March 10, 2021

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

Subject: Submittal of TPDES Permit Renewal Application
WQ0001039000, NRG Texas Power LLC
16301 Tomball Parkway, Houston, Texas 77064
CN 603207218; RN 100542885

To Whom It May Concern:

NRG Texas Power LLC (NRG) is submitting the enclosed application for a renewal of Texas Pollutant Discharge Elimination System (TPDES) permit No. WQ0001039000 re-authorizing wastewater discharge from the T.H. Wharton Electric Generating Station.

One original and two additional copies of this application are enclosed and each includes the following:

- Industrial Administrative Report 1.0;
- SPIF;
- Industrial Technical Report 1.0;
- Worksheets 1.0, 2.0, 4.0, and 5.0;
- Core Data Form;
- USGS Map;
- Flow Diagram and Water Balance;
- Site Drawing; and
- Supporting Attachments.

If you have any questions regarding this renewal application, please contact Mr. James Gay, NRG Senior Environmental Specialist, at 281-433-2035.

Sincerely,

NRG Texas Power LLC

James Gay
Senior Environmental Specialist

cc: Amanda Ragatz, ERM

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

TCEQ INDUSTRIAL WASTEWATER PERMIT APPLICATION

INDUSTRIAL ADMINISTRATIVE REPORT

Complete and submit this checklist with the application.

APPLICANT NAME: NRG Texas Power LLC

PERMIT NUMBER: WQ0001039000

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	☒	☐	Worksheet 8.0	☐	☒
Administrative Report 1.1	☐	☒	Worksheet 9.0	☐	☒
SPIF	☒	☐	Worksheet 10.0	☐	☒
Core Data Form	☒	☐	Worksheet 11.0	☐	☒
Technical Report 1.0	☒	☐	Worksheet 11.1	☐	☒
Worksheet 1.0	☒	☐	Worksheet 11.2	☐	☒
Worksheet 2.0	☒	☐	Worksheet 11.3	☐	☒
Worksheet 3.0	☐	☒	Original USGS Map	☒	☐
Worksheet 3.1	☐	☒	Affected Landowners Map	☐	☒
Worksheet 3.2	☐	☒	Landowner Disk or Labels	☐	☒
Worksheet 3.3	☐	☒	Flow Diagram	☒	☐
Worksheet 4.0	☒	☐	Site Drawing	☒	☐
Worksheet 4.1	☐	☒	Original Photographs	☐	☒
Worksheet 5.0	☒	☐	Solids Management Program	☐	☒
Worksheet 6.0	☐	☒	Water Balance	☒	☐
Worksheet 7.0	☐	☒			

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.: WQ0001039000 Expiration Date: September 17, 2021

EPA ID No.: TX0006408

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

- ☐ New TPDES permit
- ☐ Major amendment with renewal
- ☐ Renewal with changes
- ☐ Minor amendment without renewal
- ☐ Stormwater only discharge
- ☐ New TLAP permit
- ☐ Major amendment without renewal
- ☒ Renewal without changes
- ☐ Minor modification without renewal

c. If applying for an **amendment** or **modification** of a permit, describe the request in detail: N/A

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 (*40 CFR Parts 400-471*)	☐ $350	☐ $350	☐ $315	☐ $150
Minor facility subject to EPA categorical effluent guidelines (*40 CFR Parts 400-471*)	☐ $1,250	☐ $1,250	☐ $1,215	☐ $150
Major facility	N/A *	☐ $2,050	☒ $2,015	☐ $450

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

e. Payment Information:

Mailed Check or money order number: 07001823

Check or money order amount: $2,015.00

Named printed on check or money order: NRG Texas Power LLC

ePAY Voucher number: Click to enter text

Copy of voucher attached? ☐ Yes **Attachment**: A

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: NRG Texas Power LLC

  (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]: **CN**603207218

- 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: Craig Eckberg

  Title: Senior Environmental Director Credential: As the Sr. Director of Environmental Services, Mr. Craig Eckberg performs policy or decision-making functions for the corporation and therefore meets the signatory requirements in 30 TAC § 305.44.

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**N/A

- 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: N/A

  Title: Click to enter text Credential: Click to enter text

- Provide a brief description of the need for a co-permittee: N/A

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: B

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: Mary Larsen Credential: Click to enter text

Organization Name: NRG Texas Power LLC Title: Senior Environmental Specialist

Mailing Address: 16301 Tomball Pkwy City/State/ZIP Code: Houston, TX 77064

Phone No.: 281-897-2604 Fax No.: Click to enter text E-mail: Mary.Larsen@nrg.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: James Gay Credential: Click to enter text.

Organization Name: NRG Texas Power LLC Title: Senior Environmental Specialist

Mailing Address: 910 Louisiana St City/State/ZIP Code: Houston, TX 77002

Phone No.: 281-733-2035 Fax No.: Click to enter text. E-mail: James.Gay@nrg.com

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: Mary Larsen Credential: Click to enter text.

Organization Name: NRG Texas Power LLC Title: Senior Environmental Specialist

Mailing Address: 16301 Tomball Pkwy City/State/ZIP Code: Houston, TX 77064

Phone No.: 281-897-2604 Fax No.: Click to enter text. E-mail: Mary.Larsen@nrg.com

b. Mr. ☒ Ms. ☐ First/Last Name: James Gay Credential: Click to enter text.

Organization Name: NRG Texas Power LLC Title: Senior Environmental Specialist

Mailing Address: 910 Louisiana St City/State/ZIP Code: Houston, TX 77002

Phone No.: 281-433-2035 Fax No.: Click to enter text. E-mail: James.Gay@nrg.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: Mary Larsen Credential: Click to enter text.

Organization Name: NRG Texas Power LLC Title: Senior Environmental Specialist

Mailing Address: 16301 Tomball Pkwy City/State/ZIP Code: Houston, TX 77064

Phone No.: 281-897-2604 Fax No.: Click to enter text. E-mail: Mary.Larsen@nrg.com

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: Mary Larsen Credential: Click to enter text.

Organization Name: NRG Texas Power LLC Title: Senior Environmental Specialist

Mailing Address: 16301 Tomball Pkwy City/State/ZIP Code: Houston, TX 77064

Phone No.: 281-897-2604 Fax No.: Click to enter text. E-mail: Mary.Larsen@nrg.com

DMR data must be submitted through the NetDMR[2] system. An electronic reporting account can be established once the facility has obtained the permit number.

[2] https://www.tceq.texas.gov/permitting/netdmr

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

a. Individual Publishing the Notices

Mr. ☐ Ms. ☒ First/Last Name: Mary Larsen Credential: Click to enter text.

Organization Name: NRG Texas Power LLC Title: Senior Environmental Specialist

Mailing Address: 16301 Tomball Pkwy City/State/ZIP Code: Houston, TX 77064

Phone No.: 281-897-2604 Fax No.: Click to enter text. E-mail: Mary.Larsen@nrg.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: Mary.Larsen@nrg.com

☐ Fax: Click to enter text.

☐ Regular Mail (USPS)

Mailing Address: Click to enter text. City/State/ZIP Code: Click to enter text.

c. Contact in the Notice

Mr. ☐ Ms. ☒ First/Last Name: Mary Larsen Credential: Click to enter text.

Organization Name: NRG Texas Power LLC Title: Senior Environmental Specialist

Phone No.: 281-897-2604 Fax No.: Click to enter text. E-mail: Mary.Larsen@nrg.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: Direct weblink will be provided Location within the building: Click to enter text.

Physical Address of Building: https://www.nrg.com/legal/tceq-filings.html

City: Spring 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.

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 Registry[3] 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): **RN**100542885

b. Name of project or site (the name known by the community where located): T.H. Wharton Electric Generating Station

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: NRG Texas Power LLC

   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: NRG Texas Power LLC

   Mailing Address: 901 Louisiana City/State/ZIP Code: Houston, TX 77002

   Phone No.: 281-433-2035 Fax No.: Click to enter text E-mail: Click to enter text

   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: Click to enter text City/State/ZIP Code: Click to enter text

   Phone No.: Click to enter text Fax No.: Click to enter text E-mail: Click to enter text

[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. **Attachment**: N/A

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

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

Mailing Address: Click to enter text. City/State/ZIP Code: Click to enter text.

Phone No.: Click to enter text. Fax No.: Click to enter text. E-mail: Click to enter text.

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

(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.

- ☒ One-mile radius and three-miles downstream information
- ☒ Applicant's property boundaries
- ☐ Treatment facility boundaries
- ☒ Labeled point(s) of discharge and highlighted discharge route(s)
- ☐ Effluent disposal site boundaries
- ☒ All wastewater ponds
- ☐ Sewage sludge disposal site
- ☐ New and future construction
- ☒ Attachment: C

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: N/A

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: N/A

e. City nearest the outfall(s): Houston

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: N/A

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. N/A

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: N/A

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: WQ0001039000

Applicant Name: NRG Texas Power LLC

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): Craig Eckberg

Signatory title: Senior Environmental Director

Signature: C.R.E. Date: 15 March 21

(Use blue ink)

Subscribed and Sworn to before me by the said Craig Eckberg

on this 15th day of March, 20 21.

My commission expires on the 28th day of May, 20 21.

Notary Public

AAKASH PATEL
My Notary ID # 132028054
Expires May 28, 2023

[SEAL]

Montgomery
County, Texas

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

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: NRG Texas Power LLC

2. Permit No.: WQ0001039000 EPA ID No.: TX0006408

3. Address of the project (location description that includes street/highway, city/vicinity, and county): 16301 Tomball Parkway, Houston, TX 77064, Harris County

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: Mary Larsen Title: Senior Environmental Specialist Credential: Click to enter text

   Organization Name: NRG Texas Power LLC

   Mailing Address: 16301 Tomball Pkwy City/State/ZIP Code: Houston, TX 77064

   Phone No.: 281-897-2604 Fax No.: Click to enter text E-mail: Mary.Larsen@nrg.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 Outfall 001 to an unnamed ditch; thence to Greens Bayou Above Tidal in Segment No. 1016 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 Attachment A

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

   Attachment: SPIF Attachment B

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): N/A

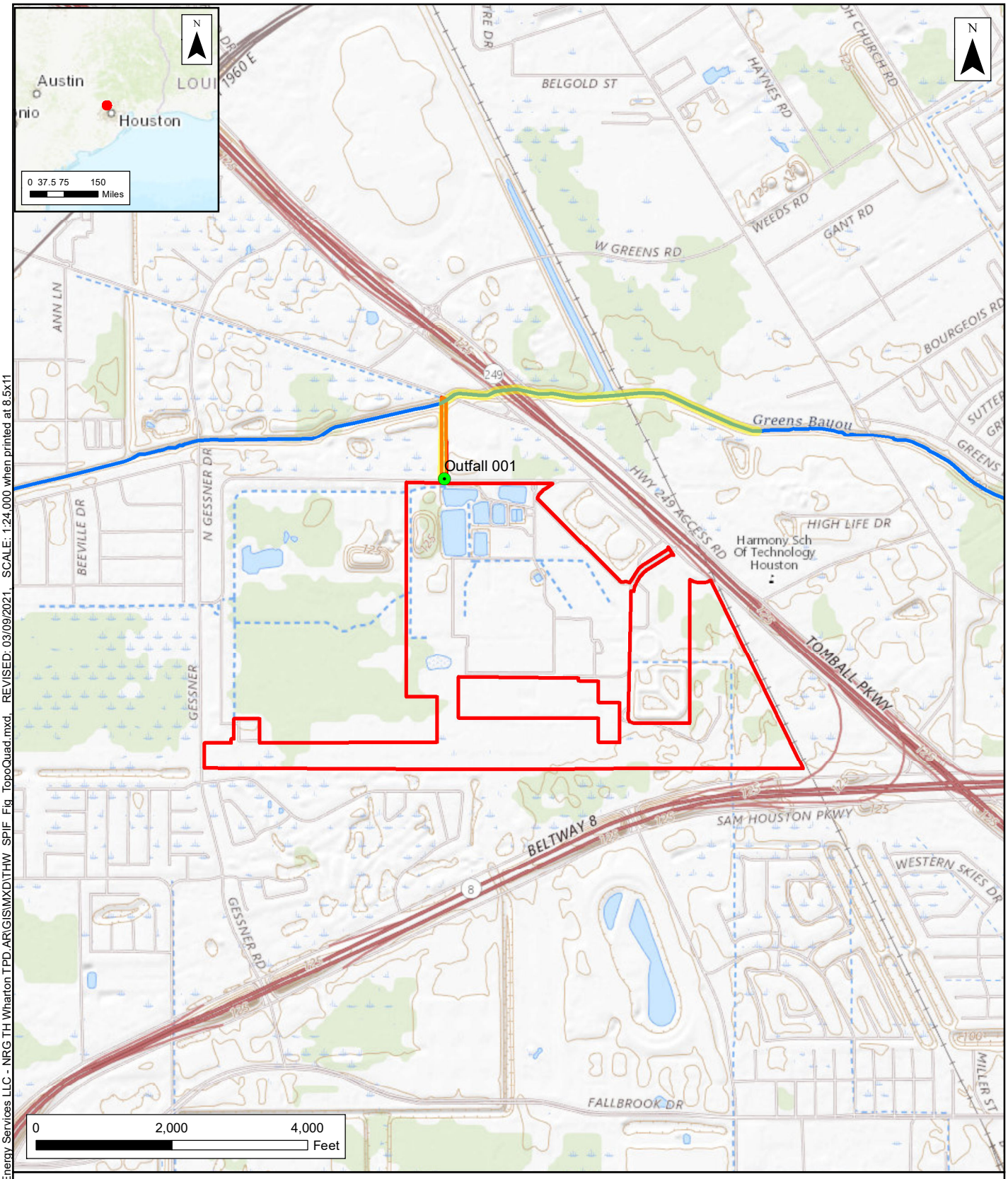
12. Describe existing disturbances, vegetation, and land use: Electric Generating Station

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: N/A

14. Provide a brief history of the property, and name of the architect/builder, if known: N/A

SPIF ATTACHMENT A FIGURE



Legend

- Property boundary
- Outfall
- Discharge route

SPIF Figure
Satsuma
1:24,000 USGS Quadrangles
TPDES Permit Renewal
NRG Texas Power LLC
Houston, Texas

Environmental Resources Management
www.erm.com

Source: Esri - USGS Topoographic Map; WGS 1984 Web Mercator Auxiliary Sphere

P:\Projects\0547925\DM\29252H(3a).pdf

H:\Houston\Projects\0547925 NRG Energy Services LLC - NRG TH Wharton TPD.AR\GIS\MXD\THW_SPIF_Fig_TopoQuad.mxd, REVISED: 03/09/2021, SCALE: 1:24,000 when printed at 8.5x11

SPIF ATTACHMENT B PHOTOS



Photo 1: B Demineralizer and Laboratory, facing west.



Photo 2: Settling Basin and Water Storage Tank, facing west.



Photo 3: B Control Room and Instrumentation & Control Shop, facing south.



Photo 4: Chemical Waste Treatment System, facing north.



Photo 5: Gas Turbines 31, 32, 33, and 34, facing north.



Photo 6: Gas Turbines 41, 42, 43, and 44, facing north.



Photo 7: Gas Turbines 51, 52, and 53, facing north.



Photo 8: Gas Turbines 54, 55, and 56, facing north.



Photo 9: Generating Units 1 & 2 and associated Cooling Towers (all retired), facing north.



Photo 10: Contractor Building and Weld Shop, facing northwest.



Photo 11: Cooling Tower for Units 3 & 4, facing northeast.



Photo 12: Gas Turbine 1 and Floor Drain Treatment System, facing north.



Photo 13: Warehouse, Mechanic Shop, and Administrative Building, facing north.



Photo 14: Floor Drain Treatment System, facing northeast.

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).

T.H. Wharton Electric Generating Station is a steam electric generating facility. Electricity is generated using steam and natural gas fired turbines. The primary SIC code is 4911.

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

See Attachment D

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

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

Materials List

Raw Materials	Intermediate Products	Final Products
Natural Gas	Steam	Electricity
Miscellaneous Chemicals	Demineralized Water	
Inventory (includes boiler and		
cooling tower chemicals		
as identified in Attachment I)		

Attachment: N/A

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: E

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: FIRM Panel: 48201C0435M

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 F

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: G

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	Pond #2	Pond #3	Pond #4
Use Designation: (T) (D) (C) or (E)	T	T	T	T
Associated Outfall Number	001	001	001	001
Liner Type (C) (I) (S) or (A)	N/A	N/A	N/A	N/A
Alt. Liner Attachment Reference	N/A	N/A	N/A	N/A
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				
Length (ft)	309	158	275	419
Width (ft)	576	274	196	173
Max Depth From Water Surface (ft), Not Including Freeboard	15.5	10.3	5.2	3.3
Freeboard (ft)	2.0	2.0	2.0	2.0
Surface Area (acres)	4.25	1.25	1.23	1.76
Storage Capacity (gallons)	20.6M	4.2M	2.1M	1.9M
40 CFR Part 257, Subpart D, Y/N	N	N	N	N
Date of Construction	Unknown	Unknown	Unknown	Unknown

Impoundment Information

Parameter	Pond #5	Pond #6	Pond #	Pond #
Use Designation: (T) (D) (C) or (E)	T	C		
Associated Outfall Number	101, 201	201		
Liner Type (C) (I) (S) or (A)	C	C		
Alt. Liner Attachment Reference	N/A	N/A		
Leak Detection System, Y/N	N	N		
Groundwater Monitoring Wells, Y/N	N	N		
Groundwater Monitoring Data Attachment	N/A	N/A		
Pond Bottom Located Above The Seasonal High-Water Table, Y/N				
Length (ft)	158	309		
Width (ft)	253	163		
Max Depth From Water Surface (ft), not including freeboard	12.4	13.1		
Freeboard (ft)	2.0	2.0		
Surface Area (acres)	0.74	1.05		
Storage Capacity (gallons)	3.0M	4.5M		
40 CFR Part 257, Subpart D, Y/N	N	N		
Date of Construction	Unknown	Unknown		

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

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

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

Attachment: N/A

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

Attachment: N/A

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

Attachment: N/A

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/0r numbered accordingly (i.e., page 6a, 6b, etc.) may be used to provide information on the additional outfalls.

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

Outfall Latitude and Longitude

Outfall Number	Latitude-decimal degrees	Longitude-decimal degrees
001	29.947682	-95.536928
101	29.946667	-95.533889
201	29.945000	-95.533611
301	29.943333	-95.530833
401	29.945	-95.533611

Outfall Location Description

Outfall Number	Location Description
001	Approximate location of Parshall flume at the outlet of Pond 4 in the north part of the facility
101	Approximate location of end of pipe from the chemical waste treatment system in the north central part of the facility to a conveyance ditch
201	Approximate location of end of pipe from the chemical waste treatment system in the north central part of the facility to a conveyance ditch
301	Approximate location of end of pipe from oily waste treatment system to conveyance ditch in the east central part of the facility
401	Approximate location where treated domestic wastewater is discharged after treatment and prior to mixing with any other waters

Description of Sampling Points (if different from Outfall location)

Outfall Number	Description of Sampling Point
	N/A

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	3.95	6.87	N/A	N/A	N/A
101	Report	Report	N/A	N/A	N/A
201	Report	Report	N/A	N/A	N/A
301	Report	Report	N/A	N/A	N/A
401	Report	Report	N/A	N/A	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	Parshall Flume
101	Y	N	Flow Meter

Outfall Number	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
201	Y	N	Flow Meter
301	Y	N	Flow Meter
401	Y	N	Flow Meter

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	12	10	12
201	Y	N	N	12	1	12
301	Y	N	N	12	20	12
401	Y	N	N	6	30	12

Wastestream Contributions

Outfall No.: 001

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Cooling tower blowdown	0.342**	43
Low volume wastes (Outfalls 101 and 301)	0.151**	19
Metal cleaning wastes (Outfall 201)	0.134**	17
Treated domestic wastewater (Outfall 401)	0.005**	1
Stormwater	Variable	20
**two-year average 10/01/18-9/30/20		

Outfall No.: 101

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Low volume wastes	0.135**	99
Storm water	Variable	1
**two-year average 10/01/18-9/30/20		

Outfall No.: 201

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Metal cleaning wastes	0.001**	1
Stormwater	Variable	99
**two-year average 10/01/18-9/30/20		

Attachment: H

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: I

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	1	758,000	3,456,000
Boilers	2	800,000	24,000

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: J

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**: Click to enter text

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

Domestic Sewage Plant/Hauler Name

Plant/Hauler Name	Permit/Registration No.
WCA Needville	96322
Specialized Waste Systems	40514

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: 24-acute using Daphnia pulex or Ceriodaphnia dubia and Pimephales promelas test organisms. Chronic using Ceriodaphnia dubia and Pimephales promelas as test organisms.

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

Attachment: All test results have been submitted to TCEQ.

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: N/A

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

☐ Yes ☐ No

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

Attachment: N/A

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

☐ Yes ☐ No

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

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)
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				
Owner				
Operator				

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: 1011093

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: N/A

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*: N/A

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 11.0, 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 11.0 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 11.0, Items 2 and 3, and Worksheet 11.2:

☐ Track I - AIF greater than 2 MGD, but less than 10 MGD
- Attach information required by *40 CFR §§ 125.86(b)(2)-(4)*.

☐ Track I - AIF greater than 10 MGD
- Attach information required by *40 CFR § 125.86(b)*.

☐ Track II
- Attach information required by *40 CFR § 125.86(c)*.

Attachment: N/A

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.

N/A

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
Steam Electric Generation	423

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
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 K

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
STAG Unit 3-Heat Recovery Steam Turbine and Generators	423	12	8/16/1974
STAG Unit 4-Heat Recovery Steam Turbine and Generators	423	12	8/16/1974

Process	EPA Guideline: Part	EPA Guideline: Subpart	Date Process/ Construction Commenced

WORKSHEET 2.0
POLLUTANT ANALYSES REQUIREMENTS

Worksheet 2.0 **is required** for all applications submitted for a TPDES permit. Worksheet 2.0 is not required for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater associated with industrial activities.

1. LABORATORY ACCREDITATION (Instructions, Page 49)

Effective July 1, 2008, all laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification* with the following general exemptions:

a. The laboratory is an in-house laboratory and is:
   i. periodically inspected by the TCEQ; or
   ii. located in another state and is accredited or inspected by that state; or
   iii. performing work for another company with a unit located in the same site; or
   iv. performing pro bono work for a governmental agency or charitable organization.

b. The laboratory is accredited under federal law.

c. The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.

d. The laboratory supplies data for which the TCEQ does not offer accreditation.

Review *30 TAC Chapter 25* for specific requirements. The following certification statement shall be signed and submitted with every application. See Instructions, Page 32, for a list of approved signatories.

I, Craig R. Eckberg, certify that all laboratory tests submitted with this application meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification*.

C.R.E. 15March21

(Signature)

2. GENERAL TESTING REQUIREMENTS (Instructions, Pages 49-51)

a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): 9/15/2020-10/13/2020

b. ☒ Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.

c. Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm. **Attachment:** L

3. SPECIFIC TESTING REQUIREMENTS (Instructions, Pages 51-62)

Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** N/A

TABLE 1 and TABLE 2 (Instructions, Page 50)

Completion of Tables 1 and 2 **is required** for **all external outfalls** for all TPDES permit applications.

Table 1 for Outfall No.: 001

Samples are (check one): ☐ Composite ☒ Grab

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
BOD (5-day)	<2.00	2.47	2.8	3.07
CBOD (5-day)	<2.00	2.04	2.42	<2.00
Chemical oxygen demand	23	<5.00	<5.00	<5.00
Total organic carbon	5.27	4.27	3.49	2.19
Dissolved oxygen	6.94	8.25	8.28	8.51
Ammonia nitrogen	<.025	<.025	0.12	<.025
Total suspended solids	53	48	54	41.5
Nitrate nitrogen	<.03	<.03	<.03	<.03
Total organic nitrogen	0.96	0.82	0.7	0.5
Total phosphorus	0.306	0.355	0.092	0.133
Oil and grease	3.4	2.55	<0.610	<0.610
Total residual chlorine	0.01	0.08	0.04	0.03
Total dissolved solids	1180	1090	426	434
Sulfate	412	400	152	82.4
Chloride	173	170	63	64.8
Fluoride	0.391	0.278	0.145	<.050
Total alkalinity (mg/L as CaCO3)	140	134	85.9	142
Temperature (°F)	86.54	73.4	73.94	77
pH (standard units)	8.47	8.15	7.78	8

Table 2 for Outfall No.: 001

Samples are (check one): ☐ Composites ☒ Grabs

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Aluminum, total	971	669	660	319	2.5
Antimony, total	<5	<5	<5	<5	5
Arsenic, total	13	12.7	7.34	6.7	0.5
Barium, total	496	475	233	286	3
Beryllium, total	<0.5	<0.5	<0.5	<0.5	0.5
Cadmium, total	<1	<1	<1	<1	1
Chromium, total	3.48	3.28	<3	<3	3
Chromium, hexavalent	<3	<3	<3	<3	3
Chromium, trivalent	<0.000251	<0.000251	<0.000251	0.000203	N/A
Copper, total	12.1	9.43	12.2	11.2	2
Cyanide, available	<2.0	<2.0	<2.0	<2.0	2/10
Lead, total	0.977	0.821	1.18	1.11	0.5
Mercury, total	<0.0016	0.0022	0.0028	0.002	0.005/0.0005
Nickel, total	4.99	4.76	5.33	4.61	2
Selenium, total	5.18	<5	<5	<5	5
Silver, total	<0.5	<0.5	<0.5	<0.5	0.5
Thallium, total	<0.5	<0.5	<0.5	<0.5	0.5
Zinc, total	7.7	5.38	6.75	8.36	5.0

TABLE 3 (Instructions, Page 50)

Completion of Table 3 **is required** for all **external outfalls** which discharge process wastewater.

Partial completion of Table 3 **is required** for all **external outfalls** which discharge non-process wastewater and stormwater associated with industrial activities commingled with other wastestreams (see instructions for additional guidance).

Table 3 for Outfall No.: 001

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Acrylonitrile	<50	<50	<50	<50	50
Anthracene	<10	<10	<10	<10	10
Benzene	<10	<10	<10	<10	10
Benzidine	<50	<50	<50	<50	50
Benzo(a)anthracene	<5	<5	<5	<5	5
Benzo(a)pyrene	<5	<5	<5	<5	5
Bis(2-chloroethyl)ether	<10	<10	<10	<10	10
Bis(2-ethylhexyl)phthalate	<10	<10	<10	<10	10
Bromodichloromethane [Dichlorobromomethane]	<10	<10	<10	<10	10
Bromoform	<10	<10	<10	<10	10
Carbon tetrachloride	<2	<2	<2	<2	2
Chlorobenzene	<10	<10	<10	<10	10
Chlorodibromomethane [Dibromochloromethane]	<10	<10	<10	<10	10
Chloroform	<10	<10	<10	<10	10
Chrysene	<5	<5	<5	<5	5
m-Cresol [3-Methylphenol]	<10	<10	<10	<10	10
o-Cresol [2-Methylphenol]	<10	<10	<10	<10	10
p-Cresol [4-Methylphenol]	<10	<10	<10	<10	10
1,2-Dibromoethane	<10	<10	<10	<10	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<10	<10	<10	<10	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<10	<10	<10	<10	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<10	<10	<10	<10	10
3,3'-Dichlorobenzidine	<5	<5	<5	<5	5
1,2-Dichloroethane	<10	<10	<10	<10	10
1,1-Dichloroethene [1,1-Dichloroethylene]	<10	<10	<10	<10	10
Dichloromethane [Methylene chloride]	<20	<20	<20	<20	20
1,2-Dichloropropane	<10	<10	<10	<10	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<10	<10	<10	<10	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
2,4-Dimethylphenol	<10	<10	<10	<10	10
Di-n-Butyl phthalate	<10	<10	<10	<10	10
Ethylbenzene	<10	<10	<10	<10	10
Fluoride	<500	<500	<500	<500	500
Hexachlorobenzene	<5	<5	<5	<5	5
Hexachlorobutadiene	<10	<10	<10	<10	10
Hexachlorocyclopentadiene	<10	<10	<10	<10	10
Hexachloroethane	<20	<20	<20	<20	20
Methyl ethyl ketone	<50	<50	<50	<50	50
Nitrobenzene	<10	<10	<10	<10	10
N-Nitrosodiethylamine	<20	<20	<20	<20	20
N-Nitroso-di-n-butylamine	<20	<20	<20	<20	20
Nonylphenol	<333	<333	<333	<333	333
Pentachlorobenzene	<20	<20	<20	<20	20
Pentachlorophenol	<5	<5	<5	<5	5
Phenanthrene	<10	<10	<10	<10	10
Polychlorinated biphenyls (PCBs) (**)	<0.2	<0.2	<0.2	<0.2	0.2
Pyridine	<20	<20	<20	<20	20
1,2,4,5-Tetrachlorobenzene	<20	<20	<20	<20	20
1,1,2,2-Tetrachloroethane	<20	<20	<20	<20	10
Tetrachloroethene [Tetrachloroethylene]	<10	<10	<10	<10	10
Toluene	<10	<10	<10	<10	10
1,1,1-Trichloroethane	<10	<10	<10	<10	10
1,1,2-Trichloroethane	<10	<10	<10	<10	10
Trichloroethene [Trichloroethylene]	<10	<10	<10	<10	10
2,4,5-Trichlorophenol	<50	<50	<50	<50	50
TTHM (Total trihalomethanes)	<10	<10	<10	<10	10
Vinyl chloride	<10	<10	<10	<10	10

(*) Indicate units if different from µg/L.
(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Pages 50-51)

Partial completion of Table 4 **is required** for each **external outfall** based on the conditions below.

a. Tributyltin

Is this facility an industrial/commercial facility which currently or proposes to directly dispose of wastewater from the types of operations listed below or a domestic facility which currently or proposes to receive wastewater from the types of industrial/commercial operations listed below?

☐ Yes ☒ No

If **yes**, check the box next to each of the following criteria which apply and provide the appropriate testing results in Table 4 below (check all that apply).

☐ Manufacturers and formulators of tributyltin or related compounds.
☐ Painting of ships, boats and marine structures.
☐ Ship and boat building and repairing.
☐ Ship and boat cleaning, salvage, wrecking and scaling.
☐ Operation and maintenance of marine cargo handling facilities and marinas.
☐ Facilities engaged in wood preserving.
☐ Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. Enterococci (discharge to saltwater)

i. This facility discharges/proposes to discharge directly into saltwater receiving waters **and** Enterococci bacteria are expected to be present in the discharge based on facility processes.

☐ Yes ☒ No

ii. Domestic wastewater is/will be discharged.

☐ Yes ☒ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

c. E. coli (discharge to freshwater)

i. This facility discharges/proposes to discharge directly into freshwater receiving waters **and** *E. coli* bacteria are expected to be present in the discharge based on facility processes.

☐ Yes ☒ No

ii. Domestic wastewater is/will be discharged.

☒ Yes ☐ No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

Table 4 for Outfall No.: 001
Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)	N/A	N/A	N/A	N/A	0.010
Enterococci (cfu or MPN/100 mL)	N/A	N/A	N/A	N/A	N/A
E. coli (cfu or MPN/100 mL)	<1	70	37	517	N/A

TABLE 5 (Instructions, Page 51)

Completion of Table 5 **is required** for all **external outfalls** which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters which may contain pesticides or herbicides, check N/A.

☒ N/A

Table 5 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Aldrin					0.01
Carbaryl					5
Chlordane					0.2
Chlorpyrifos					0.05
4,4'-DDD					0.1
4,4'-DDE					0.1
4,4'-DDT					0.02
2,4-D					0.7
Danitol [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090
Endosulfan I (*alpha*)					0.01
Endosulfan II (*beta*)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (*alpha*)					0.05
Hexachlorocyclohexane (*beta*)					0.05
Hexachlorocyclohexane (*gamma*) [Lindane]					0.05
Hexachlorophene					10
Malathion					0.1
Methoxychlor					2.0
Mirex					0.02
Parathion (ethyl)					0.1
Toxaphene					0.3
2,4,5-TP [Silvex]					0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 52)

Completion of Table 6 **is required** for all **external outfalls**.

Table 6 for Outfall No.: 001

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutants	Believed Present	Believed Absent	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	MAL (µg/L)*
Bromide	☒	☐	0.768	0.824	0.476	0.57	400
Color (PCU)	☐	☒	150	100	75	30	—
Nitrate-Nitrite (as N)	☒	☐	<0.03	<0.03	<0.03	<0.03	—
Sulfide (as S)	☐	☒	<0.011	<0.011	<0.011	<0.011	—
Sulfite (as SO3)	☐	☒	<5 H	<5 H	<5 H	<5 H	—
Surfactants	☐	☒	<0.008	<0.008	<0.008	<0.008	—
Boron, total	☐	☒	0.121	0.0959	0.0509	0.0616	20
Cobalt, total	☐	☒	0.000475	0.000412	0.000392	0.000485	0.3
Iron, total	☒	☐	0.513	0.357	0.348	0.224	7
Magnesium, total	☒	☐	13.8	13.9	5.83	6.26	20
Manganese, total	☐	☒	0.044	0.0467	0.0393	0.0487	0.5
Molybdenum, total	☐	☒	0.00112	0.00103	<0.001	<0.001	1
Tin, total	☐	☒	<.005	<.005	<.005	<.005	5
Titanium, total	☐	☒	0.0597	<0.030	0.0453	<0.030	30

* Indicate units if different from µg/L.

TABLE 7 (Instructions, Page 52)

Check the box next to any of the industrial categories applicable to this facility. If no categories are applicable, check N/A. If GC/MS testing is required, check the box provided to confirm the testing results for the appropriate parameters are provided with the application.

☐ N/A

Table 7 for Applicable Industrial Categories

Industrial Category	40 CFR Part	Volatiles Table 8	Acids Table 9	Bases/Neutrals Table 10	Pesticides Table 11
☐ Adhesives and Sealants		☐ Yes	☐ Yes	☐ Yes	No
☐ Aluminum Forming	467	☐ Yes	☐ Yes	☐ Yes	No
☐ Auto and Other Laundries		☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Battery Manufacturing	461	☐ Yes	No	☐ Yes	No
☐ Coal Mining	434	No	No	No	No
☐ Coil Coating	465	☐ Yes	☐ Yes	☐ Yes	No
☐ Copper Forming	468	☐ Yes	☐ Yes	☐ Yes	No
☐ Electric and Electronic Components	469	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Electroplating	413	☐ Yes	☐ Yes	☐ Yes	No
☐ Explosives Manufacturing	457	No	☐ Yes	☐ Yes	No
☐ Foundries		☐ Yes	☐ Yes	☐ Yes	No
☐ Gum and Wood Chemicals - Subparts A,B,C,E	454	☐ Yes	☐ Yes	No	No
☐ Gum and Wood Chemicals - Subparts D,F	454	☐ Yes	☐ Yes	☐ Yes	No
☐ Inorganic Chemicals Manufacturing	415	☐ Yes	☐ Yes	☐ Yes	No
☐ Iron and Steel Manufacturing	420	☐ Yes	☐ Yes	☐ Yes	No
☐ Leather Tanning and Finishing	425	☐ Yes	☐ Yes	☐ Yes	No
☐ Mechanical Products Manufacturing		☐ Yes	☐ Yes	☐ Yes	No
☐ Nonferrous Metals Manufacturing	421,471	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Ore Mining - Subpart B	440	No	☐ Yes	No	No
☐ Organic Chemicals Manufacturing	414	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Paint and Ink Formulation	446,447	☐ Yes	☐ Yes	☐ Yes	No
☐ Pesticides	455	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Petroleum Refining	419	☐ Yes	No	No	No
☐ Pharmaceutical Preparations	439	☐ Yes	☐ Yes	☐ Yes	No
☐ Photographic Equipment and Supplies	459	☐ Yes	☐ Yes	☐ Yes	No
☐ Plastic and Synthetic Materials Manufacturing	414	☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Plastic Processing	463	☐ Yes	No	No	No
☐ Porcelain Enameling	466	No	No	No	No
☐ Printing and Publishing		☐ Yes	☐ Yes	☐ Yes	☐ Yes
☐ Pulp and Paperboard Mills - Subpart C	430	☐ *	☐ Yes	☐ *	☐ Yes
☐ Pulp and Paperboard Mills - Subparts F, K	430	☐ *	☐ Yes	☐ *	☐ *
☐ Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	☐ Yes	☐ Yes	☐ *	☐ *
☐ Pulp and Paperboard Mills - Subparts I, J, L	430	☐ Yes	☐ Yes	☐ *	☐ Yes
☐ Pulp and Paperboard Mills - Subpart E	430	☐ Yes	☐ Yes	☐ Yes	☐ *
☐ Rubber Processing	428	☐ Yes	☐ Yes	☐ Yes	No
☐ Soap and Detergent Manufacturing	417	☐ Yes	☐ Yes	☐ Yes	No
☒ Steam Electric Power Plants	423	☒ Yes	☒ Yes	No	No
☐ Textile Mills (Not Subpart C)	410	☐ Yes	☐ Yes	☐ Yes	No
☐ Timber Products Processing	429	☐ Yes	☐ Yes	☐ Yes	☐ Yes

* Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Page 52)

Completion of Tables 8, 9, 10, and 11 **is required** as specified in Table 7 for all **external outfalls** that contain process wastewater.

Completion of Tables 8, 9, 10, and 11 **may be required** for types of industry not specified in Table 7 for specific parameters that are believed to be present in the wastewater.

Table 8 for Outfall No.: 001 : Volatile Compounds

Samples are (check one): ☐ **Composites** ☒ **Grabs**

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acrolein	<50 H	<50	<50	<50	50
Acrylonitrile	<50	<50	<50	<50	50
Benzene	<10	<10	<10	<10	10
Bromoform	<10	<10	<10	<10	10
Carbon tetrachloride	<2	<2	<2	<2	2
Chlorobenzene	<10	<10	<10	<10	10
Chlorodibromomethane	<10	<10	<10	<10	10
Chloroethane	<50	<50	<50	<50	50
2-Chloroethylvinyl ether	<10	<10	<10	<10	10
Chloroform	<10	<10	<10	<10	10
Dichlorobromomethane [Bromodichloromethane]	<10	<10	<10	<10	10
1,1-Dichloroethane	<10	<10	<10	<10	10
1,2-Dichloroethane	<10	<10	<10	<10	10
1,1-Dichloroethylene [1,1-Dichloroethene]	<10	<10	<10	<10	10
1,2-Dichloropropane	<10	<10	<10	<10	10
1,3-Dichloropropylene [1,3-Dichloropropene]	<10	<10	<10	<10	10
Ethylbenzene	<10	<10	<10	<10	10
Methyl bromide [Bromomethane]	<50	<50	<50	<50	50
Methyl chloride [Chloromethane]	<50	<50	<50	<50	50
Methylene chloride [Dichloromethane]	<20	<20	<20	<20	20
1,1,2,2-Tetrachloroethane	<10	<10	<10	<10	10
Tetrachloroethylene [Tetrachloroethene]	<10	<10	<10	<10	10
Toluene	<10	<10	<10	<10	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<10	<10	<10	<10	10
1,1,1-Trichloroethane	<10	<10	<10	<10	10
1,1,2-Trichloroethane	<10	<10	<10	<10	10
Trichloroethylene [Trichloroethene]	<10	<10	<10	<10	10
Vinyl chloride	<10	<10	<10	<10	10

* Indicate units if different from µg/L.

Table 9 for Outfall No.: 001 : Acid Compounds

Samples are (check one): ☐ Composites ☒ Grabs

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
2-Chlorophenol	<10	<10	<10	<10	10
2,4-Dichlorophenol	<10	<10	<10	<10	10
2,4-Dimethylphenol	<10	<10	<10	<10	10
4,6-Dinitro-o-cresol	<50	<50	<50	<50	50
2,4-Dinitrophenol	<50	<50	<50	<50	50
2-Nitrophenol	<20	<20	<20	<20	20
4-Nitrophenol	<50	<50	<50	<50	50
p-Chloro-m-cresol	<10	<10	<10	<10	10
Pentachlorophenol	<5	<5	<5	<5	5
Phenol	<10	<10	<10	<10	10
2,4,6-Trichlorophenol	<10	<10	<10	<10	10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: N/A : Base/Neutral Compounds

Samples are (check one): ☐ Composites ☐ Grabs

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acenaphthene					10
Acenaphthylene					10
Anthracene					10
Benzidine					50
Benzo(a)anthracene					5
Benzo(a)pyrene					5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]					10
Benzo(ghi)perylene					20
Benzo(k)fluoranthene					5
Bis(2-chloroethoxy)methane					10
Bis(2-chloroethyl)ether					10
Bis(2-chloroisopropyl)ether					10
Bis(2-ethylhexyl)phthalate					10
4-Bromophenyl phenyl ether					10
Butylbenzyl phthalate					10
2-Chloronaphthalene					10
4-Chlorophenyl phenyl ether					10
Chrysene					5
Dibenzo(a,h)anthracene					5
1,2-Dichlorobenzene [o-Dichlorobenzene]					10
1,3-Dichlorobenzene [m-Dichlorobenzene]					10
1,4-Dichlorobenzene [p-Dichlorobenzene]					10
3,3'-Dichlorobenzidine					5

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Diethyl phthalate					10
Dimethyl phthalate					10
Di-n-butyl phthalate					10
2,4-Dinitrotoluene					10
2,6-Dinitrotoluene					10
Di-n-octyl phthalate					10
1,2-Diphenylhydrazine (as Azobenzene)					20
Fluoranthene					10
Fluorene					10
Hexachlorobenzene					5
Hexachlorobutadiene					10
Hexachlorocyclopentadiene					10
Hexachloroethane					20
Indeno(1,2,3-cd)pyrene					5
Isophorone					10
Naphthalene					10
Nitrobenzene					10
N-Nitrosodimethylamine					50
N-Nitrosodi-n-propylamine					20
N-Nitrosodiphenylamine					20
Phenanthrene					10
Pyrene					10
1,2,4-Trichlorobenzene					10

* Indicate units if different from µg/L.

Table 11 for Outfall No.: N/A : Pesticides

Samples are (check one): ☐ Composites ☐ Grabs

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Aldrin					0.01
alpha-BHC [alpha-Hexachlorocyclohexane]					0.05
beta-BHC [beta-Hexachlorocyclohexane]					0.05
gamma-BHC [gamma-Hexachlorocyclohexane]					0.05
delta-BHC [delta-Hexachlorocyclohexane]					0.05
Chlordane					0.2
4,4'-DDT					0.02
4,4'-DDE					0.1
4,4'-DDD					0.1
Dieldrin					0.02
Endosulfan I (alpha)					0.01
Endosulfan II (beta)					0.02
Endosulfan sulfate					0.1

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Endrin					0.02
Endrin aldehyde					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
PCB 1242					0.2
PCB 1254					0.2
PCB 1221					0.2
PCB 1232					0.2
PCB 1248					0.2
PCB 1260					0.2
PCB 1016					0.2
Toxaphene					0.3

* Indicate units if different from µg/L.

Attachment: N/A

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete of Table 12 **is required** for **external outfalls**, as directed below. (Instructions, Pages 53-54)

a. Indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility (check all that apply).

- ☐ 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CASRN 93-76-5
- ☐ 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CASRN 93-72-1
- ☐ 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CASRN 136-25-4
- ☐ 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel) CASRN 299-84-3
- ☐ 2,4,5-trichlorophenol (TCP) CASRN 95-95-4
- ☐ hexachlorophene (HCP) CASRN 70-30-4
- ☒ None of the above

Description: N/A

b. Does the applicant or anyone at the facility know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in the effluent proposed for discharge?

☐ Yes ☒ No

Description: N/A

If **yes** to either Items a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	1.0					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.03					50
2,3,4,7,8-PeCDF	0.3					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 **is required** for all **external outfalls** as directed below. (Instructions, Page 54)

a. Are there any pollutants listed in the instructions (pages 55-62) believed present in the discharge?

☐ Yes ☒ No

b. Are there pollutants listed in Item 1.c. of Technical Report 1.0 which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

☐ Yes ☒ No

If **yes** to either Items a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No.: N/A

Samples are (check one): ☐ **Composites** ☐ **Grabs**

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method

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

v. 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 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.

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

a. Name of the immediate receiving waters: N/A

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

☐ Lake or Pond
- Surface area (acres): Click to enter text.
- Average depth of the entire water body (feet): Click to enter text.
- Average depth of water body within a 500-foot radius of the discharge point (feet): Click to enter text.

☒ Man-Made Channel or Ditch
☐ Stream or Creek
☐ Freshwater Swamp or Marsh
☐ Tidal Stream, Bayou, or Marsh
☐ Open Bay
☐ Other, specify: Click to enter 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: Click to enter text.

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Greens Bayou Segment 1016

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 facility discharges effluent directly into a man-made conveyance ditch that flows approximately 1,000 feet before discharging over a drop structure into Greens Bayou.

f. General observations of the water body during normal dry weather conditions: Flowing stream with clear water.

Date and time of observation: January 19, 2021 at 8:44am

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: stormwater

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: None

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: N/A

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: N/A

b. Provide the following information for each disposal site:

Disposal site name: WCA Needville

TCEQ Permit/Registration Number: 96322

County where disposal site is located: Fort Bend

c. Method of sewage sludge transportation: ☒ truck ☐ train ☐ pipe ☐ other: Click to enter text.

TCEQ Hauler Registration Number: Specialized Waste Systems, ID No. 40514

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.

ATTACHMENT A COPY OF PAYMENT INFORMATION

WATER QUALITY PERMIT

PAYMENT SUBMITTAL FORM

Use this form to submit the Application Fee, if mailing the payment.

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

Mail this form and the check or money order to:

BY REGULAR U.S. MAIL

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

BY OVERNIGHT/EXPRESS MAIL

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

Fee Code: WQP **Permit No: WQ000**1039000

1. Check or Money Order Number: 07001823
2. Check or Money Order Amount: $2,015.00
3. Date of Check or Money Order: 2/17/2021
4. Name on Check or Money Order: NRG Texas Power LLC
5. APPLICATION INFORMATION

   Name of Project or Site: T.H Wharton Electric Generating Station

   Physical Address of Project or Site: 16301 Tomball Pkwy, Houston, TX 77064

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

Staple Check or Money Order in This Space

NRG Texas Power LLC

REFERENCE NUMBER	DATE	VOUCHER	GROSS AMOUNT	DISCOUNT	NET AMOUNT
020221	02/02/2021	1700096915	$2,015.00	0.00	$2,015.00

VCZ081

CHECK NUMBER	DATE	VENDOR NUMBER	VENDOR NAME	TOTAL AMOUNT
07001823	02/17/21	0000239689	TEXAS COMMISSION ON ENVIRONMENTAL	$2,015.00

Refer to above check number and voucher number when inquiring about your payment 0160

nrg

Bank Of New York Mellon
Pittsburgh, PA 15262

60-160
433

Date: 02/17/2021
Check Number: 07001823
Vendor Number: 0000239689

NRG Texas Power LLC
804 Carnegie Center,
Princeton, NJ 08540

PAY *Two thousand fifteen and 00/100 Dollars*

Pay Exactly
*****$2,015.00

TO THE ORDER OF

TEXAS COMMISSION ON ENVIRONMENTAL Q
PO BOX 13089
AUSTIN TX 78711-3089

AUTHORIZED SIGNATURE

VOID WITHOUT SIGNATURE
VOID AFTER NINETY DAYS

⑈07001823⑈ ⑆043301601⑆ 185⑈0904⑈

ATTACHMENT B CORE DATA FORM

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.*)

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

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

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 603207218		RN 100542885

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	03/21/2021

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership

☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

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

NRG Texas Power LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
800836540	32033232003	342019301	168456049

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited

Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees

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

13. Independently Owned and Operated?

☒ **Yes** ☐ **No**

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

☐ Owner ☐ Operator ☒ Owner & Operator

☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:

910 Louisiana St

City	State	ZIP	ZIP + 4
Houston	TX	77002	

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	Craig.Eckberg@nrg.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(713) 537-2776		( ) -

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*)

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

The Regulated Entity Name submitted may be updated in order to meet TCEQ 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.*)

T.H. Wharton Electric Generating Station

23. Street Address of the Regulated Entity: *(No PO Boxes)*	16301 Tomball Parkway							
	City	Houston	**State**	TX	**ZIP**	77064	**ZIP + 4**	
24. County	Harris							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	N/A				
26. Nearest City			**State**	**Nearest ZIP Code**	
Houston			TX	77064	
27. Latitude (N) In Decimal:	29.94222		**28. Longitude (W) In Decimal:**	-95.531388	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	56	32	95	31	53

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)
4911		221112	

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

Generation of electricity

34. Mailing Address:	**16301 Tomball Pkwy**							
	City	**Houston**	**State**	**TX**	**ZIP**	**77064**	**ZIP + 4**	
35. E-Mail Address:	**Mary.Larsen@nrg.com**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(281) 897-2604		**( ) -**

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

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	WQ0001039000			

SECTION IV: Preparer Information

40. Name:	Amanda Ragatz	**41. Title:**	Senior Consultant, Scientist

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(314) 551-7099		( ) -	amanda.ragatz@erm.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:	NRG Texas Power LLC	**Job Title:**	Sr. Director, Environmental Services
Name *(In Print):*	Craig Eckberg	**Phone:**	(713) 537- **2776**
Signature:		**Date:**	

23. Street Address of the Regulated Entity: *(No PO Boxes)*	16301 Tomball Parkway							
	City	Houston	**State**	TX	**ZIP**	77064	**ZIP + 4**	
24. County	Harris							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	N/A							
26. Nearest City						**State**		**Nearest ZIP Code**
Houston						TX		77064
27. Latitude (N) In Decimal:	29.442222			**28. Longitude (W) In Decimal:**		95.531389		
Degrees	Minutes		Seconds	Degrees		Minutes		Seconds
29	56		32	95		31		53

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)
4911		221112	

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

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34. Mailing Address:	**16301 Tomball Pkwy**							
	City	**Houston**	**State**	**TX**	**ZIP**	**77064**	**ZIP + 4**	
35. E-Mail Address:	**Mary.Larsen@nrg.com**							
36. Telephone Number	**37. Extension or Code**		**38. Fax Number** *(if applicable)*					
(281) 897-2604			**( ) -**					

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

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☒ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:
	WQ0001039000			

SECTION IV: Preparer Information

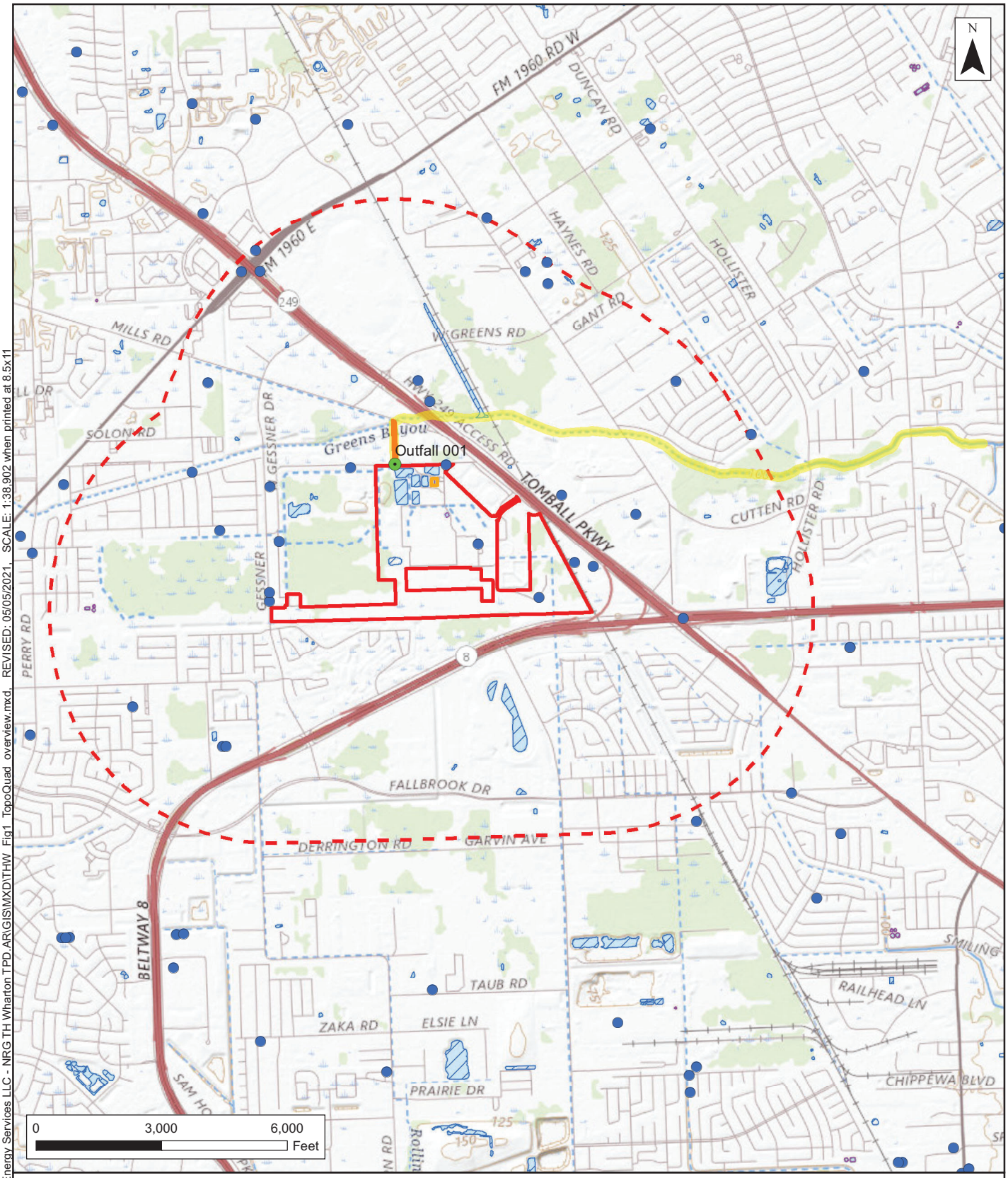
40. Name:	Amanda Ragatz	**41. Title:**	Senior Consultant, Scientist
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(314) 551-7099		( ) -	amanda.ragatz@erm.com

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:	NRG Texas Power LLC	**Job Title:**	Sr. Director, Environmental Services
Name *(In Print):*	Craig Eckberg	**Phone:**	(713) 537- **2776**
Signature:	C. R. C.	**Date:**	15 March 21

ATTACHMENT C USGS FIGURE



Legend

- Property boundary
- One-mile radius
- Outfall
- Discharge route
- Treatment facility
- TWDB Water Wells
- Lake/Pond
- Reservoir

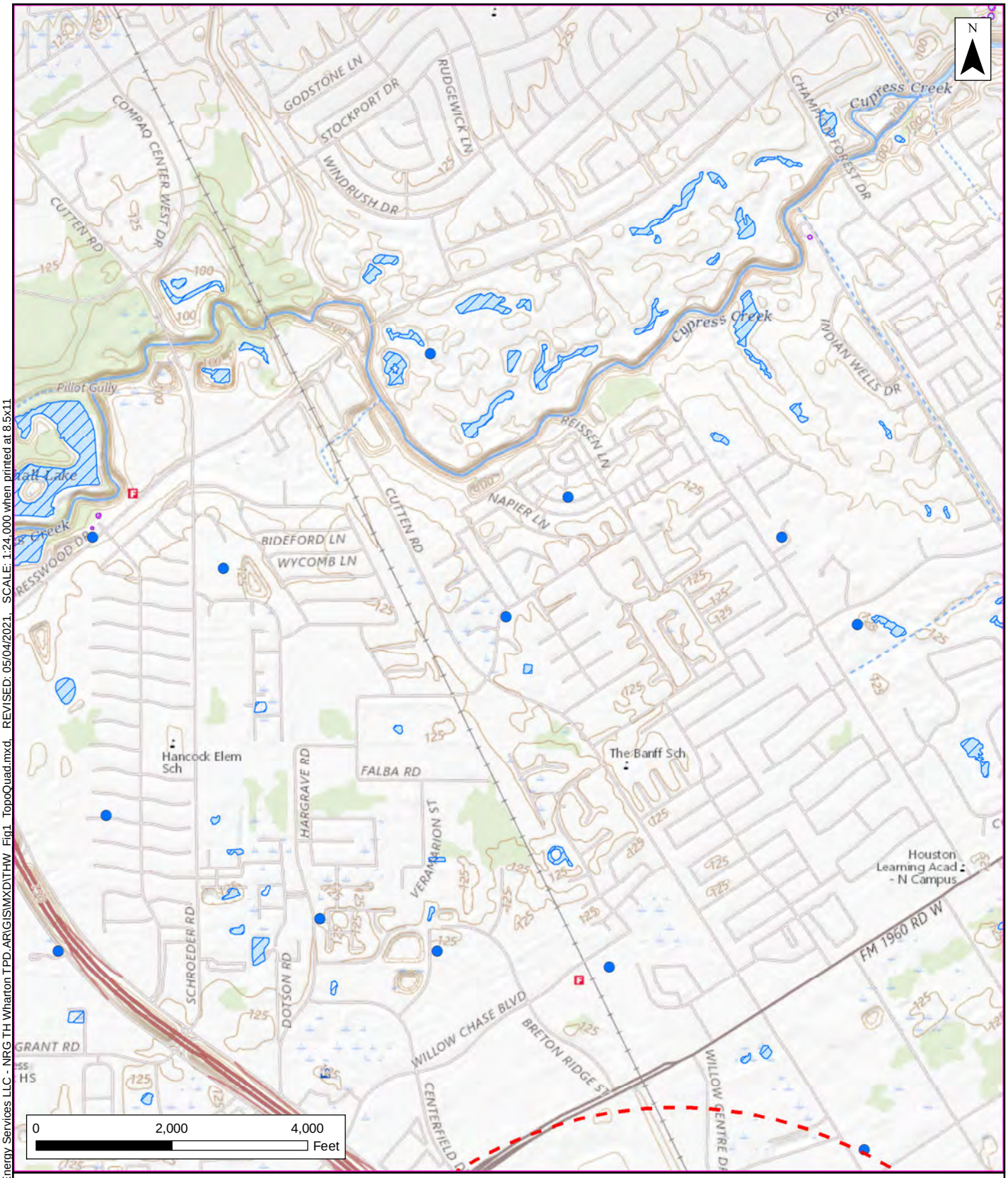
USGS Figure Overview
Satsuma
1:24,000 USGS Quadrangles
TPDES Permit Renewal
NRG Texas Power LLC
Houston, Texas

Environmental Resources Management
www.erm.com

Source: Esri - USGS Topoographic Map; NAD 1983 StatePlane Texas South Central FIPS 4204 Feet

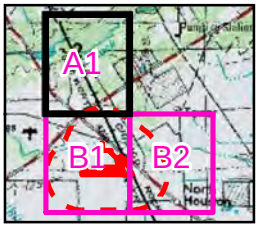
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Legend

- Property boundary
- One-mile radius
- Outfall
- Discharge route
- Treatment facility
- TWDB Water Wells
- Lake/Pond
- Reservoir



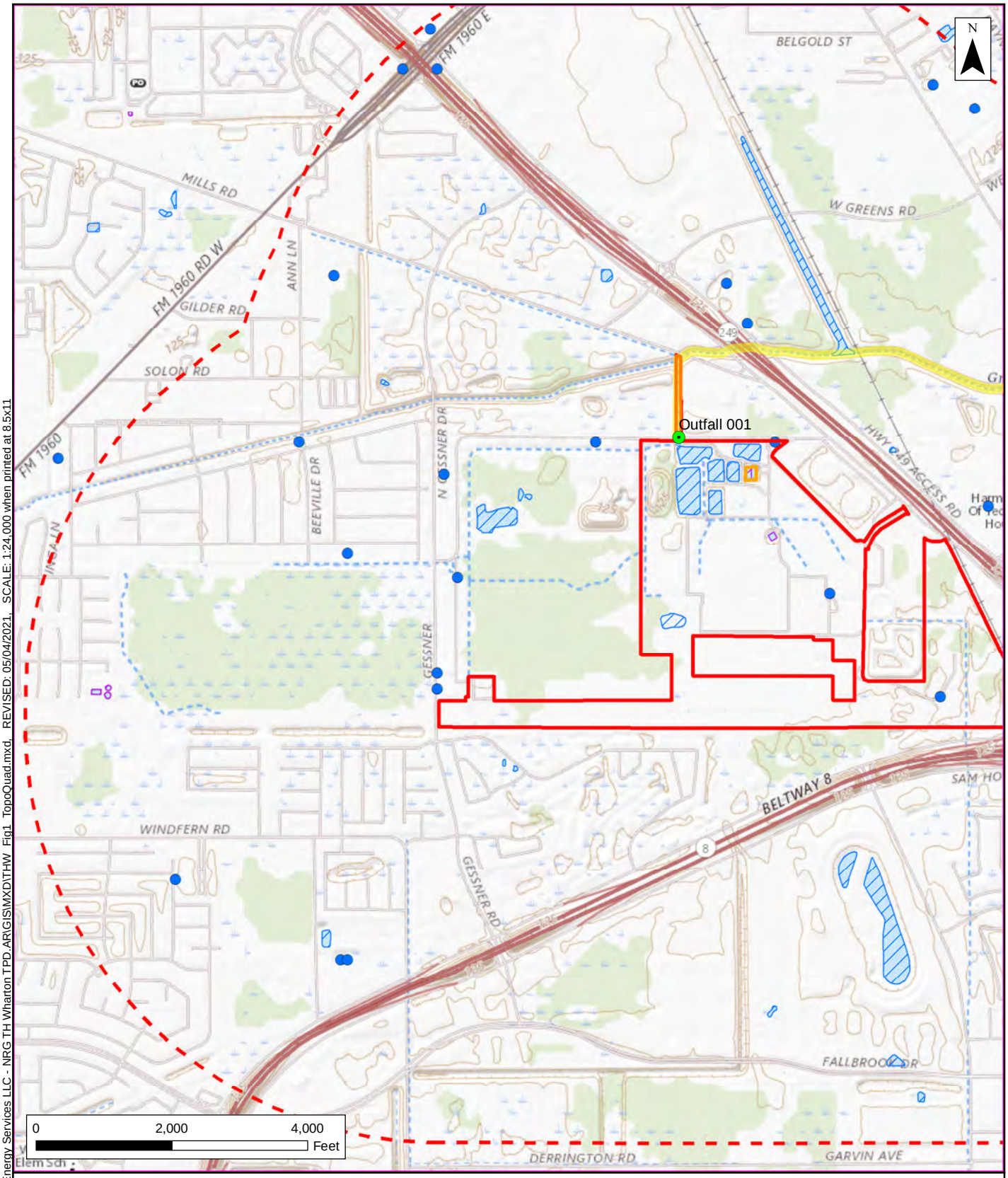
USGS Figure A1
Satsuma
1:24,000 USGS Quadrangles
TPDES Permit Renewal
NRG Texas Power LLC
Houston, Texas

Environmental Resources Management
www.erm.com

Source: Esri - USGS Topoographic Map; WGS 1984 Web Mercator Auxiliary Sphere

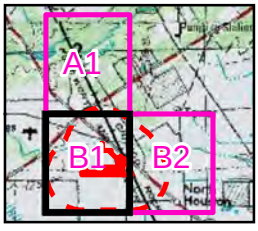
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Legend

- Property boundary
- One-mile radius
- Outfall
- Discharge route
- Treatment facility
- TWDB Water Wells
- Lake/Pond
- Reservoir



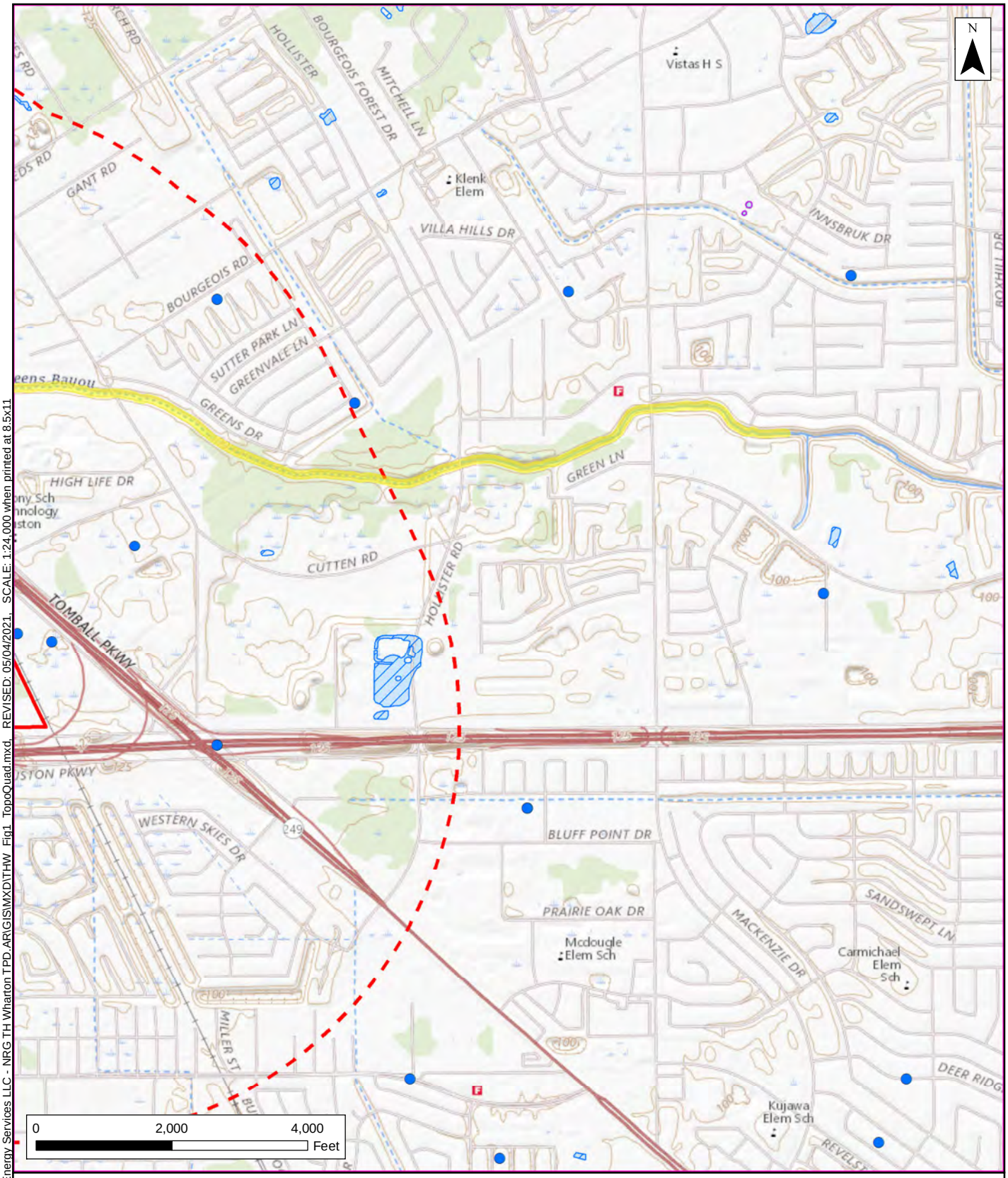
USGS Figure B1
Satsuma
1:24,000 USGS Quadrangles
TPDES Permit Renewal
NRG Texas Power LLC
Houston, Texas

Environmental Resources Management
www.erm.com

Source: Esri - USGS Topoographic Map; WGS 1984 Web Mercator Auxiliary Sphere

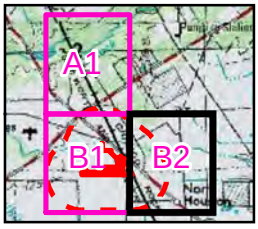
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Legend

- Property boundary
- One-mile radius
- Outfall
- Discharge route
- Treatment facility
- TWDB Water Wells
- Lake/Pond
- Reservoir



USGS Figure B2
Satsuma
1:24,000 USGS Quadrangles
TPDES Permit Renewal
NRG Texas Power LLC
Houston, Texas

Environmental Resources Management
www.erm.com

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Source: Esri - USGS Topoographic Map; WGS 1984 Web Mercator Auxiliary Sphere

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ATTACHMENT D WASTEWATER GENERATING PROCESSES

Attachment D
Technical Report

1. Describe the wastewater-generating processes.

Wastewater is produced at the T.H. Wharton Electric Generating Station through several processes.

Cooling Tower Blowdown

The major source of the wastewater is cooling tower blowdown. Cooling tower blowdown is water from the cooling tower that is discharged to reduce concentrations of impurities in the water that would cause corrosion of the heat exchangers.

Low Volume Wastewater

Low volume wastewater discharges include boiler blowdown, demineralizer regeneration waste, laboratory drains, filtrate from drying beds, floor drains and SPCC sources and their associated oily water treatment system discharges. Boiler blowdown is water from the steam boiler that is released to reduce concentrations of impurities in the water that would cause corrosion and boiler tube failure. Demineralizer regeneration wastewater results from demineralizing service water to purify and treat it before being used in the boilers. Regeneration of the demineralizer resin beds produces an acidic and caustic wastewater that is treated at the chemical waste treatment system along with boiler blowdown and equipment cleaning wastewater. The floor drain system captures condensate and water from production and maintenance areas that have the potential to have oil or grease contamination. The water is then transported to the oily waste treatment system where the oil is separated from the water. The first flush of storm water from some production and storage areas is also treated in one of the oily waste systems with other non-process storm water flow directed through the designated storm water outfalls.

Metal Cleaning Waste

Chemical and non-chemical metal cleaning wastes are generated on-site and treated in the Chemical Waste Treatment System. These wastestreams result from the cleaning, both by chemical means and non-chemical means, of metal process equipment.

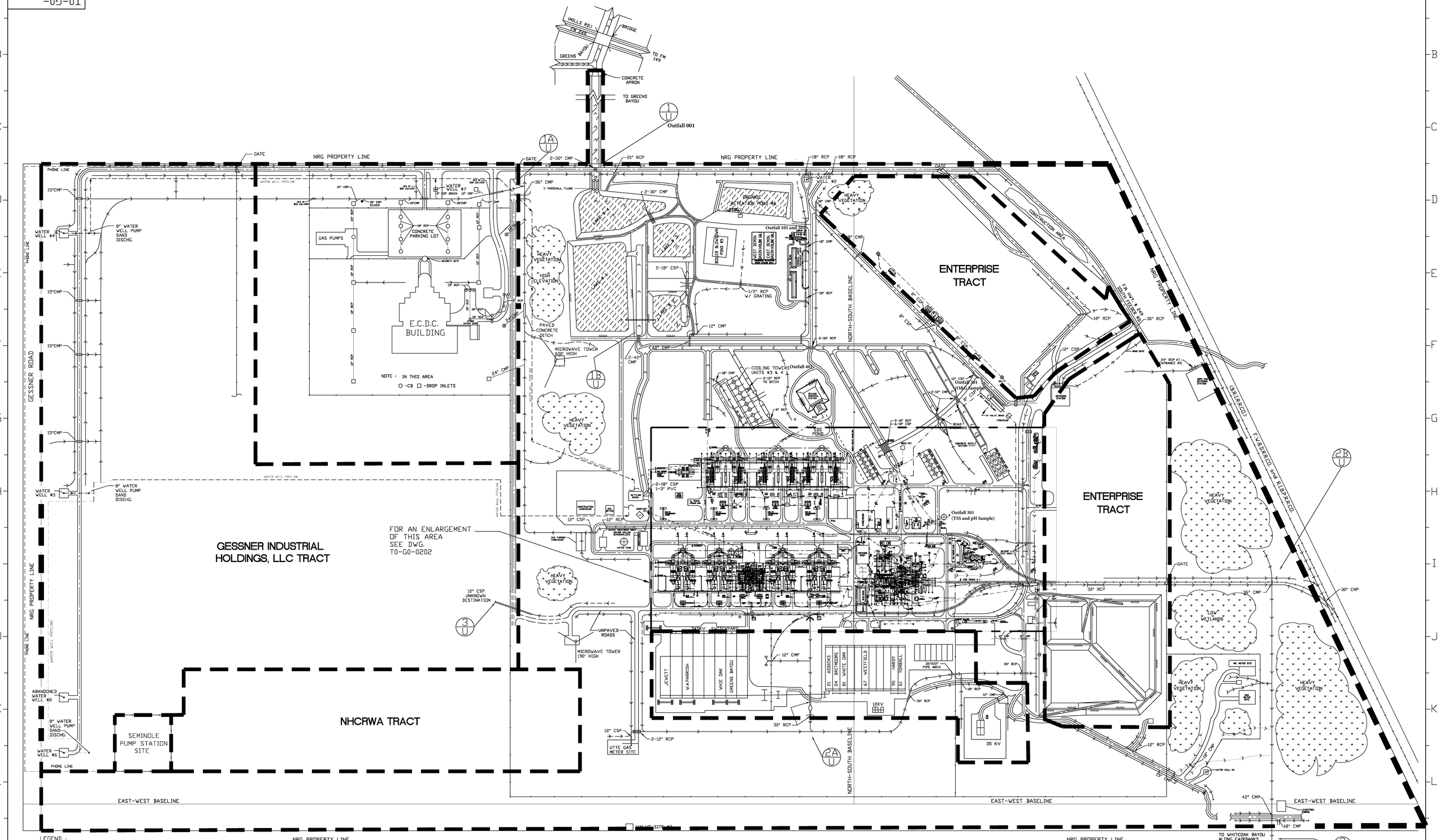
Domestic Sewage

Also on-site is a domestic sewage treatment system that includes chlorine disinfection.

All internal outfalls from the above processes discharge to the cooling ponds, which subsequently discharge into Greens Bayou.

ATTACHMENT E FACILITY MAP

T0-G0-0201



-200 0 200 400 600 800 1000

SCALE IN FEET

LEGEND :

NOTES :

1. ABOVE AND UNDERGROUND FEATURES ON THIS DRAWING ARE BASED UPON ORGINAL ISSUE DRAWINGS, PLANT IMPROVEMENT DRAWINGS AND, TO A LIMITED EXTENT, FIELD VERIFICATION. ADDITIONAL UNDERGROUND PIPING IS KNOWN TO EXIST BUT WAS NOT INCLUDED.
2. ITEMS IN LEGEND NOT TO SCALE FOR VISIBILITY.

AD	- AREA DRAIN	HH	- HAND HOLE (ELECTRICAL)
CO	- CLEAN-OUT	H & S	- HUB & SPIGOT PIPING
CI	- CAST IRON PIPING	LDR	- LATERAL DRAIN
CS	- CARBON STEEL PIPING	MH	- MANHOLE
DI	- DROP INLET	PVC	- POLY-VYNL CHLORINATED PIPE
DM	- DRAINAGE MANHOLE	RCP	- REINFORCED CONCRETE PIPE
ED	- EQUIPMENT DRAIN	RI	- RAIN INLET
FCO	- FLANGED CLEAN-OUT	SM	- SANITARY DRAIN (SEWAGE)
FD	- FLOOR DRAIN	TH	- TELEPHONE HANDHOLE

- CENTERLINE
- LINE CONTINUATION (NOT END OF LINE)
- FLOOR & STORM DRAINAGE SYSTEM PIPING (WITH LINE SIZE INDICATED ABOVE LINE)
- SANITARY WASTE SYSTEM PIPING (WITH LINE SIZE INDICATED ABOVE LINE)
- OILY WASTE SYSTEM PIPING (WITH LINE SIZE INDICATED ABOVE LINE)
- MISC. SYSTEM PIPING (WITH LINE SIZE INDICATED ABOVE LINE & SYSTEM DESCRIPTION)
- RAIL ROAD TRACKS
- FENCELINE

- -SUMPS AS NOTED (@ COOLING TOWERS, CB-15, MH, SS, ETC.)
- □ ⊞ CB -CATCH BASINS
- SS -STORM SUMP
- CMP -CORRIGATED METAL PIPE
- -DITCH W/ FLOW DIRECTION
- -SWALE W/ FLOW DIRECTION
- -CHANNEL W/ FLOW DIRECTION
- 1A U -OUTFALL DESIGNATION U-UNCONTROLLED C-CONTROLLED

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NO.	DATE	REVISION	BY	CHK.	APP.	APP.
2		REVISED PROPERTY BOUNDARY DESIGNATIONS				
1		ISSUE FOR RECORD				

T.H. WHARTON GENERATING FACILITY RECORD ISSUE PLOT PLAN

HOUSTON LIGHTING & POWER CO.
HOUSTON, TEXAS

DRAWN 04-16-92	B. ANDERSON	SCALE 1"=200'-0"	
CHECKED		DRAWING NUMBER	
APPROVED		T0-G0-0201	
APPROVED			
DISK ID: later	FILE NAME: T0G0201.DWG		

ATTACHMENT F TREATMENT PROCESSES

Attachment F
Technical Report

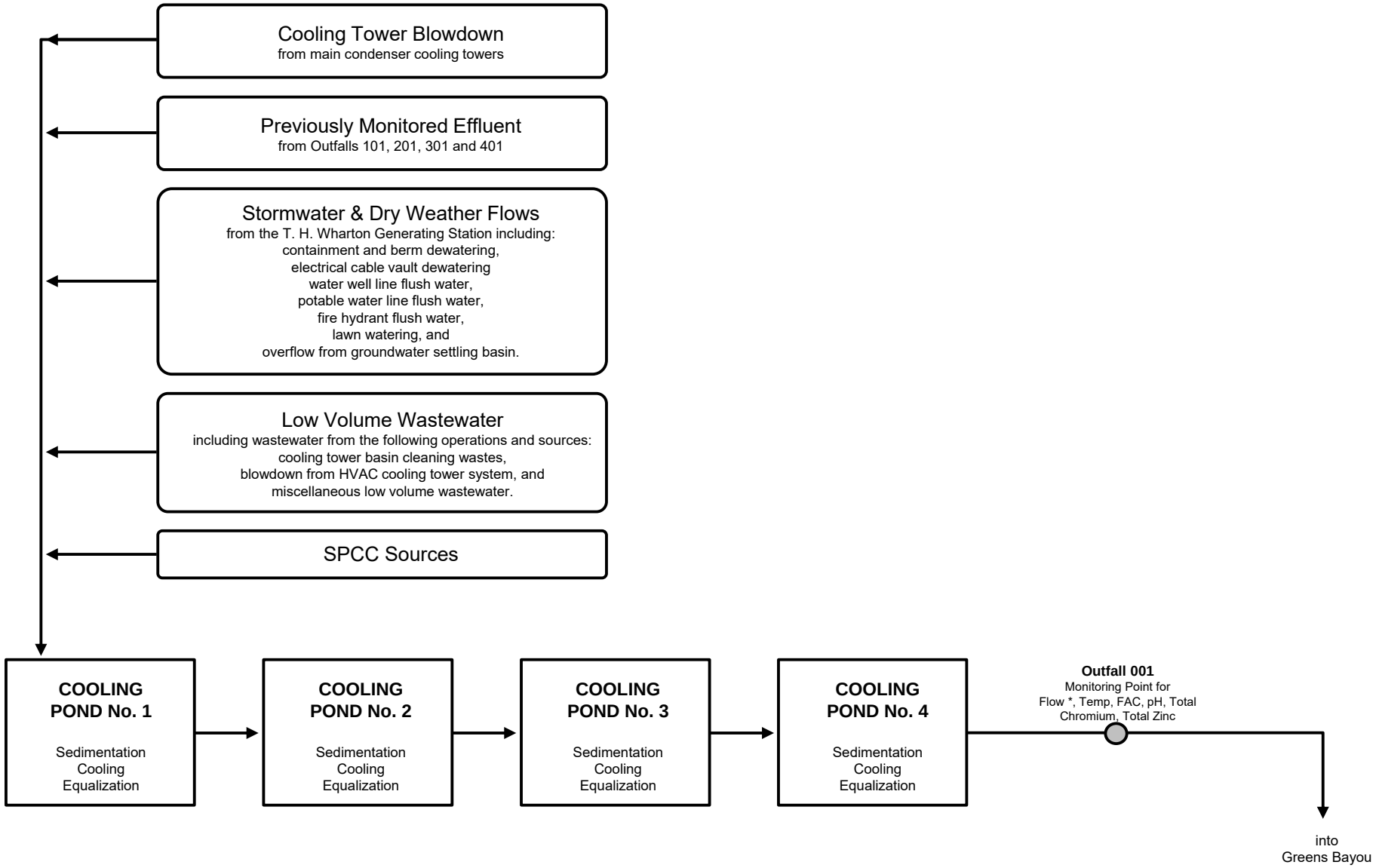
2.a. List any physical, chemical, and/or biological treatment process that you use for the treatment of wastewater at your facility. Include a description of each treatment process starting with initial treatment and finishing with the discharge point.

Treatment System	Outfall	Unit Dimensions	Treatment Processes
Chemical Waste Treatment System Low Volume Wastewater	101	Demineralizer Wastewater Basin (Concrete Basin) ~862,000 gallons	Equalization
		Boiler Blowdown Pond (Pond 5) ~3.0 Mgallons	Equalization
		First Mixing Tank ~1,500 gallons	Neutralization* Mixing*
		Coagulation Tank ~3,000 gallons	Coagulation* Mixing*
		Settling Tank ~27,000 gallons	Sedimentation
		Second Mixing Tank ~1,500 gallons	Neutralization* Mixing
		Sludge Drying Beds (2) ~110 ft x 24 ft x 6 ft	Drying Beds*
Chemical Waste Treatment System Metal Cleaning Waste	201	Organic Retention Pond (Pond 6) ~4.5 Mgallons	Equalization
		Inorganic Retention Basin (Concrete Basin) ~172,000 gallons	Equalization
		Boiler Blowdown Pond (Pond 5) ~3.0 Mgallons	Equalization
		First Mixing Tank ~1,500 gallons	Neutralization* Mixing*
		Coagulation Tank ~3,000 gallons	Coagulation* Mixing*
		Settling Tank ~27,000 gallons	Sedimentation
		Second Mixing Tank ~1,500 gallons	Neutralization* Mixing
		Sludge Drying Beds (2) ~110 ft x 24 ft x 6 ft	Drying Beds*
Floor Drainage Treatment System/ Oily Waste Treatment System Low Volume Wastewater	301	Mixing Tank ~3,000 gallons	Mixing*
		Coagulation Tank ~6,000 gallons	Coagulation* Mixing*
		Settling Tank ~54,000 gallons	Sedimentation Flotation Skimming*
		API Separator ~90 ft x 20 ft x 8 ft	Flotation Sedimentation Skimming*

Treatment System	Outfall	Unit Dimensions	Treatment Processes
		Tricellerator ~19 ft dia x 13 ft	Dissolved Air Flotation Skimming Flocculation* Coagulation*
Sanitary Wastewater Treatment System Domestic Sewage	401	Septic Tank ~7,800 gallons	Anaerobic Treatment
		Filter Bed ~72 ft x 72 ft	Slow Sand Filtration
		Chlorine Contact Chamber	Disinfection
Cooling Tower Blowdown Treatment System Cooling Tower Blowdown and Previously Monitored Effluents	001	Pond 1 ~21.5 Mgallons	Sedimentation Cooling Equalization
		Pond 2 ~4.2 Mgallons	Sedimentation Cooling Equalization
		Pond 3 ~2.1 Mgallons	Sedimentation Cooling Equalization
		Pond 4 ~1.9 Mgallons	Sedimentation Cooling Equalization

*Treatment process may be used based on influent characteristics

ATTACHMENT G FLOW SCHEMATIC AND WATER BALANCE



Notes:

* Continuous Flow

* Two year average of DLY AVG Flow = 0.804 MGD (10/01/2018 to 9/30/2020)

* Two year average of DLY MAX Flow = 3.308 MGD (10/01/2018 to 9/30/2020)

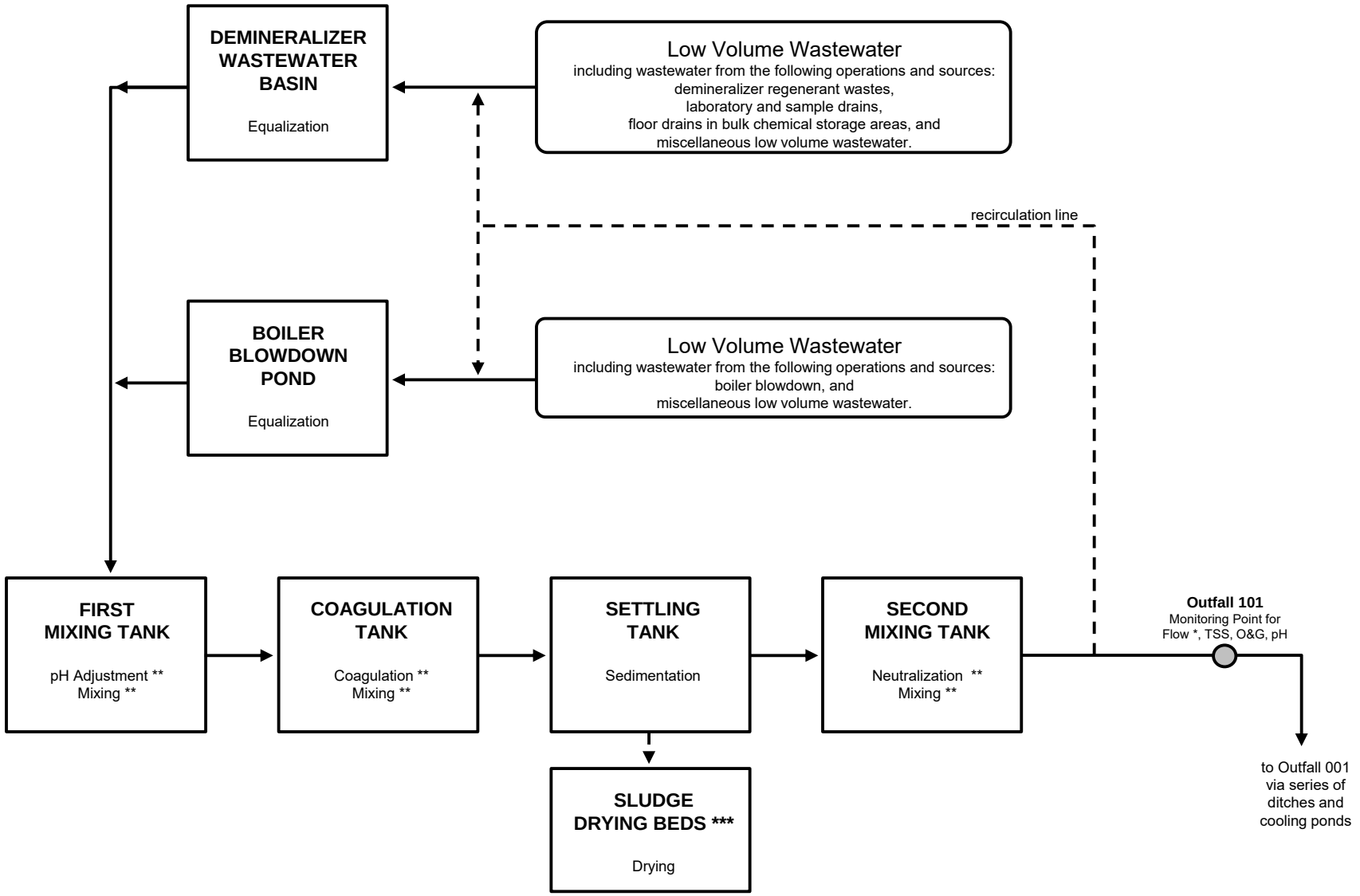
APPENDIX TR - 13 Figure TR - 13 - 1

REVISED

Simplified Process Flow Diagram
Outfall 001
Previously Monitored Effluent and Storm Water

T. H. Wharton Electric Generating Station
TCEQ Permit No. WQ0001039000

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Notes:

* Intermittent Flow

* Two year average of DLY AVG Flow = 0.136 MGD (10/01/2018 to 9/30/2020)

** Treatment process may be used based in influent characteristics

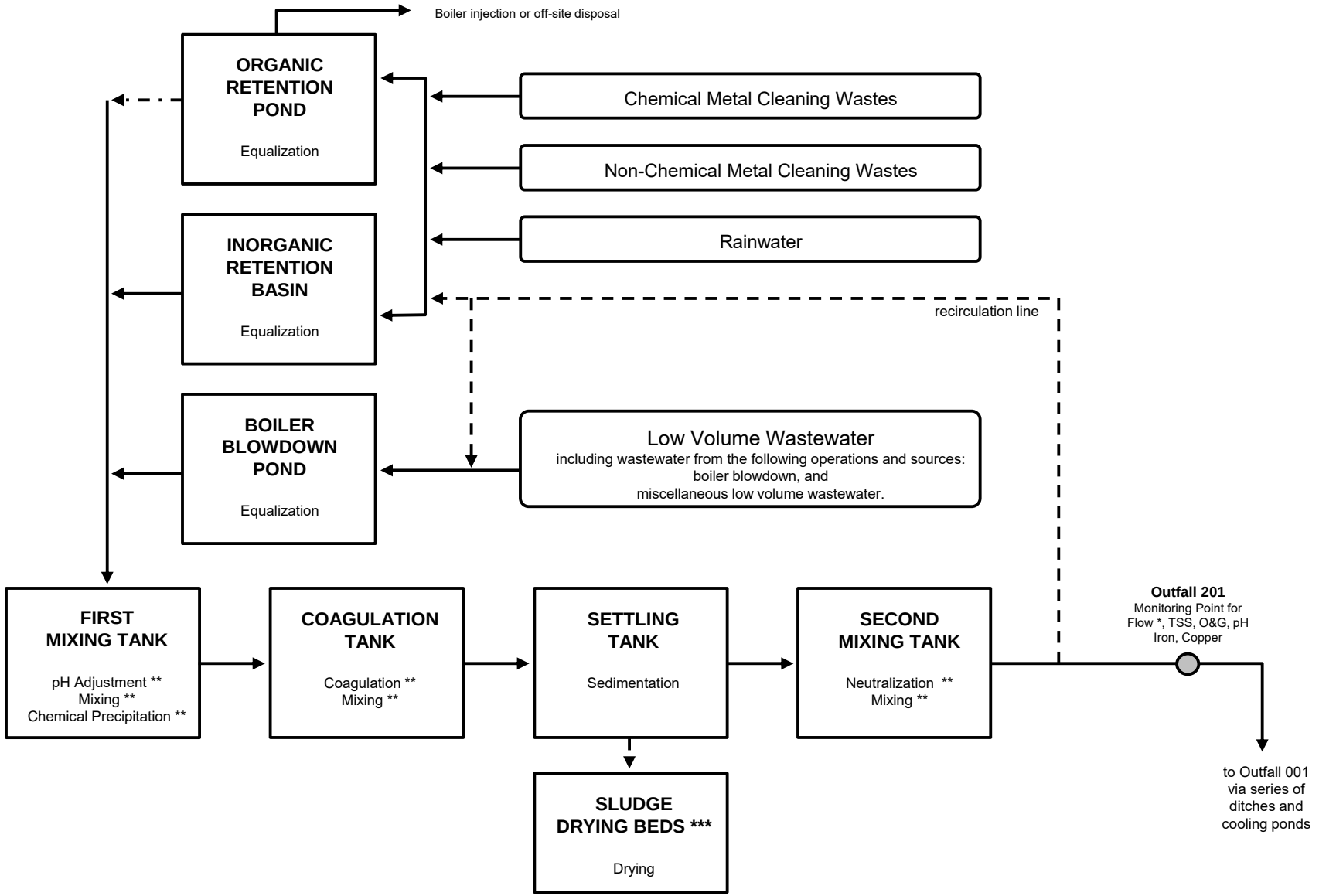
*** Solids are removed from drying beds periodically for off-site disposal

APPENDIX TR - 13 Figure TR - 13 - 2

Simplified Process Flow Diagram
Outfall 101
Chemical Waste Treatment System
Low Volume Wastewater

T. H. Wharton Electric Generating Station
TCEQ Permit No. WQ0001039000

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Notes:

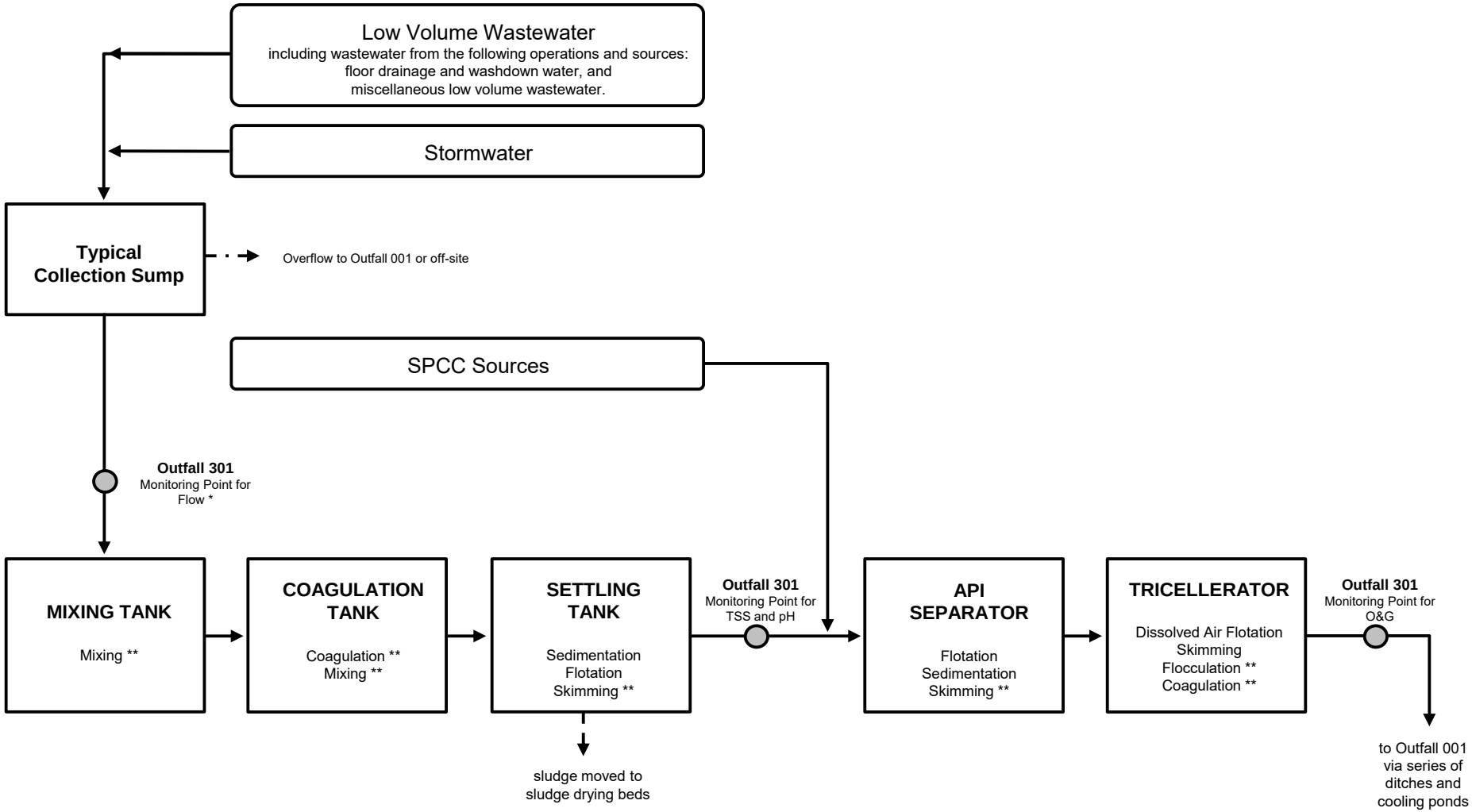
* Intermittent Flow
* Two year average of DLY AVG Flow = 0.134 MGD (10/01/2018 to 9/30/2020)
** Treatment process may be used based in influent characteristics
*** Solids are removed from drying beds periodically for off-site disposal

APPENDIX TR - 13 Figure TR - 13 - 3

Simplified Process Flow Diagram
Outfall 201
Chemical Waste Treatment System
Metal Cleaning Wastewater and Low Volume Wastewater

T. H. Wharton Electric Generating Station
TCEQ Permit No. WQ0001039000

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Notes:

* Intermittent Flow

* Two year average of DLY AVG Flow = 0.015 MGD (10/01/2018 to 9/30/2020)

** Treatment process may be used based on influent characteristics

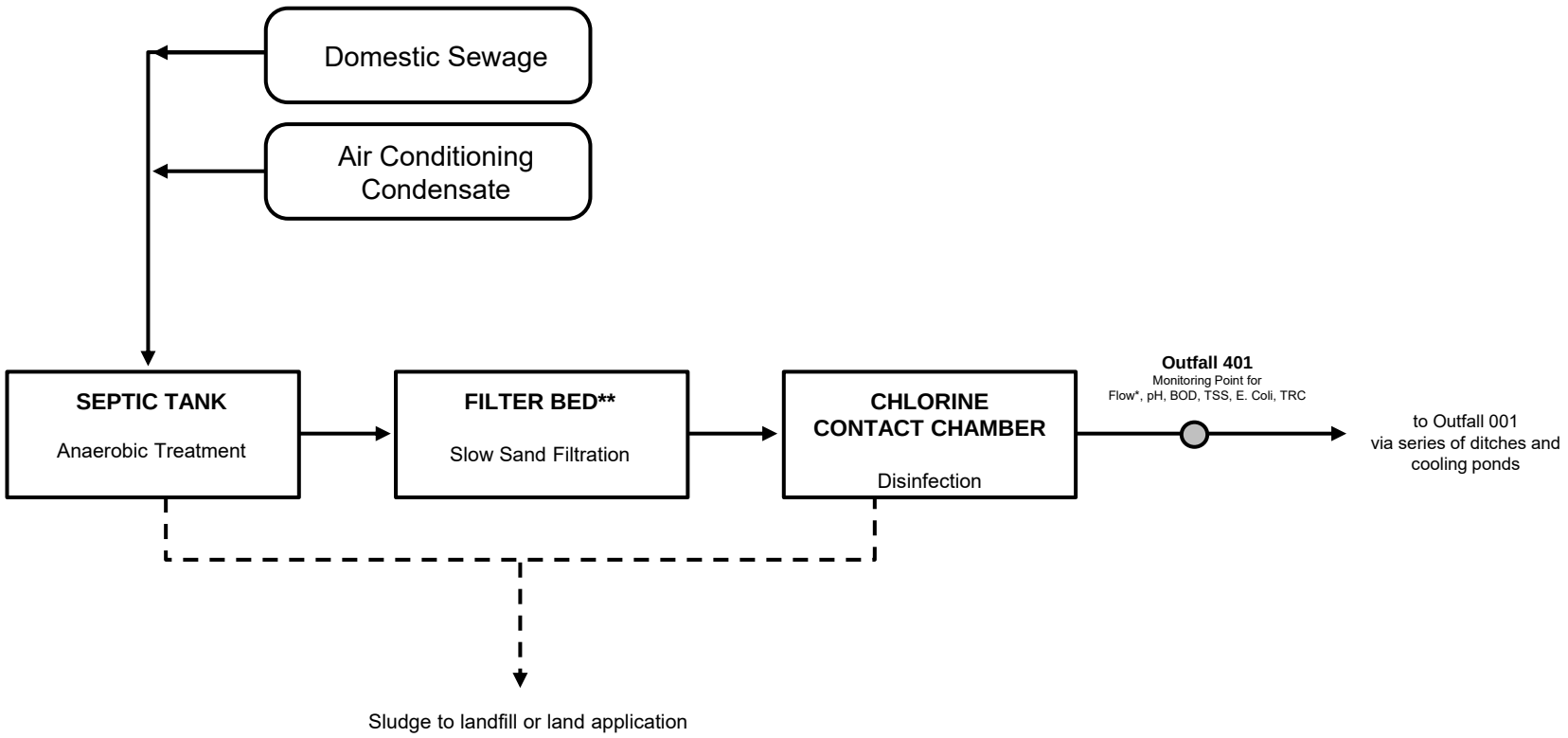
*** Waste oils are periodically removed from treatment units for off-site disposal

APPENDIX TR - 13 Figure TR - 13 - 4

Simplified Process Flow Diagram
Outfall 301
Floor Drainage Treatment System
Low Volume Wastewater

T. H. Wharton Electric Generating Station
TCEQ Permit No. WQ0001039000

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Notes:

* Intermittent discharge

* Two year average of DLY AVG Flow = 0.005 MGD (10/01/2018 to 9/30/2020)

** Rainwater falling on the filter bed may be a component of discharge.

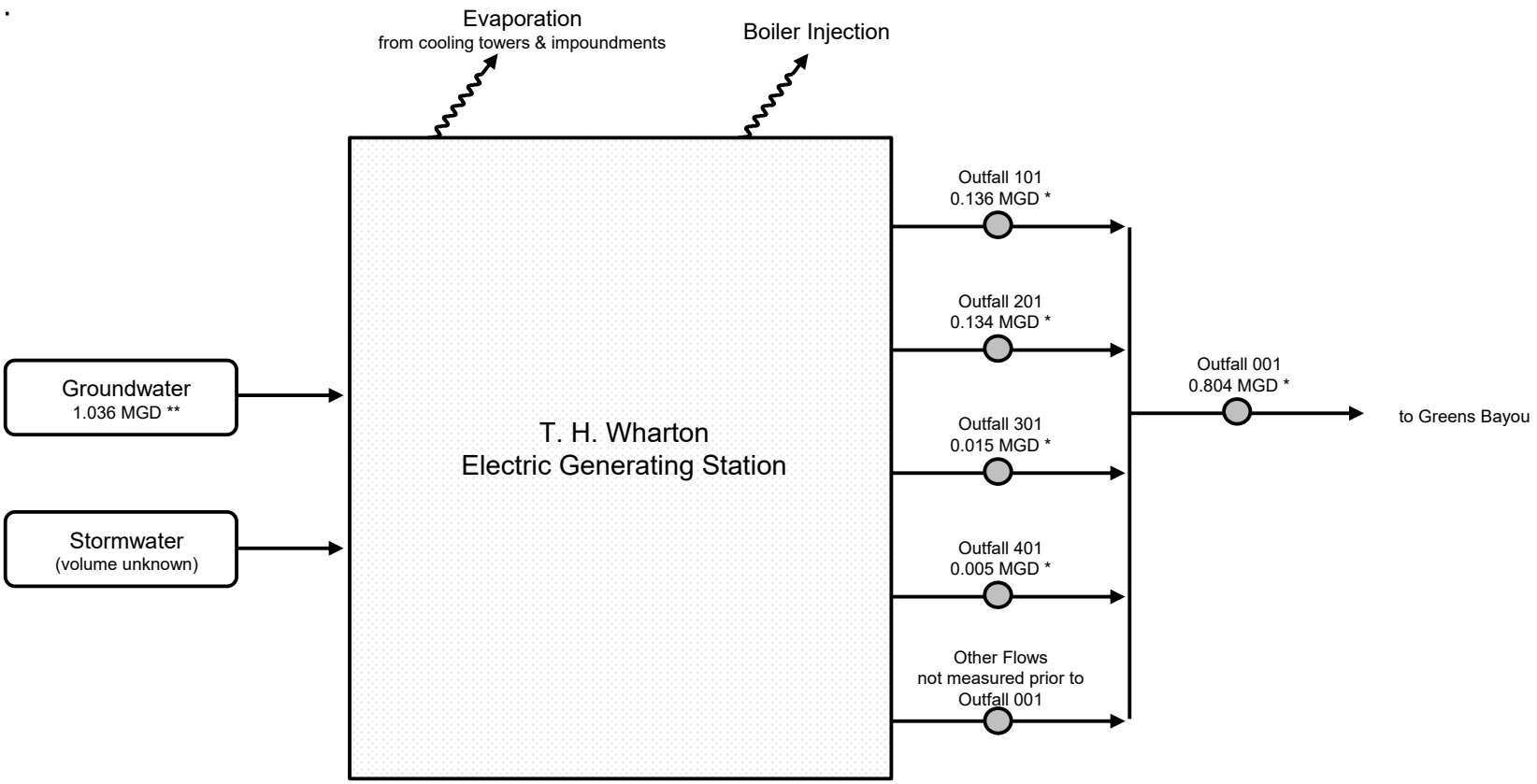
** Filter media periodically replaced and disposed.

APPENDIX TR - 13 Figure TR - 13 - 4

Simplified Process Flow Diagram
Outfall 401
Sanitary Waste Treatment System
Domestic Sewage

T.H. Wharton Electric Generating Station
TCEQ Permit No. WQ0001039000

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Notes:

* Two year average of DLY AVG Flow (10/01/2018 to 9/30/2020)
** Two year average of Total Groundwater Withdrawn (10/01/2018 to 9/30/2020)

APPENDIX TR - 13 Figure TR - 13 - 5

Simplified Water Balance

HI's T. H. Wharton Electric Generating Station
TNRCC Permit No. 01039

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ATTACHMENT H ADDITIONAL OUTFALL WASTESTREAM CONTRIBUTIONS

Wastestream Contributions

Outfall No.: 301

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Low volume wastes	0.0135**	90
Storm water	Variable	10
**two-year average 10/01/18-9/30/20		

Outfall No.: 401

Contributing Wastestreams	Volume (MGD)	% of Total Flow
Sanitary waste treatment system	0.0045**	90
Storm water	Variable	10
**two-year average 10/01/18-9/30/20		

ATTACHMENT I CHEMICAL SUMMARY AND SDS FOR COOLING WATER DISCHARGES

Attachment I
Technical Report

Cooling Water Treatment Chemicals

Chemical Name	ChemTreat CL2032	Quadrasperse® CL5898	Dixichlor Mas
Manufacturers Product Identification Number	CL2032	CL5898	Dixichlor Sodium Hypochlorite
Product Use	Algaecide	Dispersant and scale inhibitor	Biocide
Chemical Composition including CASRN for each ingredient	2−(Tert−butylamino)−4−chloro−6−(ethylamino)−s−triazine (5915-41-3)	2−Phosphono−1,2,4−butane tricarboxylic acid (37971−36−1); Benzotriazole, sodium salt (15217−42−2)	Sodium hypochlorite (7681-52-9); Sodium chloride (7647-14-5); Sodium hydroxide (1310-73-2)
Non-persistent, Persistent, or Bioaccumulative	No data available	No data available	No data available
Product or Active Ingredient Half-life	No data available	No data available	No data available
Frequency of Product Use	10 gallons per week	Continuous feed while unit in operation	2 hours per day when units run
Product Toxicity Data Specific to Fish and Aquatic Invertebrate Organisms	48-hr. LC50 (Fathead Minnow): 4364 mg/L 48-hr. LC50 (Daphnia pulex): 5750 mg/L	48-hr. LC50 (Daphnia pulex): 1803 mg/L 48-hr. LC50 (Fathead Minnow): 1708 mg/L 96-hr. LC50 (Fathead Minnow): 1649 mg/L 48-hr. LC50 (Ceriodaphnia dupia): 932 mg/L	Sodium hypochlorite: 96-hr. LC50 (Pimephales promelas) 0.08 mg/L Sodium chloride: 96-hr. LC50 (Freshwater fish) 1100 mg/L Sodium hydroxide: 96-hr. LC50 (Poecilia reticulate) 196 mg/L
Concentration of Whole Product or Active Ingredient in Wastestream	Up to 0.4 lb. of product based on 100% production	Up to 50 gallons per day of product based on 100% production	Up to 10 gallons per day of product based on 100% production

Attachment I
Technical Report

Boiler Feed Treatment Chemicals

Chemical Name	Chem Treat BL-1556	Chem Treat BL1794
Manufacturers Product Identification Number	BL1556	BL1794
Product Use	pH control of the feedwater and condensate	pH control
Chemical Composition including CASRN for each ingredient	Methoxypropylamine (5332-73-0)	Sodium phosphate, tribasic (7601-54-9)
Non-persistent, Persistent, or Bioaccumulative	No data available	No data available
Product or Active Ingredient Half-life	No data available	No data available
Frequency of Product Use	Continuous feed when unit in operation	Fed during unit startup to control pH
Product Toxicity Data Specific to Fish and Aquatic Invertebrate Organisms	48-hr. EC50 (Daphnia magna): 59 mg/l 96-hr. LC50 (Golden orfe): 166.7-366.7 mg/l	50-hr. EC50 (Daphnia magna): 2158 mg/L 96-hr. LC50 (Bluegill sunfish): 2682 mg/L 96-hr. LC50 (Rainbow trout): 1463 mg/L 48-hr. LC50 (Ceriodaphnia dupia): >10000 mg/L 96h. LC50 (Fathead minnow): >10000 mg/L
Concentration of Whole Product or Active Ingredient in Wastestream	Up to 7.5 gallons per day of product based on 100% production	Up to 1 lb. of product based on 100% production

SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat CL2032
Product Use:	Cooling Water Microbiocide and Algicide
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424−9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648−4579
Date of SDS:	May 9, 2016
Revision Date:	May 9, 2016
Revision Number:	16050901AN

Section 2. Hazard(s) Identification



Signal Word: **WARNING**

GHS Classification(s):
Acute Toxicity Dermal − Category 5
Acute Toxicity Inhalation − Category 5
Acute Toxicity Oral − Category 4

Hazard Statement(s):
H313 May be harmful in contact with skin.
H333 May be harmful if inhaled.
H302 Harmful if swallowed.

Precautionary Statement(s):

Prevention:
P264 Wash thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.

Response: None.

Storage: None.

Disposal: None.

System of Classification Used: Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified: None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
2−(Tert−butylamino)−4−chloro−6−(ethylamino)−s−triazine	5915−41−3	4

Comments If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Skin: Wash with plenty of soap and water. Call a poison center or doctor/physician if you feel unwell.

Ingestion: DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.

Most Important Symptoms: N/D

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary: N/A

Section 5. Fire Fighting Measures

Flammability of the Product: Not flammable.

Suitable Extinguishing Media: Use extinguishing media suitable to surrounding fire.

Specific Hazards Arising from the Chemical: None known.

Protective Equipment: If product is involved in a fire, wear full protective clothing including a positive−pressure, NIOSH approved, self−contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions: Use appropriate Personal Protective Equipment (PPE).

Environmental Precautions: Do not discharge effluent containing this product into lakes, ponds, streams, estuaries, oceans or public waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Methods for Cleaning up: Contain and recover liquid when possible. Flush spill area with water spray.

Other Statements: None.

Section 7. Handling and Storage

Handling: Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Storage: Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only.
Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
2−(Tert−butylamino)−4−chloro−6−(ethylamino)−s−triazine	N/E	N/E

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes: Wear chemical splash goggles or safety glasses with full−face shield. Maintain eyewash fountain in work area.

Skin: Maintain quick−drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory: If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid Emulsion, Straw, Opaque
Specific Gravity:	1.012 @ 20°C
pH:	7.4 @ 20°C, 100.0%
Freezing Point:	32°F
Flash Point:	N/D
Odor:	Mild
Melting Point:	N/D
Initial Boiling Point and Boiling Range:	N/D
Solubility in Water:	N/D
Evaporation Rate:	N/D
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.44 LB/GA

Vapor Pressure:	N/D
% VOC:	N/D
Odor Threshold	N/D
n−octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.

Incompatibility with Various Substances: Strong oxidizers, Strong acids, Strong Alkalis.

Hazardous Decomposition Products: Carbon dioxide, Carbon monoxide, Oxides of nitrogen, Oxides of sulfur, Toxic vapors/fumes/gases., Chlorine compounds.

Possibility of Hazardous Reactions: None known.

Reactivity: N/D

Conditions To Avoid: N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
ChemTreat CL2032	Oral	LD50	1350 MG/KG	Rat
	Dermal	LD50	>4400 MG/KG	Rabbit

Carcinogenicity Category

Component	Source	Code	Brief Description
2−(Tert−butylamino)−4−chloro−6−(ethylamino)−s−triazine	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Fathead Minnow	48h	LC50	4364 mg/l
Daphnia pulex	48h	LC50	5750 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: None.

Section 13. Disposal Considerations

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
CONTAINER DISPOSAL: Non−refillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by procedures approved by state and local authorities.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
2−(Tert−butylamino)−4−chloro−6−(ethylamino)−s−triazine	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
2−(Tert−butylamino)−4−chloro−6−(ethylamino)−s−triazine	None.

International Regulations

Canada

WHMIS Classification: N/A

Controlled Product Regulations (CPR): N/A

Compliance Information

NSF: N/A

Food Regulations: N/A

KOSHER: This product is certified by the Orthodox Union as Kosher for Passover and year−round use.
Only when prepared by the following ChemTreat facilities: Ashland, VA; Nederland, TX; Vernon, CA.

FIFRA: Registered pesticide under 40 CFR 152.10, Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), EPA Registration Number: 83451−9−15300.

Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	1
Flammability:	1
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha−numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end−user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept

Abbreviation	Definition
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: May 9, 2016

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	Quadrasperse® CL5898
Product Use:	Cooling Water Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424−9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648−4579
Date of MSDS:	7 May 2015
Revision Date:	7 May 2015
Revision Number:	15050701AN

Section 2. Hazard(s) Identification



Signal Word: **WARNING**

GHS Classification(s):
Eye damage/irritation − Category 2b
Acute Toxicity Dermal − Category 4
Acute Toxicity Inhalation − Category 4
Acute Toxicity Oral − Category 4

Hazard Statement(s):
Causes eye irritation.
Harmful in contact with skin.
Harmful if inhaled.
Harmful if swallowed.

Precautionary Statement(s):
Wear protective gloves/clothing and eye/face protection. Do not breathe dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Use only outdoors or in a well−ventilated area.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
2−Phosphono−1,2,4−butane tricarboxylic acid	37971−36−1	3 − 7
Benzotriazole, sodium salt	15217−42−2	1 − 5

Comments	If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Wash with plenty of soap and water. Call a poison center or doctor/physician if you feel unwell.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Notes to Physician:	N/A
Additional First Aid Remarks:	N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Use water spray to keep containers cool.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive−pressure, NIOSH approved, self−contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Methods for Cleaning up: Contain and recover liquid when possible. Flush spill area with water spray.

Other Statements: None.

Section 7. Handling and Storage

Handling: Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapours, mist or dust.

Storage: Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only.
Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
2−Phosphono−1,2,4−butane tricarboxylic acid	N/E	N/E
Benzotriazole, sodium salt	N/E	N/E

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes: Wear chemical splash goggles or safety glasses with full−face shield. Maintain eyewash fountain in work area.

Skin: Maintain quick−drench facilities in work area.
Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory: If misting occurs, use NIOSH approved organic vapour/acid gas dual cartridge respirator with a dust/mist prefilter.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Straw, Clear
Specific Gravity:	1.077 − 1.090 @ 20°C
pH:	3.8 @ 20°C, 100.0%
Freezing Point:	5°C
Flash Point:	N/D
Odour:	Mild
Melting Point:	N/A
Boiling Point:	N/D
Solubility in Water:	Complete
Evaporation Rate:	N/D
Vapour Density:	N/D
Molecular Weight:	N/D
Viscosity:	<100 CPS @ 20°C
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	1.09 KG/L
Vapour Pressure:	N/D
% VOC:	N/D
Odour Threshold	N/D
n−octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong bases.
Hazardous Decomposition Products:	Oxides of phosphorus, Oxides of sulphur.
Possibility of Hazardous Reactions:	None known.

Section 11. Toxicological Information

Chemical Name	Exposure	Type of Effect	Concentration	Species
2−Phosphono−1,2,4−butane tricarboxylic acid	Oral	LD50	>6500 MG/KG	Rat

Carcinogenicity Category

Component	Source	Code	Brief Description
2−Phosphono−1,2,4−butane tricarboxylic acid	N/E	N/E	N/E
Benzotriazole, sodium salt	N/E	N/E	N/E

Comments: None.

Section 12. Ecological Information

Species	Duration	Type of Effect	Test Results
Daphnia pulex	48h	LC50	1803 mg/l
Fathead Minnow	48h	LC50	1708 mg/l
	96h	LC50	1649 mg/l
Ceriodaphnia dubia	48h	LC50	932 mg/l

Comments: None.

Section 13. Disposal Considerations

Incinerate or bury in approved landfill. There may be additional local or provincial requirements relating to the disposal of waste. Consult provincial or local regulations regarding the proper disposal of this material. Refer to Transportation of Dangerous Goods (T.D.G.) classifications.

Section 14. Transport Information

Controlling Regulation	Proper Shipping Name:	Technical Name:	Hazard Class:	UN/NA#:	Packing Group:
DOT	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	Not Regulated	N/A	N/A
IMDG	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	Not Regulated	N/A	N/A
TDG	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	Not Regulated	N/A	N/A

Controlling Regulation	Proper Shipping Name:	Technical Name:	Hazard Class:	UN/NA#:	Packing Group:
ICAO	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	Not Regulated	N/A	N/A

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard: No
Reactive Hazard: No
Release of Pressure: No
Acute Health Hazard: Yes
Chronic Health Hazard: No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
2−Phosphono−1,2,4−butane tricarboxylic acid	N/A	N/A	N/A
Benzotriazole, sodium salt	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
2−Phosphono−1,2,4−butane tricarboxylic acid	None.
Benzotriazole, sodium salt	None.

International Regulations

Canada

WHMIS Classification:	D2B (Toxic Material)
Controlled Product Regulations (CPR):	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Section 16. Other Information

HMIS Hazard Rating

Health:	2
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha−numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end−user must determine if the code is appropriate for their use.

NSF: N/A

FDA/USDA/GRAS: N/A

KOSHER: This product has not been evaluated for Kosher approval.

FIFRA: N/A

Other: None

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable

Abbreviation	Definition
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product identifier: **DIXICHLOR MAX**
Synonyms: Bleach, Sodium Hypochlorite, Sodium Hypochlorite 12.5%
Intended use: Swimming pool chlorinator, Hard surface cleaner, Water treatment chemical, Biocides
Uses Advised Against: None identified. This is a pesticide product, do not use in a pesticide application that is not included on the label.

Company Identification
DPC Industries, Inc.
DPC Enterprises, LP
DXI Industries, Inc.
DX Terminals
PO Box 24600
Houston , TX 77229-4600

Emergency
CHEMTREC (USA) (800) 424-9300
24 hour Emergency Telephone No. (281) 457-4888
www.dxgroup.com

2. Hazard identification of the product

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 2

Label elements
Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.



Signal Word	**Danger**
Hazard Statements	Harmful in contact with skin. Causes severe skin burns and eye damage. Causes serious eye damage. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects. May be corrosive to metals
Precautionary Statements	
Prevention	Do not breathe mist / vapors / spray. Wash thoroughly after handling. Avoid release to the environment. Wear protective gloves / eye protection / face protection. Use in well ventilated area.
Response	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN: Remove / Take off immediately all contaminated clothing. Wash with plenty of soap and water. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor / physician if you feel unwell. IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing. Immediately call a POISON CENTER or doctor / physician. Wash contaminated clothing before reuse. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight.
Disposal	Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

Synonyms: Bleach, Sodium Hypochlorite, Sodium Hypochlorite 12.5%

Ingredient	CAS Number	Percent (%)	NOTES
Sodium hypochlorite.	7681-52-9	12.5 - 15.6	Substance classified with a health or environmental hazard.
Sodium chloride	7647-14-5	9 - 10	Substance classified with a health or environmental hazard.
Sodium hydroxide	1310-73-2	0.5 - 2	Substance classified with a health or environmental hazard. Substance with a workplace exposure limit.

4. First Aid Measures

General	Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Inhalation	Move victim to fresh air. Call emergency medical care. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult.
Eyes	Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart. Get medical attention. Remove contact lenses if present and easy to do - continue rinsing.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser. Do NOT use solvents or thinners.
Ingestion	If accidentally swallowed obtain immediate medical attention. Rinse mouth. Keep at rest. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content does not get into lungs.
Most important symptoms and effects, both acute and delayed	
Overview	Corrosive effects. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Recommended Extinguishing media	Alcohol resistant foam, CO^2, dry chemical powder, water spray. Do not use water jet.
Special hazards arising from the substance or mixture	Hydrogen chloride and chlorine. Chlorine gas rate of decomposition increases with the concentration with temperatures above 85 °F (30 °C). Do not breathe mist / vapors / spray.
Advice for fire-fighters	Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.). Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. **ERG Guide No.** 154

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Local authorities should be contacted if significant spill cannot be contained.
Environmental precautions	Do not allow spills to enter drains or watercourses.
Methods and material for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS.

7. Handling and storage

Precautions for safe handling	Wear appropriate personal protective equipment. Do not get in eyes, on skin, on clothing. Chemical attack increases with solution strength. Use with adequate ventilation. Observe good industrial hygiene practices. Do not apply heat or direct sunlight. Temperature and product concentration affect product quality and decomposition rates.
Conditions for safe storage, including any incompatibilities	Handle containers carefully to prevent damage and spillage. Keep container tightly closed. Store in a cool and well-ventilated place. Store in a corrosive resistant container. Consult container manufacturer for additional guidance. Store away from and do not mix with incompatible materials such as acids, ammonia, urea, oxidizers, organics and metals such as nickel, copper, tin, aluminum and iron.

8. Exposure controls and personal protection

Exposure Control Parameters

CAS No.	Ingestion	Source	Value
1310-73-2	Sodium hydroxide	OSHA	TWA 2 mg/m3
		ACGIH	Ceiling: 2 mg/m3
		NIOSH	C 2 mg/m3
7647-14-5	Sodium chloride	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
7681-52-9	Sodium hypochlorite.	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit

Individual protection measures, such as personal protective equipment

Respiratory	Use NIOSH/MSHA approved respirator, following manufacturer's recommendations when concentrations exceed permissible exposure limits.
Eyes	Wear face shield with safety glasses with side shields and/or safety goggles.
Skin	Chemical resistant clothing such as coveralls/apron boots should be worn. Chemical Impervious gloves.
Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn. Eye wash and safety shower must be available when handling this product
Other Work Practices	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

9. Physical and chemical properties

Appearance	Clear, pale yellow, or greenish Liquid
Odor	Pungent, chlorine odor
Odor threshold	0.9 mg/m^3
pH	12 - 13
Melting point / freezing point	-3 °F (-19.4 °C)
Initial boiling point and boiling range	Decomposes above 230 °F (110 °C)
Flash Point	Nonflammable
Evaporation rate (Ether = 1)	Not Established
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured **Upper Explosive Limit:** Not Measured
Vapor pressure (mmHg)	17.5 (@ 20° C)
Vapor Density	Not Established
Specific Gravity	1.20 - 1.40
Solubility in Water	Complete
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature (°C)	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured
Other information	No other relevant information.

10. Stability and reactivity

Reactivity	Hazardous Polymerization will not occur.
Chemical stability	Stable under normal circumstances.
Possibility of hazardous reactions	No data available.
Conditions to avoid	Contact with incompatible materials. Acid contact will produce chlorine gas.
Incompatible materials	Any acidic material, ammonia, urea, oxidizers, organics and metals such as nickel, copper, tin, aluminum and iron.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Sodium hypochlorite (7681-52-9)	5,000.00, Rat - Category: 5	10,000.00, Rabbit - Category: NA	10.50, Rat - Category: 4	No data available	No data available
Sodium chloride (7647-14-5)	1,350.00, Rabbit - Category: 4	100.00, Rat - Category: 2	40.00, Mouse - Category: NA	10,500.00, Rat - Category: NA	No data available
Sodium hydroxide (1310-73-2)	6,600.00, Mouse - Category: NA	1,350.00, Rabbit - Category: 4	600.00, Mouse - Category: NA	No data available	No data available

11. Toxicological information

Acute toxicity (cont.)

Item	Hazard
Acute Toxicity (mouth)	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
Acute Toxicity (skin)	Harmful in contact with skin.
Acute Toxicity (inhalation)	Vapors and spray mist may irritate throat and respiratory system and cause coughing.
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Eye damage/irritation	Causes serious eye damage.
Sensitization (respiratory)	No data available.
Sensitization (skin)	No data available.
Germ toxicity	No data available.
Carcinogenicity	Not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.
Reproductive Toxicity	No data available.
Specific target organ systemic toxicity (single exposure)	May cause respiratory irritation.
Specific target organ systemic Toxicity (repeated exposure)	Not Applicable.
Aspiration hazard	Not classified; however droplets of product may be aspirated into lungs, through ingestion or vomiting and may cause serious chemical pneumonia.

12. Ecological information

Toxicity: Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Sodium hypochlorite (7681-52-9)	0.08, Pimephales promelas	0.032, Daphnia magna	0.40 (72 hr), Dunaliella primolecta
Sodium chloride (7647-14-5)	1,100.00, Freshwater Fish	3,310.00, Daphnia magna	Not Available
Sodium hydroxide (1310-73-2)	196.00, Poecilia reticulata	40.38, Ceriodaphnia dubia	Not Available

Persistence and degradability:	There is no data available on the preparation itself.
Bioaccumulative potential:	Not Measured
Mobility in soil:	No data available.
Results of PBT and vPvB assessment:	This product contains no PBT/vPvB chemicals.
Other adverse effects:	No other effects are expected.

13. Disposal considerations

Waste treatment methods:	Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act. Using information provided in this data sheet, advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.
Waste from material:	The waste determination should be made in discussion between the user and the waste disposal company.
Container Management:	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Safety Data Sheet

14. Transport information

UN number:	UN1791
UN proper shipping name:	Hypochlorite solutions
Transport hazard class(es)	
DOT (Domestic Surface Transportation)	
DOT Proper Shipping Name:	Hypochlorite solutions
DOT Hazard Class: **DOT Label:**	8 8
UN / NA Number:	UN1791
DOT Packing Group:	III
CERCLA/DOT RQ:	100 lbs.
Environmental hazards:	IMDG Marine Pollutant: Yes (Sodium hypochlorite)
Special precautions for user:	Not Applicable

15. Regulatory information

Regulatory Overview:	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory.	
WHMIS Classification	D2B E	
US EPA Tier II Hazards:	**Fire:**	No
	Sudden Release of Pressure:	No
	Reactive:	No
	Immediate (Acute):	Yes
	Delayed (Chronic):	No
SARA 302 Extremely Hazardous Substance:		No
SARA 311/312 Chemicals and RQs (lbs) (>0.1%) :		100
SARA 313 (TRI):		No
CAA Section 112 Hazardous Air Pollutant:		No
CAA Section 112R Risk Management Plan:		No
State Regulations	**N.J. RTK Substances (>1%) :**	Listed
	Penn RTK Substances (>1%) :	Listed
	California Prop 65:	Not Listed

16. Other information:

EPA Registration Number: 813-15

NSF Maximum Use Level (STD 60): Check BOL for facility Data. (37 to 84 mg/L)

Revision Information: This is the first revision of this SDS format, changes from previous revision not applicable.

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

THE USER IS CAUTIONED TO PERFORM HIS OWN HAZARD EVALUATION AND TO RELY ON HIS OWN DETERMINATIONS.

MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	**ChemTreat BL-1556**
Manufacturer's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800) 424-9300
Address (Corporate Headquarters)	4461 Cox Road, Glen Allen, VA 23060
Telephone Number for Information:	(800) 648-4579
Date of MSDS:	August 2, 2007

Section 2. Composition/Hazardous Ingredients

Component	**CAS Registry #**	**Wt. %**
Methoxypropylamine	5332-73-0	40 - 70

Section 3. Hazards Identification

Emergency Overview: Clear colorless liquid; strong amine odor. Flash point = 122°F

Potential Health Effects:

Eyes – Will cause corrosive effects (burns or irreversible damage) to eyes.

Skin – Will cause corrosive effects (burns or irreversible damage) to lungs, upper respiratory tract, and nose.

Inhalation – Will cause corrosive effects (burns or irreversible damage) to skin.

Ingestion – Will cause corrosive effects (burns or irreversible damage) to mouth, throat and digestive tract.

Chronic Effects/Carcinogenicity: No information found on significant long-term effects. Target organs: eyes, skin, and respiratory tract.

Section 4. First Aid Measures

Inhalation: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Get immediate medical attention.

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, holding eyelids apart to ensure flushing of entire eye surface. Get immediate medical attention.

Skin: Wash thoroughly with soap and large amounts of water. Wash clothing before reuse. Get medical attention immediately.

Ingestion: Do not induce vomiting. Give victim a glass of water or milk. Never give anything by mouth to an unconscious person. Call a physician immediately.

Section 5. Fire Fighting Measures

Flammable Properties: Flash point = 122°F
Suitable Extinguishing Media: Use alcohol, carbon dioxide, foam, or water spray when fighting fires involving this material.
Fire & Explosion Hazards: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Protective Equipment: Wear full protective clothing including a positive-pressure, NIOSH-approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Small Spill: Construct temporary dikes of dirt, sand, or any readily available inert material to prevent spreading of the material. Wearing appropriate personal protective equipment, move the leaking container to a containment area or plug the leak. Absorb on inert material, then shovel up and dispose of according to local, state, federal regulations.
Large Spill: Construct temporary dikes of dirt, sand, or any readily available inert material to prevent spreading of the product. Wearing appropriate personal protective equipment, close or cap valves and/or block or plug hole in leaking container and transfer to another container for proper disposal.

Section 7. Handling and Storage

Keep away from heat, sparks and flame. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Avoid breathing mists. Do not ingest. Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For industrial use only.

Section 8. Exposure Controls/Personal Protection

Use protective equipment in accordance with 29 CFR 1910 Subpart I. Good general ventilation should be sufficient to control airborne levels. Wear chemical splash goggles or safety glasses with full-face shield. Wear rubber gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact. Maintain eyewash fountain and quick-drench facilities in work area.

Section 9. Physical and Chemical Properties

Appearance: Clear colorless	Physical state: Liquid
Boiling Point: ~ 212°F	Solubility in Water: Complete
Evaporation Rate: N/D	Specific Gravity: ~0.967
Freezing Point: < -13°F	Vapor Density: N/D
Melting Point: N/A	Vapor Pressure: N/D
Molecular Weight: Mixture	Viscosity: N/D
Odor: Strong amine	% VOCs: 60
pH: ~ 13.1	Flash Point: 122°F

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.
Incompatibility: Strong acids; strong oxidizers
Hazardous Decomposition Products: Oxides of carbon and of nitrogen
Hazardous Polymerization: Will not occur.

Section 11. Toxicological Information

Oral LD50 = 6,260 mg/kg (rats)

Section 12. Ecological Information

Daphnia magna 48 hour EC50 = 59 mg/L; Golden Orfe 96 hour LC50 = 166.7 – 366.7 mg/L

Section 13. Disposal Considerations

This material is considered to be a hazardous waste, characteristic of ignitability D001 and corrosivity D002. Observe all federal, state and local regulations when disposing of this product.

Section 14. Transport Information (not meant to be all inclusive)

D.O.T. Shipping Name: Amine, liquid, corrosive, n.o.s.
Technical Name: (Methoxypropylamine)
Hazard Class: 8 (Corrosive); UN2735; PG II

Section 15. Regulatory Information (*Not meant to be all inclusive – selected regulation represented*)

TSCA Status: All ingredients listed
CERCLA Reportable Quantity: None
SARA Title III:
Section 302 Extremely Hazardous Substances: None
Section 313 Toxic Chemicals: None
CALIFORNIA PROPOSITION 65: None

Section 16. Other Information

HMIS Hazard Rating:
Health: 2 Flammability: 2 Physical Hazard: 0 PPE: X (see note)

Note: PPE rating depends on circumstances of use. See Section 8 for recommended PPE.

SARA Hazard Categories – Section 311/312
Acute – Yes Chronic – No Fire – Yes Reactive – No Sudden Release – No

Prepared by Regulatory Affairs

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information.
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SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat BL1794
Product Use:	Boiler Water Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424−9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648−4579
Date of SDS:	May 9, 2016
Revision Date:	May 9, 2016
Revision Number:	16050901AN

Section 2. Hazard(s) Identification



Signal Word: **WARNING**

GHS Classification(s):
Eye damage/irritation − Category 2b
Skin corrosion/irritation − Category 2
Acute Toxicity Inhalation − Category 4
Acute Toxicity Oral − Category 4

Hazard Statement(s):
H320 Causes eye irritation.
H315 Causes skin irritation.
H332 Harmful if inhaled.
H302 Harmful if swallowed.

Precautionary Statement(s): No significant health risks are expected from exposures under normal conditions of use.

Prevention: None.

Response: None.

Storage: None.

Disposal: None.

System of Classification Used: Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified: None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Sodium phosphate, tribasic	7601−54−9	1 − 5

Comments If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Skin: Wash with plenty of soap and water. Take off contaminated clothing and wash before re−use. If skin irritation occurs, seek medical advice/attention.

Ingestion: DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.

Most Important Symptoms: N/D

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary: N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	None known.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive−pressure, NIOSH approved, self−contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1−800−424−8802.

Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Sodium phosphate, tribasic	N/E	N/E

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes: Wear chemical splash goggles or safety glasses with full−face shield. Maintain eyewash fountain in work area.

Skin: Maintain quick−drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory: If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	1.040 @ 20°C
pH:	12.1 @ 20°C, 100.0%
Freezing Point:	37°F
Flash Point:	N/D
Odor:	Odorless
Melting Point:	N/D
Initial Boiling Point and Boiling Range:	212°F
Solubility in Water:	Complete
Evaporation Rate:	<1
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.67 LB/GA

Vapor Pressure:	Negligible
% VOC:	0
Odor Threshold	N/D
n−octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.

Incompatibility with Various Substances: Strong oxidizers, Acids.

Hazardous Decomposition Products: Oxides of phosphorus.

Possibility of Hazardous Reactions: None known.

Reactivity: N/D

Conditions To Avoid: N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Sodium phosphate, tribasic	Oral	LD50	7400 MG/KG	Rat

Carcinogenicity Category

Component	Source	Code	Brief Description
Sodium phosphate, tribasic	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Daphnia magna	50h	EC50	2158 mg/l
Bluegill Sunfish	96h	LC50	2682 mg/l
Rainbow Trout	96h	LC50	1463 mg/l
Ceriodaphnia dubia	48h	LC50	>10000 mg/l
Fathead Minnow	96h	LC50	>10000 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: None.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.
Not a RCRA−regulated hazardous waste when disposed in the original product form.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Sodium phosphate, tribasic	N/A	N/A	5000

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Sodium phosphate, tribasic	MN, NY, PA

International Regulations

Canada

WHMIS Classification: D2B (Toxic Material)

Controlled Product Regulations (CPR): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Compliance Information

NSF: N/A

Food Regulations: FDA: All ingredients in this product are authorized in 21 CFR 173.310 for use as "Boiler Water Additives" where the steam may contact food.

KOSHER: This product is certified by the Orthodox Union as kosher pareve.
Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX; Vernon, CA.

FIFRA: N/A

Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	1
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha−numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end−user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept

Abbreviation	Definition
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: May 9, 2016

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

ATTACHMENT J STORMWATER MANAGEMENT

Attachment J
Technical Report

All storm water drainage from production and non-production areas is discharged through permitted outfalls. Oil storage procedures are detailed in the facility's Spill Prevention, Control, and Countermeasure (SPCC) Plan. Large storage tanks are located within earthen and/or concrete dike secondary containment. Tanks of acid and caustic are located within secondary containment or curbed areas for spill control. Outdoor storage of equipment is limited to items that will not significantly affect storm water quality. Potential storm water contamination sources and best management practices for storm water runoff are addressed in the facility's SPCC Plan. In addition, storm water from the Boiler Blowdown Pond (Pond 5) and the Organic Retention Pond (Pond 6) will be treated by the Chemical Waste Treatment System before being discharged.

ATTACHMENT K PROCESS/NON-PROCESS WASTEWATER FLOWS

Attachment K
Technical Report

6. 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.

For Steam Electric Generating Stations (Not all waste streams are generated at this facility):

1. Process Wastewater
    a. Chemical Metal Cleaning Wastewater
2. Non-Process Wastewater
    a. Utility Wastewater
        i. Cooling Tower Blowdown
        ii. Non-Chemical Metal Cleaning Wastewater
        iii. Low Volume Wastewater, including flows from the following sources:
            1. Floor Drainage
            2. Boiler Blowdown
            3. Ion Exchange Water Treatment Systems
            4. Recirculating Service Water Systems
            5. Laboratory and Sampling Streams
            6. Cooling Tower Basin Cleaning Wastes
    b. Domestic Wastewater
    c. Air Conditioning Condensate

ATTACHMENT L LABORATORY INFORMATION

Attachment L
Technical Report

Dissolved oxygen, total residual chlorine, temperature and pH were analyzed on-site at T.H. Wharton

E. coli analyses were performed by:
Envirodyne Laboratories, Inc.
11011 Brooklet Dr., #230
Houston, Texas 77099
281-568-7880

Mercury and cyanide analyses were performed by:
ALS Environmental - Holland
3352 128th Avenue
Holland, Michigan 49424
616-399-6070

Hexavalent chromium analyses were performed by:
Pace Analytical
12065 Lebanon Road
Mount Juliet, Tennessee 37122
615-758-5858

All other analyses were performed by:
ALS Environmental
10450 Stancliff Rd. Suite 210
Houston, Texas 77099
281-530-5656