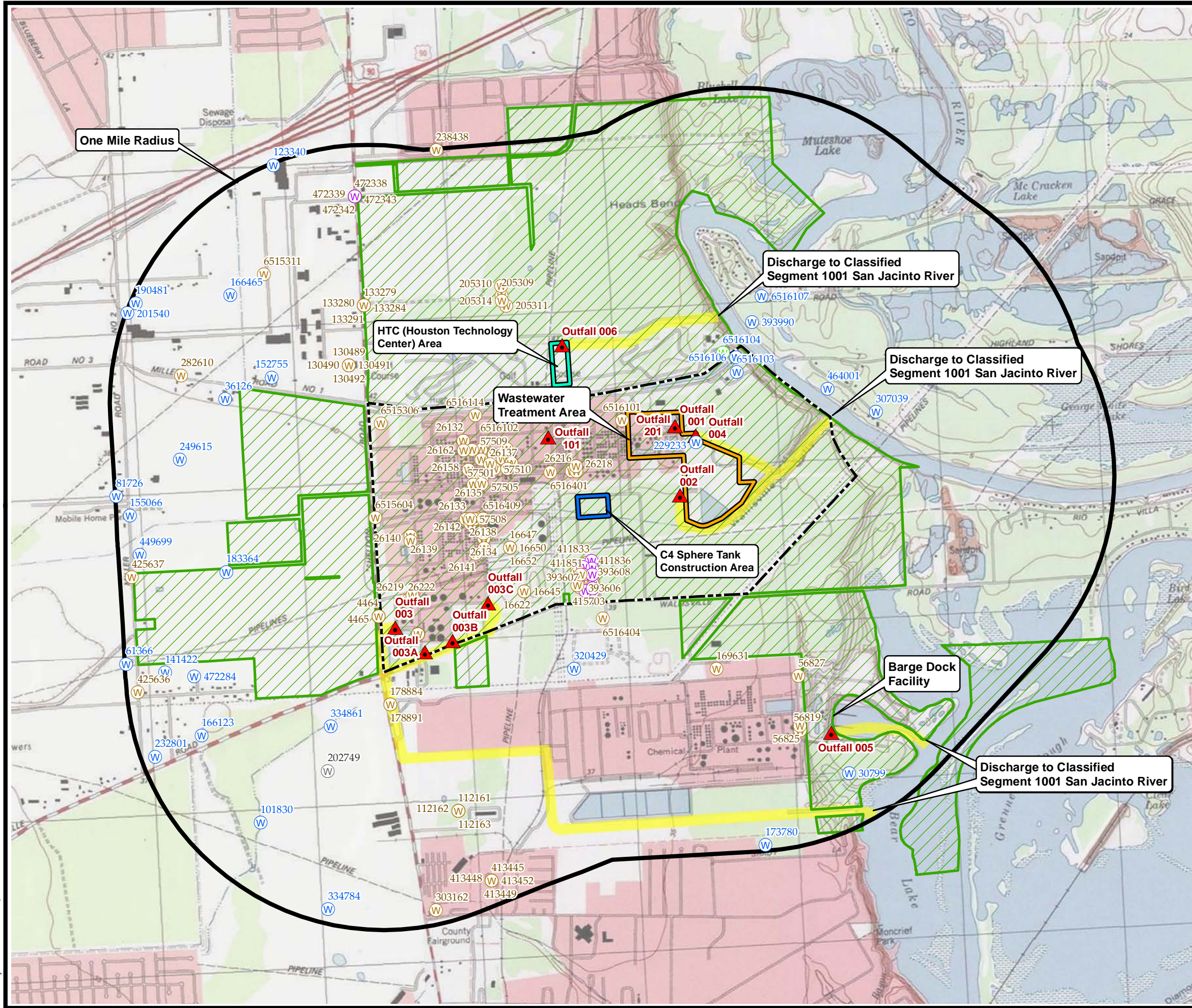
3. AUTHORIZATION FOR SEWAGE SLUDGE DISPOSAL (Instructions, Page 79)

- a. 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: N/A

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.

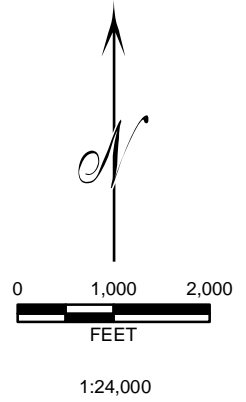


LEGEND

- Facility Boundary, Equistar Chemicals, LP
- Equistar Chemicals Property Boundary
- Wastewater Treatment Area
- C4 Sphere Tank Construction Area
- HTC (Houston Technology Center) Area
- Outfall Location
- Discharge Route
- Upstream / Downstream Markers
- One Mile Radius from Facility Boundary

TWDB Wells

- Domestic; Public Supply
- Industrial; Monitor; Environmental Soil Boring
- Irrigation
- Rig Supply
- Test Well



**EQUISTAR CHEMICALS, LP
 CHANNELVIEW NORTH COMPLEX
 CHANNELVIEW, TEXAS**

**ATTACHMENT SPIF-1
 USGS MAP**

DRAWN BY: L WILSON	SCALE: AS NOTED	PROJ. NO. TPDES 2019
CHECKED BY: D KOCUREK	DATE PRINTED: 12/9/2019	FILE NO. USGS Map.mxd
APPROVED BY:	DATE:	
	December 2019	

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ATTACHMENT A-1 TCEQ Core Data Form

TCEQ Use Only

For detailed instructions regarding completion of 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 600124705		RN 100542281

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)		12/15/2019	
<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)				
The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).				
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)			<i>If new Customer, enter previous Customer below:</i>	
Equistar Chemicals, LP				
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)	
0010258111	17605504814		96-955-7263	
11. Type of Customer:				
<input type="checkbox"/> Corporation		<input type="checkbox"/> Individual		Partnership: <input type="checkbox"/> General <input checked="" type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Other:
12. Number of Employees				
<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				
13. Independently Owned and Operated?				
<input type="checkbox"/> Yes <input checked="" 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"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other:				
15. Mailing Address:				
P.O. Box 777				
City	Channelview	State	TX	ZIP
			77530	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)
(281) 862-5026				() -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)	
<input type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input checked="" type="checkbox"/> Update to Regulated Entity Information	
The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC.)	
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)	
Equistar Chemicals Channelview Complex	

23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>	8280 Sheldon Road							
	City	Channelview	State	TX	ZIP	77530	ZIP + 4	2693
24. County								

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:										
26. Nearest City	Channelview					State	TX	Nearest ZIP Code		77530
27. Latitude (N) In Decimal:	29.831720			28. Longitude (W) In Decimal:	-95.116708					
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds					
29	49	54.19	-95	07	00.15					
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)					
2869	2821		325199		325211					
33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>										
Industrial organic chemical manufacturing										
34. Mailing Address:	P.O. Box 777									
	City	Channelview	State	TX	ZIP	77530	ZIP + 4			
35. E-Mail Address:										
36. Telephone Number			37. Extension or Code			38. Fax Number <i>(if applicable)</i>				
(281) 862-5026			() -			() -				

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"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:
WQ0000391000				

SECTION IV: Preparer Information

40. Name:	Nancy Ross			41. Title:	Senior Environmental Engineer		
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address				
(281) 452-8722		() -	Nancy.Ross@lyondellbasell.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:	Equistar Chemicals, LP		Job Title:	Site Manager		
Name <i>(In Print)</i> :	Christopher M. Cain			Phone:	(281) 862-5026	
Signature:				Date:	12/20/2019	

DATE: February 12, 2018
FROM: Michael D. VanDerSnick – Sr. Vice President, Americas Manufacturing
TO: Site Managers of Equistar Chemicals, LP; Lyondell Chemical Company; LyondellBasell Acetyls LLC; and Houston Refining
SUBJECT: Delegation of Signatory Authority for Permit Applications and Other Similar Documents

Pursuant to certain portions of the Standing Resolutions Adopted by: Equistar Chemicals, LP (Equistar); Lyondell Chemical Company (Lyondell); LyondellBasell Acetyls LLC (Acetyls); and Houston Refining LP (Refining), I am authorizing all Site Managers to sign and deliver on behalf of the individual plants and on behalf of Equistar, Lyondell, Acetyls and Refining all permit applications and other similar documents in conformity with the laws and regulations of environmental control agencies of any local, state or federal government body. This authorization includes the following sites:

EQUISTAR CHEMICALS, LP	Current Site Manager
Bayport, TX	Stephen G. Goff
Channelview, TX	Kimberly A. Foley
Chocolate Bayou, TX	Gregory M. Gray
Clinton, IA	James R. Hillier
Corpus Christi, TX	Alicia R. Matus
Edison, NJ	Antero Ortega-Velazco
Equistar Pipelines	Christopher M. Cain
Fairport Harbor, OH	Antero Ortega-Velazco
Jackson, TN	Rebecca L. White
Lake Charles, LA	Shawn P. Cullen

EQUISTAR CHEMICALS, LP	Current Site Manager
LaPorte, TX	Christopher M. Cain
Mansfield, TX	James H. Meas
Markham, TX	Scot C. McClure
Matagorda, TX	Joseph J. Hoinkis
Mont Belvieu	Scot C. McClure
Morris, IL	Timothy E. Carnell
Newark, NJ	Terry E. Mallory
Tuscola, IL	Aaron J. McKee
Victoria, TX	Gregory M. Cannon

LYONDELLBASELL ACETYLS, LLC	Current Site Manager
LaPorte, TX	Christopher M. Cain

LYONDELL CHEMICAL CO.	Current Site Manager
Bayport, TX	Stephen G. Goff
Channelview, TX	Kimberly A. Foley
Lake Charles	Shawn P. Cullen

HOUSTON REFINING LP	Current Site Manager
Houston, TX	Jerome Mauvigney

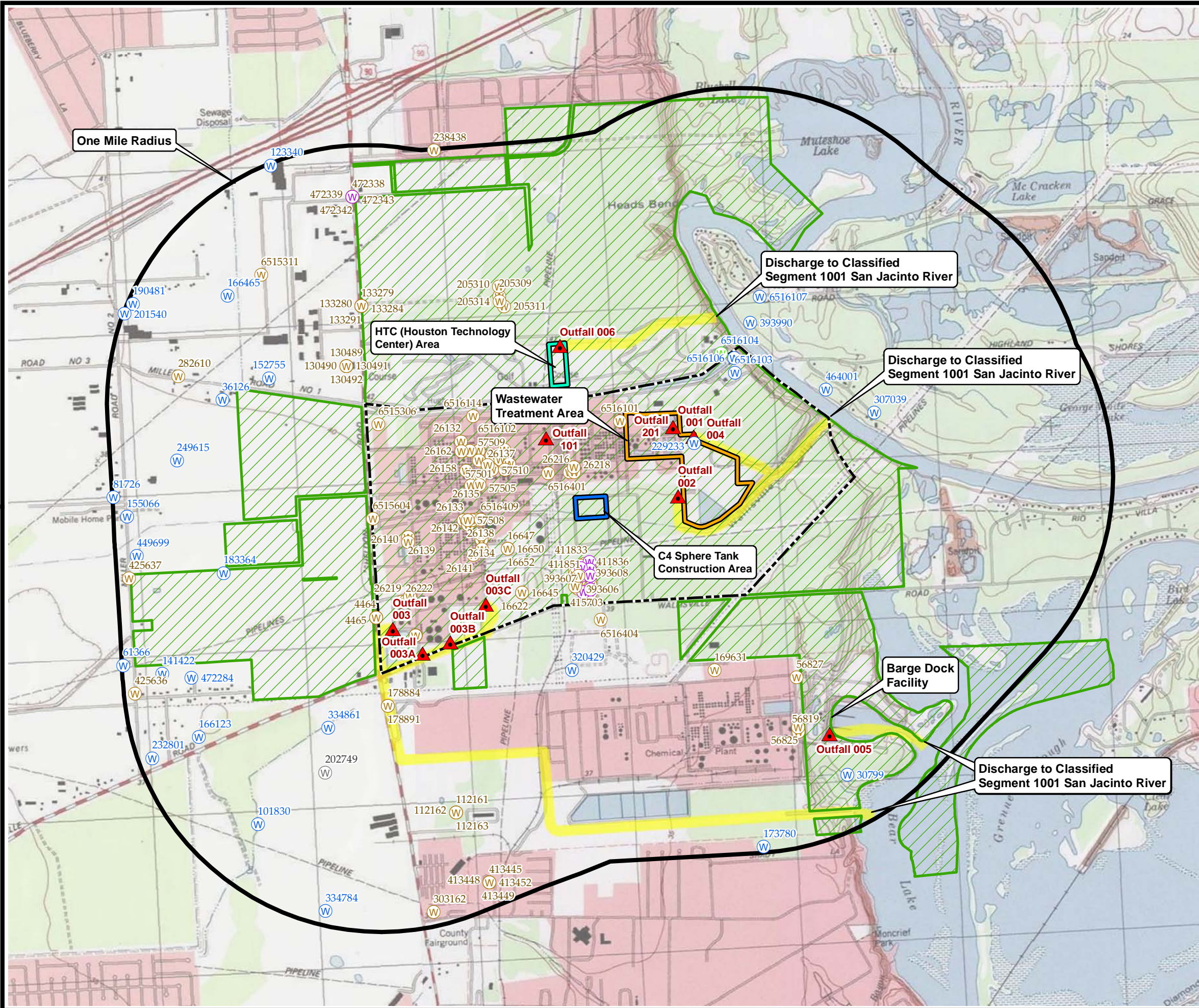
This authorization will apply to each manager's successor unless specifically revoked.

Each manager must assure that the information in these documents is accurate and truthful and in compliance with all applicable government regulations. If you have any questions, please seek assistance from the Legal Department.

If you have any questions, please feel free to contact me at 713-309-3809.


 Michael D. VanDerSnick

cc: Jeffrey Kaplan – Chief Legal Officer
 AJ Wissinger – Counsel, Global HSE

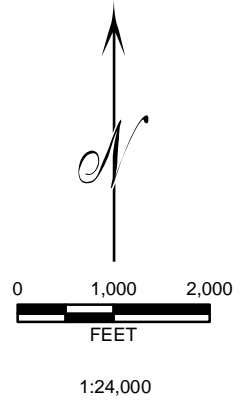


LEGEND

- Facility Boundary, Equistar Chemicals, LP
- Equistar Chemicals Property Boundary
- Wastewater Treatment Area
- C4 Sphere Tank Construction Area
- HTC (Houston Technology Center) Area
- Outfall Location
- Discharge Route
- Upstream / Downstream Markers
- One Mile Radius from Facility Boundary

TWDB Wells

- Domestic; Public Supply
- Industrial; Monitor; Environmental Soil Boring
- Irrigation
- Rig Supply
- Test Well



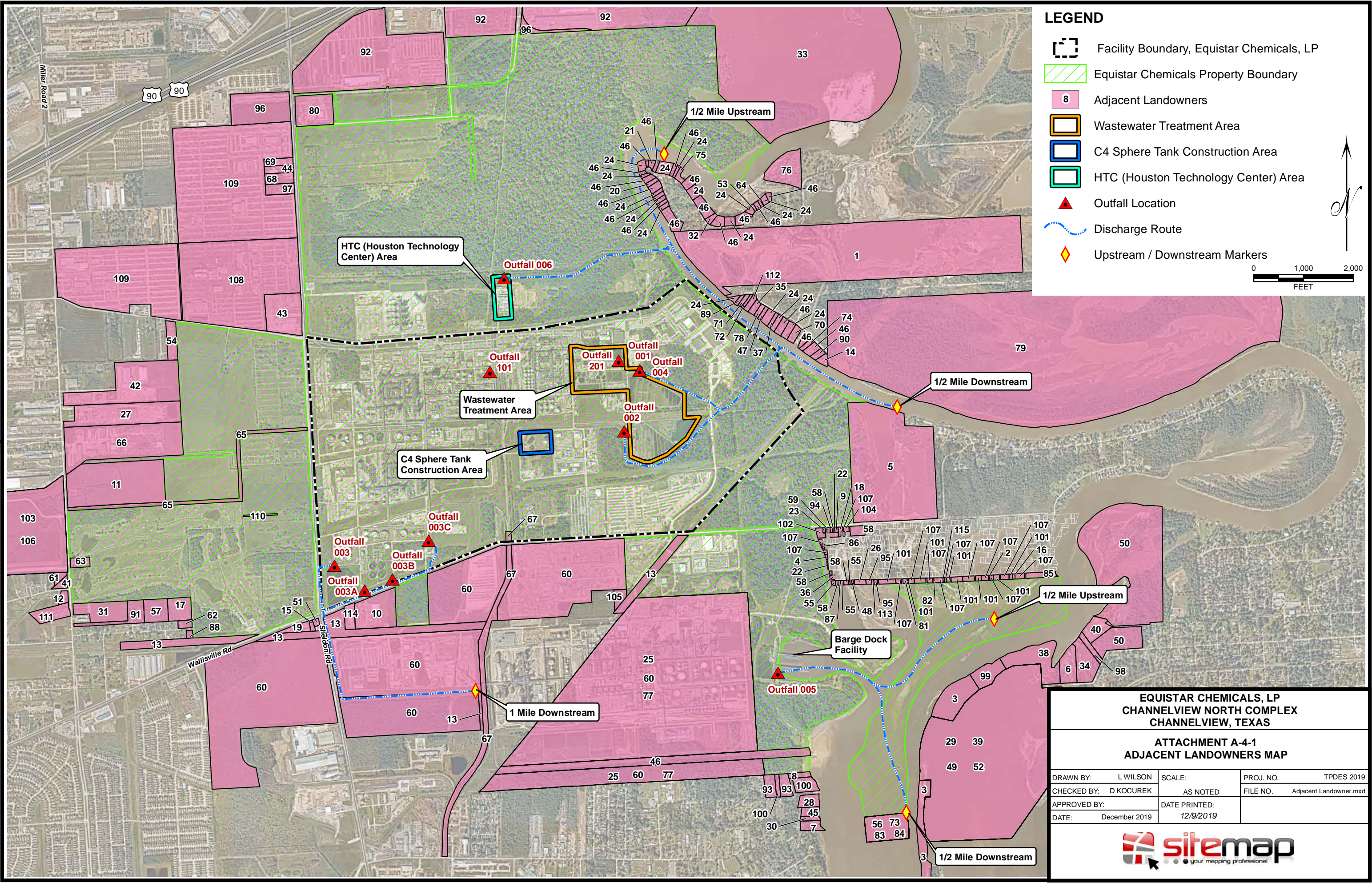
**EQUISTAR CHEMICALS, LP
 CHANNELVIEW NORTH COMPLEX
 CHANNELVIEW, TEXAS**

**ATTACHMENT A-3
 USGS MAP**

DRAWN BY: L WILSON	SCALE: AS NOTED	PROJ. NO. TPDES 2019
CHECKED BY: D KOCUREK	AS NOTED	FILE NO. USGS Map.mxd
APPROVED BY:	DATE PRINTED:	
DATE: December 2019	12/9/2019	

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J:\Prj\Equistar\Channelview\North Complex\TPDES 2019\Adjacent Landowner.mxd
 Printed By: lauri on 12/9/2019, 11:21 AM



LEGEND

- Facility Boundary, Equistar Chemicals, LP
- Equistar Chemicals Property Boundary
- 8 Adjacent Landowners
- Wastewater Treatment Area
- C4 Sphere Tank Construction Area
- HTC (Houston Technology Center) Area
- Outfall Location
- Discharge Route
- Upstream / Downstream Markers

0 1,000 2,000
FEET

**EQUISTAR CHEMICALS, LP
 CHANNELVIEW NORTH COMPLEX
 CHANNELVIEW, TEXAS**

**ATTACHMENT A-4-1
 ADJACENT LANDOWNERS MAP**

DRAWN BY: L WILSON	SCALE: AS NOTED	PROJ. NO. TPDES 2019
CHECKED BY: D KOCUREK	FILE NO. Adjacent Landowner.mxd	
APPROVED BY:	DATE PRINTED:	
DATE: December 2019	12/9/2019	

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**ATTACHMENT A-4-2 Landowner List
Equistar Chemicals, LP Channelview North Complex
WQ0000391000**

MAP ID	CURRENT OWNER	ADDRESS	CITY	STATE	ZIP CODE
1	ADLOY LLC	823 W TEXAS AVE	BAYTOWN	TX	77520-4755
2	ALBIN E	3427 VINEYARD DR	HOUSTON	TX	77082-1325
3	B D DEV	PO BOX 8450	HOUSTON	TX	77288-8450
4	B H KELLEY	ADDRESS UNKNOWN		TX	
5	BALKE THOMAS E & MARY RENEE	18803 WALLISVILLE RD	HOUSTON	TX	77049-5036
6	BAYTOWN BOAT CLUB	PO BOX 285	HIGHLANDS	TX	77562-0285
7	CURRENT OWNER	1612 PARK DR	CHANNELVIEW	TX	77530-2720
8	BLANCHARD ELIZABETH	16920 SHADY LN	CHANNELVIEW	TX	77530-2749
9	CALVIN C C	ADDRESS UNKNOWN	HOUSTON	TX	77059
10	CAMO CHEMICAL PROPERTIES LLC	16950 WALLISVILLE RD	HOUSTON	TX	77049-5014
11	CARL & LOS MITTEN FAMILY	2501 MUSEUM WAY APT 717	FORT WORTH	TX	76107-8006
12	CASTILLO JOSE I & NOHELIA	16226 MILLERS LANDING LN	HOUSTON	TX	77049-4842
13	CENTERPOINT ENERGY HOU ELE	PO BOX 1475	HOUSTON	TX	77251-1475
14	CERBARA PETER O & BETTY J	11925 CEDAR GULLY RD	BEACH CITY	TX	77523-8272
15	CINDY & JENNA CORPORATION	PO BOX 1912	ALIEF	TX	77411-1912
16	CLARK H C	ADDRESS UNKNOWN	UNKNOWN		
17	CURRENT OWNER	2220 18TH ST	GALENA PARK	TX	77547-2111
18	COLGLAZIER MARY C MD	ADDRESS UNKNOWN	UNKNOWN		00000
19	COLLINS ALLEN T	21703 RIO VILLA DR S	HOUSTON	TX	77049-3262
20	CONWELL WILLIAM	111 GRACE LN	HIGHLANDS	TX	77562-2061
21	CONWELL WILLIAM	846 LATHROP ST	HOUSTON	TX	77020-6830
22	COULSON W J JR	4814 KNICKERBOCKER ST	HOUSTON	TX	77035-3428
23	COULSON WILLIAM JR ESTATE	4946 HEATHERGLEN DR	HOUSTON	TX	77096-4214
24	COUNTY OF HARRIS	PO BOX 1525	HOUSTON	TX	77251-1525
25	COVESTRO LLC ATTN: TAX DEPARTMENT	1 COVESTRO CIR	PITTSBURGH	PA	15205-9723
26	CRAMER GRETA B ET AL	974 ENCHANTED WAY	PACIFIC PALISADES	CA	90272-2823
27	D I B MILLER PROPERTY LTD	PO BOX 1509	CHANNELVIEW	TX	77530-1509
28	DAMON EDDIE ANDREW & VERONICA	1620 PARK DR	CHANNELVIEW	TX	77530-2720
29	DAY HARRIET LAVERN	PO BOX 920546	HOUSTON	TX	77292-0546
30	DELCARPIO JULIO & DAMARIS	1614 PARK DR	CHANNELVIEW	TX	77530-2720
31	DESTINED ENTERPRISES LLC	6606 MILLER ROAD 2	HOUSTON	TX	77049-4834
32	DINH HOUNG THI THU	PO BOX 1442	HIGHLANDS	TX	77562-1442
33	DOAN ROSA NGUYEN & QUANG NHUT	10750 LEONARD RD	HOUSTON	TX	77049-1816
34	EASON CORTNEY J	PO BOX 740	HIGHLANDS	TX	77562-0740
35	FILECIA JOSEPH H & DEEDIE	16825 AVENUE B	CHANNELVIEW	TX	77530-3008
36	FLEMING W A	ADDRESS UNKNOWN	HOUSTON	TX	
37	FLORIO BONNIE	7815 DELYNN ST	BAYTOWN	TX	77521-9300
38	GANZE ADA ET AL C/O STEPHEN DAY	PO BOX 924267	HOUSTON	TX	77292-4267
39	GANZE ADA JANE JOHNSON	3414 FLEMING DR	BAYTOWN	TX	77521-9226
40	GONZALEZ BERNARD JR C/O EZ WASTE INC	PO BOX 24205	HOUSTON	TX	77229-4205
41	GONZALEZ JOSE L & EDITH M	1905 14TH ST	GALENA PARK	TX	77547-2318
42	GREENWOOD CLAYTON & CAROL	7450 MILLER ROAD 2	HOUSTON	TX	77049-4818
43	GROENDYKE TRANSPORT INC	PO BOX 632	ENID	OK	73702-0632
44	GS3 ENTERPRISES LLC	4150 CAIRO RD	PADUCAH	KY	42001-9179
45	HARRELSON DARRELL L & MARTHA A	1618 PARK DR	CHANNELVIEW	TX	77530-2720
46	HARRIS COUNTY FLOOD CONTROL DISTRICT	9900 NORTHWEST FWY	HOUSTON	TX	77092-8601
47	HOOKER GINGER	2635 SHOREWICK DR	HIGHLANDS	TX	77562-2221
48	JELSON GEORGE A	11018 WOODLAND AVE NE	ALBUQUERQUE	NM	87112-1683
49	JOHNSON HARRY KEENE III	20626 HANNINGTON LN	KATY	TX	77450-5034
50	JONES BURNEY W	PO BOX 472	GREENVILLE	TX	75403-0472
51	JUBILEE VENTURES INIC	6533 SHELTON RD	HOUSTON	TX	77049-3105
52	KELLAM JACUELIN KEENE	155 PRIMROSE LN	FREDERICKSBURG	TX	78624-7221
53	LA DOAN THUY	2403 RIDGEBROOK LN	PEARLAND	TX	77584-2551
54	LABUFF JAMES & RHONDA	687 COUNTY ROAD 2230	CLEVELAND	TX	77327-9251
55	LAMAR J L	207 S MAGNOLIA ST	HIGHLANDS	TX	77562-3755
56	LEA RAE CARR TITUS ESTATE C/O RON MYLIUS CO-EXECUTOR	PO BOX 713	FREDERICKSBURG	TX	78624-0713
57	LEGER MARK A & LORIE A	16519 LISA DAWN LN	HOUSTON	TX	77049-4911
58	LOGAN JAMES A	ADDRESS UNKNOWN		TX	
59	LUN Z M MRS	ADDRESS UNKNOWN	HOUSTON	TX	
60	LYONDELL CHEMICAL CO	PO BOX 3646	HOUSTON	TX	77253-3646
61	MARTINEZ FELIPE	7334 ANZAC ST	HOUSTON	TX	77020-5412
62	MARTINEZ RICARDO	434 TERMINAL ST	HOUSTON	TX	77020-5634
63	MEDRANO GERARDO	6830 MILLER ROAD 2	HOUSTON	TX	77049-4830
64	MICHAEL TRAN & CHRISTINE DINH	1398 ELDRIDGE PKWY STE 210	HOUSTON	TX	77077-2548
65	MIDCON TEXAS PIPELINE CORP PROPERTY TAX DEPT	500 DALLAS ST STE 1000	HOUSTON	TX	77002-4718
66	MILLER ROAD INDUSTRIAL PARK LP	7410 MILLER ROAD NO 2	HOUSTON	TX	77049
67	MISSOURI PACIFIC RAILROAD COMPANY UNION PACIFIC RAILROAD CO	1400 DOUGLAS ST STOP 1640	OMAHA	NE	68179-1001
68	MIZELL BUFORD E	2302 SPRING LAKE PARK LN	SPRING	TX	77386-3418
69	MJF PRINCIPAL HOLDING SLLC	3209 SALISBURY CT	FRIENDSWOOD	TX	77546-2532
70	MONTES JACK P	1608 MILLER ST	HOUSTON	TX	77003-5522
71	MORAIDA EDWARD	3802 NICOLE DR	PASADENA	TX	77503-1859
72	MURRAY CHARLES W & LUCY	503 N BURNETT DR	BAYTOWN	TX	77520-1111
73	MYLIUS LYNN A	PO BOX 713	FREDERICKSBURG	TX	78624-0713
74	NGC HOLDING CO INC ET AL	13430 NORTHWEST FWY STE 1200	HOUSTON	TX	77040-6052
75	NGUYEN HUONG THI THU	PO BOX 1442	HIGHLANDS	TX	77562-1442
76	NGUYEN MINH P	PO BOX 1442	HIGHLANDS	TX	77562-1442
77	OPTIM ENERGY ALTURA COGEN LLC	PO BOX 968	CHANNELVIEW	TX	77530-0968

**ATTACHMENT A-4-2 Landowner List
Equistar Chemicals, LP Channelview North Complex
WQ0000391000**

MAP ID	CURRENT OWNER	ADDRESS	CITY	STATE	ZIP CODE
78	PERRY JOSEPH RAY	4222 HASTINGS LN	DEER PARK	TX	77536-6230
79	PORT OF HOUSTON AUTHORITY	111 EAST LOOP N	HOUSTON	TX	77029-4326
80	PORT SERV USA INC	9002 SHELDON RD	HOUSTON	TX	77049-1811
81	REED GEORGE M	PO BOX 345	LA MARQUE	TX	77568-0345
82	REED ROSE OLIN MRS	907 N MARSHALL DR	OKLAHOMA CITY	OK	73110-5336
83	RENFRO BARRY L	415 MILL PLACE CT	SUGAR LAND	TX	77498-2678
84	RENFRO MARY C/O RON MYLIUS CO-EXECUTOR	PO BOX 713	FREDERICKSBURG	TX	78624-0713
85	RIVAS ANTONIO P	1518 E FORDYCE AVE	KINGSVILLE	TX	78363-6074
86	ROACH FRANK	7720 BOWEN ST	HOUSTON	TX	77051-1612
87	ROBERTS DANIEL	ADDRESS UNKNOWN	HOUSTON	TX	
88	ROBLEDO DAVID	16618 LISA DAWN LN	HOUSTON	TX	77049-4906
89	ROSALES RUBIN O	6006 MOONMIST DR	HOUSTON	TX	77081-4311
90	SANCHEZ JESSICA Y & RODOLFO	6730 AMBERDALE DR	FORT WORTH	TX	76137-6304
91	SCHNARR INETTA S & ET AL	16435 LISA DAWN LN	HOUSTON	TX	77049-4909
92	SEAH STEEL USA LLC	16952 LEONARD RD	HOUSTON	TX	77049-1800
93	SELLERS RANDY L & JAN M	PO BOX 70	CHANNELVIEW	TX	77530-0070
94	SETTLE FORESTLINE H	ADDRESS UNKNOWN	HOUSTON	TX	
95	SMITH R V	ADDRESS UNKNOWN		TX	
96	SOUTHERN PACIFIC RAILROAD COMPANY UNION PACIFIC RAILROAD CO	1400 DOUGLAS ST STOP 1640	OMAHA	NE	68179-1001
97	SOUTHVIEW LOGISTICS INC	13410 HOLLYPARK DR	HOUSTON	TX	77015-2901
98	STARNES RANDLE	1332 CLEAR LAKE RD	HIGHLANDS	TX	77562-3533
99	STATE OF TEXAS % TEXAS GENERAL LAND OFFICE	PO BOX 1386	AUSTIN	TX	78767-1386
100	STEWART DOUGLAS R & JOYCE	16916 SHADY LN	CHANNELVIEW	TX	77530-2749
101	T W I DEV CO % MRS LEROY MUSICK	1323 CHIPPENDALE RD	HOUSTON	TX	77018-5257
102	TAYLOR THOMAS N % THOS L BROWN ATTORNEY	7017 PASEO BLVD	KANSAS CITY	MO	64132-3109
103	TC TERMINALS LLC	PO BOX 2168	HOUSTON	TX	77252-2168
104	TEXAN LAND & CATTLE CO	333 WEST LOOP N	HOUSTON	TX	77024-7767
105	THORP PETROLEUM CORPORATION	1001 MCKINNEY ST STE 2200	HOUSTON	TX	77002-6418
106	TRANSCANADA OIL PIPELINES INC	PO BOX 2168	HOUSTON	TX	77252-2168
107	OWNER UNKNOWN	ADDRESS UNKNOWN	UNKNOWN		
108	V & M STAR	2107 CITYWEST BLVD STE 1300	HOUSTON	TX	77042-2827
109	VARCO LP	10000 RICHMOND AVE STE 600	HOUSTON	TX	77042-4393
110	VASTAR RESOURCES INC	PO BOX 941709	HOUSTON	TX	77094-8709
111	VAZQUEZ ROLANDO & CRISTINA E	6627 MILLER ROAD 2	HOUSTON	TX	77049-4833
112	VENCES ANANIAS & CELIA	824 MAGNOLIA BLVD	HUFFMAN	TX	77336-
113	WALLACE AGNES	ADDRESS UNKNOWN		TX	
114	WILLIAMS FIELD SERVICES GULF	ONE WILLIAMS CENTER	TULSA	OK	74172-0140
115	WILVER RAY L & JOHN L	7 SONGBIRD LN	MILTON	PA	17847-9536

ADLOY LLC
623 W TEXAS AVE
BAYTOWN TX 77520-4755

ALBIN E
3427 VINEYARD DR
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B D DEV
PO BOX 8450
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B H KELLEY
ADDRESS UNKNOWN
TX

BALKE THOMAS E & MARY RENEE
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BAYTOWN BOAT CLUB
PO BOX 285
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1612 PARK DR
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BLANCHARD ELIZABETH
16920 SHADY LN
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CAMO CHEMICAL PROPERTIES LLC
16950 WALLISVILLE RD
HOUSTON TX 77049-5014

CARL & LOS MITTEN FAMILY
2501 MUSEUM WAY APT 717
FORT WORTH TX 76107-8006

CASTILLO JOSE I & NOHELIA
16226 MILLERS LANDING LN
HOUSTON TX 77049-4842

CENTERPOINT ENERGY HOU ELE
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ALIEF TX 77411-1912

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UNKNOWN

CURRENT OWNER
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COLGLAZIER MARY C MD
ADDRESS UNKNOWN
UNKNOWN 00000

COLLINS ALLEN T
21703 RIO VILLA DR S
HOUSTON TX 77049-3262

CONWELL WILLIAM
111 GRACE LN
HIGHLANDS TX 77562-2061

CONWELL WILLIAM
846 LATHROP ST
HOUSTON TX 77020-6830

COULSON W J JR
4814 KNICKERBOCKER ST
HOUSTON TX 77035-3428

COULSON WILLIAM JR ESTATE
4946 HEATHERGLEN DR
HOUSTON TX 77096-4214

COUNTY OF HARRIS
PO BOX 1525
HOUSTON TX 77251-1525

COVESTRO LLC ATTN: TAX DEPARTMENT
1 COVESTRO CIR
PITTSBURGH PA 15205-9723

CRAMER GRETA B ET AL
974 ENCHANTED WAY
PACIFIC PALISADES CA 90272-2823

D I B MILLER PROPERTY LTD
PO BOX 1509
CHANNELVIEW TX 77530-1509

DAMON EDDIE ANDREW & VERONICA
1620 PARK DR
CHANNELVIEW TX 77530-2720

DAY HARRIET LAVERN
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HOUSTON TX 77292-0546

DELCARPIO JULIO & DAMARIS
1614 PARK DR
CHANNELVIEW TX 77530-2720

DESTINED ENTERPRISES LLC
6606 MILLER ROAD 2
HOUSTON TX 77049-4834

DINH HOUNG THI THU
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10750 LEONARD RD
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PO BOX 740
HIGHLANDS TX 77562-0740

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CHANNELVIEW TX 77530-3008

FLEMING W A
ADDRESS UNKNOWN
HOUSTON TX

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7815 DELYNN ST
BAYTOWN TX 77521-9300

GANZE ADA ET AL C/O STEPHEN DAY
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HOUSTON TX 77292-4267

GANZE ADA JANE JOHNSON
3414 FLEMING DR
BAYTOWN TX 77521-9226

GONZALEZ BERNARD JR C/O EZ WASTE INC
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HOUSTON TX 77229-4205

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1905 14TH ST
GALENA PARK TX 77547-2318

GREENWOOD CLAYTON & CAROL
7450 MILLER ROAD 2
HOUSTON TX 77049-4818

GROENDYKE TRANSPORT INC
PO BOX 632
ENID OK 73702-0632

GS3 ENTERPRISES LLC
4150 CAIRO RD
PADUCAH KY 42001-9179

HARRELSON DARRELL L & MARTHA A
1618 PARK DR
CHANNELVIEW TX 77530-2720

HARRIS COUNTY FLOOD CONTROL DISTRICT
9900 NORTHWEST FWY
HOUSTON TX 77092-8601

HOOKER GINGER
2635 SHOREWICK DR
HIGHLANDS TX 77562-2221

JELSON GEORGE A
11018 WOODLAND AVE NE
ALBUQUERQUE NM 87112-1683

JOHNSON HARRY KEENE III
20626 HANNINGTON LN
KATY TX 77450-5034

JONES BURNEY W
PO BOX 472
GREENVILLE TX 75403-0472

JUBILEE VENTURES INIC
6533 SHELDON RD
HOUSTON TX 77049-3105

KELLAM JACUELIN KEENE
155 PRIMROSE LN
FREDERICKSBURG TX 78624-7221

LA DOAN THUY
2403 RIDGEBROOK LN
PEARLAND TX 77584-2551

LABUFF JAMES & RHONDA
687 COUNTY ROAD 2230
CLEVELAND TX 77327-9251

LAMAR J L
207 S MAGNOLIA ST
HIGHLANDS TX 77562-3755

LEA RAE CARR TITUS ESTATE C/O RON
MYLIUS CO-EXECUTOR
PO BOX 713
FREDERICKSBURG TX 78624-0713

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16519 LISA DAWN LN
HOUSTON TX 77049-4911

LOGAN JAMES A
ADDRESS UNKNOWN
TX

LUN Z M MRS
ADDRESS UNKNOWN
HOUSTON TX

LYONDELL CHEMICAL CO
PO BOX 3646
HOUSTON TX 77253-3646

MARTINEZ FELIPE
7334 ANZAC ST
HOUSTON TX 77020-5412

MARTINEZ RICARDO
434 TERMINAL ST
HOUSTON TX 77020-5634

MEDRANO GERARDO
6830 MILLER ROAD 2
HOUSTON TX 77049-4830

MICHAEL TRAN & CHRISTINE DINH
1398 ELDRIDGE PKWY STE 210
HOUSTON TX 77077-2548

MIDCON TEXAS PIPELINE CORP PROPERTY
TAX DEPT
500 DALLAS ST STE 1000
HOUSTON TX 77002-4718

MILLER ROAD INDUSTRIAL PARK LP
7410 MILLER ROAD NO 2
HOUSTON TX 77049

MISSOURI PACIFIC RAILROAD COMPANY
UNION PACIFIC RAILROAD CO
1400 DOUGLAS ST STOP 1640
OMAHA NE 68179-1001

MIZELL BUFORD E
2302 SPRING LAKE PARK LN
SPRING TX 77386-3418

MJF PRINCIPAL HOLDING SLLC
3209 SALISBURY CT
FRIENDSWOOD TX 77546-2532

MONTES JACK P
1608 MILLER ST
HOUSTON TX 77003-5522

MORAIDA EDWARD
3802 NICOLE DR
PASADENA TX 77503-1859

MURRAY CHARLES W & LUCY
503 N BURNETT DR
BAYTOWN TX 77520-1111

MYLIUS LYNN A
PO BOX 713
FREDERICKSBURG TX 78624-0713

NGC HOLDING CO INC ET AL
13430 NORTHWEST FWY STE 1200
HOUSTON TX 77040-6052

NGUYEN HUONG THI THU
PO BOX 1442
HIGHLANDS TX 77562-1442

NGUYEN MINH P
PO BOX 1442
HIGHLANDS TX 77562-1442

OPTIM ENERGY ALTURA COGEN LLC
PO BOX 968
CHANNELVIEW TX 77530-0968

PERRY JOSEPH RAY
4222 HASTINGS LN
DEER PARK TX 77536-6230

PORT OF HOUSTON AUTHORITY
111 EAST LOOP N
HOUSTON TX 77029-4326

PORT SERV USA INC
9002 SHELDON RD
HOUSTON TX 77049-1811

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PO BOX 345
LA MARQUE TX 77568-0345

REED ROSE OLIN MRS
907 N MARSHALL DR
OKLAHOMA CITY OK 73110-5336

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415 MILL PLACE CT
SUGAR LAND TX 77498-2678

RENFRO MARY C/O RON MYLIUS CO-
EXECUTOR
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FREDERICKSBURG TX 78624-0713

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ROBERTS DANIEL
ADDRESS UNKNOWN
HOUSTON TX

ROBLEDO DAVID
16618 LISA DAWN LN
HOUSTON TX 77049-4906

ROSALES RUBIN O
6006 MOONMIST DR
HOUSTON TX 77081-4311

SANCHEZ JESSICA Y & RODOLFO
6730 AMBERDALE DR
FORT WORTH TX 76137-6304

SCHNARR INETTA S & ET AL
16435 LISA DAWN LN
HOUSTON TX 77049-4909

SEAH STEEL USA LLC
16952 LEONARD RD
HOUSTON TX 77049-1800

SELLERS RANDY L & JAN M
PO BOX 70
CHANNELVIEW TX 77530-0070

SETTLE FORESTLINE H
ADDRESS UNKNOWN
HOUSTON TX

SMITH R V
ADDRESS UNKNOWN
TX

SOUTHERN PACIFIC RAILROAD COMPANY
UNION PACIFIC RAILROAD CO
1400 DOUGLAS ST STOP 1640
OMAHA NE 68179-1001

SOUTHVIEW LOGISTICS INC
13410 HOLLYPARK DR
HOUSTON TX 77015-2901

STARNES RANDLE
1332 CLEAR LAKE RD
HIGHLANDS TX 77562-3533

STATE OF TEXAS % TEXAS GENERAL LAND
OFFICE
PO BOX 1386
AUSTIN TX 78767-1386

STEWART DOUGLAS R & JOYCE
16916 SHADY LN
CHANNELVIEW TX 77530-2749

T W I DEV CO % MRS LEROY MUSICK
1323 CHIPPENDALE RD
HOUSTON TX 77018-5257

TAYLOR THOMAS N % THOS L BROWN
ATTORNEY
7017 PASEO BLVD
KANSAS CITY MO 64132-3109

TC TERMINALS LLC
PO BOX 2168
HOUSTON TX 77252-2168

TEXAN LAND & CATTLE CO
333 WEST LOOP N
HOUSTON TX 77024-7767

THORP PETROLEM CORPORATION
1001 MCKINNEY ST STE 2200
HOUSTON TX 77002-6418

TRANSCANADA OIL PIPELINES INC
PO BOX 2168
HOUSTON TX 77252-2168

OWNER UNKNOWN
ADDRESS UNKNOWN
UNKNOWN

V & M STAR
2107 CITYWEST BLVD STE 1300
HOUSTON TX 77042-2827

VARCO LP
10000 RICHMOND AVE STE 600
HOUSTON TX 77042-4393

VASTAR RESOURCES INC
PO BOX 941709
HOUSTON TX 77094-8709

VAZQUEZ ROLANDO & CRISTINA E
6627 MILLER ROAD 2
HOUSTON TX 77049-4833

VENCES ANANIAS & CELIA
824 MAGNOLIA BLVD
HUFFMAN TX 77336-

WALLACE AGNES
ADDRESS UNKNOWN
TX

WILLIAMS FIELD SERVICES GULF
ONE WILLIAMS CENTER
TULSA OK 74172-0140

WILVER RAY L & JOHN L
7 SONGBIRD LN
MILTON PA 17847-9536

ATTACHMENT A-5 Outfall Photos



1. Outfall 001 discharge structure (upper center), discharge and channel in foreground



2. Outfall 001 looking downstream from sample point

ATTACHMENT A-5
Outfall Photos



3. Outfall 002 discharge structure at sample point



4. Outfall 002 looking downstream from discharge structure

ATTACHMENT A-5 Outfall Photos



5. Outfall 003 discharge point



6. Outfall 003 looking downstream from outfall structure

ATTACHMENT A-5 Outfall Photos



7. Outfall 003A discharge point



8. Outfall 003A looking downstream, outfall structure bottom center

ATTACHMENT A-5 Outfall Photos



9. Outfall 003B discharge point



10. Outfall 003B looking downstream, outfall structure in bottom center

ATTACHMENT A-5 Outfall Photos



11. Outfall 003C discharge structure (center)



12. Outfall 003C looking downstream, outfall discharge valve lower left.

ATTACHMENT A-5
Outfall Photos



13. Outfall 004 discharge point

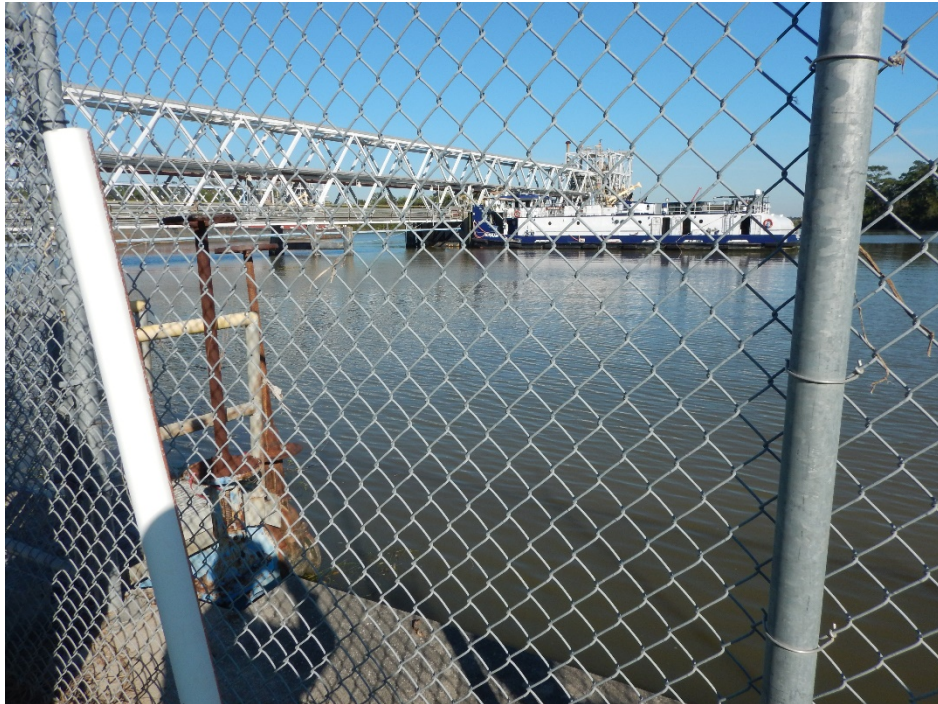


14. Outfall 004 looking downstream from discharge structure

ATTACHMENT A-5
Outfall Photos



15. Outfall 005 at Barge Dock Pond, bottom center



16. Outfall 005 discharge point into barge area, discharge valve on left

ATTACHMENT A-5 Outfall Photos



17. Outfall 006 HTC Pond



18. Outfall 006 stairs to discharge pipe, HCFCD ditch past stairs, photo center

ATTACHMENT A-5
Outfall Photos

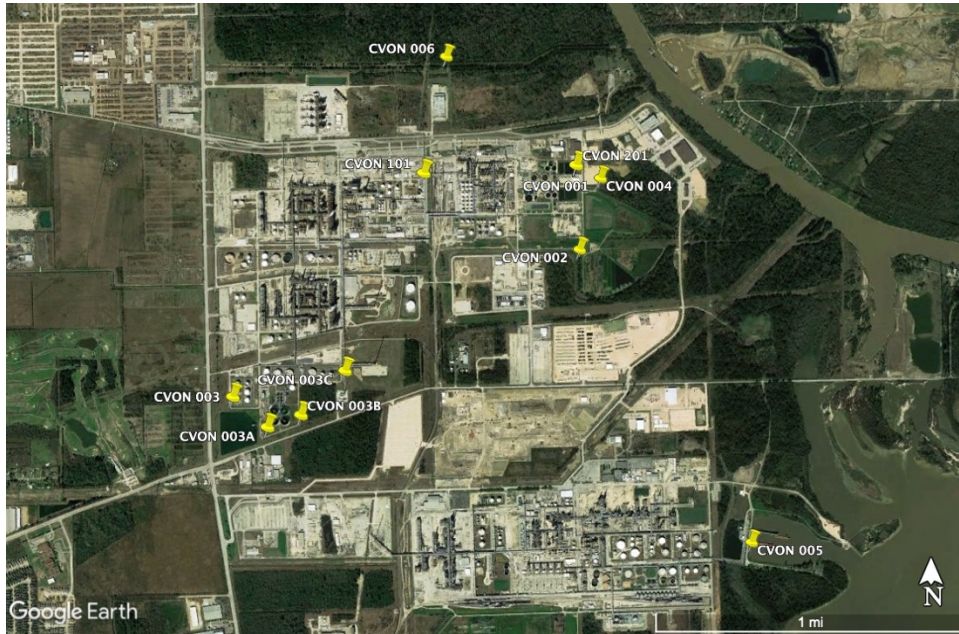


19. Outfall 101 septic chlorinator



20. Outfall 201 septic chlorinator

ATTACHMENT A-5 Outfall Photos



Outfall Aerial Map

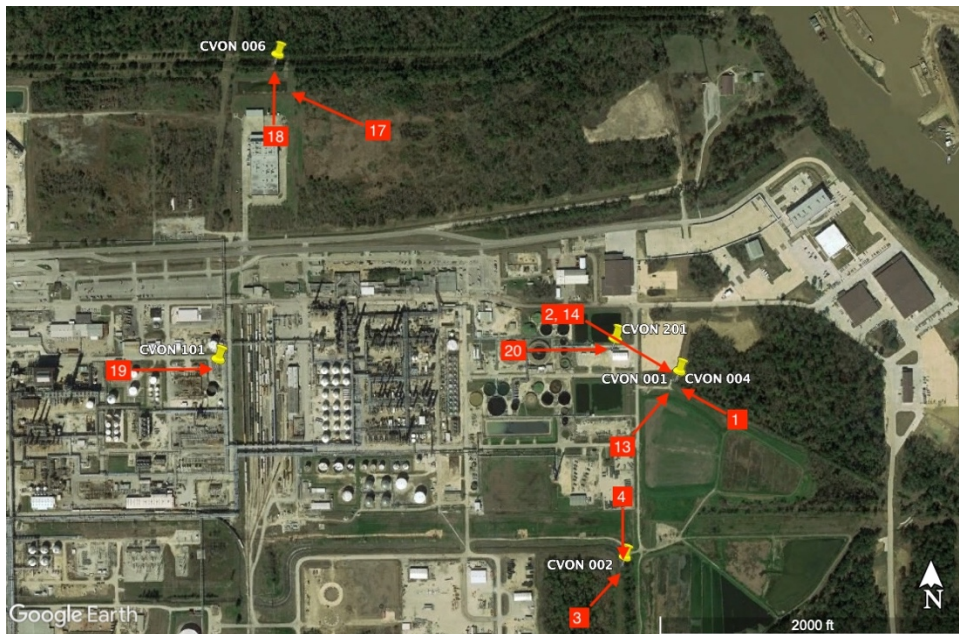


Photo Location Map 1

ATTACHMENT A-5 Outfall Photos



Photo Location Map 2



Photo Location Map 3

ATTACHMENT A-6 Fee Payment Receipts



Basis2 Receipt Report by Endorsement Number

DEC-17-19 08:23 AM

<u>Acct. #:</u>	<u>WQP</u>	<u>Account Name:</u>									
<u>Paid For</u>	<u>Endors. #</u>	<u>Ref #2</u>	<u>Paid In By</u>	<u>PayTyp</u>	<u>Chk #</u>	<u>Card#</u>	<u>Bank Slip</u>	<u>Tran.Date</u>	<u>Receipt Amnt.</u>		
RENEWAL/CHANNELVIEW FACILITY	WRS0020111	00391000	LYB AMERICAS	WT	WIRE		BS00077408	13-DEC-19	\$2000.00		



Basis2 Receipt Report by Endorsement Number

DEC-17-19 08:23 AM

<u>Acct. #:</u>	<u>PTGO</u>	<u>Account Name:</u>									
<u>Paid For</u>	<u>Endors. #</u>	<u>Ref #2</u>	<u>Paid In By</u>	<u>PayTyp</u>	<u>Chk #</u>	<u>Card#</u>	<u>Bank Slip</u>	<u>Tran.Date</u>	<u>Receipt Amnt.</u>		
	WRS0020112	00391000	LYB AMERICAS	WT	WIRE		BS00077408	13-DEC-19	\$100.00		

ATTACHMENT T-1

EQUISTAR CHEMICALS, LP CHANNELVIEW NORTH COMPLEX FACILITY DESCRIPTION

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TABLE 1. RAW MATERIALS, INTERMEDIATES, AND FINAL PRODUCTS

TABLE 2. WASTEWATER SOURCES BY OUTFALL

TABLE 3. WASTEWATER FLOWS BY OUTFALL

TABLE 4. WASTEWATER TREATMENT UNITS

FIGURE 1. WASTEWATER FLOW BALANCE

FIGURE 2. WASTEWATER FLOW DIAGRAM

EQUISTAR CHEMICALS, LP CHANNELVIEW NORTH COMPLEX FACILITY DESCRIPTION

This document describes the Equistar Chemicals, LP Channelview North Complex in relation to its wastewater discharge TPDES permit WQ0000391000. This description includes outfall locations and wastewaters discharged, wastewater and storm water management, and applicability of national effluent guidelines.

SITE OPERATIONS

Equistar CVON

The Equistar Chemicals, LP Channelview North Complex (CVON) is located at 8280 Sheldon Road in Channelview, Texas, approximately four miles north of Interstate Highway 10. The facility produces bulk, commodity, and thermoplastic resins. Chemicals are produced by high temperature cracking of various petroleum-based feedstocks. Chemicals are compressed, fractionated, and then recovered in downstream units.

Raw materials, intermediates, and products associated with the manufacturing units are listed in Table 1. In 2019, the Styrene/Maleic Anhydride (SMA) Unit was permanently shut down and de-inventoried.

Third-Party Operations

A number of third-party facilities send wastewater to CVON's wastewater treatment system. These wastewaters are compatible with CVON-generated wastewaters that treated in the CVON wastewater treatment system. The volume and nature of these third-party wastewaters will not impact the ability for CVON to consistently achieve the effluent limitations specified in the permit.

EIF Channelview Cogeneration LLC (EIF)¹ owns and operates a cogeneration facility adjacent to and north of CVON. CVON provides the boiler feed and utility water to EIF. EIF's cogeneration unit generates 600- and 1,500-pound steam, which is the major source of steam for CVON. The electricity produced by EIF supplies all of CVON's power needs.

EIF is a combined-cycle cogeneration unit using natural gas combustion to generate electricity via turbines and steam in heat recovery steam generators. The wastewaters received by CVON from EIF's cogeneration facility are boiler blowdown, cooling tower blowdown, process area storm water, and domestic wastewater. EIF's process area storm water is routed through a corrugated plate interceptor (CPI) prior to being discharged to CVON's treatment system. The volume of the combined

¹ EIF Channelview Cogeneration, LLC 8580 Sheldon Road, Channelview, Texas 77049

wastewaters received from the cogeneration facility is approximately 1.0 million gallons per day (MGD).

Lyondell Chemical Company owns and operates the Houston Technology Center (HTC)² adjacent to and north of CVON. The HTC functions as a Research and Development Center. CVON has the ability to receive wastewater from the HTC for treatment within the CVON wastewater treatment plant on an as-needed basis. Currently, the HTC wastewater is comprised of non-contact storm water and utility wastewater, which includes condensate blowdown from air handling units, air exchangers, and ventilation equipment. Currently, the HTC's wastewater is discharged through an outfall authorized by the Multi-Sector General Permit (MSGP).

CVON receives domestic wastewater from the HTC and EIF and may periodically receive domestic wastewater and wastewater treatment sludges from the adjacent Lyondell Chemical Channelview South Plant.³ Domestic wastewater is sent to CVON's internal Outfall 101 septic chlorinator where it is chlorinated along with domestic wastewater from the majority of CVON.

CVON periodically receives hydrostatic test water from Equistar Pipeline Operations.⁴ The hydrostatic test water is generated very infrequently and potential contaminants in the test water are identical to those found in the wastewater that is typically generated at CVON.

CVON may periodically receive wastewater from other Equistar facilities located off-site that are compatible with the wastewaters currently treated at CVON.

WASTEWATER SYSTEM AND OUTFALLS

There are twelve outfalls authorized by CVON's TPDES Permit No. WQ0000391000. Outfall 001 is the process wastewater outfall. There are two internal outfalls (101, 201), which discharge treated domestic wastewater to the Outfall 001 wastewater treatment system. The remaining outfalls (002, 003, 003A, 003B, 003C, 004, 005, 006, 007) are primarily storm water outfalls.

Sources of wastewater are listed by outfall in Table 2, which indicates which wastewaters are listed in the current TPDES permit as well as other wastewaters that CVON is requesting to be added to the permit in this TPDES amendment/renewal application. Wastewater flows by outfall are listed in Table 3.

Figure 1 is a flow balance diagram for Outfall 001 that shows wastewater sources and treatment units. Figure 2 shows the overall flow routing in the treatment system. Table 4 is a list of the primary components of the wastewater treatment system.

² Houston Technology Center, 8280 Sheldon Road, Channelview, Texas 77530

³ Lyondell Chemical Company, P.O. Box 777, Channelview, Texas 77530

⁴ Equistar Pipeline Operations Mont Belvieu Terminal, 11815 Highway 146, Mont Belvieu, Texas 77580

Outfall 001

Outfall 001 discharges treated process wastewater, utility wastewater, treated domestic wastewater, and storm water. A list of specific wastewaters that may be discharged through Outfall 001 is shown in Table 2. Outfall 001 discharges to an unnamed drainage ditch, thence to Wallisville Gully, thence to San Jacinto River Tidal.

Wastewater Treatment System

Preliminary treatment of certain wastewaters is provided in the manufacturing operation units and consists primarily of separation, neutralization, and/or steam stripping. These wastewaters are then routed to the main wastewater treatment system, which includes treatment units for equalization, stabilization, filtration, activated sludge biological treatment, clarification, and settling. Part of the biosolids generated in the activated sludge process are recycled to the biological aeration tanks (return activated sludge, RAS) and excess biosolids (waste activated sludge, WAS) are removed and routed to land treatment. Treated wastewater is discharged through Outfall 001.

Outfalls 101 and 202

Domestic (sanitary) wastewater is collected separately from industrial wastewaters. Domestic wastewater is chlorinated for bacterial disinfection and then routed via internal Outfalls 101 and 201 to the wastewater treatment system. Domestic wastewater from the CVON Northeast Campus is collected in the newer septic chlorinator known as Tank 1767 and effluent from the unit is designated as internal Outfall 201. Domestic wastewater from the remainder of the CVON, the HTC, and the EIF cogeneration facility is collected in the original septic chlorinator and effluent from this chlorinator is designated as internal Outfall 101. Domestic wastewater from the Lyondell Channelview South Complex (CVOS) may be received for treatment on an as-needed basis. Some domestic wastewater is collected in on-site portable toilets during construction/maintenance work and transported off-site for treatment.

In this TPDES application, Equistar is requesting the addition of process wastewater and storm water from the HTC to internal Outfall 101 (see the following section).

Houston Technology Center (HTC)

The HTC is a research and development (R&D) facility, which started up in 2013. Currently, all R&D activities are conducted inside the HTC building and any wastewaters or liquid wastes generated by the R&D operations inside the HTC building are transported off-site for disposal.

Process wastewater from the HTC was added to the list of authorized wastewaters discharged through Outfall 001 when the permit was renewed in 2016; however, the HTC has not yet sent any process wastewater to CVON's Outfall 001 wastewater system. The HTC is expected to start up a pilot plant for VAM (vinyl acetate monomer) production by January 2020. VAM operations will include the pilot plant itself and a diked area for tanks storing acetic acid, product (VAM), oxygen, and storm water.

The only sewer connection from the HTC to the 001 treatment system is the HTC sanitary sewer that routes domestic wastewater from the HTC building to the CVON septic chlorinator associated with internal Outfall 101. The chlorinator that receives HTC domestic wastewater includes a grinder pump for solids and disinfection with sodium hypochlorite. Effluent from the chlorinator is designated as internal Outfall 101 and monitoring is required for flow, bacteria (*Enterococci*), and residual chlorine.

The Outfall 101 effluent is routed to the 001 treatment system where it commingles with other wastewaters, including process wastewaters, for treatment before discharge through Outfall 001. Outfall 001 has permit limits that cover process wastewaters. Vinyl acetate is listed under Subpart F Commodity Organic Chemicals of 40 CFR 414, and this subpart also covers several existing process units at CVON (benzene, ethylene, isopropanol, methanol, propylene, toluene). As such, the VAM wastewater would not add any new effluent guidelines to the Outfall 001 discharge.

There would be 6,000-7,000 gallons per month of storm water from the diked area. Process wastewaters from the VAM pilot plant operations would be related to any contaminated waters as a result of spills or leaks and would be intermittent. CVON does not expect that the HTC wastewaters sent to the 101 septic chlorinator would affect the disinfection process.

Because the purpose of Outfall 101 is to demonstrate through bacteria and chlorine monitoring that domestic wastewater is properly disinfected and any other required monitoring for process wastewater is at Outfall 001, CVON requests that monitoring for internal Outfall 101 be kept the same as in the current permit (i.e., flow, *Enterococci*, and residual chlorine).

Landfarm

The CVON has a landfarm to cultivate the WAS biosolids from the biological wastewater treatment system. Dewatered sludge from raw water treatment may also be sent to the landfarm as-needed. The landfarm consists of four cells. Once a cell is at approximately 75% capacity with solids, the cell is taken out of service and dewatered. A vegetative crop is planted within the cell, then harvested when mature and sent to an off-site waste disposal site. Afterwards, a filtration grass is planted within the cell. Once the grass has matured, the cell can be put back in service. Storm water and any water from the biosolids that accumulate in active landfarm cells is pumped to Ponds 1A and 1B in the wastewater treatment system. Storm water that accumulates in inactive landfarm cells may be discharged through storm water Outfalls 002 and 004, or sent through wastewater treatment.

Storm Water Outfalls

Outfall 002

Outfall 002 is primarily a storm water outfall. Other wastewaters that may be discharged include utility wastewaters and de minimis wastewaters from spill cleanups. Specific utility wastewaters are listed in Table 2. At times, particularly during the summer, water from the fire water system may be used to keep a continuous flow through Outfall 002 to prevent stagnant water conditions at the outfall. Outfall 002 discharges to an unnamed drainage ditch, thence to Wallisville Gully, thence to San Jacinto River Tidal.

Construction of two C4 sphere tanks within the drainage area of Outfall 002 will be completed in 2020. A new concrete containment basin will be constructed adjacent to these tanks. During routine operation, storm water from the C4 sphere pad will drain via gravity flow to the basin. Non-contaminated storm water will be drained to the adjacent storm water ditch that ultimately discharges via Outfall 002. In the unlikely event of a release from the tanks, firewater will be applied to knock down vapors into the containment basin. Contaminated material will be pumped to a process unit for treatment.

Outfalls 003, 003A, 003B, 003C

Outfalls 003, 003A, 003B, and 003C are four separate storm water outfalls that are located in close proximity to each other in the southwest corner of the site (see Attachment A-3 USGS Map). For the purpose of discharge monitoring reports (DMRs), the TPDES permit requires that the highest value for total organic carbon, oil and grease, and total zinc, and the highest and lowest pH from the combined outfall data be reported in the DMR under Outfall 003.

All four “003” outfalls discharge primarily storm water, but they are also authorized to discharge utility wastewaters and de minimis wastewaters from spill cleanups. Specific utility wastewaters are listed in Table 2. Outfall 003 discharges to an unnamed drainage ditch along Sheldon Road on the west side of the facility. Outfalls 003A, 003B, and 003C discharge to an unnamed drainage ditch along Wallisville Road on the south side of the facility. The two ditches merge at the intersection of Sheldon and Wallisville Roads, then flow to Harris County Flood Control District (HCFCD) Ditch G103-03-02, thence to San Jacinto River Tidal.

Outfall 004

Outfall 004 is primarily a storm water outfall. Other wastewaters that may be discharged include utility wastewaters and de minimis wastewaters from spill cleanups. Specific utility wastewaters are listed in Table 2. Outfall 004 discharges in close proximity to the Outfall 001 discharge and both discharges commingle in the same unnamed drainage ditch, which flows to Wallisville Gully, and thence to San Jacinto River Tidal.

Outfall 005

Outfall 005 is primarily a storm water outfall. Other wastewaters that may be discharged include utility wastewaters and de minimis wastewaters from spill cleanups. Specific utility wastewaters are listed in Table 2. Outfall 005 discharges from the Barge Dock Pond into the barge dock waters, which are part of San Jacinto River Tidal.

Outfall 006

Outfall 006 discharges storm water from the HTC via the HTC Pond. The discharge flows into HCFCD Ditch G103-07-05, thence to San Jacinto River Tidal.

The HTC is a research and development (R&D) facility and currently, all R&D activities are conducted inside the HTC building. Located outside the building are a covered drum storage area, a

thermal oxidizer and associated propane tank, and parking areas. Because the HTC and the HTC pond outfall were started up prior to the addition of Outfall 006 to the TPDES permit, Outfall 006 was originally authorized by MSGP No. TXR05BR93. CVON has not activated this outfall for use under the individual permit WQ0000391000's Other Requirement No. 9, and intends to continue authorization under the MSGP for the foreseeable future. However, CVON wishes to retain Outfall 006 in permit WQ0000391000 for now.

Outfall 007

Outfall 007 was added to the TPDES permit in 2016 when construction storm water was added to the storm outfalls. When construction storm water is added to a TPDES permit, it is the TCEQ's policy to add an outfall to authorize the discharge of storm water from any on-site concrete batch plant associated with construction projects. To-date, CVON has not needed to activate Outfall 007 for any construction projects. Because the location of this type of outfall depends on where a given construction project is located, the outfall routing is not specified in the permit.

WATER SUPPLY

Water used for industrial purposes at CVON is supplied from Lake Houston. The City of Houston owns 100% of Lake Houston and the Coastal Water Authority (CWA) manages Lake Houston.⁵ The intake structure at Lake Houston is controlled and operated by CWA. The City is also a public water system (PWS) with ID TX1010013.

Water from CWA is pumped into a canal system that leads to CVON. The water from the canal is pumped to a surface water treatment unit within CVON where the water is filtered and clarified before use within the manufacturing process. Periodically, the water from Lake Houston may have elevated copper levels, which is monitored at the entry and exit to the CVON surface water treatment unit. Currently, the CWA is implementing the Luce Bayou Interbasin Transfer Project, which will transfer surface water from the Trinity River to Lake Houston via a canal system to meet the increased demand for surface water by municipalities and industry within Harris County. This project is scheduled to be completed in 2023.

EFFLUENT GUIDELINES

National effluent guidelines that apply to the process wastewater from CVON are those for the Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) industry at 40 CFR 414, Subpart D Thermoplastic Resins, Subpart F Commodity Organic Chemicals, Subpart G Bulk Organic Chemicals, and Subpart I Direct Discharge Point Sources That Use End-of-Pipe Biological Treatment. Process production percentages and wastewater flow rates are given in Table 3.

⁵ <https://www.publicworks.houstontx.gov/pud/drinkingwater.html>

Wastewaters received from the EIF cogeneration unit, the HTC R&D facility, Equistar Pipeline, and Lyondell Chemical are not subject to 40 CFR 437 Centralized Waste Treatment effluent guidelines because they are either routed to the CVON wastewater system via conduit (40 CFR 437.1(b)(3)) and/or they are similar to other wastewaters that are generated by CVON and are compatible with CVON's wastewater treatment system (40 CFR 437.1(b)(2)).

Process wastewater from EIF's cogeneration facility is not subject to effluent guidelines at 40 CFR 423, Steam Electric Power Generating, because it is a merchant plant (industrial non-utility).⁶

⁶ United States Environmental Protection Agency, Steam Electric Power Generating Point Source Category: Final Detailed Study Report, EPA 821-R-09-008, pg. 7-10.

Table 1. Raw Materials, Intermediates, and Final Products

Raw Materials	Intermediates	Final Products
1,3-Butadiene [106-99-0]	Acetonitrile [75-05-8]	1,3-Butadiene [106-99-0]
Acetone [67-64-1]	Butene [106-98-9]	Alkylate [64741-64-6]
Butane [106-97-8]	Ethylbenzene [100-41-4]	Benzene [71-43-2]
Butylcellusolve [111-76-2]	Hydrogen [1333-74-0]	Butylene [25167-67-3]
Butylene [25167-67-3]	Isobutane [75-28-5]	Dicyclopentadiene [77-73-6]
Dicumylperoxide [80-43-3]	Methanol [67-56-1]	Ethylene [74-85-1]
Ditertiarybutylperoxide [110-0-54]	Sodium Bisulfite (NAHSO3) [7631-90-5]	Gasoline Blending Stock
Dripolene	Sodium Hydroxide [1310-73-2]	Heavy Pyrolysis Gasoline [64742-48-9]
Ethane [74-84-0]	Sodium Hypochlorite [7681-52-9]	Hydrogen [1333-74-0]
Gas Oil [64742-80-9]	Total Xylene [1330-20-7]	Isoprene [78-79-5]
Hydrogen Peroxide [7722-84-1]	Xylene-m [108-38-3]	Isopropyl Alcohol [67-63-0]
Iso-octyl Alcohol [68526-83-0]	Xylene-o [95-47-6]	Light Pyrolysis Gasoline [68527-26-4]
Isobutane [75.28-5]	Xylene-p [95-47-6]	Methanol [67-56-1]
Isopropyl Alcohol [67-63-0]		Methyl Tertiary Butyl Ether [1634-04-4]
Lithium Acetate [546-89-4]		Piperylene [68477-35-0]
Methanol [67-56-1]		Poly Butadiene Resins [69102-90-5]
Naphtha [8030-30-6]		Propane [74-98-6]
Natural Gas [8006-14-2]		Propylene [115-07-1]
Propane [74-98-6]		Pyrolysis Fuel Oil [64742-90-1]
		Pyrolysis Gas Oil [68475-80-1]
		Toluene [108-88-3]

Table 2. Wastewater Sources by Outfall

Source	Outfall											
	001	002	003	003A	003B	003C	004	005	006	007	101	201
Process wastewater	x											
Houston Technology Center (HTC) wastewater	x										ADD	
Auto shop wastewater	x											
Laboratory wastewater	x											
Cooling tower and boiler blowdown	x											
Cooling tower and boiler maintenance wastewaters	ADD											
Loading area and process area washdown	x											
Tank farm wastewater	x											
Heat exchanger blasting slab wastewater	x											
Steam condensate and blowdown	x											
Demineralization regeneration blowdown	x											
Water treatment wastewaters	ADD											
Methanol neutralization sump wastewater	x											
Hydrostatic test water [7]	x											
Maintenance wastewater	x											
Landfarm runoff	x[8]											
Water from landfarm	ADD											
Groundwater [4]	x											
Domestic wastewater [6]	x										x	x
Storm water	x[1]	x[2]	x	x	x	x	x[2]	x	x			
Utility wastewater [3]	ADD	x	x	x	x	x	x	x				
Construction storm water	ADD	x	x	x	x	x	x	x		x[5]		
De minimis spill cleanup water		x	x	x	x	x	x	x				
Notes												
x Listed in TPDES permit issued 9-5-2017												
ADD Amendment request to add wastewater to existing outfall												
[1] Storm water from process areas and adjacent co-generation facility, first-flush from process areas												
[2] Storm water from non-process areas, secondary containment structures, and post-first flush process storm water												
[3] Utility wastewater includes, but is not limited to: potable water, vehicle rinse water, firewater (which has not come into direct contact with raw material, intermediate product, finished product, by-product, or waste product and is not the result of a fire), hydrotest water, clarified water, demineralized water, steam condensate and blowdown, non-contact once-through cooling water, de minimis amounts of cooling tower water, raw and well water, groundwater seepage, condensate, and analyzer instrumentation drain wastewater.												
[4] Groundwater from monitoring and recovery wells (on-site and off-site)												
[5] Storm water associated with construction activities from a concrete batch plant												
[6] Domestic wastewater from Equistar CVON, Lyondell CVOS, HTC, and EIF Cogen. All domestic wastewater routed from internal Outfalls 101/201 to Outfall 001 treatment system.												
[7] Hydrostatic test water includes water from Equistar Pipeline Operations.												
[8] Because landfarm runoff is expected to be mostly storm water, but can include supernate from wastewater treatment solids, change description to "water from landfarm."												

Table 3. Wastewater Flows by Outfall

Outfall	Wastewater Sources	Monthly Average (MGD)	Flow % by Wastewater Source	Applicable Effluent Guideline (EGL)[1] and Percent of Production
001	Process wastewater and storm water (total)	4.04	45.4%	40 CFR 414, Subpart D (0.2%) 40 CFR 414, Subpart F (69.5%) 40 CFR 414, Subpart G (30.3%)
	Process Wastewater	3.04		
	Storm water [2]	1.00		
	Utility wastewater (total)	4.62	51.9%	N/A
	Cooling tower and boiler blowdown (including Cogen)	2.50		
	Demineralizer / regeneration water	1.10		
	Other miscellaneous flows [3]	1.02		
	101/201	Domestic wastewater	0.24	2.7%
	Outfall 001 Total	8.90	100%	
002	Storm water	Intermittent and variable	N/A	
	Construction storm water			
	De minimis quantities from spill cleanups			
	Utility wastewater			
003, 003A, 003B, 003C	Storm water	Intermittent and variable	N/A	
	Construction storm water			
	De minimis quantities from spill cleanups			
	Utility wastewater			
004	Storm water	Intermittent and variable	N/A	
	Construction storm water			
	De minimis quantities from spill cleanups			
	Utility wastewater			
005	Storm water	Intermittent and variable	N/A	
	Construction storm water			
	De minimis quantities from spill cleanups			
	Utility wastewater			
006	Storm water	Intermittent and variable	N/A	
007	Storm water associated with construction activities from a concrete batch plant	Intermittent and variable	N/A	
Notes				
[1]	40 CFR 414, Subpart D - Organic Chemicals, Plastics, and Synthetic Fibers, Thermoplastic Resins 40 CFR 414, Subpart F - Organic Chemicals, Plastics, and Synthetic Fibers, Commodity Organic Chemicals 40 CFR 414, Subpart G - Organic Chemicals, Plastics, and Synthetic Fibers, Bulk Organic Chemicals			
[2]	Storm water that is potentially contaminated. For purpose of EGL allocations, considered equivalent to process wastewater.			
[3]	Other miscellaneous flows, see Table 2 Wastewater Sources by Outfall.			
N/A	Not applicable			

Table 4. Wastewater Treatment Units

Treatment Unit	Capacity	Associated Outfall
OPI CPI	12,000 gallons	001
OPII CPI	12,000 gallons	001
BT CPI	7,500 gallons	001
Poly BD API	30,000 gallons	001
West API	6,300 gallons	001
East API	24,000 gallons	001
Equalization Tank 1708	200,000 gallons	001
First-Flush Tank 1713	451,000 gallons	001
First-Flush Tank 1714	451,000 gallons	001
Equalization Tank 1715	1,000,000 gallons	001
Equalization Tank 1719	451,000 gallons	001
Equalization Tank 1720	451,000 gallons	001
Equalization Tank 1721	451,000 gallons	001
Equalization Tank 1722	149,000 gallons	001
Equalization Tank 1729	451,000 gallons	001
Equalization Tank 1730	451,000 gallons	001
Equalization Tank 1731	451,000 gallons	001
Equalization Tank 1732	149,000 gallons	001
Equalization Tank 2612	1,000,000 gallons	001
Equalization Tank 2615	66,000 gallons	001
OPI Neutralization Pit (Demin, Regin BD)	165,000 gallons	001
OPII Neutralization Pit (Demin, Regin BD)	165,000 gallons	001
MEK Neutralization Sumps 2 & 3	126,000 gallons	001
Equalization Tank 1750	424,000 gallons	001
Clarifier 1724	212,000 gallons	001
Clarifier 1734	212,000 gallons	001
Aerobic Digestion 1725	451,000 gallons	001
Aerobic Digestion 1735	451,000 gallons	001
Thickener 1726	248,000 gallons	001
Thickener 1736	248,000 gallons	001
Septic Chlorinator	6,500 gallons	001
Septic Chlorinator (Tank 1767)	7,200 gallons	001
East Basin	2,600,000 gallons	001
Holding Pond 1-A	1,300,000 gallons	001
Holding Pond 1-B	532,000 gallons	001
Holding Pond 2-A	1,300,000 gallons	001
Holding Pond 2-B	532,000 gallons	001
Final Holding Basin 1-C	63,000 gallons	001
Final Holding Basin 2-C	63,000 gallons	001
OP2 Storm Water Steam Stripper T-4453	1,500,000 gpd	001
OP1 NESHAP Steam Stripper T-3407	600,000 gpd	001
OP2 NESHAP Steam Stripper T-4407	600,000 gpd	001
Blasting Slab Sump	20,000 gallons	001
Landfarm	24 acres	001
Methanol Neutralization Pits	600,000 gallons	001
Storage Tank TK 38009	13,800 gallons	001
HTC Storm Water Impoundment	1,757,000 gallons	006
HTC Wastewater Sump	5,760 gallons	001
Storage Tank TK 38010	833,700 gallons	001
Storage Tank TK 38011	833,700 gallons	001
Storage Tank TK 3903	4,620,000 gallons	001
Storage Tank TK 48009	13,800 gallons	001
Storage Tank TK 48010	833,700 gallons	001
Storage Tank TK 48011	833,700 gallons	001
Maintenance Drum D- 8804	50,000 gallons	001
Wastewater Diversion Tank D-88014	250,000 gallons	001
Aeration/Clarifier Tanks TK-1709 A/B, TK-1740 A/B	1,600,000 gallons (aeration) 800,000 gallons (clarification)	001
OP1 Supemate Collection Tank TK 1718	1,500 gallons	001
OP2 Supemate Collection Tank TK 1739	1,500 gallons	001
Splitter Box	29,000 gallons	001
Phosphoric Acid Storage Tank	5,000 gallons	001
Wastewater Cooling System and Cooling Tower	3,025 gpm	001
D-8801 DSS Feed Drum	10,000 gallons	001
T-8801 Design Steam Stripper	217 gpm	001
T-8802 Design Steam Stripper	217 gpm	001
Notes		
gpm - gallons per minute		
gpd - gallons per day		

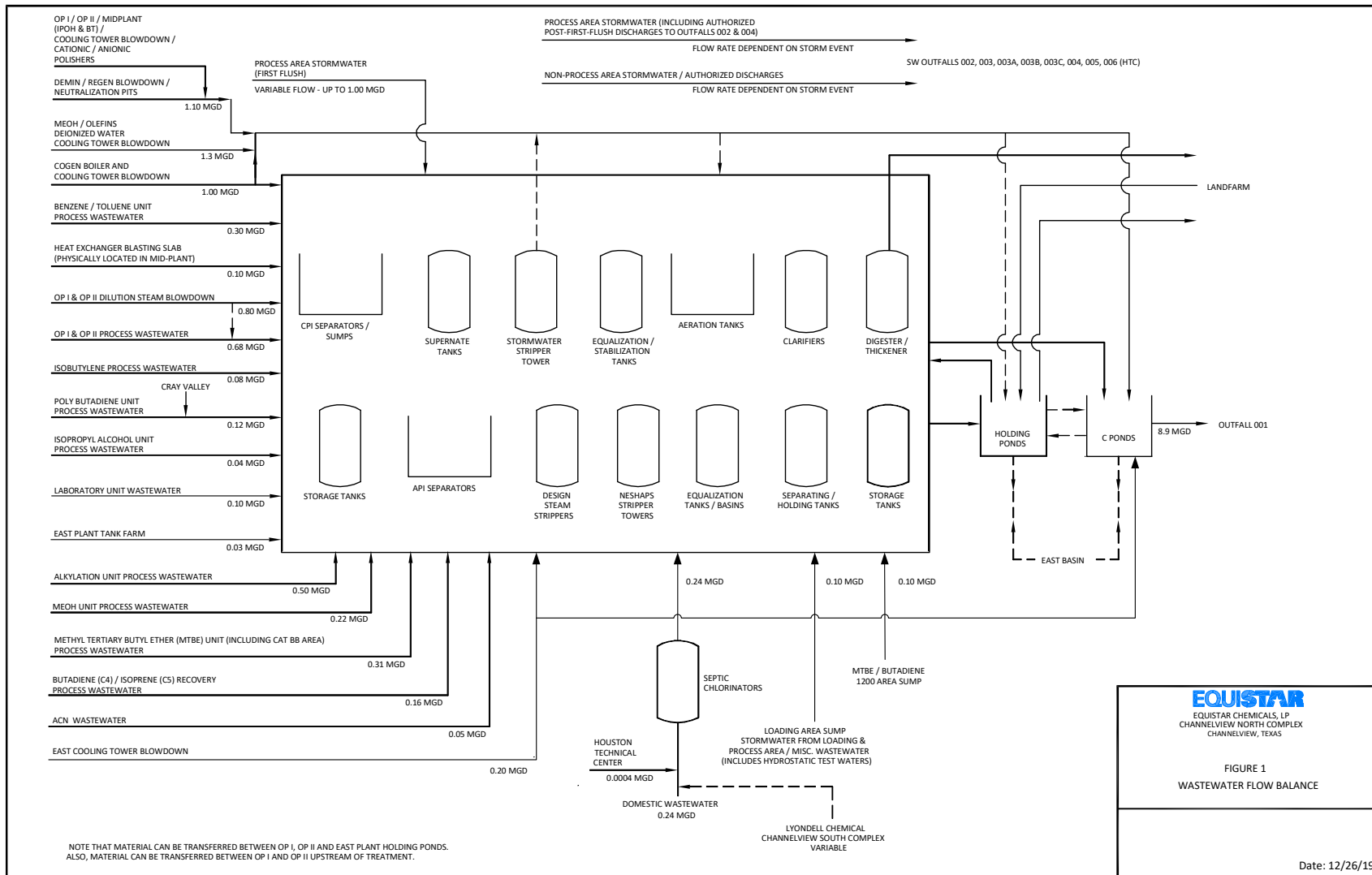


Figure 1. Wastewater Flow Balance

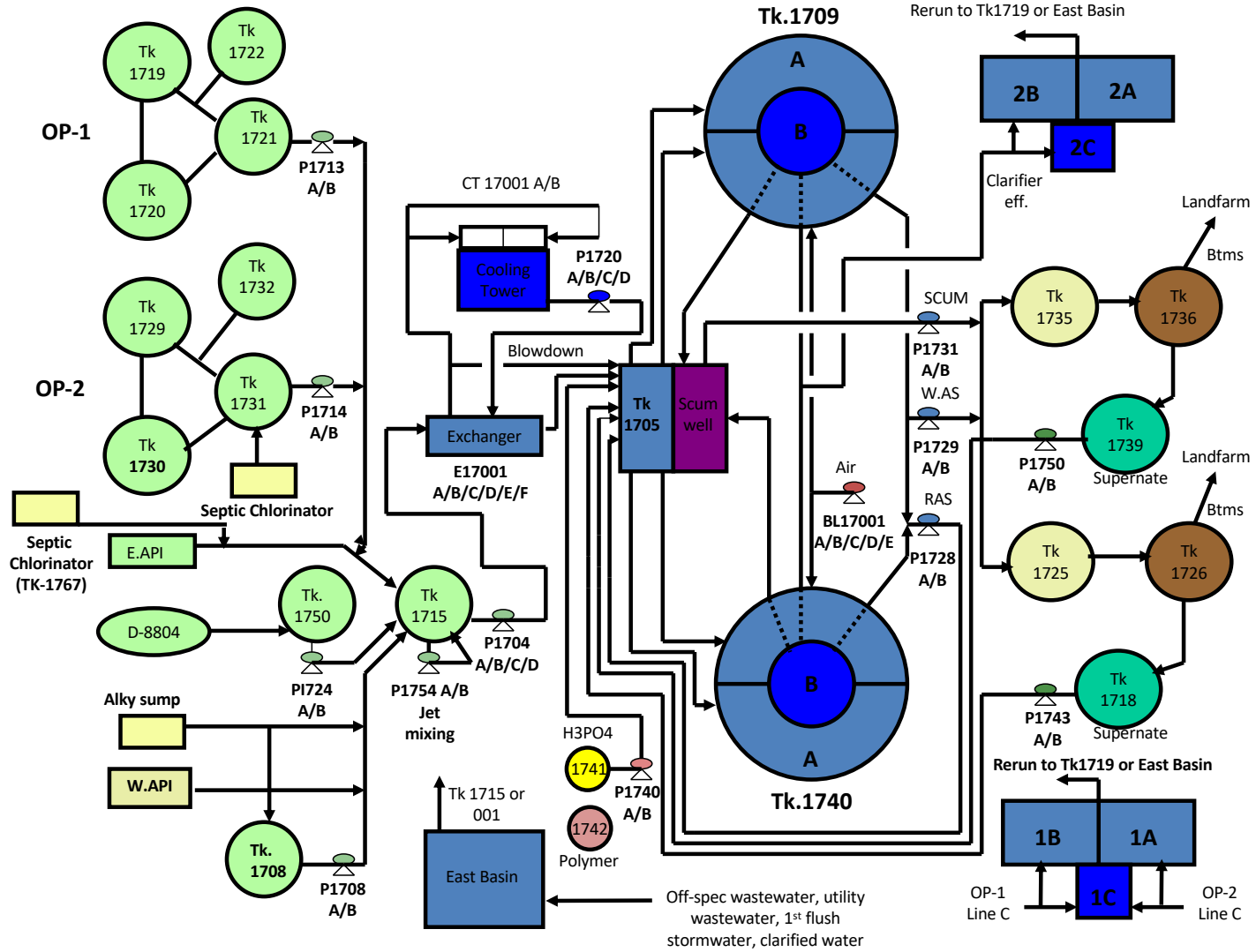


Figure 2. Wastewater Flow Diagram

ATTACHMENT T-2

AMENDMENT REQUESTS EQUISTAR CHEMICALS, LP CHANNELVIEW NORTH COMPLEX

REDUCE MONITORING FREQUENCY FOR OUTFALL 002 FOR FLOW, TOC, PH, AND OIL AND GREASE.....	2
REDUCE MONITORING FREQUENCY FOR OUTFALLS 004 AND 005 FOR OIL AND GREASE.....	3
ADD PROCESS WASTEWATER AND STORM WATER TO OUTFALL 101	3
ADD CONSTRUCTION STORM WATER AND UTILITY WASTEWATERS TO OUTFALL 001.....	3
REMOVAL OF COMPLETED OTHER REQUIREMENTS	4

AMENDMENT REQUESTS EQUISTAR CHEMICALS, LP CHANNELVIEW NORTH COMPLEX

Equistar Chemicals, LP (Equistar) requests the following amendments to TPDES Permit WQ0000391000 for the Channelview North Complex:

1. Reduce the monitoring frequency for Outfall 002 for flow, total organic carbon (TOC), and pH to quarterly, and for oil and grease to annually.
2. Reduce the monitoring frequency for Outfalls 004 and 005 for oil and grease to annually.
3. Add process wastewater and storm water to Outfall 101.
4. Add construction storm water and utility wastewaters to Outfall 001.
5. Remove Other Requirement provisions that have been completed.

REDUCE MONITORING FREQUENCY FOR OUTFALL 002 FOR FLOW, TOC, PH, AND OIL AND GREASE

Equistar is requesting a reduction in sampling frequency for Outfall 002 for flow, TOC, pH, and oil and grease. The current TPDES permit requires weekly monitoring for these parameters and Equistar is requesting quarterly monitoring for flow, TOC, and pH, and annual monitoring for oil and grease. A summary of discharge monitoring report (DMR) data from the period July 2016 – August 2019 is provided in the table below.

Outfall 002 Monitoring Data (July 2016 – August 2019)				
	pH (S.U.)	TOC (mg/L)	O&G* (mg/L)	Zinc (mg/L)
Minimum	6	6	5	0.02
Maximum	8.6	23	5	0.58
Average	7.0	12	5	0.06
Permit Limit	6-9	75	15	Report
*Actual analytical results for oil and grease are typically non-detect at a detection limit of 5 mg/L, but are reported as equal to 5 mg/L in the DMR.				

As the data show, these parameters have typically been at levels well below permit limits, and the TCEQ normally allows less frequent monitoring in such cases. For example, the monitoring frequency for one of the site's other storm water outfalls, Outfall 003, is quarterly for flow, TOC, and pH, and annually for oil and grease.

REDUCE MONITORING FREQUENCY FOR OUTFALLS 004 AND 005 FOR OIL AND GREASE

Equistar is requesting a reduction in sampling frequency for oil and grease for Outfalls 004 and 005 from quarterly to annually. A summary of DMR data from the period September 2016 – June 2019 is provided in the table below. As the data show, oil and grease has typically been at levels well below the permit limit, and the TCEQ normally allows less frequent monitoring in such cases, as it has done for Outfall 003.

Outfall 004 and 005 O&G* (mg/L) (September 2016 – June 2019)		
	Outfall 004	Outfall 005
Minimum	5	5
Maximum	5	5
Average	5	5
Permit Limit	15	15
*Actual analytical results for oil and grease are typically non-detect at a detection limit of 5 mg/L, but are reported as equal to 5 mg/L in the DMR.		

ADD PROCESS WASTEWATER AND STORM WATER TO OUTFALL 101

Equistar is requesting the addition of process wastewater and storm water to internal Outfall 101. The process wastewater and storm water would originate from the site's Houston Technology Center (HTC); a description of the HTC and its wastewaters is found in Attachment T-1 Facility Description.

Outfall 101 is an internal outfall whose effluent is routed to the Outfall 001 wastewater treatment system. Outfall 101 is monitored for flow, bacteria (*Enterococci*), and chlorine residual, which are typical TPDES monitoring parameters for treated domestic wastewater. Equistar is not requesting any change in the monitoring for these parameters at Outfall 101, and notes that any permit requirements for the process wastewater and storm water flows contributed by Outfall 101 can be incorporated into the permit requirements at the final Outfall 001.

ADD CONSTRUCTION STORM WATER AND UTILITY WASTEWATERS TO OUTFALL 001

Equistar is requesting the addition of construction storm water and additional utility wastewaters to Outfall 001 (see Table 2 in Attachment T-1 Facility Description for specific wastewaters to be added).

REMOVAL OF COMPLETED OTHER REQUIREMENTS

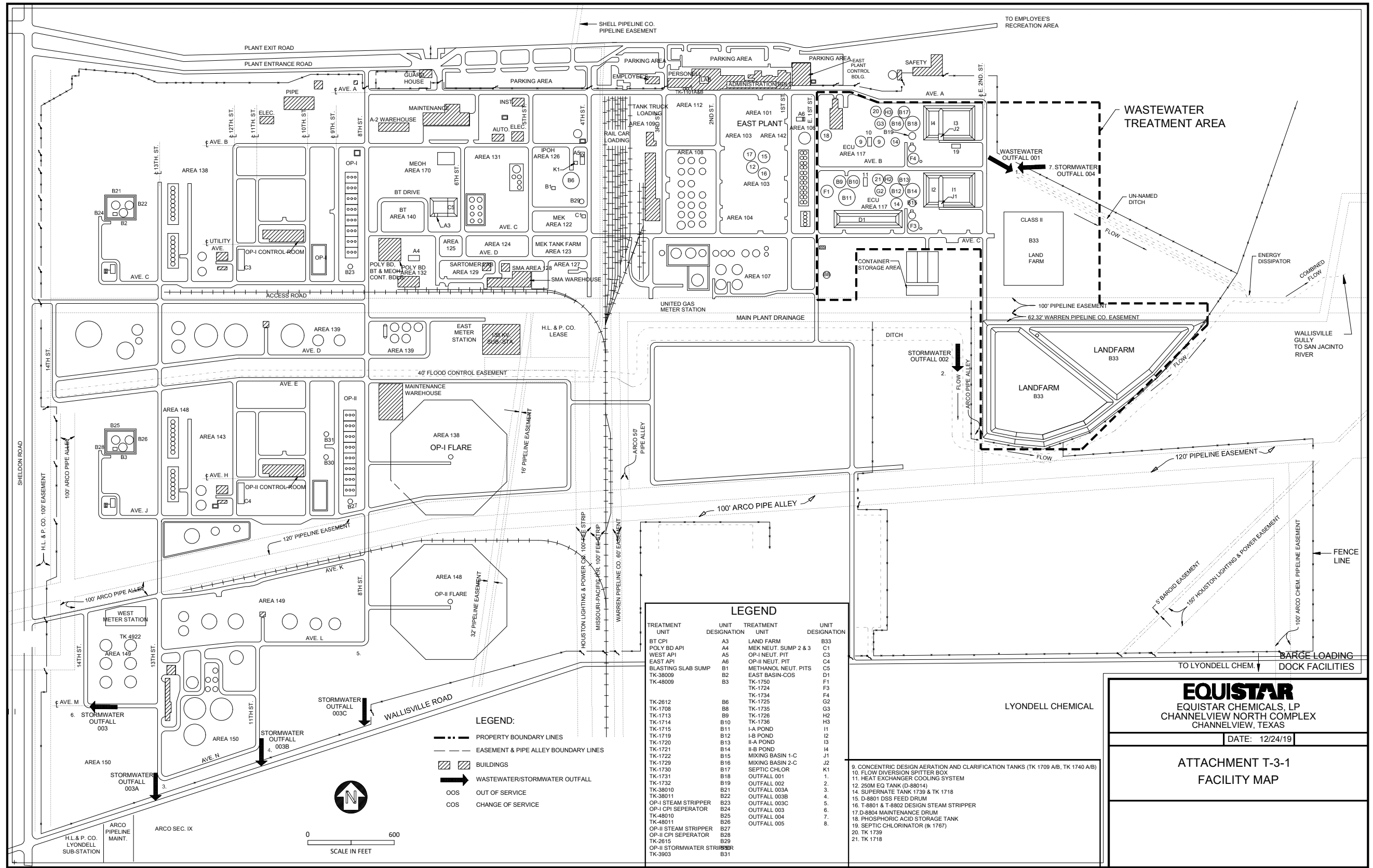
Equistar is requesting the removal of provisions in Other Requirements Nos. 9, 10, 15, and 16 because these requirements have or will be completed by the time the permit is reissued.

Other Requirement No. 9 relates to notification of start-up for Outfalls 006, 007, 101, and 201. Equistar has submitted notification for start-up of Outfalls 101 and 102 and is requesting removal of these two outfalls from the provision. Outfalls 006 and 007 have not been started up and the notification provision should be retained for these outfalls.

Other Requirement No. 10 required analyses for mercury for Outfall 005 and these have been completed.

Other Requirement No. 15 relates to an aluminum partitioning coefficient study for Outfalls 002 and 003. Equistar expects to submit the results of this study to the TCEQ in the first quarter of 2020.

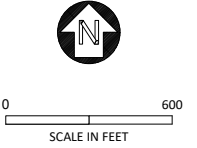
Other Requirement No. 16 contained a 3-year compliance schedule for attaining water quality-based effluent limits (WQBELs) for total copper and hexachlorobenzene for Outfall 001, which Equistar completed in April 2019.



LEGEND

TREATMENT UNIT	UNIT DESIGNATION	TREATMENT UNIT	UNIT DESIGNATION
BT CPI	A3	LAND FARM	B33
POLY BD API	A4	MEK NEUT. SUMP 2 & 3	C1
WEST API	A5	OP-I NEUT. PIT	C3
EAST API	A6	OP-II NEUT. PIT	C4
BLASTING SLAB SUMP	B1	METHANOL NEUT. PITS	C5
TK-38009	B2	EAST BASIN-COS	D1
TK-48009	B3	TK-1750	F1
		TK-1724	F3
		TK-1734	F4
		TK-1725	G2
		TK-1735	G3
TK-1713	B9	TK-1726	H2
TK-1714	B10	TK-1736	H3
TK-1715	B11	I-A POND	I1
TK-1719	B12	I-B POND	I2
TK-1720	B13	II-A POND	I3
TK-1721	B14	II-B POND	I4
TK-1722	B15	MIXING BASIN 1-C	J1
TK-1729	B16	MIXING BASIN 2-C	J2
TK-1730	B17	SEPTIC CHLOR	K1
TK-1731	B18	OUTFALL 001	1.
TK-1732	B19	OUTFALL 002	2.
TK-38010	B21	OUTFALL 003A	3.
TK-38011	B22	OUTFALL 003B	4.
OP-I STEAM STRIPPER	B23	OUTFALL 003C	5.
OP-I CPI SEPARATOR	B24	OUTFALL 003	6.
TK-48010	B25	OUTFALL 004	7.
TK-48011	B26	OUTFALL 005	8.
OP-II STEAM STRIPPER	B27		
OP-II CPI SEPARATOR	B28		
TK-2615	B29		
OP-II STORMWATER STRIPPER	B31		
TK-3903			

- LEGEND:**
- PROPERTY BOUNDARY LINES
 - - - EASEMENT & PIPE ALLEY BOUNDARY LINES
 - ▨ BUILDINGS
 - ➔ WASTEWATER/STORMWATER OUTFALL
 - OOS OUT OF SERVICE
 - COS CHANGE OF SERVICE



EQUISTAR
EQUISTAR CHEMICALS, LP
CHANNELVIEW NORTH COMPLEX
CHANNELVIEW, TEXAS

DATE: 12/24/19

ATTACHMENT T-3-1
FACILITY MAP

- 9. CONCENTRIC DESIGN AERATION AND CLARIFICATION TANKS (TK 1709 AB, TK 1740 AB)
- 10. FLOW DIVERSION SPILLER BOX
- 11. HEAT EXCHANGER COOLING SYSTEM
- 12. 250M EQ TANK (D-88014)
- 14. SUPERNATE TANK-1739 & TK 1718
- 15. D-8801 DSS FEED DRUM
- 16. T-8801 & T-8802 DESIGN STEAM STRIPPER
- 17. D-8804 MAINTENANCE DRUM
- 18. PHOSPHORIC ACID STORAGE TANK
- 19. SEPTIC CHLORINATOR (K 1767)
- 20. TK 1739
- 21. TK 1718