Lloyd Gosselink
ATTORNEYS AT LAW
Mr. Vassar's Direct Line: (512) 322-5867
[redacted]

816 Congress Avenue, Suite 1900
Austin, Texas 78701
512.322.5800 p
512.472.0532 f
lglawfirm.com

October 16, 2024

VIA HAND DELIVERY

Mr. Bert Galvan
Manager
Water Rights Permitting and Availability (MC 160)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: San Jacinto River Authority and City of Houston Joint Application for a Water Use Permit Pursuant to Texas Water Code § 11.042 (1197-34)

Dear Mr. Galvan:

Please find enclosed one hard copy of a joint application for a water use permit filed on behalf of San Jacinto River Authority and City of Houston (collectively the "Applicants"). As provided herein, the enclosed application requests a bed and banks permit to transport discharged effluent through Lake Conroe (West Fork San Jacinto River) for subsequent diversion and is the direct result of a settlement agreement between the San Jacinto River Authority, the City of Houston, Texas, Municipal Utility Districts 8 and 9, and the City of Huntsville, Texas. This application is consistent with the discussions during the May 12, 2023, pre-application meeting with Texas Commission on Environmental Quality ("TCEQ") staff.

Enclosed herein is a check in the amount of $112.50, which is submitted as partial payment for the application fees. The Applicants will remit payment for any additional fees for mailing of notice upon notification from TCEQ of such fees.

We look forward to working with you and your staff in processing this application. Should you have any questions, please do not hesitate to contact me at [redacted]

Sincerely,

Nathan Vassar

NEV/las
ENCLOSURES

cc: *(via electronic mail only)*
Dr. Kathy Alexander
Ms. Brooke McGregor
Ms. Kim Nygren
Ms. Emily Rogers
Ms. Carolyn Ahrens
Mr. Aubrey Spear
Mr. Matt Barrett

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Mr. Ed Shackelford
Ms. Lauren Thomson

Texas Commission on Environmental Quality

Application for a Water Use Permit

San Jacinto River Authority and City of Houston

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Water Availability Division

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

October 2024

Accounting Plan..... 20

Check 21

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

TCEQ WATER RIGHTS PERMITTING APPLICATION

ADMINISTRATIVE INFORMATION CHECKLIST

Complete and submit this checklist for each application. See Instructions Page 5.

APPLICANT(S): San Jacinto River Authority and City of Houston

Indicate whether the following items are included in your application by writing either Y (for yes) or N (for no) next to each item (all items are not required for every application).

Y/N		Y/N	
Y	**Administrative Information Report**	Y	**Worksheet 3.0**
Y	Additional Co-Applicant Information	N	Additional W.S. 3.0 for each Point
Y	Additional Co-Applicant Signature Pages	N	Recorded Deeds for Diversion Points
Y	Written Evidence of Signature Authority	N	Consent for Diversion Access
Y	**Technical Information Report**	N	**Worksheet 4.0**
Y	USGS Map (or equivalent)	Y	TPDES Permit(s)
Y	Map Showing Project Details	N	WWTP Discharge Data
N	Original Photographs	N	Groundwater Well Permit
N	Water Availability Analysis	N	Signed Water Supply Contract
Y	**Worksheet 1.0**	N	**Worksheet 4.1**
N	Recorded Deeds for Irrigated Land	Y	**Worksheet 5.0**
N	Consent for Irrigated Land	N	Addendum to Worksheet 5.0
N	**Worksheet 1.1**	Y	**Worksheet 6.0**
N	Addendum to Worksheet 1.1	Y	Water Conservation Plan(s)
N	**Worksheet 1.2**	Y	Drought Contingency Plan(s)
N	**Worksheet 2.0**	Y	Documentation of Adoption
N	Additional W.S. 2.0 for Each Reservoir	Y	**Worksheet 7.0**
N	Dam Safety Documents	Y	Accounting Plan
N	Notice(s) to Governing Bodies	Y	**Worksheet 8.0**
N	Recorded Deeds for Inundated Land	Y	Fees
N	Consent for Inundated Land	N	Public Involvement Plan

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Water Availability Division

ADMINISTRATIVE INFORMATION REPORT

The following information **is required** for **all** new applications and amendments.

****Applicants are REQUIRED to schedule a pre-application meeting with TCEQ Staff to discuss Applicant's needs prior to submitting an application. Call the Water Rights Permitting Team to schedule a meeting at* (512) 239-4600.

1. TYPE OF APPLICATION (Instructions, Page. 6)

Indicate, by marking X, next to the following authorizations you are seeking.

_____New Appropriation of State Water

_____Amendment to a Water Right *

X____Bed and Banks

**If you are seeking an amendment to an existing water rights authorization, you must be the owner of record of the authorization. If the name of the Applicant in Section 2 does not match the name of the current owner(s) of record for the permit or certificate or if any of the co-owners is not included as an applicant in this amendment request, your application could be returned. If you or a co-applicant are a new owner, but ownership is not reflected in the records of the TCEQ, submit a change of ownership request (Form TCEQ-10204) prior to submitting the application for an amendment. See Instructions page. 6. Please note that an amendment application may be returned, and the Applicant may resubmit once the change of ownership is complete.*

Please summarize the authorizations or amendments you are seeking in the space below or attach a narrative description entitled "Summary of Request."

See Addendum Summary of Request, Tab 4.

2. APPLICANT INFORMATION (Instructions, Page. 6)

a. Applicant

Indicate the number of Applicants/Co-Applicants 2
(Include a copy of this section for each Co-Applicant, if any)

What is the Full Legal Name of the individual or entity (applicant) applying for this permit?

San Jacinto River Authority

(If the Applicant is an entity, the legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal documents forming the entity.)

If the applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch

CN : CN600644595 (leave blank if you do not yet have a CN).

What is the name and title of the person or persons signing the application? Unless an application is signed by an individual applicant, the person or persons must submit written evidence that they meet the signatory requirements in *30 TAC § 295.14.*

First/Last Name: Jace A. Houston

Title: General Manager

Have you provided written evidence meeting the signatory requirements in 30 TAC § 295.14, as an attachment to this application? **Y/N** Y See Tab 7.

What is the applicant's mailing address as recognized by the US Postal Service (USPS)? You may verify the address on the USPS website at https://tools.usps.com/go/ZipLookupAction!input.action.

Name: San Jacinto River Authority

Mailing Address: P.O. Box 329

City: Conroe State: Texas ZIP Code: 77305

Indicate an X next to the type of Applicant:

___Individual	___Sole Proprietorship-D.B.A.
___Partnership	___Corporation
___Trust	___Estate
___Federal Government	___State Government
___County Government	___City Government
X Other Government	___Other_____

For Corporations or Limited Partnerships, provide:
State Franchise Tax ID Number: N/A SOS Charter (filing) Number: N/A

2. APPLICANT INFORMATION (Instructions, Page. 6)

a. Applicant

Indicate the number of Applicants/Co-Applicants 2
(Include a copy of this section for each Co-Applicant, if any)

What is the Full Legal Name of the individual or entity (applicant) applying for this permit?

City of Houston

(If the Applicant is an entity, the legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal documents forming the entity.)

If the applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at http://www15.tceq.texas.gov/crpub/index.cfm?fuseaction=cust.CustSearch

CN : CN600128995 (leave blank if you do not yet have a CN).

What is the name and title of the person or persons signing the application? Unless an application is signed by an individual applicant, the person or persons must submit written evidence that they meet the signatory requirements in *30 TAC § 295.14.*

First/Last Name: Randall V. Macchi

Title: Chief Operating Officer, Houston of Public Works

Have you provided written evidence meeting the signatory requirements in 30 TAC § 295.14, as an attachment to this application? **Y/N** Y See Tab 8.

What is the applicant's mailing address as recognized by the US Postal Service (USPS)? You may verify the address on the USPS website at https://tools.usps.com/go/ZipLookupAction!input.action.

Name: City of Houston

Mailing Address: 611 Walker Street, 25th Floor

City: Houston State: Texas ZIP Code: 77002

Indicate an X next to the type of Applicant:

___Individual	___Sole Proprietorship-D.B.A.
___Partnership	___Corporation
___Trust	___Estate
___Federal Government	___State Government
___County Government	X City Government
___Other Government	___Other_____

For Corporations or Limited Partnerships, provide:
State Franchise Tax ID Number: N/A SOS Charter (filing) Number: N/A

3. APPLICATION CONTACT INFORMATION (Instructions, Page. 9)

If the TCEQ needs additional information during the review of the application, who should be contacted? Applicant may submit their own contact information if Applicant wishes to be the point of contact.

First and Last Name: Nathan E. Vassar

Title: Principal

Organization Name: Lloyd Gosselink Rochelle & Townsend, P.C.

Mailing Address: 816 Congress Ave., Suite 1900

City: Austin State: Texas ZIP Code: 78701

[redacted]

4. WATER RIGHT CONSOLIDATED CONTACT INFORMATION (Instructions, Page. 9)

N/A

This section applies only if there are multiple Owners of the same authorization. Unless otherwise requested, Co-Owners will each receive future correspondence from the Commission regarding this water right (after a permit has been issued), such as notices and water use reports. Multiple copies will be sent to the same address if Co-Owners share the same address. Complete this section if there will be multiple owners and **all** owners agree to let one owner receive correspondence from the Commission. Leave this section blank if you would like all future notices to be sent to the address of each of the applicants listed in section 2 above.

I/We authorize all future notices be received on my/our behalf at the following:

First and Last Name: _____

Title: _____

Organization Name: _____

Mailing Address: _____

City: _____ State: _____ ZIP Code: _____

Phone Number: _____

Fax Number: _____

E-mail Address: _____

5. MISCELLANEOUS INFORMATION (Instructions, Page. 9)

a. The application will not be processed unless all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol by all applicants/co-applicants. If you need assistance determining whether you owe delinquent penalties or fees, please call the Water Rights Permitting Team at (512) 239-4600, prior to submitting your application.

1. Does Applicant or Co-Applicant owe any fees to the TCEQ? **Yes / No** No

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

   Account number: _____ Amount past due: _____

2. Does Applicant or Co-Applicant owe any penalties to the TCEQ? **Yes / No** No

   If **yes**, please provide the following information:

   Enforcement order number: _____ Amount past due: _____

b. If the Applicant is a taxable entity (corporation or limited partnership), the Applicant must be in good standing with the Comptroller or the right of the entity to transact business in the State may be forfeited. See Texas Tax Code, Subchapter F. Applicant's may check their status with the Comptroller at https://mycpa.cpa.state.tx.us/coa/

   Is the Applicant or Co-Applicant in good standing with the Comptroller? **Yes / No** N/A

c. The commission will not grant an application for a water right unless the applicant has submitted all Texas Water Development Board (TWDB) surveys of groundwater and surface water use – if required. See TWC §16.012(m) and 30 TAC § 297.41(a)(5). Applicants should check survey status on the TWDB website prior to filing: https://www3.twdb.texas.gov/apps/reports/WU/SurveyStatus_PriorThreeYears

   Applicant has submitted all required TWDB surveys of groundwater and surface water? **Yes / No** Yes

6. SIGNATURE PAGE (Instructions, Page. 11)

Applicant:

I, Jace A. Houston (Typed or printed name) General Manager (Title)

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 Title 30 Texas Administrative Code §295.14 to sign and submit this document and I have submitted written evidence of my signature authority.

Signature: _____ Date: 5/24/2023
(Use blue ink)

Subscribed and Sworn to before me by the said

on this 24th day of May, 2023.

My commission expires on the 11th day of January, 2025 calo.

Notary Public [SEAL]

CYNTHIA A. BOWMAN NOTARY PUBLIC STATE OF TEXAS ID 12305977 EXP. 01-11-2024

County, Texas

If the Application includes Co-Applicants, each Applicant and Co-Applicant must submit an original, separate signature page

6. SIGNATURE PAGE (Instructions, Page. 11)

Applicant:

I, Randall V. Macchi chief Operating Officer
(Typed or printed name) (Title)

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 Title 30 Texas Administrative Code §295.14 to sign and submit this document and I have submitted written evidence of my signature authority.

Signature: _____ Date: 9/19/2024
(Use blue ink)

Subscribed and Sworn to before me by the said

on this 19 day of September, 20 24.

My commission expires on the 12 day of September, 20 24 thru 5

Notary Public

[SEAL]

TRINYA R. MEADOWS
My Notary ID # 129557987
Expires September 12, 2025

County, Texas

If the Application includes Co-Applicants, each Applicant and Co-Applicant must submit an original, separate signature page

TECHNICAL INFORMATION REPORT
WATER RIGHTS PERMITTING

This Report is required for applications for new or amended water rights. Based on the Applicant's responses below, Applicants are directed to submit additional Worksheets (provided herein). A completed Administrative Information Report is also required for each application.

Applicants are REQUIRED to schedule a pre-application meeting with TCEQ Permitting Staff to discuss Applicant's needs and to confirm information necessary for an application prior to submitting such application. Please contact the Water Availability Division at (512) 239-4600 or WRPT@tceq.texas.gov to schedule a meeting.

Date of pre-application meeting: May 12, 2023

1. New or Additional Appropriations of State Water. Texas Water Code (TWC) § 11.121 (Instructions, Page. 12)

State Water is: *The water of the ordinary flow, underflow, and tides of every flowing river, natural stream, and lake, and of every bay or arm of the Gulf of Mexico, and the storm water, floodwater, and rainwater of every river, natural stream, canyon, ravine, depression, and watershed in the state. TWC § 11.021.*

a. Applicant requests a new appropriation (diversion or impoundment) of State Water? **Y / N** N

b. Applicant requests an amendment to an existing water right requesting an increase in the appropriation of State Water or an increase of the overall or maximum combined diversion rate? **Y / N** N (If yes, indicate the Certificate or Permit number:_____)

If Applicant answered yes to (a) or (b) above, does Applicant also wish to be considered for a term permit pursuant to TWC § 11.1381? **Y / N** N

c. Applicant requests to extend an existing Term authorization or to make the right permanent? **Y / N** N (If yes, indicate the Term Certificate or Permit number:_____)

If Applicant answered yes to (a), (b) or (c), the following worksheets and documents are required:

- **Worksheet 1.0 – Quantity, Purpose, and Place of Use Information Worksheet**
- **Worksheet 2.0 - Impoundment/Dam Information Worksheet** (submit one worksheet for each impoundment or reservoir requested in the application)
- **Worksheet 3.0 - Diversion Point Information Worksheet** (submit one worksheet for each diversion point and/or one worksheet for the upstream limit and one worksheet for the downstream limit of each diversion reach requested in the application)
- **Worksheet 5.0 – Environmental Information Worksheet**
- **Worksheet 6.0 – Water Conservation Information Worksheet**
- **Worksheet 7.0 – Accounting Plan Information Worksheet**
- **Worksheet 8.0 – Calculation of Fees**
- **Fees calculated on Worksheet 8.0** – see instructions **Page. 34.**
- **Maps** – See instructions **Page. 15.**
- **Photographs** - See instructions **Page. 30.**

Additionally, if Applicant wishes to submit an alternate source of water for the project/authorization, see Section 3, Page 3 for Bed and Banks Authorizations (Alternate sources may include groundwater, imported water, contract water or other sources).

Additional Documents and Worksheets may be required (see within).

2. Amendments to Water Rights. TWC § 11.122 (Instructions, Page. 12)

N/A

This section should be completed if Applicant owns an existing water right and Applicant requests to amend the water right. ***If Applicant is not currently the Owner of Record in the TCEQ Records, Applicant must submit a Change of Ownership Application (TCEQ-10204) prior to submitting the amendment Application or provide consent from the current owner to make the requested amendment. If the application does not contain consent from the current owner to make the requested amendment, TCEQ will not begin processing the amendment application until the Change of Ownership has been completed and will consider the Received Date for the application to be the date the Change of Ownership is completed.*** **See instructions page. 6.**

Water Right (Certificate or Permit) number you are requesting to amend: _____

Applicant requests to sever and combine existing water rights from one or more Permits or Certificates into another Permit or Certificate? **Y / N**_____(if yes, complete chart below):

List of water rights to sever	Combine into this ONE water right

a. Applicant requests an amendment to an existing water right to increase the amount of the appropriation of State Water (diversion and/or impoundment)? **Y / N**_____

If yes, application is a new appropriation for the increased amount, complete ***Section 1 of this Report (PAGE. 1) regarding New or Additional Appropriations of State Water.***

b. Applicant requests to amend existing Term authorization to extend the term or make the water right permanent (remove conditions restricting water right to a term of years)? **Y / N**___

If yes, application is a new appropriation for the entire amount, complete ***Section 1 of this Report (PAGE. 1) regarding New or Additional Appropriations of State Water.***

c. Applicant requests an amendment to change the purpose or place of use or to add an additional purpose or place of use to an existing Permit or Certificate? **Y / N**_____
If yes, submit:
   - **Worksheet 1.0 – Quantity, Purpose, and Place of Use Information Worksheet**
   - **Worksheet 1.2 - Notice: "Marshall Criteria"**

d. Applicant requests to change: diversion point(s); or reach(es); or diversion rate? **Y / N**____
If yes, submit:
   - **Worksheet 3.0 - Diversion Point Information Worksheet** (submit one worksheet for each diversion point or one worksheet for the upstream limit and one worksheet for the downstream limit of each diversion reach)
   - **Worksheet 5.0 – Environmental Information** (Required for <u>any</u> new diversion points that are not already authorized in a water right)

e. Applicant requests amendment to add or modify an impoundment, reservoir, or dam? **Y / N**____

If yes, submit: **Worksheet 2.0 - Impoundment/Dam Information Worksheet** (submit one worksheet for each impoundment or reservoir)

f. Other - Applicant requests to change any provision of an authorization not mentioned above? **Y / N**_____*If yes, call the Water Availability Division at (512) 239-4600 to discuss.*

Additionally, all amendments require:

- **Worksheet 8.0 – Calculation of Fees; and Fees calculated – see instructions Page. 34**
- **Maps – See instructions Page. 15.**
- **Additional Documents and Worksheets may be required (see within).**

3. Bed and Banks. TWC § 11.042 (Instructions, Page 13)

a. Pursuant to contract, Applicant requests authorization to convey, stored or conserved water to the place of use or diversion point of purchaser(s) using the bed and banks of a watercourse? TWC § 11.042(a). **Y/N** N

If yes, submit a signed copy of the Water Supply Contract pursuant to 30 TAC §§ 295.101 and 297.101. Further, if the underlying Permit or Authorization upon which the Contract is based does not authorize Purchaser's requested Quantity, Purpose or Place of Use, or Purchaser's diversion point(s), then either:

1. *Purchaser must submit the worksheets required under Section 1 above with the Contract Water identified as an alternate source; or*
2. *Seller must amend its underlying water right under Section 2.*

b. Applicant requests to convey water imported into the state from a source located wholly outside the state using the bed and banks of a watercourse? TWC § 11.042(a-1). **Y / N** N

If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps and fees from the list below.

c. Applicant requests to convey Applicant's own return flows derived from privately owned groundwater using the bed and banks of a watercourse? TWC § 11.042(b). **Y / N** N

If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps, and fees from the list below.

d. Applicant requests to convey Applicant's own return flows derived from surface water using the bed and banks of a watercourse? TWC § 11.042(c). **Y / N** N

If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, Maps, and fees from the list below.

****Please note, if Applicant requests the reuse of return flows belonging to others, the Applicant will need to submit the worksheets and documents under Section 1 above, as the application will be treated as a new appropriation subject to termination upon direct or indirect reuse by the return flow discharger/owner.***

e. Applicant requests to convey water from any other source, other than (a)-(d) above, using the bed and banks of a watercourse? TWC § 11.042(c). **Y / N** Y

If yes, submit worksheets 1.0, 2.0, 3.0, 4.0, 5.0, 7.0, 8.0, Maps, and fees from the list below.

Worksheets and information:

MUDs 8/9 and Huntsville discharged effluent. See Summary of Request Tab 4.

- **Worksheet 1.0 – Quantity, Purpose, and Place of Use Information Worksheet**
- **Worksheet 2.0 - Impoundment/Dam Information Worksheet** (submit one worksheet for each impoundment or reservoir owned by the applicant through which water will be conveyed or diverted)
- **Worksheet 3.0 - Diversion Point Information Worksheet** (submit one worksheet for the downstream limit of each diversion reach for the proposed conveyances)

- **Worksheet 4.0 - Discharge Information Worksheet** (for each discharge point)
- **Worksheet 5.0 - Environmental Information Worksheet**
- **Worksheet 6.0 - Water Conservation Information Worksheet**
- **Worksheet 7.0 - Accounting Plan Information Worksheet**
- **Worksheet 8.0 - Calculation of Fees; and Fees calculated - see instructions Page. 34**
- **Maps** - See instructions **Page. 15.**
- **Additional Documents and Worksheets may be required (see within).**

4. General Information, Response Required for all Water Right Applications (Instructions, Page 15)

a. Provide information describing how this application addresses a water supply need in a manner that is consistent with the state water plan or the applicable approved regional water plan for any area in which the proposed appropriation is located or, in the alternative, describe conditions that warrant a waiver of this requirement (*not required for applications to use groundwater-based return flows*). Include citations or page numbers for the State and Regional Water Plans, if applicable. Provide the information in the space below or submit a supplemental sheet entitled "Addendum Regarding the State and Regional Water Plans":

See Tab 5 Addendum regarding consistency with State and Regional Water Plans.

b. Did the Applicant perform its own Water Availability Analysis? **Y** / **N** N

If the Applicant performed its own Water Availability Analysis, provide electronic copies of any modeling files and reports.

c. Does the application include required Maps? (**Instructions Page. 15**) **Y** / **N** Y

WORKSHEET 1.0
Quantity, Purpose and Place of Use

1. New Authorizations (Instructions, Page. 16)

Submit the following information regarding quantity, purpose and place of use for requests for new or additional appropriations of State Water or Bed and Banks authorizations:

Quantity (acre-feet) *(Include losses for Bed and Banks)*	**State Water Source (River Basin) or Alternate Source** *each alternate source (and new appropriation based on return flows of others) also requires completion of Worksheet 4.0*	**Purpose(s) of Use**	**Place(s) of Use** **requests to move state water out of basin also require completion of Worksheet 1.1 Interbasin Transfer*
Up to 1.65 MGD (1,849.463 acre-feet)	Contract water with MUD 8/9 for TPDES Permit No. WQ0011371001 return flows	Municipal, industrial, mining, and agriculture	Montgomery County
Up to 2.5 MGD (2,802.216 acre-feet)	Contract water with Huntsville for TPDES Permit No. WQ0010781004 return flows	Municipal, industrial, mining, and agriculture	Montgomery County
Up to 1.6 MGD (1,793.419 acre-feet)	Contract water with Huntsville for TPDES Permit No. WQ0010781002 return flows	Mining, industrial, mining, and agriculture	Montgomery County

6,445.098 Total amount of water (in acre-feet) to be used annually (*include losses for Bed and Banks applications*)

Per settlement, SJRA and Houston will only divert a.) 21% of actual discharge MUDs 8/9 and b.) 21% of Huntsville contract water to MUDs 8/9 once reaching head waters of Lake Conroe. See Tab 4 addressing channel losses.

If the Purpose of Use is Agricultural/Irrigation for any amount of water, provide:

a. Location Information Regarding the Lands to be Irrigated

N/A

i) Applicant proposes to irrigate a total of_____acres in any one year. This acreage is all of or part of a larger tract(s) which is described in a supplement attached to this application and contains a total of_____acres in_____County, TX.

ii) Location of land to be irrigated: In the_____Original Survey No. _____, Abstract No. 77002.

A copy of the deed(s) or other acceptable instrument describing the overall tract(s) with the recording information from the county records must be submitted. Applicant's name must match deeds.

If the Applicant is not currently the sole owner of the lands to be irrigated, Applicant must submit documentation evidencing consent or other documentation supporting Applicant's right to use the land described.

Water Rights for Irrigation may be appurtenant to the land irrigated and convey with the land unless reserved in the conveyance. 30 TAC § 297.81.

2. Amendments - Purpose or Place of Use (Instructions, Page. 12) N/A

a. Complete this section for each requested amendment changing, adding, or removing Purpose(s) or Place(s) of Use, complete the following:

Quantity (acre-feet)	Existing Purpose(s) of Use	Proposed Purpose(s) of Use*	Existing Place(s) of Use	Proposed Place(s) of Use**

**If the request is to add additional purpose(s) of use, include the existing and new purposes of use under "Proposed Purpose(s) of Use."*

***If the request is to add additional place(s) of use, include the existing and new places of use under "Proposed Place(s) of Use."*

Changes to the purpose of use in the Rio Grande Basin may require conversion. 30 TAC § 303.43.

b. For any request which adds Agricultural purpose of use or changes the place of use for Agricultural rights, provide the following location information regarding the lands to be irrigated:

i. Applicant proposes to irrigate a total of_____acres in any one year. This acreage is all of or part of a larger tract(s) which is described in a supplement attached to this application and contains a total of_____acres in_____ County, TX.

ii. Location of land to be irrigated: In the_____Original Survey No. _____, Abstract No._____.

A copy of the deed(s) describing the overall tract(s) with the recording information from the county records must be submitted. Applicant's name must match deeds. If the Applicant is not currently the sole owner of the lands to be irrigated, Applicant must submit documentation evidencing consent or other legal right for Applicant to use the land described.

Water Rights for Irrigation may be appurtenant to the land irrigated and convey with the land unless reserved in the conveyance. 30 TAC § 297.81.

c. Submit Worksheet 1.1, Interbasin Transfers, for any request to change the place of use which moves State Water to another river basin.

d. See Worksheet 1.2, Marshall Criteria, and submit if required.

e. See Worksheet 6.0, Water Conservation/Drought Contingency, and submit if required.

WORKSHEET 1.1
INTERBASIN TRANSFERS, TWC § 11.085

N/A

Submit this worksheet for an application for a new or amended water right which requests to transfer State Water from its river basin of origin to use in a different river basin. A river basin is defined and designated by the Texas Water Development Board by rule pursuant to TWC § 16.051.

Applicant requests to transfer State Water to another river basin within the State? Y / N_____

1. Interbasin Transfer Request (Instructions, Page. 20)

a. Provide the Basin of Origin._____

b. Provide the quantity of water to be transferred (acre-feet)._____

c. Provide the Basin(s) and count(y/ies) where use will occur in the space below:

_____

2. Exemptions (Instructions, Page. 20), TWC § 11.085(v)

Certain interbasin transfers are exempt from further requirements. Answer the following:

a. The proposed transfer, which in combination with any existing transfers, totals less than 3,000 acre-feet of water per annum from the same water right. Y/N_

b. The proposed transfer is from a basin to an adjoining coastal basin? Y/N___

c. The proposed transfer from the part of the geographic area of a county or municipality, or the part of the retail service area of a retail public utility as defined by Section 13.002, that is within the basin of origin for use in that part of the geographic area of the county or municipality, or that contiguous part of the retail service area of the utility, not within the basin of origin? Y/N__

d. The proposed transfer is for water that is imported from a source located wholly outside the boundaries of Texas, except water that is imported from a source located in the United Mexican States? Y/N__

3. Interbasin Transfer Requirements (Instructions, Page. 20)

For each Interbasin Transfer request that is not exempt under any of the exemptions listed above Section 2, provide the following information in a supplemental attachment titled "Addendum to Worksheet 1.1, Interbasin Transfer":

a. the contract price of the water to be transferred (if applicable) (also include a copy of the contract or adopted rate for contract water);

b. a statement of each general category of proposed use of the water to be transferred and a detailed description of the proposed uses and users under each category;

c. the cost of diverting, conveying, distributing, and supplying the water to, and treating the water for, the proposed users (example - expert plans and/or reports documents may be provided to show the cost);

d. describe the need for the water in the basin of origin and in the proposed receiving basin based on the period for which the water supply is requested, but not to exceed 50 years (the need can be identified in the most recently approved regional water plans. The state and regional water plans are available for download at this website: (http://www.twdb.texas.gov/waterplanning/swp/index.asp);

e. address the factors identified in the applicable most recently approved regional water plans which address the following:

   (i) the availability of feasible and practicable alternative supplies in the receiving basin to the water proposed for transfer;
   (ii) the amount and purposes of use in the receiving basin for which water is needed;

   (iii) proposed methods and efforts by the receiving basin to avoid waste and implement water conservation and drought contingency measures;

   (iv) proposed methods and efforts by the receiving basin to put the water proposed for transfer to beneficial use;

   (v) the projected economic impact that is reasonably expected to occur in each basin as a result of the transfer; and

   (vi) the projected impacts of the proposed transfer that are reasonably expected to occur on existing water rights, instream uses, water quality, aquatic and riparian habitat, and bays and estuaries that must be assessed under Sections 11.147, 11.150, and 11.152 in each basin *(if applicable)*. If the water sought to be transferred is currently authorized to be used under an existing permit, certified filing, or certificate of adjudication, such impacts shall only be considered in relation to that portion of the permit, certified filing, or certificate of adjudication proposed for transfer and shall be based on historical uses of the permit, certified filing, or certificate of adjudication for which amendment is sought;

f. proposed mitigation or compensation, if any, to the basin of origin by the applicant; and

g. the continued need to use the water for the purposes authorized under the existing Permit, Certified Filing, or Certificate of Adjudication, if an amendment to an existing water right is sought.

WORKSHEET 1.2
NOTICE. "THE MARSHALL CRITERIA"

N/A

This worksheet assists the Commission in determining notice required for certain **amendments** that do not already have a specific notice requirement in a rule for that type of amendment, and *that do not change the amount of water to be taken or the diversion rate.* The worksheet provides information that Applicant **is required** to submit for amendments such as certain amendments to special conditions or changes to off-channel storage. These criteria address whether the proposed amendment will impact other water right holders or the on- stream environment beyond and irrespective of the fact that the water right can be used to its full authorized amount.

*This worksheet is **not required for Applications in the Rio Grande Basin** requesting changes in the purpose of use, rate of diversion, point of diversion, and place of use for water rights held in and transferred within and between the mainstems of the Lower Rio Grande, Middle Rio Grande, and Amistad Reservoir. See 30 TAC § 303.42.*

*This worksheet is **not required for amendments which are only changing or adding diversion points, or request only a bed and banks authorization or an IBT authorization.** However, Applicants may wish to submit the Marshall Criteria to ensure that the administrative record includes information supporting each of these criteria*

1. The "Marshall Criteria" (Instructions, Page. 21)

Submit responses on a supplemental attachment titled "Marshall Criteria" in a manner that conforms to the paragraphs (a) - (g) below:

a. Administrative Requirements and Fees. Confirm whether application meets the administrative requirements for an amendment to a water use permit pursuant to TWC Chapter 11 and Title 30 Texas Administrative Code (TAC) Chapters 281, 295, and 297. An amendment application should include, but is not limited to, a sworn application, maps, completed conservation plan, fees, etc.

b. Beneficial Use. Discuss how proposed amendment is a beneficial use of the water as defined in TWC § 11.002 and listed in TWC § 11.023. Identify the specific proposed use of the water (e.g., road construction, hydrostatic testing, etc.) for which the amendment is requested.

c. Public Welfare. Explain how proposed amendment is not detrimental to the public welfare. Consider any public welfare matters that might be relevant to a decision on the application. Examples could include concerns related to the well-being of humans and the environment.

d. Groundwater Effects. Discuss effects of proposed amendment on groundwater or groundwater recharge.

e. State Water Plan. Describe how proposed amendment addresses a water supply need in a manner that is consistent with the state water plan or the applicable approved regional water plan for any area in which the proposed appropriation is located or, in the alternative, describe conditions that warrant a waiver of this requirement. The state and regional water plans are available for download at: http://www.twdb.texas.gov/waterplanning/swp/index.asp.

f. Waste Avoidance. Provide evidence that reasonable diligence will be used to avoid waste and achieve water conservation as defined in TWC § 11.002. Examples of evidence could include, but are not limited to, a water conservation plan or, if required, a drought contingency plan, meeting the requirements of 30 TAC Chapter 288.

g. Impacts on Water Rights or On-stream Environment. Explain how the proposed amendment will not impact other water right holders or the on-stream environment beyond and irrespectiveof the fact that the water right can be used to its full authorized amount.

WORKSHEET 2.0
Impoundment/Dam Information

N/A

This worksheet **is required** for any impoundment, reservoir and/or dam. Submit an additional Worksheet 2.0 for each impoundment or reservoir requested in this application.

If there is more than one structure, the numbering/naming of structures should be consistent throughout the application and on any supplemental documents (e.g., maps).

1. Storage Information (Instructions, Page. 21)

a. Official USGS name of reservoir, if applicable:_____

b. Provide amount of water (in acre-feet) impounded by structure at normal maximum operating level:_____.

c. The impoundment is on-channel_____or off-channel_____(mark one)

i. Applicant has verified on-channel or off-channel determination by contacting Surface Water Availability Team at (512) 239-4600? Y / N_____

ii. If on-channel, will the structure have the ability to pass all State Water inflows that Applicant does not have authorization to impound? Y / N_

d. Is the impoundment structure already constructed? Y / N____

i. For already constructed **on-channel** structures:

1. Date of Construction:_____

2. Was it constructed to be an exempt structure under TWC § 11.142? Y / N____
   a. If Yes, is Applicant requesting to proceed under TWC § 11.143? Y / N_____
   b. If No, has the structure been issued a notice of violation by TCEQ? Y / N_____

3. Is it a U.S. Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service (SCS)) floodwater-retarding structure? Y / N___
   a. If yes, provide the Site No._____and watershed project name_____;
   b. Authorization to close "ports" in the service spillway requested? Y / N____

ii. For **any** proposed new structures or modifications to structures:

1. Applicant **must** contact TCEQ Dam Safety Section at (512) 239-0326, *prior to submitting an Application.* Applicant has contacted the TCEQ Dam Safety Section regarding the submission requirements of 30 TAC, Ch. 299? Y / N_____ Provide the date and the name of the Staff Person_____

2. As a result of Applicant's consultation with the TCEQ Dam Safety Section, TCEQ has confirmed that:
   a. No additional dam safety documents required with the Application. Y / N_____
   b. Plans (with engineer's seal) for the structure required. Y / N_____
   c. Engineer's signed and sealed hazard classification required. Y / N_____
   d. Engineer's statement that structure complies with 30 TAC, Ch. 299 Rules required. Y / N___

3. Applicants **shall** give notice by certified mail to each member of the governing body of each county and municipality in which the reservoir, or any part of the reservoir to be constructed, will be located. (30 TAC § 295.42). Applicant must submit a copy of all the notices and certified mailing cards with this Application. Notices and cards are included? **Y / N**____

iii. Additional information required for **on-channel** storage:

1. Surface area (in acres) of on-channel reservoir at normal maximum operating level:_____.

2. Based on the Application information provided, Staff will calculate the drainage area above the on-channel dam or reservoir. If Applicant wishes to also calculate the drainage area they may do so at their option.
Applicant has calculated the drainage area. **Y/N**_____
If yes, the drainage area is_____sq. miles.
(If assistance is needed, call the Surface Water Availability Team prior to submitting the application, (512) 239-4600).

2. Structure Location (Instructions, Page. 23)

N/A

a. On Watercourse (if on-channel) (USGS name):_____

b. Zip Code: _____

c. In the_____Original Survey No._____, Abstract No._____, _____County, Texas.

* ***A copy of the deed(s) with the recording information from the county records must be submitted describing the tract(s) that include the structure and all lands to be inundated.***

*****If the Applicant is not currently the sole owner of the land on which the structure is or will be built and sole owner of all lands to be inundated, Applicant must submit documentation evidencing consent or other documentation supporting Applicant's right to use the land described.***

d. A point on the centerline of the dam (on-channel) or anywhere within the impoundment (off-channel) is:

Latitude_____°N, Longitude_____°W.

****Provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places***

i. Indicate the method used to calculate the location (examples: Handheld GPS Device, GIS, Mapping Program):_____

ii. Map submitted which clearly identifies the Impoundment, dam (where applicable), andthe lands to be inundated. See instructions Page. 15. **Y / N**___

WORKSHEET 3.0
DIVERSION POINT (OR DIVERSION REACH) INFORMATION

This worksheet **is required** for each diversion point or diversion reach. Submit one Worksheet 3.0 for **each** diversion point and two Worksheets for **each** diversion reach (one for the upstream limit and one for the downstream limit of each diversion reach).

The numbering of any points or reach limits should be consistent throughout the application and on supplemental documents (e.g., maps).

1. Diversion Information (Instructions, Page. 24)

a. This Worksheet is to add new (select 1 of 3 below):

1. Y Diversion Point No. 1
2. N/A Upstream Limit of Diversion Reach No.
3. N/A Downstream Limit of Diversion Reach No.

Co-applicants are seeking authorization to divert anywhere along the perimeter of Lake Conroe (as already authorized under COA 10-4963A. See Tab 10).

b. Maximum Rate of Diversion for **this ~~new point~~** Existing point 700 cfs (cubic feet per second) or 315,000 gpm (gallons per minute)

c. Does this point share a diversion rate with other points? **Y / N** Y
*If yes, submit Maximum **Combined** Rate of Diversion for all points/reaches* 700 cfs or 315,000 gpm

d. For amendments, is Applicant seeking to increase combined diversion rate? **Y / N** N/A

*** An increase in diversion rate is considered a new appropriation and would require completion of Section 1, New or Additional Appropriation of State Water.*

e. Check (√) the appropriate box to indicate diversion location and indicate whether the diversion location is existing or proposed):

Check one		Write: Existing or Proposed
☐	Directly from stream	
☑	From an on-channel reservoir	Existing
☐	From a stream to an on-channel reservoir	
☐	Other method (explain fully, use additional sheets if necessary)	

f. Based on the Application information provided, Staff will calculate the drainage area above the diversion point (or reach limit). If Applicant wishes to also calculate the drainage area, you may do so at their option.

Applicant has calculated the drainage area. **Y / N** N

If yes, the drainage area is _____ sq. miles.
(*If assistance is needed, call the Surface Water Availability Team at (512) 239-4600, prior to submitting application*)

2. Diversion Location (Instructions, Page 25)

a. On watercourse (USGS name): _____

b. Zip Code: _____

c. Location of point: In the_____Original Survey No._____, Abstract No._____, _____County, Texas. N/A

A copy of the deed(s) with the recording information from the county records must be submitted describing tract(s) that include the diversion structure.

For diversion reaches, the Commission cannot grant an Applicant access to property that the Applicant does not own or have consent or a legal right to access, the Applicant will be required to provide deeds, or consent, or other documents supporting a legal right to use the specific points when specific diversion points within the reach are utilized. Other documents may include, but are not limited to a recorded easement, a land lease, a contract, or a citation to the Applicant's right to exercise eminent domain to acquire access.

d. Point is at:
Latitude_____°N, Longitude_____°W. N/A
Provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places

e. Indicate the method used to calculate the location (examples: Handheld GPS Device, GIS, Mapping Program):_____ N/A

f. Map submitted must clearly identify each diversion point and/or reach. See instructions Page. 15.

g. If the Plan of Diversion is complicated and not readily discernable from looking at the map, attach additional sheets that fully explain the plan of diversion.

WORKSHEET 4.0
DISCHARGE INFORMATION

N/A

This worksheet required for any requested authorization to discharge water into a State Watercourse for conveyance and later withdrawal or in-place use. Worksheet 4.1 is also required for each Discharge point location requested. **Instructions Page. 26.** ***Applicant is responsible for obtaining any separate water quality authorizations which may be required and for insuring compliance with TWC, Chapter 26 or any other applicable law.***

a. The purpose of use for the water being discharged will be_____.

b. Provide the amount of water that will be lost to transportation, evaporation, seepage, channel or other associated carriage losses_____(% or amount) and explain the method of calculation:_____

c. Is the source of the discharged water return flows? **Y / N**_____If yes, provide the following information:

1. The TPDES Permit Number(s)._____(attach a copy of the **current** TPDES permit(s))
2. Applicant is the owner/holder of each TPDES permit listed above? **Y / N**_____

PLEASE NOTE: If Applicant is not the discharger of the return flows, or the Applicant is not the water right owner of the underlying surface water right, or the Applicant does not have a contract with the discharger, the application should be submitted under Section 1, New or Additional Appropriation of State Water, as a request for a new appropriation of state water. If Applicant is the discharger, the surface water right holder, or the contract holder, then the application should be submitted under Section 3, Bed and Banks.

3. Monthly WWTP discharge data for the past 5 years in electronic format. (Attach and label as "Supplement to Worksheet 4.0").
4. The percentage of return flows from groundwater_____, surface water_____?
5. If any percentage is surface water, provide the base water right number(s)_____.

d. Is the source of the water being discharged groundwater? **Y / N**___ If yes, provide the following information:

1. Source aquifer(s) from which water will be pumped:_____
2. If the well has not been constructed, provide production information for wells in the same aquifer in the area of the application. See http://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp. Additionally, provide well numbers or identifiers_____.
3. Indicate how the groundwater will be conveyed to the stream or reservoir.

4. A copy of the groundwater well permit if it is located in a Groundwater Conservation District (GCD) or evidence that a groundwater well permit is not required.

di. Is the source of the water being discharged a surface water supply contract? **Y / N**___
If yes, provide the signed contract(s).

dii. Identify any other source of the water_____

WORKSHEET 4.1
DISCHARGE POINT INFORMATION

N/A

This worksheet is required for **each** discharge point. Submit one Worksheet 4.1 for each discharge point. If there is more than one discharge point, the numbering of the points should be consistent throughout the application and on any supplemental documents (e.g., maps). **Instructions, Page 27.**

For water discharged at this location provide:

a. The amount of water that will be discharged at this point is_____acre-feet per year. The discharged amount should include the amount needed for use and to compensate for any losses.

b. Water will be discharged at this point at a maximum rate of_____cfs or_____gpm.

c. Name of Watercourse as shown on Official USGS maps: _____

d. Zip Code _____

e. Location of point: In the_____Original Survey No._____, Abstract No._____, _____County, Texas.

f. Point is at:

Latitude_____°N, Longitude_____°W.

Provide Latitude and Longitude coordinates in decimal degrees to at least six decimal places

g. Indicate the method used to calculate the discharge point location (examples: Handheld GPS Device, GIS, Mapping Program):_____

Map submitted must clearly identify each discharge point. See instructions Page. 15.

WORKSHEET 5.0
ENVIRONMENTAL INFORMATION

1. Impingement and Entrainment

N/A

This section is required for any new diversion point that is not already authorized. Indicate the measures the applicant will take to avoid impingement and entrainment of aquatic organisms (ex. Screens on any new diversion structure that is not already authorized in a water right). **Instructions, Page 28.**

2. New Appropriations of Water (Canadian, Red, Sulphur, and Cypress Creek Basins only) and Changes in Diversion Point(s)

N/A

This section is required for new appropriations of water in the Canadian, Red, Sulphur, and Cypress Creek Basins and in all basins for requests to change a diversion point. **Instructions, Page 30.**

Description of the Water Body at each Diversion Point or Dam Location. (Provide an Environmental Information Sheet for each location),

a. Identify the appropriate description of the water body.

☐ Stream

☐ Reservoir

Average depth of the entire water body, in feet: _____

☐ Other, specify: _____

b. Flow characteristics

If a stream, was checked above, provide the following. For new diversion locations, check one of the following that best characterize the area downstream of the diversion (check one).

☐ Intermittent - dry for at least one week during most years

☐ Intermittent with Perennial Pools - enduring pools

☐ Perennial - normally flowing

Check the method used to characterize the area downstream of the new diversion location.

☐ USGS flow records

☐ Historical observation by adjacent landowners

☐ Personal observation

☐ Other, specify: _____

c. Waterbody aesthetics

Check one of the following that best describes the aesthetics of the stream segments affected by the application and the area surrounding those stream segments.

☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area; water clarity exceptional

☐ Natural Area: trees and/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

d. Waterbody Recreational Uses

Are there any known recreational uses of the stream segments affected by the application?

☐ Primary contact recreation (swimming or direct contact with water)

☐ Secondary contact recreation (fishing, canoeing, or limited contact with water)

☐ Non-contact recreation

e. Submit the following information in a Supplemental Attachment, labeled Addendum to Worksheet 5.0:

1. Photographs of the stream at the diversion point or dam location. Photographs should be in color and show the proposed point or reservoir and upstream and downstream views of the stream, including riparian vegetation along the banks. Include a description of each photograph and reference the photograph to the mapsubmitted with the application indicating the location of the photograph and the direction of the shot.

2. If the application includes a proposed reservoir, also include:

   i. A brief description of the area that will be inundated by the reservoir.

   ii. If a United States Army Corps of Engineers (USACE) 404 permit is required, provide the project number and USACE project manager.

   iii. A description of how any impacts to wetland habitat, if any, will be mitigated if the reservoir is greater than 5,000 acre-feet.

3. Alternate Sources of Water and/or Bed and Banks Applications

This section is required for applications using an alternate source of water and bed and banks applications in any basins. **Instructions, page 31.**

a. For all bed and banks applications:

i. Submit an assessment of the adequacy of the quantity and quality of flows remaining after the proposed diversion to meet instream uses and bay and estuary freshwater inflow requirements.

N/A

b. For all alternate source applications:

i. If the alternate source is treated return flows, provide the TPDES permit number WQ0011371001; WQ0010781004; WQ0010781002

ii. If groundwater is the alternate source, or groundwater or other surface water will be discharged into a watercourse provide:
Reasonably current water chemistry information including but not limited to the following parameters in the table below. Additional parameters may be requested if there is a specific water quality concern associated with the aquifer from which water is withdrawn. If data for onsite wells are unavailable; historical data collected from similar sized wells drawing water from the same aquifer may be provided. However, onsite data may still be required when it becomes available. Provide the well number or well identifier. Complete the information below for each well and provide the Well Number or identifier.

N/A

Parameter	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Sulfate, mg/L					
Chloride, mg/L					
Total Dissolved Solids, mg/L					
pH, standard units					
Temperature*, degrees Celsius					

* Temperature must be measured onsite at the time the groundwater sample is collected.

iii. If groundwater will be used, provide the depth of the well_____and the name of the aquifer from which water is withdrawn_____.

N/A

WORKSHEET 6.0
Water Conservation/Drought Contingency Plans

This form is intended to assist applicants in determining whether a Water Conservation Plan and/or Drought Contingency Plans is required and to specify the requirements for plans. **Instructions, Page 31.**

The TCEQ has developed guidance and model plans to help applicants prepare plans. Applicants may use the model plan with pertinent information filled in. For assistance submitting a plan call the Resource Protection Team (Water Conservation staff) at 512-239-4600, or e-mail wras@tceq.texas.gov. The model plans can also be downloaded from the TCEQ webpage. ***Please use the most up-to-date plan documents available on the webpage.***

1. Water Conservation Plans

a. The following applications must include a completed Water Conservation Plan (30 TAC § 295.9) for each use specified in 30 TAC, Chapter 288 (municipal, industrial or mining, agriculture - including irrigation, wholesale):

1. Request for a new appropriation or use of State Water.
2. Request to amend water right to increase appropriation of State Water.
3. Request to amend water right to extend a term.
4. Request to amend water right to change a place of use.
   **does not apply to a request to expand irrigation acreage to adjacent tracts.*
5. Request to amend water right to change the purpose of use.
   **applicant need only address new uses.*
6. Request for bed and banks under TWC § 11.042(c), when the source water is State Water.
   **including return flows, contract water, or other State Water.*

b. If Applicant is requesting any authorization in section (1)(a) above, indicate each use for which Applicant is submitting a Water Conservation Plan as an attachment:

	SJRA	Houston
1. _____Municipal Use. See 30 TAC § 288.2. **	Y	Y
2. _____Industrial or Mining Use. See 30 TAC § 288.3.	Y	Y
3. _____Agricultural Use, including irrigation. See 30 TAC § 288.4.	Y	Y
4. _____Wholesale Water Suppliers. See 30 TAC § 288.5. **	Y	Y

**If Applicant is a water supplier, Applicant must also submit documentation of adoption of the plan. Documentation may include an ordinance, resolution, or tariff, etc. See 30 TAC §§ 288.2(a)(1)(J)(i) and 288.5(1)(H). Applicant has submitted such documentation with each water conservation plan? Y / N_Y_ See Tab 7 and Tab 8

c. Water conservation plans submitted with an application must also include data and information which: supports applicant's proposed use with consideration of the plan's water conservation goals; evaluates conservation as an alternative to the proposed

appropriation; and evaluates any other feasible alternative to new water development. See 30 TAC § 288.7.
Applicant has included this information in each applicable plan? **Y** / **N** Y

2. Drought Contingency Plans

a. A drought contingency plan is also required for the following entities if Applicant is requesting any of the authorizations in section (1) (a) above – indicate each that applies:

	SJRA	Houston
1. Y Municipal Uses by public water suppliers. See 30 TAC § 288.20	Y	Y
2. ____ Irrigation Use/ Irrigation water suppliers. See 30 TAC § 288.21.	Y	Y
3. ____ Wholesale Water Suppliers. See 30 TAC § 288.22.	Y	Y

b. If Applicant must submit a plan under section 2(a) above, Applicant has also submitted documentation of adoption of drought contingency plan (*ordinance, resolution, or tariff, etc. See 30 TAC § 288.30*) **Y** / **N** Y

WORKSHEET 7.0
ACCOUNTING PLAN INFORMATION WORKSHEET

The following information provides guidance on when an Accounting Plan may be required for certain applications and if so, what information should be provided. An accounting plan can either be very simple such as keeping records of gage flows, discharges, and diversions; or, more complex depending on the requests in the application. Contact the Surface Water Availability Team at 512-239-4600 for information about accounting plan requirements, if any, for your application. **Instructions, Page 34.**

1. Is Accounting Plan Required

Accounting Plans are generally required:

- For applications that request authorization to divert large amounts of water from a single point where multiple diversion rates, priority dates, and water rights can also divert from that point;
- For applications for new major water supply reservoirs;
- For applications that amend a water right where an accounting plan is already required, if the amendment would require changes to the accounting plan;
- For applications with complex environmental flow requirements;
- For applications with an alternate source of water where the water is conveyed and diverted; and
- For reuse applications.

2. Accounting Plan Requirements

a. A **text file** that includes:
   1. an introduction explaining the water rights and what they authorize;
   2. an explanation of the fields in the accounting plan spreadsheet including how they are calculated and the source of the data;
   3. for accounting plans that include multiple priority dates and authorizations, a section that discusses how water is accounted for by priority date and which water is subject to a priority call by whom; and
   4. Should provide a summary of all sources of water.

b. A **spreadsheet** that includes:
   1. Basic daily data such as diversions, deliveries, compliance with any instream flow requirements, return flows discharged and diverted and reservoir content;
   2. Method for accounting for inflows if needed;
   3. Reporting of all water use from all authorizations, both existing and proposed;
   4. An accounting for all sources of water;
   5. An accounting of water by priority date;
   6. For bed and banks applications, the accounting plan must track the discharged water from the point of delivery to the final point of diversion;
   7. Accounting for conveyance losses;
   8. Evaporation losses if the water will be stored in or transported through a reservoir. Include changes in evaporation losses and a method for measuring reservoir content resulting from the discharge of additional water into the reservoir;
   9. An accounting for spills of other water added to the reservoir; and
   10. Calculation of the amount of drawdown resulting from diversion by junior rights or diversions of other water discharged into and then stored in the reservoir.

WORKSHEET 8.0
CALCULATION OF FEES

This worksheet is for calculating required application fees. Applications are not Administratively Complete until all required fees are received. **Instructions, Page. 34**

1. NEW APPROPRIATION

	Description	Amount ($)
Filing Fee	Circle fee correlating to the total amount of water* requested for any new appropriation and/or impoundment. Amount should match total on Worksheet 1, Section 1. Enter corresponding fee under **Amount ($).** In Acre-Feet a. Less than 100 — $100.00 b. 100 - 5,000 — $250.00 c. 5,001 - 10,000 — $500.00 d. 10,001 - 250,000 — $1,000.00 e. More than 250,000 — $2,000.00	
Recording Fee		$25.00
Agriculture Use Fee	*Only for those with an Irrigation Use.* Multiply 50¢ x_____Number of acres that will be irrigated with State Water. **	
Use Fee	*Required for all Use Types,* ***excluding Irrigation Use.*** Multiply $1.00 x_____Maximum annual diversion of State Water in acre-feet. **	
Recreational Storage Fee	*Only for those with Recreational Storage.* Multiply $1.00 x_____acre-feet of in-place Recreational Use State Water to be stored at normal max operating level.	
Storage Fee	*Only for those with Storage,* ***excluding Recreational Storage.*** Multiply 50¢ x_____acre-feet of State Water to be stored at normal max operating level.	
Mailed Notice	Cost of mailed notice to all water rights in the basin. Contact Staff to determine the amount (512) 239-4600.	
	TOTAL	$

2. AMENDMENT *OR* SEVER AND COMBINE

	Description	Amount ($)
Filing Fee	Amendment: $100	
	OR Sever and Combine: $100 x___of water rights to combine	
Recording Fee		$12.50
Mailed Notice	Additional notice fee to be determined once application is submitted.	
	TOTAL INCLUDED	$

3. BED AND BANKS

	Description	Amount ($)
Filing Fee		$100.00
Recording Fee		$12.50
Mailed Notice	Additional notice fee to be determined once application is submitted.	
	TOTAL INCLUDED	$ 112.50

SUMMARY OF REQUEST

Co-applicants San Jacinto River Authority (the "Authority") and City of Houston ("Houston") (collectively, the "Applicants") submit this application (the "Application") for a bed and banks permit to transport discharged effluent through Lake Conroe (West Fork San Jacinto River) for subsequent diversion. This Application is contemplated under a multi-party settlement agreement among the Authority, Houston, Montgomery County Municipal Utility District Nos. 8 and 9 ("MUDs 8 & 9" or the "MUDs"), and the City of Huntsville ("Huntsville"), dated July 28, 2017 ("Settlement Agreement"). See Tab 9. The location of the proposed diversion by Houston and the Authority is anywhere along the perimeter of Lake Conroe, as such diversions are already authorized pursuant to Certificate of Adjudication No. 10-4963, as amended. The use of the diverted water will be for municipal, industrial, mining, and agricultural purposes in the Applicants' service areas. The source of the water is MUDs 8 & 9 return flows and Huntsville return flows, for which bed and banks authorizations have already been granted to those entities.

A. THE SETTLEMENT AGREEMENT (BASIS FOR APPLICATION)

This Application follows the Settlement Agreement's provisions, under which the Authority and Houston may seek a water right for their share of MUDs 8 & 9 discharges into Lake Conroe, as further described below. See Tab 9. Article 3 of the Settlement Agreement states that the MUDs commit "twenty-one percent (21%) of the quantity of water actually discharged, conveyed, and otherwise available for diversion from Lake Conroe…on an annual basis." See Tab 9 at 17. Further, in the Settlement Agreement Huntsville agrees to commit "twenty-one percent (21%) of the quantity of water Huntsville discharges to supply the MUDs with water pursuant to [a separate contract] on an annual basis."[1] See Tab 9 at 17. The Applicants will share the water right usage pursuant to allocations between Houston and the Authority set forth in a separate contract between them regarding their respective rights in Lake Conroe.

The Settlement Agreement details how this Application should be framed, by allowing (with TCEQ's counsel and consent during negotiations) the Authority and Houston to divert flows in the calendar year following the time of such flows' actual discharge. Specifically, Article 3 of the Settlement Agreement requires Huntsville and MUDs 8 & 9 to measure and track their discharges on an annual basis, and then report the discharge quantities to the Authority and

[1] Huntsville tracks water annually using the Huntsville Committed Water Worksheet. Huntsville shares the worksheet annually with the Authority and Houston.

Houston to identify the respective 21% from each entity ("Committed Water"), for diversion the subsequent year. The existing accounting plan for the MUDs 8 & 9 and Huntsville bed and banks permits (Permit Nos. 12510 and 12754, respectively, as described further herein) already identifies the 21% that the Applicants are entitled to divert. As such, the Authority and Houston would be required under that accounting plan and this new permit to ensure that their collective diversions do not exceed the Committed Water quantities, as tied to the continued effectiveness of the Settlement Agreement.

B. MUDs 8 & 9 RETURN FLOWS

The first source of water subject to this Application is the return flows discharged from MUDs 8 & 9's wastewater treatment plant. Applicants seek to divert 21% of the total annual amounts actually discharged by MUDs 8 & 9 pursuant to the Settlement Agreement framework discussed above.

While Applicants seek the authorization to divert 21% of MUDs 8 & 9's discharge, MUDs 8 & 9 have already appropriated use of their wastewater return flows, but with such use not to exceed 79% as measured on an annual basis, as provided more specifically in the Settlement Agreement. MUDs 8 & 9 are authorized under Water Use Permit No. 12510 ("Permit 12510") to divert up to 1,008.86 acre-feet of groundwater-based return flows per year, and under Texas Pollutant Discharge Elimination System ("TPDES") Permit No. WQ0011371001, MUDs 8 & 9 are permitted to discharge an annual amount of up to 1.65 MGD into Lake Conroe on the West Fork San Jacinto River. See Tabs 12 and 15. As a practical matter, even though the Applicants are seeking to permit based on the full quantity of the MUDs' discharge, the Applicants' 21% will never exceed 21% of the total discharge. TPDES Permit No. WQ0011371001 for Outfall No. 1 (referred to as "Discharge Point 1" in the maps in Tab 6) is located at latitude 30.390833 °N, longitude 95.604722 °W, and Outfall No. 2 (referred to as "Discharge Point 2" in the maps in Tab 6) is located at latitude 30.389722 °N and longitude 95.604167 °W. See Tab 12. This water may be diverted for municipal, industrial, mining, and agricultural use. See Tab 12.

Permit 12510 includes a recital acknowledging that Houston and the Authority are contractually entitled to receive 21% of MUDs 8 & 9's actual discharge. Special Condition H in Water Use Permit No. 12510 states:

> The exercise of rights under Paragraph 3. DIVERSION is conditioned upon the continued effectiveness of both: 1) the Settlement Agreement identified in the recitals of this permit and 2) authorization to use property granted by the [Authority] and [Houston] in the Settlement Agreement and the Encroachment Agreement identified in the recitals of this permit.

See Tab 12.

C. HUNTSVILLE RETURN FLOWS

The Applicants also seek to divert 21% of the effluent actually discharged from the City of Huntsville ("Huntsville") water treatment plants for delivery to MUDs 8 & 9 after exercise of their option for Huntsville water, and request such discharges from Huntsville, as outlined in the Settlement Agreement. See Tab 9 at 17. Huntsville is authorized under Water Use Permit No. 12754 to convey up to 4,593 acre-feet per year of its current and future groundwater and surface water-based return flows for municipal, industrial, mining, and agricultural purposes in MUDs 8 & 9's service area. See Tab 14. Water Use Permit No. 12754 includes a recital acknowledging that the Applicants are contractually entitled to receive 21% of the total discharge water MUDs 8 & 9 call on Huntsville to deliver, with such 21% measured at the headwaters of Lake Conroe. Any discharges by Huntsville over and above what are discharged for MUDs 8 & 9 are not subject to the Settlement Agreement. Just as in Permit No. 12510, Permit No. 12754 states:

> The exercise of rights under Paragraph 3. DIVERSION regarding diversion from authorized points in Lake Conroe is conditioned upon the continued effectiveness of both: 1) the Settlement Agreement identified in the recitals of this permit and 2) the authorization to use property granted by the [Authority] and [Houston] in the Settlement Agreement and the Encroachment Agreement identified in the recitals of this permit.

See Tab 14.

The return flows authorized for discharge are from two locations. See Tab 14. The first location is at Latitude 30.645547 °N, Longitude 95.595334 °W at Robinson Creek Wastewater Treatment Plant (TPDES Permit No. WQ0010781004) (referred to as "Discharge Point 3" in the maps in Tab 6). See Tabs 14 and 16. The second location is at Latitude 30.645275 °N, Longitude

95.553197 °W at N.B. Davidson Wastewater Treatment Plant (TPDES Permit No. WQ0010781002) (referred to as "Discharge Point 4" in the maps in Tab 6). See Tabs 14 and 17. The City of Huntsville is authorized to discharge up to 2.5 MGD under TPDES Permit No. WQ0010781004 and up to 1.60 MGD under TPDES Permit No. WQ0010781002.

See Tabs 16 and 17.

D. CHANNEL LOSSES

This Application is filed under the requirements of Texas Water Code Section 11.042(c). This section allows "to be diverted only the amount of water put into a watercourse or stream, less carriage losses. . ."[2] The water contemplated by this Application is discharged into Lake Conroe, a reservoir averaging over 412,000 acre-feet.[3] Due to this large volume, the diversion of these discharges, up to 6,445.098 acre-feet, will amount to de minimus loss due to transportation, evaporation, seepage, channel or carriage losses and will not affect the lake levels.

E. NOTICE REQUIRED

This Application is subject to 30 Texas Administrative Code § 295.161. This section states that notice "shall be provided by first class mail. . .to every water right holder of record downstream of the discharge point. . ."[4] and that notice also be provided to the Texas Parks and Wildlife Department and the Public Interest Counsel.[5] No published notice is required for this Application.[6] The Applicants intend to provide this downstream notice at the appropriate time following these requirements.

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[2] Tex. Water Code § 11.042(c).
[3] USGS Summary Monitoring Data, https://waterdata.usgs.gov/monitoring-location/08067600/#parameterCode=00054&period=P365D.
[4] 30 Tex. Admin. Code §295.161(a).
[5] 30 T.A.C. §295.161(c).
[6] *Id.* at §295.161(d).

Here forward
Scanned
~~Start w/ Tab 5~~
Scan 5 on
Talk to Josh w/ Questions

RECEIVED
OCT 16 2024
Water Availability Division

ADDENDUM REGARDING CONSISTENCY WITH STATE AND REGIONAL WATER PLANS

Co-applicants San Jacinto River Authority (the "Authority") and City of Houston ("Houston") (collectively, the "Applicants") submit this application (the "Application") to authorize the diversion and use of their contractually owned portion of effluent discharged from the Montgomery County Municipal Utility Districts 8 and 9 Wastewater Treatment Plant ("MUDs WWTP") outfalls and the City of Huntsville's Robinson Creek WWTP and N.B. Davidson WWTP ("Huntsville WWTPs") outfalls.[1] The Application is consistent with the approved 2021 Region H Water Plan and the 2022 State Water Plan.

Pursuant to Texas Water Code § 11.134, an appropriation of water must address a water supply need in a manner that is "consistent" with the "state water plan and the relevant approved regional plan."[2] Lake Conroe, and the area for which the Applicants will divert water pursuant to this Application for use, are both located within the Region H Planning Area ("Region H"). According to the State Water Plan, Water for Texas 2022, the population in Region H is expected to increase by sixty percent (60%) from 2020 to 2070.[3] This population growth is predicted to increase demands for water by thirty-two percent (32%) between 2020 and 2070, from 2,337,000 acre-feet to 3,077,000 acre-feet.[4] Additionally, the Region H Water Plan and State Water Plan recommend increased water reuse projects as a water management strategy in order to meet future water needs.[5]

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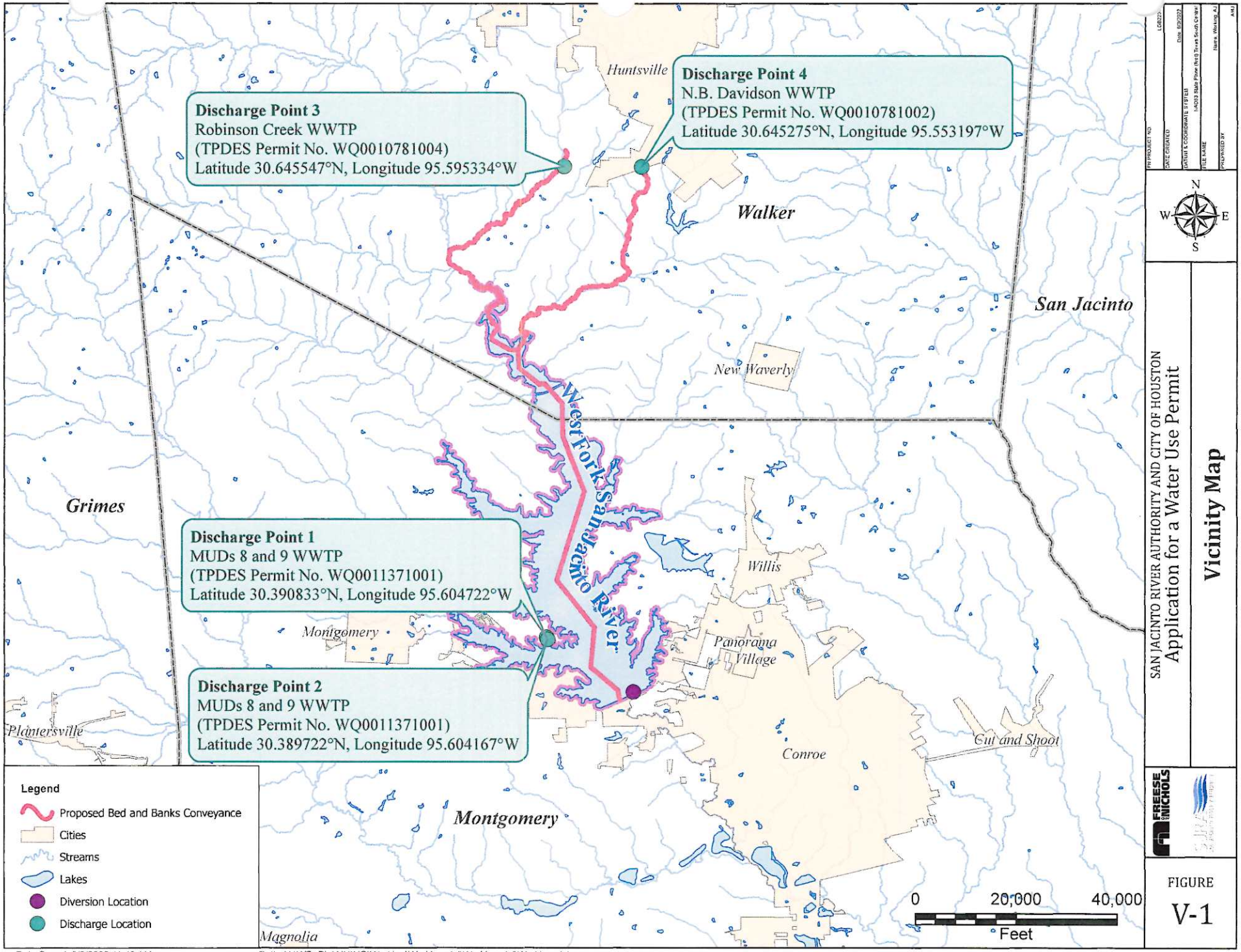
[1] The source of water identified in this application stems from the Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment By and Between Montgomery County Municipal Utility District No. 8, Montgomery County Municipal Utility District No. 9, City of Huntsville, City of Houston, and San Jacinto River Authority. See Tab 9.

[2] Texas Water Code § 11.134(b)(3)(E).

[3] Texas Water Development Board ("TWDB"), 2022 State Water Plan – Water for Texas, ch. 2 & Table 4-1 at 50 (2021).

[4] TWDB, 2022 State Water Plan – Water for Texas, ch. 2 & Table 4-3 at 54 (2021).

[5] TWDB, 2022 State Water Plan – Water for Texas at A-106 (2021); Region H Water Planning Group ("Region H WPG"), 2021 Region H Water Plan at ES-9 (2021).



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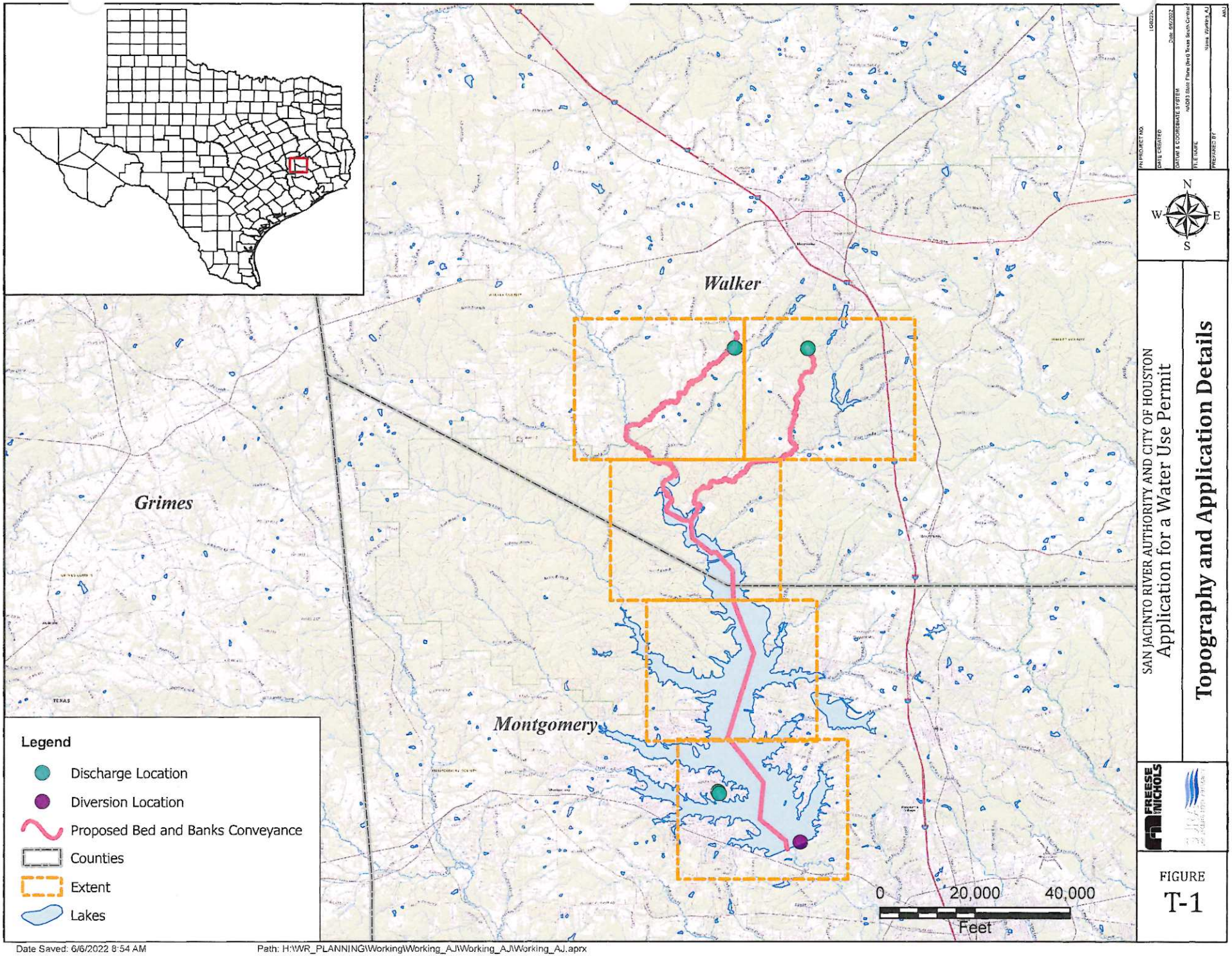

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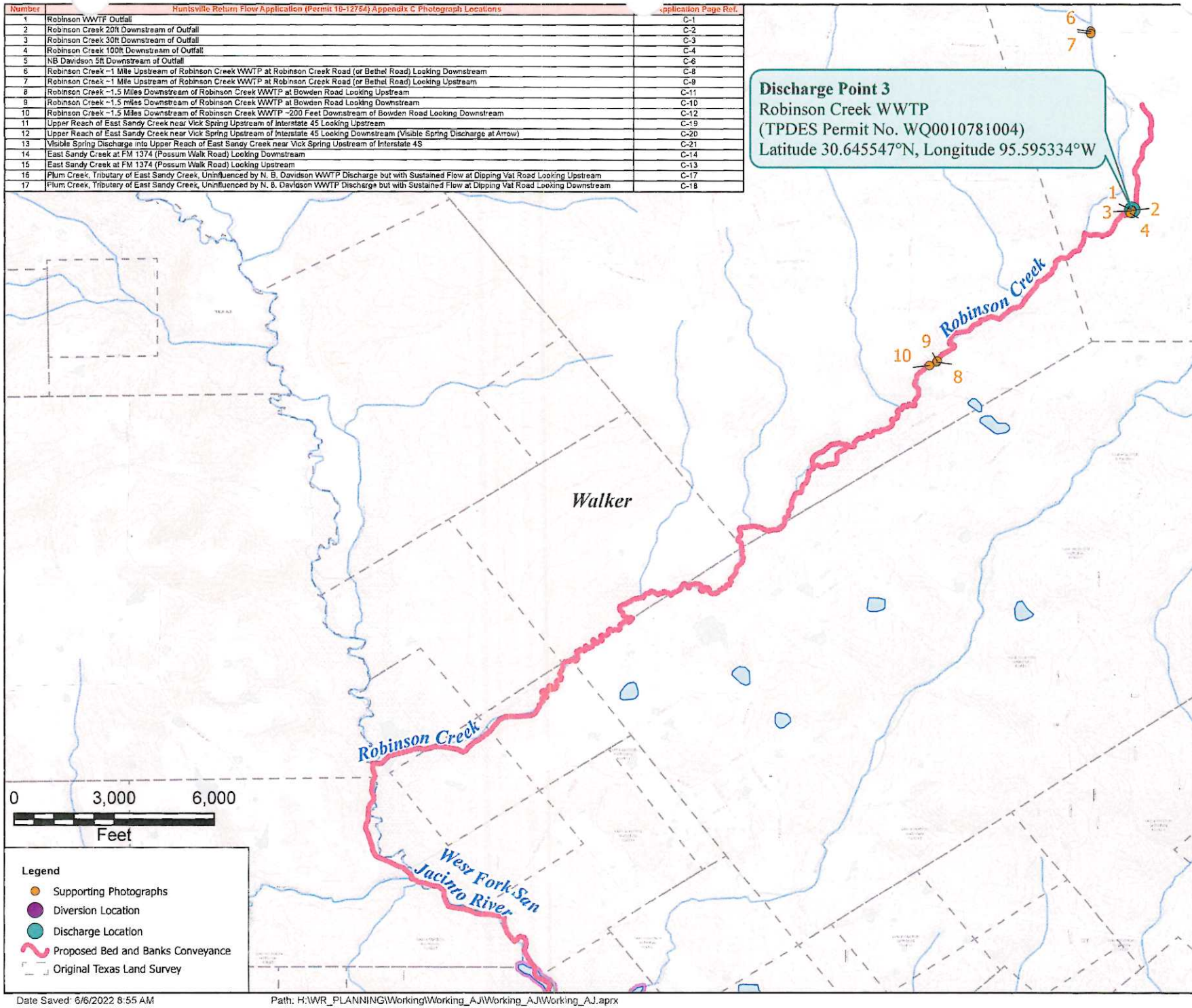
Number	Huntsville Return Flow Application (Permit 10-12754) Appendix C Photograph Locations	Application Page Ref.
1	Robinson WWTF Outfall	C-1
2	Robinson Creek 20ft Downstream of Outfall	C-2
3	Robinson Creek 30ft Downstream of Outfall	C-3
4	Robinson Creek 100ft Downstream of Outfall	C-4
5	NB Davidson 5ft Downstream of Outfall	C-6
6	Robinson Creek ~1 Mile Upstream of Robinson Creek WWTP at Robinson Creek Road (or Bethel Road) Looking Downstream	C-8
7	Robinson Creek ~1 Mile Upstream of Robinson Creek WWTP at Robinson Creek Road (or Bethel Road) Looking Upstream	C-9
8	Robinson Creek ~1.5 Miles Downstream of Robinson Creek WWTP at Bowden Road Looking Upstream	C-11
9	Robinson Creek ~1.5 miles Downstream of Robinson Creek WWTP at Bowden Road Looking Downstream	C-10
10	Robinson Creek ~1.5 Miles Downstream of Robinson Creek WWTP ~200 Feet Downstream of Bowden Road Looking Downstream	C-12
11	Upper Reach of East Sandy Creek near Vick Spring Upstream of Interstate 45 Looking Upstream	C-19
12	Upper Reach of East Sandy Creek near Vick Spring Upstream of Interstate 45 Looking Downstream (Visible Spring Discharge at Arrow)	C-20
13	Visible Spring Discharge into Upper Reach of East Sandy Creek near Vick Spring Upstream of Interstate 4S	C-21
14	East Sandy Creek at FM 1374 (Possum Walk Road) Looking Downstream	C-14
15	East Sandy Creek at FM 1374 (Possum Walk Road) Looking Upstream	C-13
16	Plum Creek, Tributary of East Sandy Creek, Uninfluenced by N. B. Davidson WWTP Discharge but with Sustained Flow at Dipping Vat Road Looking Upstream	C-17
17	Plum Creek, Tributary of East Sandy Creek, Uninfluenced by N. B. Davidson WWTP Discharge but with Sustained Flow at Dipping Vat Road Looking Downstream	C-18



FN PROJECT NO. LGB223C
DATE CREATED Date: 6/6/2022
DATUM & COORDINATE SYSTEM NAD83 State Plane (feet) Texas South Central
FILE NAME Name: Working_AJ
PREPARED BY AMJ

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SAN JACINTO RIVER AUTHORITY AND CITY OF HOUSTON
Application for a Water Use Permit

Topography and Application Details

FREESE NICHOLS

FIGURE
T-2

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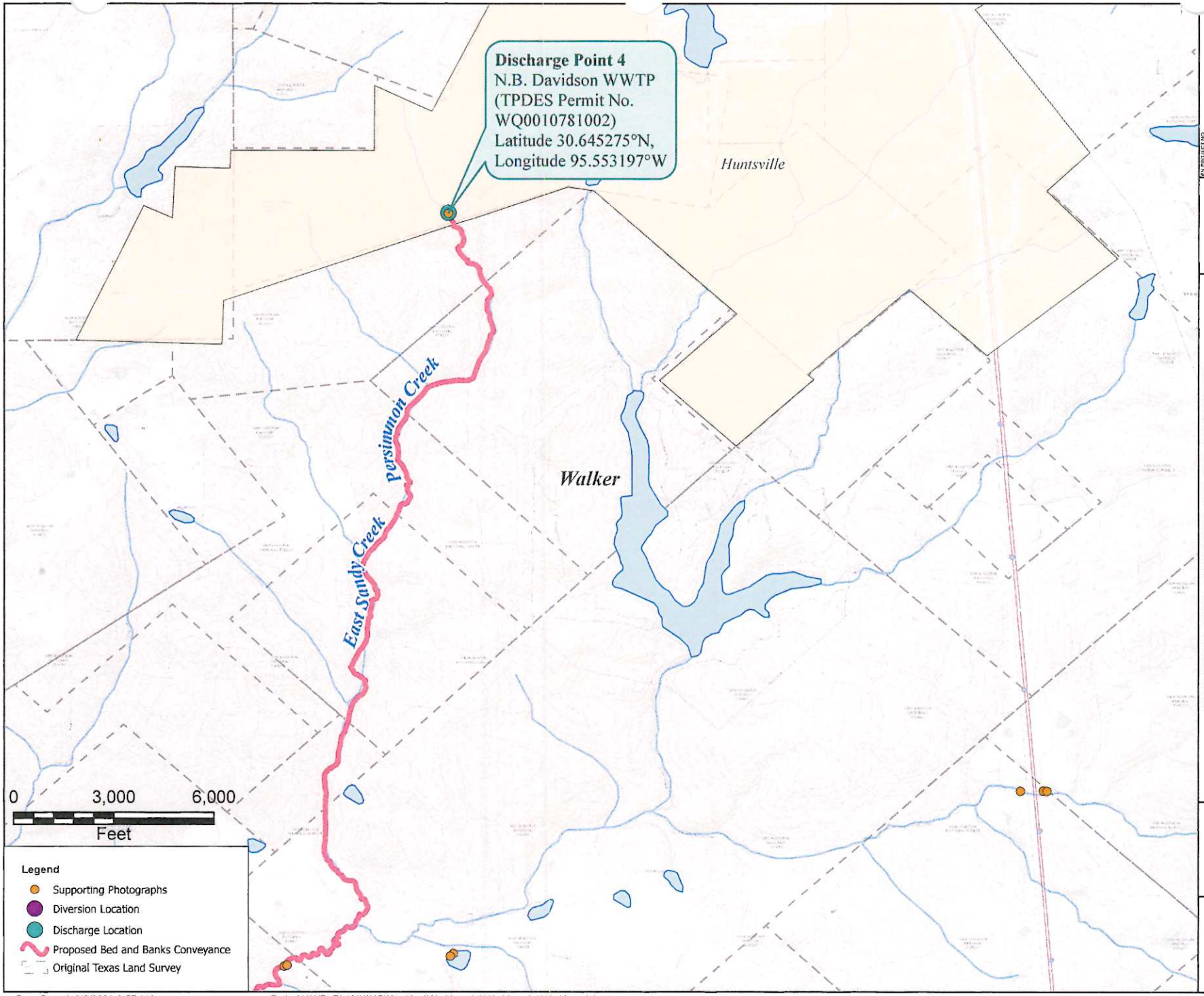
Discharge Point 4
N.B. Davidson WWTP
(TPDES Permit No.
WQ0010781002)
Latitude 30.645275°N,
Longitude 95.553197°W
Huntsville
Walker
East Sandy Creek
Persimmon Creek
0
3,000
6,000
Feet
Legend
Supporting Photographs
Diversion Location
Discharge Location
Proposed Bed and Banks Conveyance
Original Texas Land Survey
N
W
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S
SAN JACINTO RIVER AUTHORITY AND CITY OF HOUSTON
Application for a Water Use Permit
Topography and Application Details
FREESE NICHOLS
FIGURE
T-3
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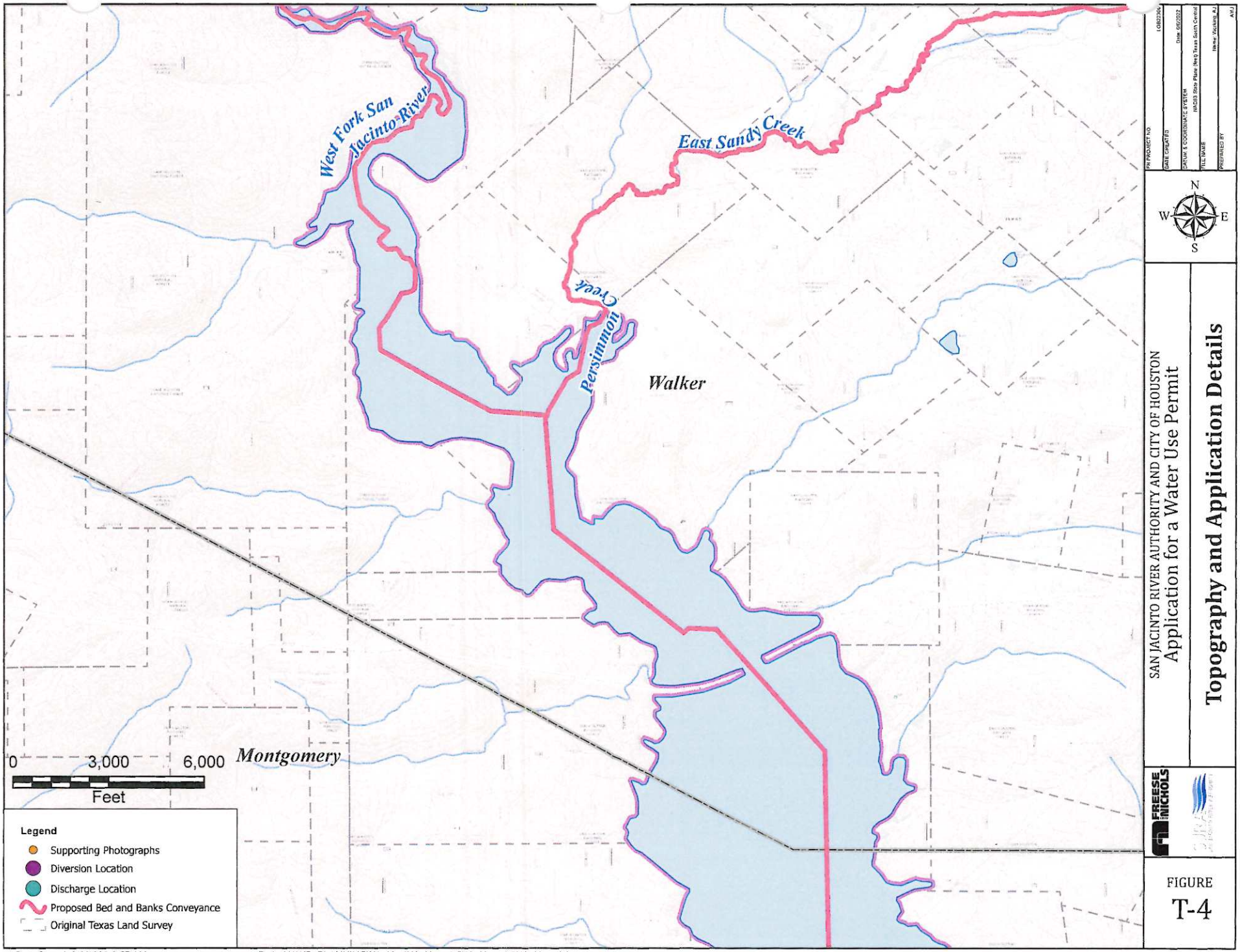

SAN JACINTO RIVER AUTHORITY AND CITY OF HOUSTON
Application for a Water Use Permit

Topography and Application Details

FIGURE
T-4

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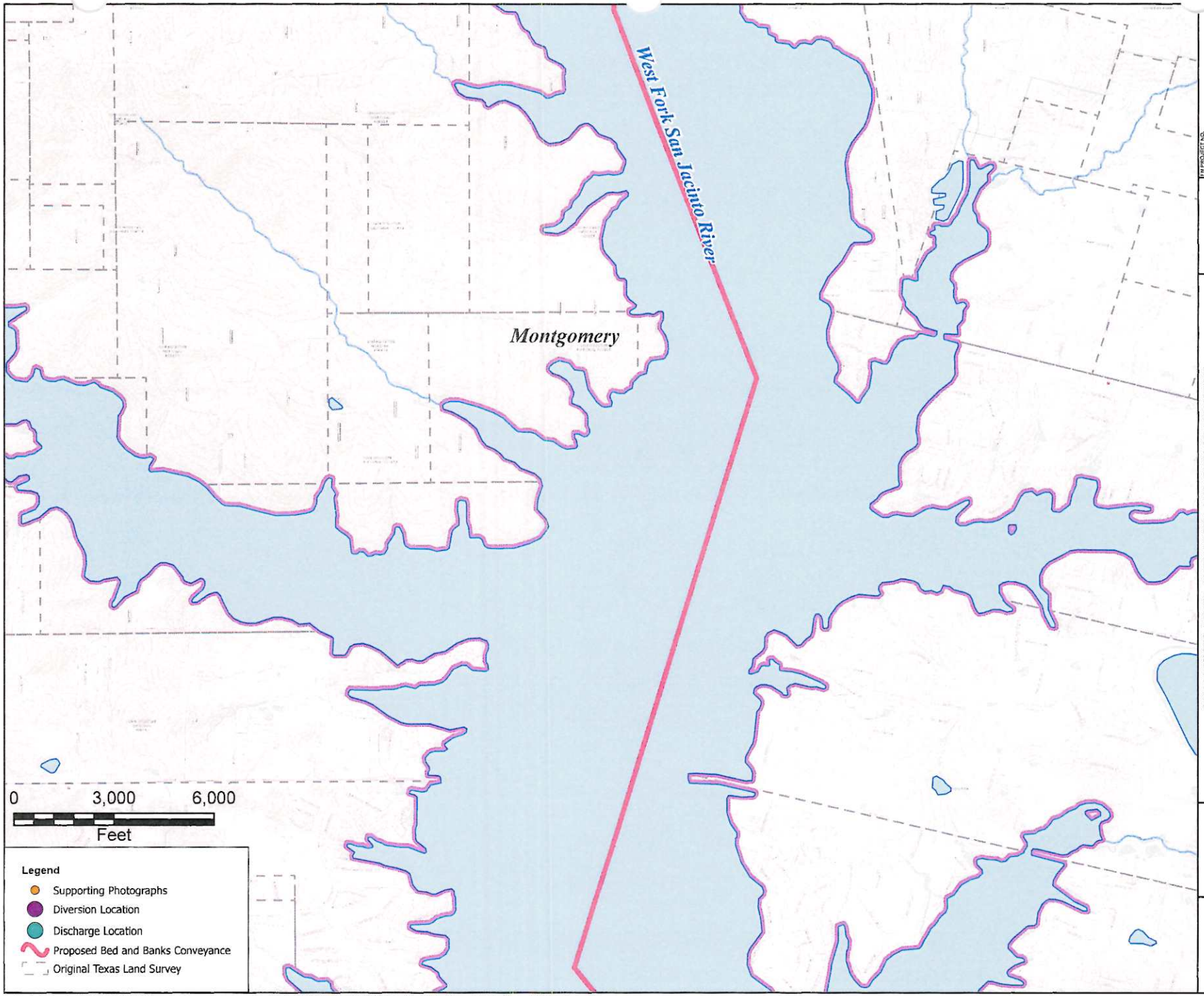

SAN JACINTO RIVER AUTHORITY AND CITY OF HOUSTON

Application for a Water Use Permit

Topography and Application Details

FIGURE

T-5

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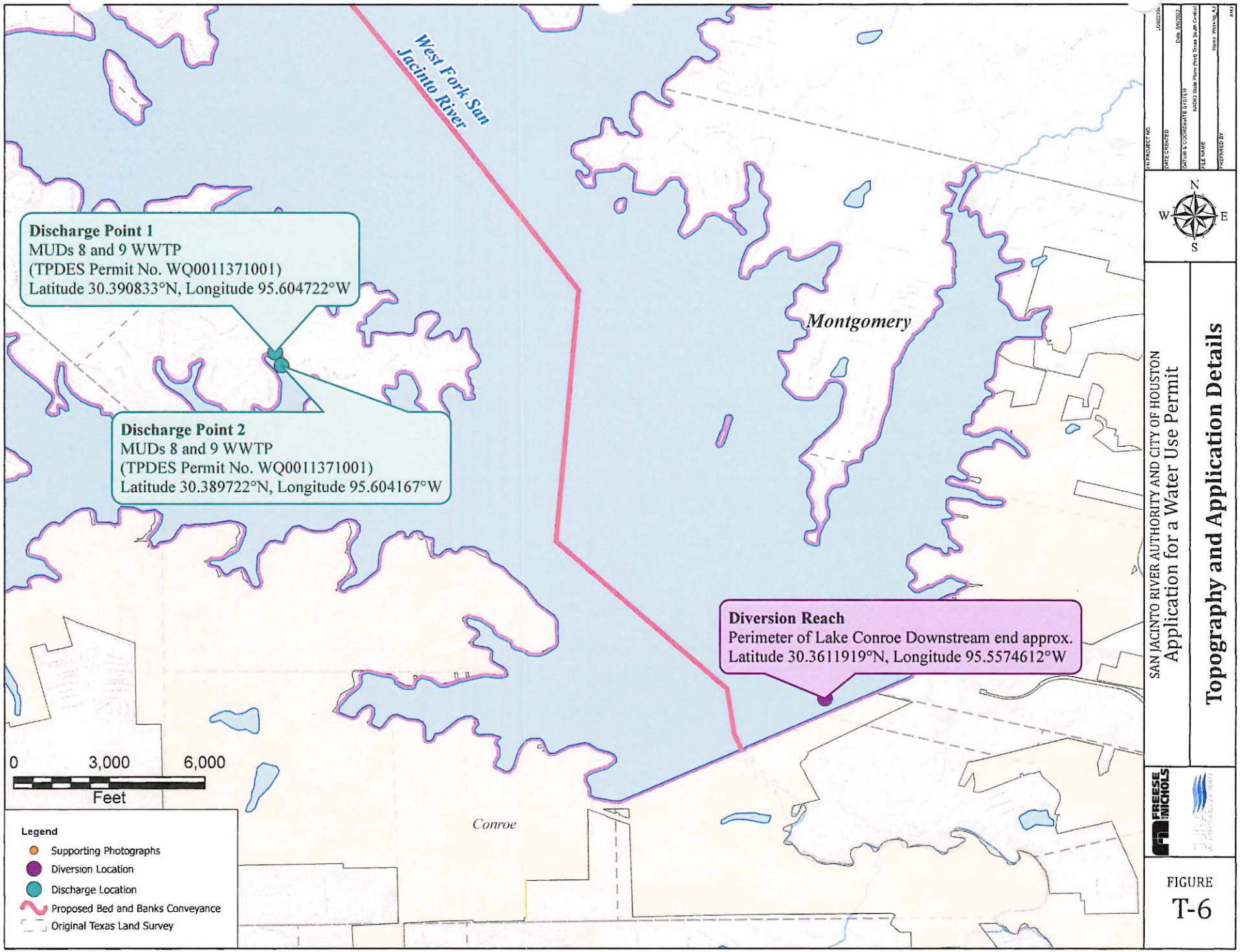
West Fork San Jacinto River
Montgomery
Conroe
Discharge Point 1
MUDs 8 and 9 WWTP
(TPDES Permit No. WQ0011371001)
Latitude 30.390833°N, Longitude 95.604722°W
Discharge Point 2
MUDs 8 and 9 WWTP
(TPDES Permit No. WQ0011371001)
Latitude 30.389722°N, Longitude 95.604167°W
Diversion Reach
Perimeter of Lake Conroe Downstream end approx.
Latitude 30.3611919°N, Longitude 95.5574612°W
0
3,000
6,000
Feet
Legend
Supporting Photographs
Diversion Location
Discharge Location
Proposed Bed and Banks Conveyance
Original Texas Land Survey
N
W
E
S
SAN JACINTO RIVER AUTHORITY AND CITY OF HOUSTON
Application for a Water Use Permit
Topography and Application Details
FREESE NICHOLS
FIGURE
T-6
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RESOLUTION NO. 2021-R-20

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN JACINTO RIVER AUTHORITY AUTHORIZING THE FILING OF AN APPLICATION FOR A WATER RIGHT

WHEREAS, the San Jacinto River Authority (the "Authority"), a conservation and reclamation district, body politic and corporate and a governmental agency of the State of Texas created by special act of the Texas Legislature, is a co-owner of Certificate of Adjudication No. 10-4963, as amended, with the City of Houston (the "City"), relative to the impoundment and diversion of water in Lake Conroe; and

WHEREAS, the Authority and the City entered into an agreement with Montgomery County Municipal Utility District Nos. 8 and 9 ("the MUDs") and the City of Huntsville ("Huntsville") wherein the MUDs agreed to provide the Authority and the City with a total of twenty-one percent (21%) of the quantity of water actually discharged, conveyed, and otherwise available for diversion from Lake Conroe, and Huntsville agreed to provide the Authority and the City with a total of twenty-one percent (21%) of the quantity of water Huntsville discharges to supply the MUDs, pursuant to the MUDs' and Huntsville's respective Water Use Permit Nos. 12510 and 12754 (the "Water Commitment"); and

WHEREAS, the Authority seeks to permit the Water Commitment by filing a water right application with the Texas Commission on Environmental Quality (the "TCEQ"); and

WHEREAS, it is necessary for the Authority to apply to the TCEQ for a water right to allow the diversion of the Water Commitment quantities; and

WHEREAS, the Authority's Board of Directors deems it necessary and appropriate at this time to authorize the General Manager or his designee to prepare, make, execute, file, prosecute, amend, settle and compromise any and all applications to the TCEQ to apply for such water right and to employ the services of such consultants to assist in the prosecution of such application(s), as deemed to be in the best interest of the Authority.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SAN JACINTO RIVER AUTHORITY:

Section 1. The General Manager or his designee is hereby authorized and directed on behalf of the Authority to prepare, or cause to be prepared, and to make, execute, file, prosecute, amend, settle, and compromise, as necessary, any and all applications to the TCEQ in order to authorize the diversion of the Water Commitment, as deemed necessary and appropriate, and to employ the services of such consultants to assist in the prosecution of such application(s), as deemed to be in the best interest of the Authority.

Section 2. A certified copy of this resolution shall be provided to the TCEQ and to all persons interested in the subject matter hereof.

PASSED, ADOPTED AND EFFECTIVE this 28th day of October, 2021.

Ronnie Anderson, President

ATTEST:

William Faubel, Secretary

[SEAL]



CERTIFICATE FOR RESOLUTION

THE STATE OF TEXAS §
§
COUNTY OF MONTGOMERY §

I, the undersigned General Manager of the San Jacinto River Authority (the "Authority"), hereby certify as follows:

1. That I am the duly qualified and acting General Manager of the Authority, and that as such, I have custody of the minutes and records of the Authority.

2. That the Board of Directors of the Authority convened in regular session on October 28, 2021, at the regular meeting place thereof, and the roll was called of the duly constituted officers and members of the Board of Directors, to-wit:

Ronnie Anderson	President
Ed Boulware	Vice-President
Mark Micheletti	Treasurer
William Faubel	Secretary
Ricardo Mora	Secretary-Pro Tempore
Stacey Buick	Director

and all of said persons were present, except Director(s) William Faubel, thus constituting a quorum, whereupon, among other business, the following was transacted at such meeting: a written resolution, captioned as follows:

RESOLUTION NO. 2021-R-20

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN JACINTO RIVER AUTHORITY AUTHORIZING THE FILING OF AN APPLICATION FOR A WATER RIGHT

was duly introduced for the consideration of the Board of Directors. It was then duly moved and seconded that such Resolution be adopted and, after due discussion, such motion, carrying with it the adoption of such Resolution, prevailed and carried by the following vote:

AYES: 5

NOES: 0

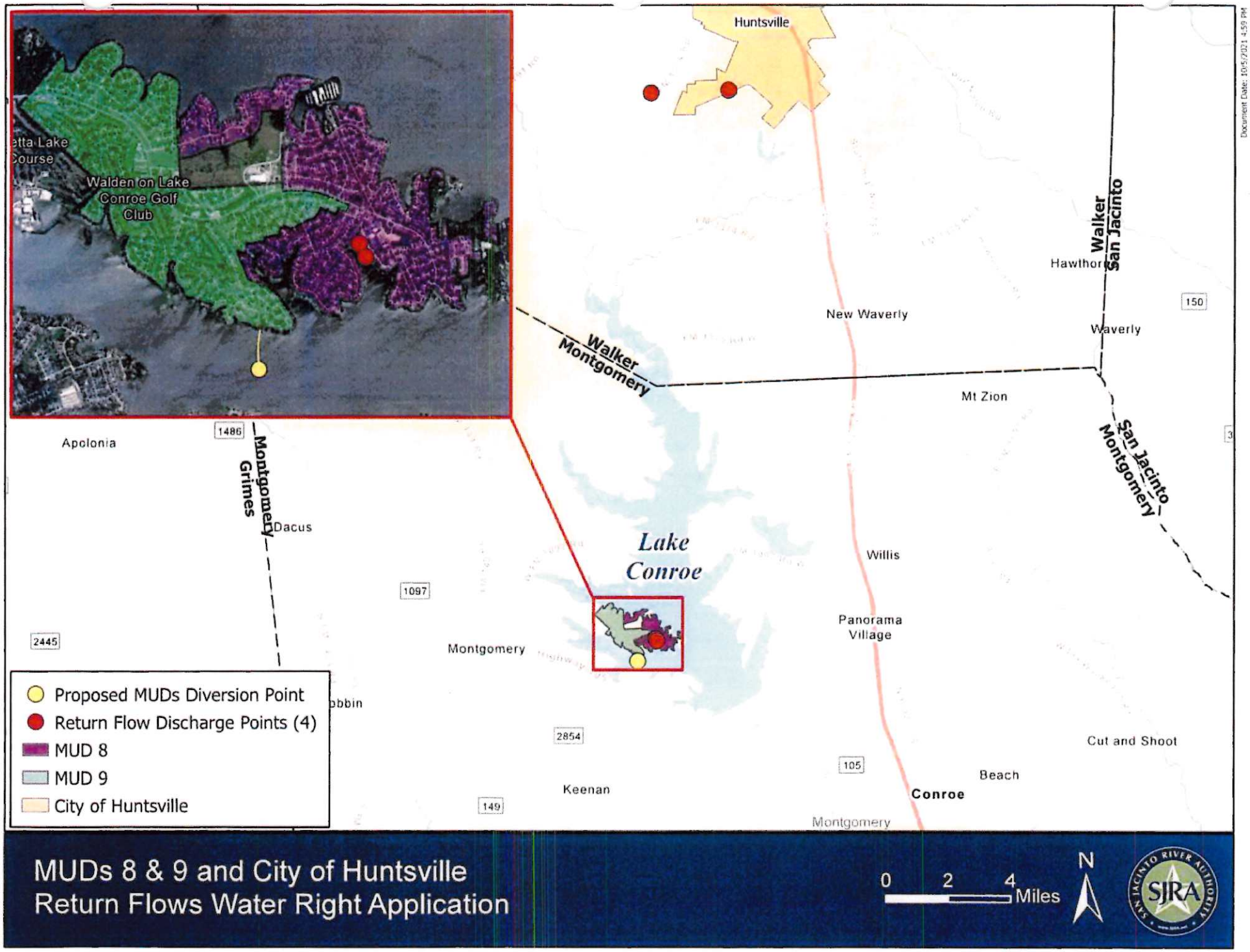
3. That a true and correct copy of such Resolution adopted at such meeting is attached to and follows this certificate; that such Resolution has been duly recorded in the minutes of the Board of Directors for such meeting; that the persons named in the above and foregoing Paragraph 2. were the duly chosen, qualified and acting officers and members of the

Board of Directors as indicated therein, that each was duly and sufficiently notified officially and personally, in advance, of the time, place and purpose of such meeting, and that such Resolution would be introduced and considered for adoption at such meeting, and that each consented in advance, to the holding of such meeting for such purpose; that the canvassing of the officers and members of the Board of Directors present at and absent from such meeting and of the votes of each on such motion, as set forth in the above and foregoing Paragraph 2., is true and correct; that such meeting was open to the public as required by law; and that sufficient and timely notice of the hour, date, place and subject of such meeting was given and posted as required by Chapter 551, Texas Government Code, as amended.

SIGNED AND SEALED the 28th day of October, 2021.



Jace A. Houston, General Manager


Huntsville
Walden on Lake Conroe Golf Club
Walker
San Jacinto
Hawthorne
New Waverly
Waverly
150
Walker
Montgomery
Mt Zion
San Jacinto
Montgomery
Apolonia
1486
Montgomery
Grimes
Dacus
Lake Conroe
Willis
1097
Panorama Village
2445
Montgomery
Proposed MUDs Diversion Point
Return Flow Discharge Points (4)
MUD 8
MUD 9
City of Huntsville
2854
Cut and Shoot
105
Beach
Keenan
Conroe
149
Montgomery
MUDs 8 & 9 and City of Huntsville
Return Flows Water Right Application
0 2 4 Miles
N
SJRA
SAN JACINTO RIVER AUTHORITY
Document Date: 10/5/2021 4:59 PM

Signatory Authority

Agenda - Jan. 28, 2009 Item #1

MOTION NO. 2009 0026

MOTION by Council Member Khan that the recommendation from the Director of the Department of Public Works and Engineering, relative to signing water rights applications on behalf of the City of Houston, be adopted, and in accordance with the State of Texas under 30TAC§295.14, the Director of the Department of Public Works and Engineering is hereby given signatory authority on behalf of the City of Houston and any successor organization of the City of Houston.

Seconded by Council Member Green and carried.

Mayor White, Council Members Lawrence, Johnson, Clutterbuck, Adams, Sullivan, Khan, Holm, Rodriguez, Brown, Lovell, Green and Jones voting aye
Nays none
Council Member Noriega absent

PASSED AND ADOPTED this 28th day of January, 2009.

Pursuant to Article VI, Section 6 of the City Charter, the effective date of the foregoing motion is February 3, 2009.

City Secretary

C17265
2017-0519

SETTLEMENT AGREEMENT

INCLUDING TERMS FOR

WATER PASS-THROUGH, WATER COMMITMENT,

AND

ENCROACHMENT

BY AND BETWEEN

MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 8

MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 9

CITY OF HUNTSVILLE

CITY OF HOUSTON

SAN JACINTO RIVER AUTHORITY

EFFECTIVE July 26, **2017**

SETTLEMENT AGREEMENT INCLUDING TERMS FOR WATER PASS-THROUGH, WATER COMMITMENT, AND ENCROACHMENT

RECITALS

PARTS OF AGREEMENT

1. Agreed Accounting Protocols.

2. Exhibits.

TERMS OF AGREEMENT

ARTICLE 1

Definitions, Interpretations, and Acknowledgements

1.01. Definitions.

1.02. Interpretations.

1.03. Acknowledgements and Warrants, Including Regarding Provision of Goods and Services and Regarding Consideration.

ARTICLE 2

Agreements Regarding Conveyance and Diversion of Water

2.01. Limitations on Diversions of Conveyed Water from Lake Conroe.

2.02. Houston and the Authority Not to Take Certain Actions.

2.03. Initial Accounting Plans, Travel Time, and Carriage Losses.

2.04. Amendment of Accounting Plans, B&B Permits, and Certain Accounting Protocols.

ARTICLE 3

Agreements Regarding Committed Water Provided by the MUDs and Huntsville

3.01. Amount and Delivery of Committed Water.

3.02. Representation of Water Commitments in B&B Permits.

3.03. Implementation of the MUDs' Water Commitment.

3.04. Implementation of Huntsville's Water Commitment.

3.05. Use of Committed Water Provided to Houston and the Authority.

3.06. Curtailments or Reductions in Water Rights or Use.

ARTICLE 4

Agreements Regarding Fees and Assessments; Annual Report

4.01. Diversion Fee.

4.02. Additional Fee Related to Failure to Satisfy the MUDs' Water Commitment.

4.03. Payment of Assessments Against Water Rights or Use.

4.04. Annual Report and Annual Invoice.

ARTICLE 5

Agreements Regarding Diversion Point, Intake Facilities, and Use of Property

5.01. Encroachment Area.

5.02. Execution of Encroachment Agreement.

5.03. Terms and Conditions of Encroachment Agreement.

5.04. Adjustment to Encroachment Area.

ARTICLE 6

Agreements Regarding Initial Permitting

6.01. Houston's and the Authority's Support of the B&B Permits.

6.02. Application by Houston and the Authority to Use Committed Water.

6.03. Release of Claims and Attorney and Consultant Fees.

ARTICLE 7

Agreements Regarding Conditions Subsequent and Termination

7.01. Conditions Subsequent.

7.02. Termination and Expiration of Settlement Agreement.

ARTICLE 8

Agreements Regarding General and Administrative Matters and Warranties

8.01. Metering and Adjustments.

8.02. Annual Invoice Payment by the MUDs; Current Funds.

8.03. Notice.

8.04. Binding Effect and Assignment.

8.05. Hold Harmless.

8.06 NO WARRANTIES AS TO WATER QUALITY.

8.07. Force Majeure.

8.08. No Third-Party Beneficiaries.

8.09. No Rights or Title Acquired.

8.10. Representations and Warranties Regarding Validity.

8.11. Remedies.

8.12. Amendment.

8.13. Counterparts.

8.14. Further Assurances.

8.15. Governing Law and Venue.

8.16. No Presumption.

8.17. Relationship of Parties.

8.18. Severability.

8.19. Mediation.

SETTLEMENT AGREEMENT INCLUDING TERMS FOR WATER PASS-THROUGH, WATER COMMITMENT, AND ENCROACHMENT

This Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment ("Settlement Agreement") is entered into by and between the following entities, each referred to individually as a "Party" and collectively as the "Parties": MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 8, a conservation and reclamation district, body politic and corporate and a governmental agency of the State of Texas created under the provisions of Section 59 of Article XVI of the Texas Constitution, and operating pursuant to Chapters 49 and 54, Texas Water Code ("MUD 8"), and the MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 9, a conservation and reclamation district, body politic and corporate and a governmental agency of the State of Texas created under the provisions of Section 59 of Article XVI of the Texas Constitution, and operating pursuant to Chapters 49 and 54, Texas Water Code ("MUD 9"), the CITY OF HUNTSVILLE, a Texas home-rule municipality, located in Walker County ("Huntsville"), the CITY OF HOUSTON, a Texas home-rule municipality, located principally in Harris County ("Houston"), and the SAN JACINTO RIVER AUTHORITY, a conservation and reclamation district, body politic and corporate and a governmental agency of the State of Texas created and operating under the provisions of Chapter 426, Acts of the 45th Texas Legislature, Regular Session, 1937, as amended (compiled as Vernon's Annotated Texas Civil Statutes, Article 8280-121), enacted pursuant to the provisions of Section 59 of Article XVI of the Texas Constitution (the "Authority"). This Settlement Agreement, subject to the provisions of Section 7.01 (Conditions Subsequent), is effective on the date on which Houston's Controller provides a countersignature.

RECITALS

WHEREAS, MUD 8 and MUD 9 (jointly, the "MUDs") are subject to rules of the Lone Star Groundwater Conservation District that require reductions in the use of groundwater to meet the MUDs' municipal water supply obligations commencing in 2016, pursuant to a certified groundwater reduction plan;

WHEREAS, the MUDs submitted Application No. 12510 to the Texas Commission on Environmental Quality (the "TCEQ") on October 2, 2009, seeking authorization to convey discharged water using the bed and banks of Lake Conroe on the West Fork of the San Jacinto River, for subsequent diversion at a point to be established by the MUDs on Lake Conroe, and that application was declared administratively complete on April 12, 2010;

WHEREAS, the MUDs' groundwater reduction plan includes implementation of the bed and banks water conveyance and diversion project contemplated by Application No. 12510 and the use of supplemental contractual supplies, and was certified by the Board of Directors of the Lone Star Groundwater Conservation District on June 14, 2011;

WHEREAS, the MUDs also entered into a "Water Supply Agreement" and an "Option to Purchase and Agreement to Pursue Water Supply" with Huntsville and, in furtherance of those agreements, Huntsville submitted Application No. 12754 to the TCEQ on August 15, 2011, seeking to convey discharged water using the bed and banks of the West Fork of the San Jacinto River and in Lake Conroe also for subsequent diversion including at a point to be established by the MUDs on Lake Conroe;

WHEREAS, the TCEQ issued notice on March 23, 2011, that the Executive Director recommended granting the MUDs' Application No. 12510;

WHEREAS, Houston and the Authority jointly own Certificate of Adjudication No. 10-4963, as amended, which authorizes Houston and the Authority to maintain and operate Lake Conroe and to divert water from storage for authorized beneficial uses;

WHEREAS, the MUDs and Huntsville own no interest in Certificate of Adjudication No. 10-4963, as amended, or Lake Conroe as defined herein;

WHEREAS, implementation of certain authorizations proposed in Application No. 12510 and Application No. 12754, in addition to requiring the passage of water in Lake Conroe, requires the use of real property on or near the perimeter of Lake Conroe related to the establishment and operation of intake facilities in Lake Conroe, which property is owned by the Authority on behalf of Houston and the Authority;

WHEREAS, Houston and the Authority objected to Application No. 12510, requesting a contested case hearing before the TCEQ, and also objected to Application No. 12754 which at the time of objection was not yet declared administratively complete by the Executive Director of the TCEQ;

WHEREAS, on September 21, 2016, the TCEQ granted Houston's and the Authority's request for a contested case hearing regarding the MUDs' Application No. 12510, while recommending a period of time for the MUDs, Houston, and the Authority to conduct alternative dispute resolution;

WHEREAS, in order to avoid the significant expense and delay that would result from litigation, and after the MUDs, the Authority, and Houston participated in mediation on November 30, 2016, all Parties have reached an agreement that resolves their differences regarding Application No. 12510 and Application No. 12754, and the use of property by the MUDs for an intake facility on Lake Conroe;

WHEREAS, while this Settlement Agreement was being memorialized, the TCEQ issued notice that the Executive Director recommended granting Huntsville's Application No. 12754, and, in order to preserve their interests prior to final adoption of this Settlement Agreement, Houston and the Authority requested a contested case hearing before the TCEQ regarding that application;

WHEREAS, the agreements contained herein are made to compromise disputed claims, avoid litigation, and buy peace, and nothing in this Settlement Agreement shall be used for any purpose collateral to the subject matter of this Settlement Agreement, or construed as an admission or acknowledgement in any contested proceeding, unless expressly provided for otherwise herein;

WHEREAS, resolution of this dispute includes, among other things, terms that under expressed conditions require the MUDs to pay certain fees to Houston and the Authority; require the MUDs and Huntsville to provide water to Houston and the Authority; require Houston and the Authority to support TCEQ approval of pending Application No. 12510 and Application

No. 12754; and provide for execution of an agreement entered contemporaneously with and incorporated in this Settlement Agreement as the "Encroachment Agreement" to authorize the MUDs' use of real property owned by Houston and the Authority to establish and operate water intake facilities in, on, or near the perimeter of Lake Conroe;

NOW, THEREFORE, pursuant to the general laws applicable to cities, municipal utility districts, and conservation and reclamation districts, including Chapter 791 of the Texas Government Code, Chapter 572 of the Texas Local Government Code, and Chapters 49 and 54 of the Texas Water Code, and as otherwise authorized and permitted by the laws of the State of Texas, for and in consideration of the foregoing recitals, the covenants, conditions and undertakings hereinafter described, and the mutual benefits and covenants contained in this Settlement Agreement and the separate Encroachment Agreement identified below and entered contemporaneously, and subject to each and every term and condition of this Settlement Agreement and the Encroachment Agreement, the Parties agree as follows:

PARTS OF AGREEMENT

1. **Agreed Accounting Protocols.** The Parties acknowledge that agreement to certain water Accounting Protocols, as defined herein, for the MUDs and Huntsville is essential to this Settlement Agreement and that it is not practical or adequate to reflect those protocols in an exhibit. The following water Accounting Protocols, as delivered jointly by the MUDs and Huntsville to the Authority and Houston electronically on May 19, 2017 and acknowledged separately by representatives of the Authority and of Houston on May 24, 2017, are agreed to and incorporated herein for the purposes specified in Article 2 (Agreements Regarding Conveyance and Diversion of Water) and Article 3 (Agreements Regarding Committed Water Provided by the MUDs and Huntsville):

   (a) MUDs' "TCEQ Accounting Plan for Permit No. 12510";

   (b) Huntsville's "TCEQ Accounting Plan for Permit No. 12754";

   (c) "MUDs Commitment Water Worksheet"; and

   (d) "Huntsville Commitment Water Worksheet".

2. **Exhibits.** This Settlement Agreement includes the following exhibits.

(a) The agreed draft permit for issuance pursuant to the MUDs' Application No. 12510 is attached as Exhibit A-1, and the agreed draft permit for issuance pursuant to Huntsville's Application No. 12754 is attached as Exhibit A-2.

(b) The Encroachment Agreement executed contemporaneously by the MUDs, Houston, and the Authority is attached as Exhibit B.

(c) Documentation evidencing the delivery of Accounting Protocols referenced in this Parts of Agreement is attached as Exhibit C-1, and documentation evidencing the receipt of those Accounting Protocols is attached as Exhibits C-2 and C-3.

These exhibits include terms that are essential to the agreement of the Parties, and, subject to the terms of this Settlement Agreement, they are incorporated herein.

TERMS OF AGREEMENT

ARTICLE 1
Definitions, Interpretations, and Acknowledgements

1.01. Definitions.

"Accounting Plans" means collectively the Huntsville Accounting Plan and the MUDs Accounting Plan, as those terms are defined below.

"Accounting Protocols" means collectively the four electronic water accounting worksheets described in the Parts of Agreement.

"Annual Report" means the written report prepared by the MUDs and delivered to Houston and the Authority as described in Article 4 (Agreements Regarding Fees and Assessments; Annual Report).

"Annual Invoice" means the invoice prepared by the Authority for the MUDs as described in Article 8 (Agreements Regarding General and Administrative Matters and Warranties).

"Authority" means the San Jacinto River Authority, as fully defined in the introduction to this Settlement Agreement, and its successors and assigns insofar as such succession or assignment includes either or both (1) title to and ownership of water rights, facilities, and real property associated with Certificate of Adjudication No. 10-4963 and Lake Conroe, and (2) rights and obligations under either or both this Settlement Agreement and the Encroachment Agreement.

"B&B Permits" means collectively the MUDs B&B Permit and the Huntsville B&B Permit, as those terms are defined below.

"Carriage Losses" means an amount of water lost to channel seepage, evaporation, and other causes between the point of discharge for conveyance and a point of delivery.

"Commitment Water Worksheet(s)" collectively, or individually the "MUDs Commitment Water Worksheet" and the "Huntsville Commitment Water Worksheet", refer to electronic water accounting worksheets delivered as components of the Accounting Protocols, as same may be amended consistent with this Settlement Agreement.

"Diversion Fee" means the fee the MUDs pay the Authority and Houston, as described in Section 4.01 (Diversion Fee).

"Diversion Fee Rate" means the fee rate that the MUDs will pay the Authority and Houston for the MUDs' Diversion Fee obligation as described in Section 4.01 (Diversion Fee).

"Executive Director" means the Executive Director of the Texas Commission on Environmental Quality.

"Encroachment Agreement" means the Encroachment Agreement between the MUDs, Houston, and the Authority that is attached as Exhibit B, as same may be amended.

"Houston" means the City of Houston, Texas, a home-rule municipality, as fully defined in the introduction to this Settlement Agreement, and its successors and assigns insofar as

such succession or assignment includes either or both (1) title to and ownership of water rights, facilities, and real property associated with Certificate of Adjudication No. 10-4963 and Lake Conroe, and (2) rights and obligations under either or both this Settlement Agreement and the Encroachment Agreement.

"Houston Rate Ordinance Index" means the calculation that the Director of the City of Houston Department of Public Works and Engineering is required to apply each year to Houston's water rates in accordance with Section 14 of Houston Ordinance No. 2010-305, as same may be amended from time to time.

"Huntsville" means the City of Huntsville, Texas, a home-rule municipality as fully defined in the introduction to this Settlement Agreement, and its successors and assigns, insofar as such succession or assignment includes either or both (1) title to and ownership of water rights granted pursuant to Application No. 12754 and (2) rights and obligations under this Settlement Agreement.

"Huntsville Accounting Plan" means the water accounting plan approved by the TCEQ for Huntsville's use as required by the Huntsville B&B Permit.

"Huntsville B&B Permit" means the permitted water rights authorizations granted by the TCEQ pursuant to Huntsville's Application No. 12754, as same may be amended consistent with this Settlement Agreement.

"Huntsville Contract" means collectively the "Water Supply Agreement" and the "Option to Purchase and Agreement to Pursue Water Supply" between the MUDs and Huntsville dated September 9, 2010, as same may be amended.

"Lake Conroe" means the water storage reservoir authorized by Certificate of Adjudication No. 10-4963, as amended, and associated lands, property, and rights of way, and up to its conservation pool elevation of 201.0 feet above mean sea level; provided, however, it is agreed and acknowledged by the Parties that the foregoing definition shall apply with respect to this Settlement Agreement and the Encroachment Agreement only, it being recognized that contractual agreements between Houston and the Authority may

define such reservoir in other terms which may, or may not, be consistent with the foregoing.

"Lake Conroe Contract" means the Contract between Houston and the Authority, dated May 9, 1968, concerning Lake Conroe, as same may be amended.

"MUD 8" means Montgomery County Municipal Utility District No. 8, as fully defined in the introduction to this Settlement Agreement, and each of its successors and assigns insofar as such succession or assignment includes either or both (1) title to and ownership of water rights granted pursuant to Application No. 12510 and the right to use water pursuant to the Huntsville Contract, and (2) rights and obligations under either or both this Settlement Agreement and the Encroachment Agreement.

"MUD 9" means Montgomery County Municipal Utility District No. 9, as fully defined in the introduction to this Settlement Agreement, and each of its successors and assigns insofar as such succession or assignment includes either or both (1) title to and ownership of water rights granted pursuant to Application No. 12510 and the right to use water pursuant to the Huntsville Contract, and (2) rights and obligations under either or both this Settlement Agreement and the Encroachment Agreement.

"MUDs" means MUD 8 and MUD 9 collectively.

"MUDs Accounting Plan" means the water accounting plan approved by the TCEQ for the MUDs' use as required by the MUDs B&B permit.

"MUDs B&B Permit" means the permitted water rights authorizations granted by the TCEQ pursuant to MUDs' Application No. 12510, as same may be amended consistent with this Settlement Agreement.

"MUDs' Lake Conroe Intake Facility" means the intake structure, pipeline, and diversion works, as defined and authorized in the Encroachment Agreement, that the MUDs will use to divert conveyed water from Lake Conroe at point(s) authorized for use in the B&B Permits.

"Travel Time" means the time it takes an amount of water to travel between the point of discharge for conveyance and a point of delivery.

"Water Commitment" or "Committed Water" means the water that the MUDs and Huntsville commit to Houston and the Authority from their discharges, as described in Article 3 (Agreements Regarding Committed Water Provided by the MUDs and Huntsville).

"Water Commitment Fee" means the fee the MUDs pay the Authority and Houston pursuant to the terms of Section 4.02 (Additional Fee Related to Failure to Satisfy the MUDs' Water Commitment).

"Water Commitment Fee Rate" means the fee rate that the MUDs pay the Authority and Houston for the MUDs' Water Commitment Fee obligation as described in Section 4.02 (Additional Fee Related to Failure to Satisfy the MUDs' Water Commitment).

1.02. Interpretations.

(a) Unless otherwise stated, reference to any document, including to a contract or a water rights permit or an associated accounting or other plan, means the document as amended or supplemented from time to time.

(b) Reference to any party or governmental regulatory agency means that entity and its successors and assigns with jurisdiction relevant to the subject matter of this Settlement Agreement.

(c) References to an Exhibit, Article, Section, or Subsection means to an exhibit, article, section, or subsection of this Settlement Agreement, unless specified otherwise.

(d) Misspelling of one or more words in this Settlement Agreement does not void the agreement. Misspelled words have the meaning apparently intended by the Parties.

(e) Words in the singular number include the plural, unless the context otherwise requires.

(f) Article, section, and subsection headings contained herein are for convenience and reference and are not included to define or limit the scope of any provision of this Settlement Agreement.

(g) This Settlement Agreement and the Encroachment Agreement should be construed in harmony and to avoid conflicts. If a conflict is unavoidable, more specific language in the agreements shall control over more general language. If the conflict cannot be resolved on the basis of which language is more specific, then this Settlement Agreement shall control.

1.03. Acknowledgements and Warrants, Including Regarding Provision of Goods and Services and Regarding Consideration.

(a) Each Party acknowledges the adequacy of consideration for the rights and obligations created in this Settlement Agreement and the Encroachment Agreement, as provided by the mutual covenants made herein, including avoidance of litigation, payment of fees including the Diversion Fee and Water Commitment Fee, supply of water, and use of property that facilitates the conveyance of water in, and diversion of water from, Lake Conroe.

(b) Each Party, to the extent it executed same, acknowledges and warrants that:

(i) it has been fully informed and has full knowledge of the terms, conditions, and effects of this Settlement Agreement and the Encroachment Agreement;

(ii) either personally or through its independently retained attorneys, hydrologists, and other consultants, it has fully investigated to its satisfaction all facts surrounding the various claims, controversies, and disputes, and is fully satisfied with the terms and effects of this Settlement Agreement and the Encroachment Agreement;

(iii) no promise or inducement has been offered or made to it except as expressly stated in this Settlement Agreement and the Encroachment Agreement contemporaneously entered;

(iv) this Settlement Agreement and the Encroachment Agreement contemporaneously entered are executed without reliance on any statement or representation not expressly stated therein and without reliance on any statement or representation by any other Party or any other Party's agent; and

(v) this Settlement Agreement and the Encroachment Agreement represent the entire agreement between Houston and the Authority on the one hand, and the MUDs and Huntsville on the other hand, related to the subject matter of the respective agreements.

(c) Each Party represents and warrants that the persons executing either or both this Settlement Agreement and the Encroachment Agreement on its behalf are fully authorized to do so.

(d) Each Party, to the extent it executed same, acknowledges that this Settlement Agreement and the Encroachment Agreement are written contracts for the following goods and services within the meaning of Section 271.151(2) of the Texas Local Government Code:

(i) Committed Water provided by the MUDs and Huntsville to Houston and the Authority, as expressly provided for herein;

(ii) to the extent the MUDs fail to satisfy their Water Commitment to Houston and the Authority, water provided by Houston and the Authority to the MUDs under the provisions of Section 4.02 (Additional Fee Related to Failure to Satisfy the MUDs' Water Commitment);

(iii) the Diversion Fee paid by the MUDs to Houston and the Authority under the provisions of Section 4.01 (Diversion Fee);

(iv) the use of such property of Houston and the Authority as facilitates the conveyance of water by the MUDs and Huntsville in Lake Conroe; and

(v) the use of property of Houston and the Authority as provided herein and in the Encroachment Agreement for establishment and use of the MUDs' Lake Conroe Intake Facility.

(e) In support of those provisions of this Settlement Agreement that create an obligation to provide water, the Parties agree as follows.

(i) The Authority will file a copy of this Settlement Agreement with the Executive Director of the TCEQ, P. O. Box 13087, Austin, Texas, 78711.

(ii) The MUDs, Houston, and the Authority will maintain water conservation and drought contingency plans using applicable elements of Chapter 288 of Title 30 of Texas Administrative Code, as may be amended from time to time. To the extent Houston or the Authority intend to resell Committed Water pursuant to a contract, they will provide in the contract for resale of the water that their successive customers in the resale of the water implement water conservation and drought contingency measures in accordance with the applicable provisions of Chapter 288 of Title 30 of the Texas Administrative Code, as may be amended from time to time.

(f) The Parties acknowledge that the MUDs' and Huntsville's authority to discharge treated wastewater, including the conditions applicable to those discharges, is not within the subject matter of this Settlement Agreement. The MUDs and Huntsville also acknowledge their obligations under law and regulation to comply with the terms and conditions of their discharge authorizations, including with regard to water quality. Nothing in this Settlement Agreement relieves either the MUDs or Huntsville from any responsibility related to compliance with the terms

of their discharge authorizations and such responsibilities are not affected by this Settlement Agreement.

(g) The Parties acknowledge that the Huntsville Contract does not create obligations on the part of Houston or the Authority, and that Houston and the Authority are not third-party beneficiaries of the Huntsville Contract.

(h) For purposes of provisions in this Settlement Agreement that require either or both Houston's and the Authority's written concurrence for changes to the Accounting Protocols, the Accounting Plans, or the B&B Permits, the MUDs and Huntsville may rely on:

(i) written concurrence from Houston provided by the Director of the City of Houston Department of Public Works and Engineering or the Director's designee; and

(ii) written concurrence from the Authority provided by the Authority's General Manger or the General Manager's designee.

ARTICLE 2

Agreements Regarding Conveyance and Diversion of Water

2.01. Limitations on Diversions of Conveyed Water from Lake Conroe.

(a) The MUDs will not divert water, under authority of the MUDs B&B Permit or the Huntsville Contract, or both, in excess of that which is conveyed and available to them daily according to the MUDs Accounting Plan and the Huntsville Accounting Plan. The MUDs acknowledge that additional limitations, calculated on an annual basis, apply to their diversions as set out in Section 3.03 (Implementation of the MUDs' Water Commitment).

(b) Except with regard to diversions by the MUDs in accordance with the Huntsville Contract, Huntsville will not provide water conveyed pursuant to the Huntsville B&B Permit for diversion from Lake Conroe before entering into a separate

agreement with Houston and the Authority regarding the pass-through of such water in Lake Conroe and use of property owned by Houston and the Authority. Nothing in this Settlement Agreement obligates Houston or the Authority to undertake any such additional agreements.

2.02. Houston and the Authority Not to Take Certain Actions. Subject to each and every provision of this Settlement Agreement and the Encroachment Agreement, Houston and the Authority will not take any action, directly or indirectly, for the purpose of interfering with the MUDs' ability to physically convey, divert, and use water passed-through Lake Conroe pursuant to the B&B Permits. The Parties acknowledge that this Settlement Agreement creates no obligation on Houston and the Authority to maintain the level of water in Lake Conroe at any particular elevation.

2.03. Initial Accounting Plans, Travel Time, and Carriage Losses.

(a) With reference to the Accounting Protocols, the MUDs agree to the following.

(i) Within ninety (90) days after the MUDs B&B Permit becomes final and non-appealable, the MUDs will submit the "TCEQ Accounting Plan for Permit No. 12510" to the Executive Director for approval as required by the MUDs B&B Permit. The MUDs will not accept any substantive changes during the TCEQ Executive Director's review without written concurrence of Houston and the Authority. Houston and the Authority will not unreasonably withhold or delay providing their concurrence.

(ii) The MUDs will not divert water from Lake Conroe before the Executive Director approves the "TCEQ Accounting Plan for Permit No. 12510" consistent with this Section, for use with the MUDs B&B Permit.

(iii) Upon approval by the Executive Director, the MUDs "TCEQ Accounting Plan for Permit No. 12510" will become the MUDs Accounting Plan for all purposes under this Settlement Agreement, as same may be further amended consistent with this Settlement Agreement and as provided in

Section 2.04 (Amendment of Accounting Plans, B&B Permits, and Certain Accounting Protocols).

(b) With reference to the Accounting Protocols, the Parties acknowledge that Huntsville's "TCEQ Accounting Plan for Permit No. 12754" was approved by the TCEQ Executive Director as part of his recommendation to grant Huntsville's B&B Permit application.

(c) Houston and the Authority agree and acknowledge for the limited purposes of this Settlement Agreement and issuance of the MUDs B&B Permit that the MUDs Accounting Plan adequately accounts for Travel Time and Carriage Losses between the point(s) of the MUDs' actual discharge and the MUDs' Lake Conroe Intake Facility.

(d) Houston and the Authority agree and acknowledge for the limited purposes of this Settlement Agreement and issuance of the Huntsville B&B Permit that the Huntsville Accounting Plan adequately accounts for Travel Time and Carriage Losses between the outfall points at which Huntsville discharges water for conveyance to the MUDs pursuant to the Huntsville B&B Permit and the MUDs' Lake Conroe Intake Facility. The Parties further acknowledge and agree that, as of the effective date of this Settlement Agreement, the Carriage Losses from Huntsville's Robinson Creek Wastewater Treatment Plant to the headwaters of Lake Conroe are 1.02% and the Carriage Losses from Huntsville's N.B. Davidson Wastewater Treatment Plant to the headwaters of Lake Conroe are 0.67%.

2.04. Amendment of Accounting Plans, B&B Permits, and Certain Accounting Protocols. For changes from time to time to the Accounting Plans after approval by the TCEQ Executive Director consistent with Section 2.03 (Initial Accounting Plans, Travel Time, and Carriage Losses), to the B&B Permits after they are issued, and to the Commitment Water Worksheets, the Parties agree to the following conditions.

(a) The MUDs or Huntsville, or both, will provide written notice, and opportunity for consultation, to Houston and the Authority, at least sixty (60) days prior to submitting to the TCEQ a request to amend either or both the Accounting Plans or the B&B Permits, in the absence of force majeure conditions that make such prior notice and consultation infeasible. Except as specified below in Subsections (c) through (d) of this Section, neither the MUDs nor Huntsville will request such changes without Houston's and the Authority's written concurrence. Houston and the Authority agree that they will not unreasonably withhold or delay providing their concurrence.

(b) The Parties acknowledge that the Commitment Water Worksheets are essential parts of this Settlement Agreement but are not required in the B&B Permits and will not be submitted to the Executive Director. However, in the Accounting Plans submitted to the TCEQ, the MUDs and Huntsville will each maintain language that reads in substance as follows: "According to the Settlement Agreement referenced in Special Condition [X] of Permit No. [X], the delivery of committed water by contract to the San Jacinto River Authority and the City of Houston is being accounted separately." Except as specified below in Subsections (c) through (d) of this Section, neither the MUDs nor Huntsville will revise or amend their respective Commitment Water Worksheet without Houston's and the Authority's written concurrence. Houston and the Authority agree that they will not unreasonably withhold or delay providing their concurrence.

(c) Notwithstanding anything to the contrary in Subsections (a) and (b) of this Section, Houston's and the Authority's written concurrence is not necessary with regard to changes: that are required by the TCEQ or required to maintain compliance with the law or TCEQ regulation; that are necessary to reflect the quantity of water contracted to the MUDs from time to time under the Huntsville Contract; or that do not relate to the diversions of water from Lake Conroe, so

long as such changes do not impair Houston's and the Authority's operations and management of Lake Conroe.

(d) Notwithstanding anything to the contrary in Subsections (a) and (b) of this Section, Houston and the Authority will not withhold their written concurrence with changes that are made for the purpose of accommodating the MUDs' or Huntsville's new or amended discharge permits, including with regard to discharge location and discharge amounts, to the extent such changes are otherwise consistent with this Settlement Agreement.

ARTICLE 3

Agreements Regarding Committed Water Provided by the MUDs and Huntsville

3.01. Amount and Delivery of Committed Water.

(a) Subject to this Article 3, the MUDs will provide to Houston and the Authority, jointly to share as the MUDs' Water Commitment, twenty-one percent (21%) of the quantity of water actually discharged, conveyed, and otherwise available for diversion from Lake Conroe pursuant to the MUDs B&B Permit, on an annual basis, as calculated pursuant to the MUDs Commitment Water Worksheet. Committed Water provided pursuant to this Subsection will be considered delivered to Houston and the Authority when released at the MUDs' point of discharge in excess of daily diversions attributed in the MUDs Accounting Plan to the MUDs B&B Permit.

(b) Subject to this Article 3, Huntsville agrees to provide to Houston and the Authority jointly to share, as Huntsville's Water Commitment, twenty-one percent (21%) of the quantity of water Huntsville discharges to supply the MUDs with water pursuant to the Huntsville Contract, on an annual basis, as calculated pursuant to the Huntsville Commitment Water Worksheet. The Parties acknowledge that the amount of Huntsville's actual discharges on any given day may be more or less than that required to satisfy the maximum amount of water the MUDs contract for delivery to the MUDs pursuant to the Huntsville Contract.

Committed Water provided to Houston and the Authority pursuant to this Subsection will be conveyed to Lake Conroe under authority of the Huntsville B&B Permit and delivered as it enters the headwaters of Lake Conroe. Houston and the Authority shall bear the Carriage Losses for the delivery of the Committed Water provided pursuant to this Subsection from Huntsville's points of discharge to the headwaters of Lake Conroe.

(c) Title to the Committed Water provided to Houston and the Authority pursuant to this Section passes upon delivery, and Houston and the Authority shall share the water in proportion to their ownership interests detailed in the Lake Conroe Contract. Prior to using the Committed Water, Houston and the Authority shall obtain any and all state and other authorizations that may be necessary to convey, store, account, divert, and use the Committed Water provided to them pursuant to this Article 3.

3.02. Representation of Water Commitments in B&B Permits.

(a) The MUDs will request a recital in the MUDs B&B Permit as follows and also reflected in Exhibit A-1: "WHEREAS, in and subject to the terms of the "Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment" (the "Settlement Agreement") entered by Applicants with the City of Huntsville, the City of Houston, and the San Jacinto River Authority effective [insert date], Applicants have agreed to provide contractually for the term of that Settlement Agreement, to the San Jacinto River Authority and the City of Houston as owners of Certificate of Adjudication No. 10-4963, a quantity of water that is twenty-one percent (21%) of the quantity of water the Applicants actually discharge, convey, and otherwise make available for diversion from Lake Conroe pursuant to this permit. Also in that Settlement Agreement, and in the "Encroachment Agreement" entered contemporaneously by Applicants with the San Jacinto River Authority and the City of Houston, the San Jacinto River Authority and the City of Houston have given Applicants

access to property on Lake Conroe for diversion facilities at the points authorized in Paragraph 3. DIVERSION of this permit."

(b) The MUDs will request inclusion of the following language in the special conditions of the MUDs B&B Permit, as follows and also as reflected in Exhibit A-1: "The exercise of rights under Paragraph 3. DIVERSION is conditioned upon the continued effectiveness of both: 1) the Settlement Agreement identified in the recitals of this permit, and 2) authorization to use property granted by the San Jacinto River Authority and the City of Houston in the Settlement Agreement and the Encroachment Agreement identified in the recitals of this permit."

(c) Huntsville will request a recital in the Huntsville B&B permit as follows and also reflected in Exhibit A-2: "WHEREAS, in and subject to the terms of the "Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment" entered by the Applicant with Montgomery County Municipal Utility District No. 8, Montgomery County Municipal Utility District No. 9, the City of Houston and the San Jacinto River Authority effective [insert date] (the "Settlement Agreement"), the Applicant has agreed to provide contractually for the term of that Settlement Agreement, to the San Jacinto River Authority and the City of Houston as owners of Certificate of Adjudication No. 10-4963, a quantity of water that is twenty-one percent (21%) of the amount of water the Applicant discharges to supply Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9 with water pursuant to a water supply contract, as reflected in the accounting plan for the permit. Also in that Settlement Agreement, and in the "Encroachment Agreement" entered contemporaneously between the San Jacinto River Authority, City of Houston, and Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9, the San Jacinto River Authority and the City of Houston have given Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9

access to property on Lake Conroe for diversion facilities at the points authorized in Paragraph 3 of this permit."

(d) Huntsville will request inclusion of the following language in the special conditions of the Huntsville B&B Permit: "The exercise of rights under Paragraph 3. DIVERSION regarding diversions from authorized points in Lake Conroe is conditioned upon the continued effectiveness of both: 1) the Settlement Agreement identified in the recitals of this permit; and 2) the authorization to use property granted by the San Jacinto River Authority and the City of Houston in the Settlement Agreement and the Encroachment Agreement identified in the recitals of this permit."

3.03. Implementation of the MUDs' Water Commitment.

(a) The MUDs will commence delivery of Committed Water pursuant to Subsection (a) of Section 3.01 (Amount and Delivery of Committed Water) sixty (60) days after the MUDs B&B Permit becomes final and non-appealable. Houston and the Authority may commence their diversions of Committed Water upon authorization from the TCEQ, and annually upon receipt of the Annual Report in the calendar year that follows the delivery of Committed Water during the immediately preceding calendar year.

(b) Subject to each and every provision of this Article 3, the MUDs will limit their total diversion of water from Lake Conroe as necessary to provide the Committed Water pursuant to Subsection (a) of Section 3.01 (Amount and Delivery of Committed Water) on an annual basis, as calculated according to the MUDs Commitment Water Worksheet, so long as the MUDs' Water Commitment is in effect. This limitation on the MUDs' diversion is in addition to the limitation on daily diversions required in Article 2 (Agreements Regarding Conveyance and Diversion of Water).

(c) The MUDs' Water Commitment to Houston and the Authority terminates upon the later of the following occurrences: (i) sixty (60) days following written notice by the MUDs, to Houston and the Authority, that the MUDs intend permanently to relinquish the authority to divert from Lake Conroe pursuant to the MUDs B&B Permit; or (ii) the date on which the MUDs submit, to the TCEQ, either a request that authority in the MUDs B&B Permit to divert water from Lake Conroe be withdrawn, or notice that the MUDs B&B Permit is voluntarily relinquished.

3.04. Implementation of Huntsville's Water Commitment.

(a) Huntsville will commence delivery of the Committed Water it provides pursuant to Subsection (b) of Section 3.01 (Amount and Delivery of Committed Water) on the same date that Huntsville's obligation to deliver water to the MUDs' Lake Conroe Intake Facility commences pursuant to the Huntsville Contract. Houston and the Authority may commence their diversions of Committed Water upon authorization from the TCEQ, and annually upon receipt of the Annual Report in the calendar year that follows the delivery of Committed Water during the immediately preceding calendar year.

(b) Huntsville's Water Commitment to Houston and the Authority terminates upon the later of the following occurrences: (i) sixty (60) days after Huntsville provides written notice to the Authority and Houston that Huntsville intends permanently to relinquish the authority for its customers, the MUDs, to divert water from Lake Conroe pursuant to the Huntsville B&B Permit, or (ii) the date on which Huntsville submits, to the TCEQ, either a request that authority in the Huntsville B&B Permit for its customers, the MUDs, to divert water from Lake Conroe be withdrawn, or notice that the Huntsville B&B Permit is voluntarily relinquished.

3.05. Use of Committed Water Provided to Houston and the Authority.

(a) To the extent the MUDs and Huntsville are required to account, record, or report the storage, conveyance, diversion, or use of Committed Water they provide to Houston and the Authority pursuant to this Article 3, Houston and the Authority

will provide, to the MUDs and Huntsville, the necessary information in a useable, electronic format and in a timely fashion, along with any other information that may be required of the MUDs and Huntsville in such regard.

(b) Notwithstanding anything in this Settlement Agreement to the contrary, Houston and the Authority acknowledge that the MUDs and Huntsville are not obligated, by this Settlement Agreement or otherwise, to maintain any permit in effect or to continue to discharge water in any amount, in any particular location, or at all. The MUDs and Huntsville acknowledge that their decision to permanently discontinue some or all such discharges respectively may trigger special conditions in their respective B&B Permits that require relinquishing certain rights under those permits.

(c) Houston and the Authority also acknowledge that the amount of water committed by Huntsville is limited by the quantity of water the MUDs contract to purchase pursuant to the Huntsville Contract, which may be less than Huntsville's actual discharges. This Settlement Agreement does not obligate the MUDs or Huntsville to exercise or maintain the Huntsville Contract in effect in any particular contract amount, or at all.

(d) Neither the MUDs nor Huntsville make any representation or warranty in this Settlement Agreement that water actually discharged in satisfaction of the Water Commitment will reach any particular facilities of Houston and the Authority in a usable quantity. The MUDs and Huntsville will not, however, take any action, directly or indirectly, for the purpose of interfering with Houston's and the Authority's ability to physically convey, store, divert, use, or store Committed Water.

3.06. Curtailments or Reductions in Water Rights or Use. The Parties acknowledge their intent to bear proportionally any limitations, adjustments, or curtailments in the diversion and use of water conveyed pursuant to their respective permits that may be imposed by the state under law, regulation, or TCEQ order. However, whether such limitations,

adjustments, or curtailments are accepted without objection or contest will remain in the respective Parties' complete discretion, each with regard to either or both of its own permits and rights under this Settlement Agreement.

ARTICLE 4

Agreements Regarding Fees and Assessments; Annual Report

4.01. Diversion Fee.

(a) The MUDs will pay annually, jointly to Houston and the Authority to share, the Diversion Fee calculated by applying the Diversion Fee Rate to the total quantity of water actually diverted by the MUDs through the MUDs' Lake Conroe Intake Facility in the preceding year as reported to Houston and the Authority in the Annual Report. Payment of the Diversion Fee applied to water diverted by the MUDs, whether such water is diverted under authority of the MUDs B&B Permit or provided to and diverted by the MUDs pursuant to the Huntsville Contract, is the sole responsibility of the MUDs.

(b) The initial Diversion Fee Rate is $0.115 (eleven and one half cents) per 1000/gallons.

(c) On January 1st of each year, commencing after the effective date of this Settlement Agreement, Houston and the Authority will update the Diversion Fee Rate to reflect the lesser of (i) the product of the previous year's Diversion Fee Rate and the most recent adjusted annual percentage change reflected in the Consumer Price Index for the Houston-Sugarland-Baytown Metropolitan Statistical Area published by the U.S. Bureau of Labor Statistics or (ii) the product of the previous year's Diversion Fee Rate and the Houston Rate Ordinance Index (applied to Houston's retail water rates on April 1 of the preceding year).

4.02. Additional Fee Related to Failure to Satisfy the MUDs' Water Commitment.

(a) If the MUDs' total diversions, on an annual basis, exceed their authorized usage as prescribed in Subsection (b) of Section 3.03 (Implementation of the MUDs' Water Commitment) to ensure the delivery of Committed Water provided by the MUDs to Houston and the Authority, the MUDs will pay a "Water Commitment Fee" calculated by applying the "Water Commitment Fee Rate" to the amount of the overdiversion in the preceding year as reported to Houston and the Authority in the Annual Report. Payment of the Water Commitment Fee is in addition to payment of the fee provided in Section 4.01 (Diversion Fee).

(b) The Water Commitment Fee Rate is the adopted "Disincentive Fee" by the Harris-Galveston Subsidence District, as same may be adjusted from time to time. The current Water Commitment Fee Rate is $8.46 per thousand gallons diverted.

4.03. Payment of Assessments Against Water Rights or Use. The Parties acknowledge their intent that the provision of water to Houston and the Authority pursuant to Article 3 (Agreements Regarding Committed Water Provided by the MUDs and Huntsville) be without direct financial cost to the MUDs and Huntsville except as may be expressly set forth in this Settlement Agreement. The Parties further acknowledge their intent that each Party will be responsible for its own costs associated with their respective permits. Accordingly, each of the Parties will be responsible for, and will pay directly if allowed by law, any fees, charges, or other monetary assessments that are levied by the state or any other governmental entity on water rights for, or conveyance, diversion, or use of, Committed Water subject to applicable permits.

4.04. Annual Report and Annual Invoice.

(a) The MUDs shall provide a written report to Houston and the Authority by February 1 of each year, the "Annual Report," that includes the following information for the preceding calendar year (January 1 through December 31):

(i) total amount of effluent discharged by the MUDs into Lake Conroe;

(ii) total amount of water delivered to the MUDs by Huntsville;

(iii) total amount of Committed Water delivered to the headwaters of Lake Conroe by Huntsville;

(iv) total amount of water diverted from the MUDs Lake Conroe Intake Facility;

(v) total amount of the MUDs' diversion for the previous calendar year categorized by source water (i.e., diversion of water delivered to the MUDs by Huntsville totaled separately from diversion of water attributed to the MUDs' own discharges); and

(vi) any other information reasonably requested by Houston and the Authority necessary to confirm the amount of Committed Water provided by the MUDs and Huntsville to Houston and the Authority, the amount due by the MUDs for the Diversion Fee, and the amount due by the MUDs for the Water Commitment Fee (if any).

(b) Based on the information contained in the Annual Report, the Authority shall prepare an Annual Invoice to the MUDs for amounts due to Houston and the Authority for the Diversion Fee and the Water Commitment Fee (if any) attributable to the MUDs' diversions for the previous calendar year and provide all documentation necessary for the MUDs to verify any changes applied in the Diversion Fee Rate and the Water Commitment Fee Rate. Terms for payment of the Annual Invoice by the MUDs shall be as provided in Article 8 (Agreements Regarding General and Administrative Matters and Warranties).

ARTICLE 5

Agreements Regarding Diversion Point, Intake Facilities, and Use of Property

5.01. Encroachment Area. The MUDs, Houston, and the Authority have identified an acceptable area for the location the MUDs' Lake Conroe Intake Facility. Such area is located, in part, upon certain real property held in fee by the Authority and comprising a portion of the shoreline and bed of Lake Conroe. A detailed description of such area (the "Encroachment Area") is included as an exhibit to the Encroachment Agreement.

5.02. Execution of Encroachment Agreement. Contemporaneously with the execution of this Settlement Agreement, Houston, the Authority, and the MUDs shall execute the Encroachment Agreement in order to memorialize the terms and conditions upon which Houston and the Authority consent to the encroachment by the MUDs upon the Encroachment Area for the construction, operation, and maintenance of the MUDs' Lake Conroe Intake Facility.

5.03. Terms and Conditions of Encroachment Agreement. The terms and conditions of the Encroachment Agreement shall control in all respects with regard to the construction, operation, and maintenance of the MUDs' Lake Conroe Intake Facility.

5.04. Adjustment to Encroachment Area. Houston and the Authority agree to reasonably cooperate with the MUDs if the MUDs request an adjustment to the boundaries or location of the MUDs' Lake Conroe Intake Facility or the Encroachment Area provided, however, any such adjustment shall require the execution by the Parties of an amendment to the Encroachment Agreement to reflect such adjustment.

ARTICLE 6

Agreements Regarding Initial Permitting

6.01. Houston's and the Authority's Support of the B&B Permits.

(a) In accordance with the terms and conditions of this Settlement Agreement and contingent upon the MUDs and Huntsville performing their duties related to obtaining their respective B&B Permits and communicating with Houston and the

Authority, as provided in this Settlement Agreement, Houston and the Authority agree to support, and to not oppose directly or indirectly, issuance of B&B Permits that are consistent with this Settlement Agreement and further specifically agree to:

(i) the MUDs supplementing Application No. 12510 to request revision of the Executive Director's recommended draft permit to be consistent with Exhibit A-1 (MUDs Draft Permit);

(ii) Huntsville supplementing Application No. 12754 to request revision of the Executive Director's recommended draft permit to be consistent with Exhibit A-2 (Huntsville Draft Permit);

(iii) the MUDs supplementing or amending Application No. 12510 or the MUDs B&B Permit, or both, if necessary to reflect diversion of water by the MUDs at the point or points identified in the Encroachment Agreement;

(iv) Huntsville supplementing or amending Application No. 12754 or the Huntsville B&B Permit, or both, if necessary to reflect diversion of water at the point or points identified in the Encroachment Agreement;

(v) the MUDs supplementing or amending Application No. 12510 or the MUDs B&B Permit if necessary to specify that the source of water discharged by the MUDs subject to conveyance by bed and banks includes contract water conveyed to the MUDs from Huntsville as well as groundwater they pump from all sources;

(vi) the TCEQ granting the MUDs' Application No. 12510 and issuing a permit that is consistent with this Settlement Agreement and substantially in the form attached as Exhibit A-1; and

(vii) the TCEQ granting Huntsville's Application No. 12754 and issuing a permit that is consistent with this Settlement Agreement and substantially in the form attached as Exhibit A-2.

The Parties acknowledge that the draft permit attached as Exhibit A-1 (MUDs Draft Permit) and the draft permit attached as Exhibit A-2 (Huntsville Draft Permit) are consistent with this Settlement Agreement.

(b) Houston and the Authority will, contemporaneously with the effective date of this Settlement Agreement, notify the Executive Director, the TCEQ Chief Clerk, and the State Office of Administrative Hearings that they withdraw their requests for a contested case hearing regarding Application No. 12510 contingent only on the Executive Director revising his recommended draft permit to be either substantially in the form attached as Exhibit A-1 or in another form that the Parties have agreed to in writing. Houston and the Authority also agree to provide such other information consistent with this Settlement Agreement that will facilitate the Executive Director's issuance of the MUDs B&B Permit without a contested case hearing.

(c) Houston and the Authority will, contemporaneously with the effective date of this Settlement Agreement, notify the Executive Director and the TCEQ Chief Clerk, that they withdraw their requests for a contested case hearing regarding Application No. 12574 contingent only on the Executive Director revising his recommended draft permit to be either substantially in the form attached as Exhibit A-2 or in another form that the Parties have agreed to in writing. Houston and the Authority also agree to provide such other information consistent with this Settlement Agreement that will facilitate the Executive Director's issuance of the Huntsville B&B Permit without a contested case hearing.

6.02. **Application by Houston and the Authority to Use Committed Water.** The Parties acknowledge that Houston and the Authority may seek a water right or other legal authorization to convey, store, account, divert, and use water based on this Settlement Agreement and the Water Commitments contained herein. With regard to such future permitting, the Parties agree as follows.

(a) Houston and the Authority, as part of any application to the TCEQ that is based in whole or in part on rights obtained under this Settlement Agreement, will condition their requested authorizations on the continued effectiveness of both this Settlement Agreement and the Encroachment Agreement.

(b) Houston and the Authority shall provide to the MUDs and Huntsville a copy of any water rights application or amendment, and any proposed new or amended accounting plan provisions, that are based in whole or in part on this Settlement Agreement at least sixty (60) days prior to submission to the TCEQ. Upon receipt of a draft permit or other proposed authorization from the TCEQ, Houston and the Authority will provide a copy of the same to the MUDs and Huntsville. The MUDs and Huntsville will have thirty (30) days, after delivery of the draft permit or proposed authorization to them, to review and provide comments to Houston and the Authority regarding the same. Houston and the Authority will request that the TCEQ incorporate the MUDs' and Huntsville's proposed changes into the draft permit(s) or other proposed authorization, and any associated accounting plans, to the extent those changes are required to ensure the permit(s) or other authorization is consistent with this Settlement Agreement.

(c) The MUDs and Huntsville agree to support, and to not oppose directly or indirectly, issuance by the TCEQ of a permit or other authorization for Houston and the Authority to use Committed Water consistent with this Settlement Agreement, provided:

(i) Houston and the Authority have complied with Subsections (a) and (b) of this Section;

(ii) the recommended permit or authorization specifies that diversions are conditioned on the amount of Committed Water actually discharged by the MUDs and Huntsville and available pursuant to the terms of this Settlement Agreement and are subject to the MUDs' and Huntsville's right to decrease discharges and contracted amounts; and

(iii) the recommended permit or other authorization, and any associated water accounting provisions, are consistent with this Settlement Agreement and the Commitment Water Worksheets.

(d) Houston and the Authority will maintain any accounting of water rights or other authorizations that rely on Committed Water consistent with the Settlement Agreement and the Commitment Water Worksheets. The Parties agree to cooperate from time to time as may be helpful in establishing operating protocols that facilitate the accuracy and coordination of the Parties' accounting and record-keeping.

6.03. Release of Claims and Attorney and Consultant Fees.

(a) The MUDs and Huntsville do hereby release, acquit, and forever discharge Houston and the Authority, and their officers, directors, partners, agents, attorneys, representatives, employees, affiliates, successors, assigns, and insurers, from the claims and actions described below to the extent they are directly or indirectly attributable to the MUDs' and Huntsville's applications for initial issuance, by the TCEQ, of their respective B&B Permits:

(i) any and all claims, demands, debts, liability, damages, fees, expenses, or costs of court, of any and every character and nature whatsoever, whether known or unknown, either in or arising out of the law of contracts, torts, property rights, or the regulation of water, whether arising under statutory or common law, at law or in equity, and any action taken thereon through the date of this Settlement Agreement; and

(ii) any claim that was brought or could have been brought in proceedings on those applications except as specifically made a part of this Settlement Agreement.

(b) Houston and the Authority do hereby release, acquit, and forever discharge the MUDs and Huntsville, and their officers, directors, partners, agents, attorneys, representatives, employees, affiliates, successors, assigns, and insurers, from the claims and actions described below to the extent they are directly or indirectly attributable to the MUDs' and Huntsville's applications for initial issuance, by the TCEQ, of their respective B&B Permits:

(i) any and all claims, demands, debts, liability, damages, fees, expenses, or costs of court, of any and every character and nature whatsoever, whether known or unknown, either in or arising out of the law of contracts, torts, property rights or the regulation of water, whether arising under statutory or common law, at law or in equity, and any action taken thereon through the date of this Settlement Agreement; and

(ii) any claim that was brought or could have been brought in proceedings on those applications except as specifically made a part of this Settlement Agreement.

(c) The Parties further agree that, except as between the MUDs and Huntsville as expressly provided in the Huntsville Contract, each shall be solely responsible for their respective costs, including all attorneys' fees and costs, attributed directly or indirectly to MUDs' and Huntsville's applications for initial issuance, by the TCEQ, of their respective B&B Permits.

ARTICLE 7

Agreements Regarding Conditions Subsequent and Termination

7.01. Conditions Subsequent. This Settlement Agreement and the Encroachment Agreement are subject to the following conditions subsequent being satisfied:

(a) as to the MUDs, except to the extent specified in Subsection (b) of this Section, the MUDs B&B Permit becoming final and non-appealable substantially in the form attached hereto as Exhibit A-1, or if modified by the TCEQ, a form that the Authority and Houston have consented to in writing; and

(b) as to Huntsville and as to the MUDs for diversion and use of water pursuant to the Huntsville Contract:

(i) the Huntsville B&B Permit becoming final and non-appealable in the form attached hereto as Exhibit A-2, or if modified by the TCEQ, a form that the Authority and Houston have consented to in writing;

(ii) amendment of the Huntsville Contract if necessary to implement the Water Commitment from Huntsville; and

(iii) exercise, by the MUDs, of their option to purchase water under the Huntsville Contract. Notwithstanding the foregoing, if the condition subsequent described in this Subsection (b)(iii) is not met, Huntsville will not use, and will seek amendment of the Huntsville B&B Permit as necessary to withdraw, the authorization for diversion from Lake Conroe.

7.02. Termination and Expiration of Settlement Agreement.

(a) Houston and the Authority may terminate this Settlement Agreement early only for either the nonpayment of any amount due under this Settlement Agreement from the MUDs or the MUDs' failure to timely deliver the Annual Report, and only in accordance with the following terms and conditions.

(i) If the Authority or Houston determines that the MUDs have not paid the full amount owed for any payment due under this Settlement Agreement herein or have not timely delivered the Annual Report, the Authority or Houston shall give written notice to the MUDs and Huntsville stating the time period for which nonpayment has been determined and any fee and interest accrued (the "Delinquent Payment Notice").

(ii) Upon delivery of the Delinquent Payment Notice to the MUDs, the MUDs shall have forty-five (45) days to cure (the "Cure Period") the applicable failure by paying the amounts due and payable or submitting the Annual Report. If full payment of all amounts due is not made or the Annual Report is not delivered within the Cure Period, the Authority or Houston may provide notice of termination of this Settlement Agreement to the MUDs and Huntsville (the "Termination Notice"), which may state the existing obligations of the Parties under the Settlement Agreement and the Encroachment Agreement upon termination. This Settlement Agreement shall terminate on the 10th business day after the date the Termination Notice is sent unless otherwise stated in the Termination Notice.

(iii) If the MUDs dispute the obligation to pay all or any part of the amount stated in any notice or the failure to deliver the Annual Report, the MUDs may, in addition to all other rights that they may have under law, pay such amount under protest, pending final resolution of such dispute or submit a duplicate of the Annual Report. Houston and the Authority may not terminate this Settlement Agreement if the MUDs pay such amount under protest or submit the duplicate of the Annual Report until there is a final resolution of such dispute.

(b) The MUDs may terminate this Settlement Agreement at any time upon written notice by the MUDs, to Huntsville, Houston, and the Authority, that the MUDs have relinquished the authority to divert water from Lake Conroe under both the MUDs B&B Permit and the Huntsville Contract.

(c) Huntsville may terminate its participation as a Party to this Settlement Agreement at any time after the Huntsville Contract is no longer in effect, upon notice to Houston and the Authority that Huntsville has relinquished authorization to convey water to the MUDs in Lake Conroe pursuant to the Huntsville B&B Permit and the Huntsville Contract. Termination of Huntsville's party status pursuant to this Subsection does not terminate the Settlement Agreement as to the other Parties.

(d) Notwithstanding Subsections (b) and (c) of this Section 7.02, the Parties agree that both this Settlement Agreement as to all Parties, and the Encroachment Agreement as to the parties named therein, shall terminate without further action of any Party, if:

(i) either of the following events has occurred:

(A) the MUDs have relinquished the MUDs B&B Permit, or

(B) the MUDs B&B Permit has been withdrawn, revoked, or otherwise determined to be abandoned by the TCEQ;

and

(ii) any of the following events have occurred:

(A) Huntsville has relinquished the Huntsville B&B Permit,

(B) the Huntsville B&B Permit has been withdrawn, revoked, or otherwise determined to be abandoned by the TCEQ,

(C) Huntsville has relinquished authorization to convey water to the MUDs in Lake Conroe pursuant to the Huntsville B&B Permit,

(D) the Huntsville B&B Permit has been amended to remove authorization therein for Huntsville to convey water to the MUDs in Lake Conroe, or

(E) the MUDs no longer have authority to divert water from Lake Conroe under the Huntsville Contract.

If any event listed in Subsection (d)(i) or Subsection (d)(ii), of this Section 7.02, is the subject of or may be affected by a pending lawsuit, contest, appeal, or other type of proceedings in which a Party hereto is named, whether before an administrative agency or in court, then such event may not be the basis for termination of this Settlement Agreement pursuant to this Subsection (d) until such time as the proceedings have been fully and finally concluded and are no longer subject to appeal.

(e) The MUDs acknowledge that pursuant to the terms of the Encroachment Agreement, this Settlement Agreement terminates without further action of the Parties upon the termination of the Encroachment Agreement.

(f) The following obligations shall survive termination or expiration of this Settlement Agreement under any provision in this Section 7.02:

(i) the obligation to pay fees that have accrued under the provisions of this Settlement Agreement;

(ii) those obligations that are imposed on the MUDs in the Encroachment Agreement related to permanent cessation of diversions from the MUDs Lake Conroe Facility; and

(iii) the MUDs' and Huntsville's obligation to amend their B&B Permits consistent with such non-existence of or termination of the Settlement Agreement.

ARTICLE 8

Agreements Regarding General and Administrative Matters and Warranties

8.01. Metering and Adjustments.

(a) The MUDs, at their own expense, will install, or enable, and maintain flow meters and recording devices ("MUDs Meters") so as to enable the reporting to the Authority and Houston of the measurement by the MUDs of discharges to and diversions of water from Lake Conroe. The MUDs agree that the MUDs Meters shall be tested at least annually for accuracy by qualified personnel at the MUDs' sole expense. Commencing upon diversion from the MUDs Lake Conroe Intake Facility, the MUDs will provide Houston and the Authority with two (2) weeks' notice in advance of the MUDs Meters' testing, to provide Houston and the Authority an opportunity to witness such testing. Whether before or after diversions commence, the MUDs will furnish to Houston and the Authority a report of MUDs Meters test results pursuant to this Section, upon the Authority's or Houston's specific (non-continuing) request. The MUDs shall take timely and necessary steps to correct any meter inaccuracy discovered during any test. With regard to discharges, readings within accuracy levels acceptable to the TCEQ shall be considered correct. With regard to diversions, readings within five percent (5%) of accuracy shall be considered correct, so long as such meter accuracy is consistent with the meter manufacturer's tolerances, standards, and specifications.

(b) Huntsville, at its own expense, will install, or enable, and maintain flow meters and recording devices ("Huntsville Meters") so as to enable reporting to the Authority and Houston the measure of Huntsville's discharges. Huntsville agrees that the Huntsville Meters shall be tested at least annually for accuracy by qualified personnel at Huntsville's expense. Huntsville shall furnish to Houston and the Authority a report of such test results, upon a specific (non-continuing) request by Houston or the Authority, or both. Huntsville shall take timely and necessary steps to correct any meter inaccuracy discovered during any test.

Readings within accuracy levels acceptable to the TCEQ shall be considered correct.

(c) If the MUDs or Huntsville are required to report to the TCEQ diversions of Committed Water by Houston and the Authority, then Houston and the Authority will, at their own expense, install and maintain such flow meters and recording devices ("the Authority/Houston Meters") to measure diversions of Committed Water provided to Houston and the Authority pursuant to Section 3.01 (Amount and Delivery of Committed Water). The Authority and Houston agree that the Authority/Houston Meters shall be tested at least annually for accuracy by qualified personnel at Houston's and the Authority's expense. Houston and the Authority shall furnish to the MUDs and Huntsville a report of such test results, upon either the MUDs' or Huntsville's specific (non-continuing) request. Houston and the Authority shall take necessary steps to correct any meter inaccuracy discovered during any test. Readings within five percent (5%) of accuracy shall be considered correct, so long as such meter accuracy is consistent with the meter manufacturer's tolerances, standards, and specifications.

(d) If, as a result of any test performed under this Section, the MUDs Meters, the Huntsville Meters, or the Authority/Houston Meters are found to be registering inaccurately in excess of the applicable accuracy percentage, the readings of such meter shall be corrected for purposes of adjusting the Accounting Plans as well as the Commitment Water Worksheets, and any accounting plan or other record of Houston's and the Authority's diversion of Committed Water. With respect to the MUDs, the payments due pursuant to Article 4 (Agreements Regarding Fees and Assessments; Annual Report) shall also be adjusted. The corrections required in this Subsection will be at the rate of the inaccuracy for any period which is definitely known and agreed upon or, if no such period is known and agreed upon, the shorter of the following periods shall be used as the basis for correction:

(i) if a demand for the test was made, a period extending back ninety (90) days from the date of demand for the test; or

(ii) if no demand for the test was made, a period extending back ninety (90) days from the date of the test; or

(iii) if the meter has been tested within ninety (90) days prior to the test performed in accordance with this Subparagraph (d), a period extending back the full time elapsed since the last previous test.

8.02. Annual Invoice Payment by the MUDs; Current Funds.

(a) Within thirty (30) days of the date of the Annual Invoice date provided to the MUDs, the MUDs shall pay the Authority and Houston the amount included therein. All such payments shall be made to the Authority, and the Authority and Houston will subsequently account for their respective interests in the payment pursuant to the Authority's and Houston's respective ownership in Lake Conroe. All payments to be made by the MUDs pursuant to the Annual Invoice, including the payment of interest on overdue amounts, will be paid in accordance with Chapter 2251 of the Texas Government Code. In the event the MUDs attempt to make payment as provided in this Section and the instrument is returned or refused by the bank or similar institution as insufficient or non-negotiable for any reason, the MUDs shall also pay all administrative costs incurred as a result of the returned or refused payment. If full payment has not been made within thirty (30) days following the initial due date, the MUDs agree to pay all costs of collection and reasonable attorney's fees, regardless of whether a suit is filed, in addition to all other fees, if any, due and owing pursuant to this Settlement Agreement.

(b) All obligations for payment by the Parties will be paid from current funds available to the paying party in accordance with Chapter 791 of the Texas Government Code.

8.03. Notice. Each notice under this Settlement Agreement shall be transmitted by hand delivery or certified mail, return receipt requested, and shall be effective on the date actually received.

All notices and statements to the MUDs shall be addressed to:

For Montgomery County Municipal Utility District No. 8:

Ross Radcliffe
Radcliffe Bobbitt Adams Polley PLLC
2929 Allen Parkway, Suite 3450
Houston, Texas 77019-7120

For Montgomery County Municipal Utility District No. 9:

Clark Stockton Lord
Bracewell & Giuliani LLP
711 Louisiana Street, Suite 2300
Houston, Texas 77002

All notices and statements to Huntsville shall be addressed to:

City of Huntsville, Texas
c/o City Manager
1212 Avenue M
Huntsville, Texas 77340

All notices and statements to Houston shall be addressed to:

City of Houston, Texas
Director of Public Works and Engineering
P.O. Box 1562
Houston, Texas 77251

All notices and statements to the Authority shall be addressed to:

San Jacinto River Authority
General Manager
1577 Dam Site Road
Conroe, Texas 77304
(P.O. Box 329
Conroe, Texas 77305)

[redacted]

Any party may change its address by giving written notice of such change to all of the other Parties.

8.04. Binding Effect and Assignment. This Settlement Agreement is binding upon, and inures to the benefit of, the Parties and each of their respective representatives, successors, and assigns. Notwithstanding the foregoing, no Party may assign this Settlement Agreement without the other Parties' written consent, which shall not be withheld or delayed unreasonably.

8.05. Hold Harmless.

(a) To the extent permitted by law, the MUDs and Huntsville individually agree to hold Houston and the Authority harmless from any and all claims and demands whatsoever to which Houston or the Authority may be subjected by reason of any injury to any person or damage to any property resulting from or in any way connected with any and all actions and activities (or failure to act) of the MUDs and Huntsville under this Settlement Agreement or the B&B Permits, or both, except to the extent such injury or damage is caused by Houston's or the Authority's gross negligence or willful misconduct. The MUDs and Huntsville respectively shall operate and maintain all facilities associated with their discharges, and the MUDs shall operate and maintain all facilities associated with their diversions from Lake Conroe pursuant to this Settlement Agreement at their sole risk, and they shall be solely responsible for such facilities and any related claims from any third party. Nothing in this Settlement Agreement shall be construed as authorizing the MUDs or Huntsville to install any equipment or improvements on property owned by third parties, except as expressly stated herein or in the Encroachment Agreement.

(b) To the extent permitted by law, but except as is provided in the Encroachment Agreement, Houston and the Authority individually agree to hold the MUDs and Huntsville harmless from any and all claims or demands whatsoever to which the MUDs or Huntsville may be subjected by reason of any injury to any person or damage to any property resulting from or in any way connected with any and all actions and activities (or failure to act) of Houston or the Authority under this Settlement Agreement or Houston's and the Authority's separate authorizations to

use the Committed Water, except to the extent such injury or damage is caused by the MUDs' or Huntsville's gross negligence or willful misconduct. Houston and the Authority shall operate and maintain all facilities associated with receiving, conveying, storing, diverting, or using Committed Water provided to them pursuant to this Settlement Agreement at their sole risk, and Houston and the Authority shall be solely responsible for any water after delivery to them except to the extent acknowledged in Subsection (J) of Section 1.03 (Acknowledgements and Warrants, Including Regarding Provision of Goods and Services and Regarding Consideration). Nothing in this Settlement Agreement shall be construed as authorizing Houston or the Authority to install any equipment or improvements on property owned by third parties.

8.06. **NO WARRANTIES AS TO WATER QUALITY. THE PARTIES ACKNOWLEDGE THAT THERE IS NO WARRANTY MADE BY ANY PARTY WITH RESPECT TO THE QUALITY OF WATER THAT MAY BE DIVERTED OR PROVIDED IN ACCORDANCE WITH THIS SETTLEMENT AGREEMENT, EITHER EXPRESS OR IMPLIED, AND THAT WATER DIVERTED OR PROVIDED IS DIVERTED OR PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND AS TO QUALITY, SUFFICIENCY, ADEQUACY OR USEFULNESS FOR ANY INTENDED PURPOSE.**

8.07. **Force Majeure.** The term "Force Majeure" as used herein, shall mean those situations or conditions which are beyond the control of the Parties or one of them and which, after the exercise of due diligence to remedy such situation or condition, render the Parties or one of them unable, wholly or in part, to carry out the covenants contained herein. Such force majeure includes but is not limited to acts of God, strikes, lockouts, acts of the public enemy, orders of any kind of the government of the United States or of the State of Texas or any civil or military authority, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, hurricanes, storms, floods, washouts, droughts, civil disturbances, acts of terrorism, explosions, breakage or accidents to facilities required to deliver water under this Settlement Agreement, or any partial or entire failure of water

supply insofar as each of the foregoing are beyond the reasonable control of the Party in question. The MUDs and Huntsville shall not be held liable or responsible for any damage that may be caused by their inability, after the exercise of due diligence, to make water available to Houston and the Authority due to any force majeure. The MUDs and Huntsville acknowledge that the Authority and Houston shall not be held liable or responsible for damages, or other consequences, that may be caused by the MUDs' inability to meet Lone Star Groundwater Conservation District rules resulting from an inability to maintain lake levels on Lake Conroe.

8.08. No Third-Party Beneficiaries. The Parties enter into this Agreement solely for their own benefit and agree that nothing herein shall be construed to confer any right, privilege, or benefit on any person or entity other than the Parties.

8.09. No Rights or Title Acquired. Houston and the Authority agree and acknowledge that they do not acquire by this Settlement Agreement any rights or title to the B&B Permits or the water supplies that are subject of this Settlement Agreement other than those contractual rights explicitly set forth in this Settlement Agreement.

8.10. Representations and Warranties Regarding Validity. Each of the Parties represents and warrants to the other that this Settlement Agreement constitutes a valid and binding agreement, enforceable against it in accordance with its terms (except as such enforceability may be limited by bankruptcy laws or other similar laws relating to the enforcement of creditors' rights generally).

8.11. Remedies. To the extent that one or more of the Parties are in default of this Settlement Agreement, subject, however, to Section 7.02 (Termination and Expiration of Settlement Agreement), each Party not in default may pursue any remedy available to it at law or in equity, including, but not limited to, specific performance. No party shall be liable or have any responsibility to the other for any indirect, special, consequential, punitive, or delay-related or performance-related damages including, without limitation, lost earnings or profits, except as expressly provided for herein. Such limitation on liability shall apply to any claim or action, whether it is based in whole or in part in

contract, negligence, strict liability, tort, statute, or any other theory of liability. The provisions of this Section shall have no effect on the Parties' obligations under Section 8.05 (Hold Harmless).

8.12. **Amendment.** This Settlement Agreement may not be amended or modified except by an instrument in writing signed by the authorized representatives of all of the Parties.

8.13. **Counterparts.** The Parties may execute this Settlement Agreement in any number of separate counterparts, each of which when so executed and delivered shall be deemed an original, but all counterparts shall together constitute one and the same agreement. All signatures need not be on the same counterpart and this Settlement Agreement may be executed by facsimile or electronic signatures.

8.14. **Further Assurances.** The Parties, together and severally, agree to do all acts and things and to execute and deliver such further written instruments, as may be reasonably required from time to time, to carry out the terms and provisions of this Settlement Agreement.

8.15. **Governing Law and Venue.** This Settlement Agreement and the rights and duties of the Parties arising out of this Settlement Agreement shall be governed by, and construed in accordance with, the laws of the State of Texas. This Settlement Agreement is performable in Montgomery, Harris, and Walker Counties, Texas, and the Parties agree that venue for any action arising under this Settlement Agreement will be in Montgomery, Harris, or Walker Counties, Texas.

8.16. **No Presumption.** No presumption will apply in favor of or against any Party in the interpretation of this Settlement Agreement or in the resolution of any ambiguity of any provision thereof, regardless of who participated in drafting of the Settlement Agreement.

8.17. **Relationship of Parties.** This Settlement Agreement and the transactions contemplated herein are based upon the active participation of all Parties. Neither the execution nor delivery of this Settlement Agreement, nor the consummation of the transactions contemplated hereunder, shall create or constitute a partnership, joint

venture, or any other form of business organization or arrangement between or among the Parties, except for the contractual arrangements specifically set forth in this Settlement Agreement. Except as is expressly agreed to in writing, no Party (or any of its agents, officers, or employees) shall be an agent or employee of the other Party, nor shall a Party (or any of its agents, officers, or employees) have any power to assume or create any obligation on behalf of the other Party.

8.18. Severability. In the event that any provision of this Settlement Agreement is held to be unenforceable or invalid by any court of competent jurisdiction, the Parties shall negotiate an equitable adjustment to its provisions with the view to effecting, to the extent possible, the original purpose and intent of this Settlement Agreement, and the validity and enforceability of the remaining provisions shall not be affected thereby.

8.19. Mediation. The Parties agree to negotiate in good faith in an effort to resolve any dispute relating to this Settlement Agreement that may arise between them. If the dispute cannot be resolved by negotiation, the Parties agree to submit the dispute to mediation before resorting to litigation. If the need for mediation arises, the Parties shall choose a mutually acceptable mediator and shall share the cost of mediation services equally. Mediation is a voluntary dispute resolution process in which the parties to the dispute meet with an impartial person, called a mediator, who would help to resolve the dispute informally and confidentially. Any mediator selected by the Parties may not impose binding decisions. Those Parties accepting any rights or responsibilities under a proposed settlement must agree to that settlement before the settlement is binding with respect to them.

[Signature Pages Follow]

MONTGOMERY COUNTY MUD NO. 8

BY: John Taylor

DATE SIGNED: June 14, 2017

ATTEST Maggie Barfoot

Secretary

MONTGOMERY COUNTY MUD NO. 9

BY: Linda R. Wilson

DATE SIGNED: 6/28/2017

ATTEST: Carla H Benson

Secretary

CITY OF HUNTSVILLE

Andy Brauninger, Mayor
City of Huntsville, TX

DATE SIGNED: June 22, 2017

ATTEST:

City Secretary of the City of Huntsville, TX

APPROVED AS TO FORM:

Leonard Schneider
City Attorney for the City of Huntsville, TX

CITY OF HOUSTON

ATTEST/SEAL:

City Secretary

CITY OF HOUSTON, TEXAS

Signed by:

Amanda Washington

Mayor

APPROVED:

Director, Public Works and Engineering Department

COUNTERSIGNED BY:

City Controller

APPROVED AS TO FORM:

Assistant City Attorney

L.D. File No. 0801600234001

DATE COUNTERSIGNED:

7-28-17

SAN JACINTO RIVER AUTHORITY

President, Board of Directors

DATE SIGNED: 6.22.17

ATTEST:

Secretary, Board of Directors

(SEAL)

Exhibit A-1
Agreed Draft Permit for Issuance Pursuant to the MUDs' Application No. 12510

WATER USE PERMIT

PERMIT NO. 12510 TYPE §11.042

Permittee:	Montgomery County Municipal Utility District No. 8	Address:	2929 Allen Parkway, Suite 3450 Houston, Texas 77002-6424
	Montgomery County Municipal Utility District No. 9		711 Louisiana St., Suite 2300 Houston, Texas 77002-6760
Filed:	April 12, 2010	Granted:	
Purpose:	Municipal, Industrial, and Agricultural	County:	Montgomery
Watercourse:	West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River	Watershed:	San Jacinto River Basin

WHEREAS, Applicants seek authorization to use the bed and banks of the West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River, San Jacinto River Basin, to convey their present and future groundwater-based return flows; and

WHEREAS, TPDES Permit No. WQ0011371001 authorizes a final phase combined discharge rate of 0.9 MGD (1,008.86 acre-feet/year) from two outfall points into Lake Conroe; and

WHEREAS, Applicants indicate the water will be diverted, less carriage losses, from diversion point(s) at or inland of the perimeter of Lake Conroe, Montgomery County at a maximum combined diversion rate of 3.422 cfs (1,500 gpm) for municipal, industrial, and agricultural purposes within the Districts' service areas in Montgomery County in the San Jacinto River Basin; and

WHEREAS, Lake Conroe is authorized by Certificate of Adjudication No. 10-4963, issued jointly to San Jacinto River Authority and the City of Houston; and

WHEREAS, in and subject to the terms of the "Settlement Agreement Including Terms for Water Pass-Through, Water Commitment and Encroachment" (the "Settlement Agreement") entered by Applicants with the City of Huntsville, the City of Houston, and the San Jacinto River Authority dated [insert date], Applicants have agreed to provide contractually for the term of that Settlement Agreement, to the San Jacinto River Authority and the City of Houston as owners of Certificate of Adjudication No. 10-4963, a quantity of water that is twenty-one percent (21%) of the quantity of water the Applicants actually discharge, convey, and otherwise make available for diversion from Lake Conroe pursuant to this permit. Also in that Settlement Agreement, and in the "Encroachment Agreement" entered contemporaneously by Applicants with the San Jacinto River Authority and the City of Houston, the San Jacinto River Authority and the City of Houston have given Applicants access to property on Lake Conroe for diversion facilities at the points authorized in Paragraph 3. DIVERSION of this permit.

WHEREAS, the Texas Commission on Environmental Quality (TCEQ) finds that jurisdiction over the application is established; and

WHEREAS, Applicants submitted an accounting plan on October 30, 2009, which was accepted by the Executive Director; and

WHEREAS, the Executive Director recommends special conditions be included in the permit; and

WHEREAS, no requests for a contested case hearing were received for this application; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality in issuing this water use permit;

NOW, THEREFORE, Water Use Permit No. 12510 is issued to Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9 subject to the following terms and conditions:

1. USE

Permittees are authorized to use the bed and banks of the West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River, San Jacinto River Basin, to convey their current and future groundwater-based return flows for subsequent diversion and reuse of up to 1,008.86 acre-feet per year (less losses) of those return flows for municipal, industrial and agricultural purposes within their service areas in Montgomery County in the San Jacinto River Basin.

2. DISCHARGE

TPDES Permit No. WQ0011371001 authorizes the Permittees to discharge up to 1,008.86 acre-feet of water per year (0.9 MGD) into Lake Conroe on the West

Fork San Jacinto, tributary of the San Jacinto River, San Jacinto River Basin, at two points as described below:

Outfall 1 - Latitude 30.390833°N, Longitude 95. 604722°W, also bearing N81.350000°E, 5,270 feet from the westernmost corner of the W.C. Clark Survey, Abstract No. 3, Montgomery County.

Outfall 2 - Latitude 30.389722°N, Longitude 95.604167°W, also bearing S34.531667°W, 237 feet from the east corner of Lot 44 in Block 36 of Walden On Lake Conroe, Section 5 out of the William Clark Survey, Abstract No. 6, Montgomery County.

3. DIVERSION

Permittee is authorized to divert the groundwater-based return flows at a maximum combined diversion rate of 3.422 cfs (1,500 gpm) from a point or points to be determined at or inland from the perimeter of Lake Conroe.

4. TIME PRIORITY

The groundwater-based return flows authorized to be conveyed via the bed and banks of a State watercourse in this permit do not have a priority date and are not subject to priority calls from downstream senior water rights.

5. SPECIAL CONDITIONS

A. The diversions authorized by this permit are dependent upon potentially interruptible return flows or discharges and are conditioned on the availability of those discharges. The right to divert the discharged return flows is subject to revocation if all discharges become permanently unavailable for diversion. Should all discharges become permanently unavailable for diversion, Permittees shall immediately cease diversion under this permit and either apply to amend the permit or voluntarily forfeit the permit. If Permittees do not amend or forfeit the permit, the Commission may begin proceedings to cancel this permit. This permit is subject to reduction if the return flows are not available in quantities and qualities sufficient to fully satisfy the permit. Permittees shall only divert the return flows that are actually discharged, and if there is a permanent reduction in available return flows, Permittees shall immediately seek an amendment to the permit to reflect the reductions.

B. Permittees shall only divert and use groundwater-based return flows pursuant to Paragraph 1. USE and Paragraph 3. DIVERSION in accordance with the most recently approved accounting plan. Permittees shall maintain the plan in electronic format and make the data available to the Executive Director and the public upon request. Any modifications to the

accounting plan shall be approved by the Executive Director. Any modification to the accounting plan that changes the permit terms must be in the form of an amendment to the permit. Should Permittees fail to maintain the accounting plan or notify the Executive Director before making any such modifications to the plan, Permittees shall immediately cease diversion of discharged return flows and either apply to amend the permit or voluntarily forfeit the permit. If Permittees fail to amend the accounting plan or forfeit the permit, the Commission may begin proceedings to cancel the permit. Permittees shall immediately notify the Executive Director upon modification of the accounting plan and provide copies of the appropriate documents effectuating such changes.

C. Prior to diversion of groundwater-based return flows in excess of the amount currently authorized by TPDES Permit No. WQ0011371001, described in Paragraph 2. DISCHARGE, Permittees shall apply for and be granted the right to reuse those return flows. Permittees shall amend the accounting plan to include future discharges of groundwater-based return flows prior to diverting said return flows.

D. To the extent that the exercise of the authority granted in Paragraph 3. DIVERSION, requires an easement or agreement for installation of diversion works upon the land of another, Permittees shall, prior to the diversion and use of the groundwater-based return flows, submit a signed document showing that such easement or agreement exists.

E. To the extent that Special Condition 5.D. of this Permit requires submission of an easement or agreement, the exercise of rights under Paragraph 3. DIVERSION is conditioned upon the continued effectiveness of such easement or agreement. Upon expiration of the easement or agreement, Permittees shall immediately cease diversion of the water and either apply to amend the permit or voluntarily forfeit the permit. If Permittees fail to acquire and maintain the easement or agreement, or forfeit the permit, the Commission may begin proceedings to cancel the permit. The Permittees shall immediately notify the Commission upon amendment or expiration of the easement or agreement and provide copies of appropriate documents effectuating such changes.

F. Permittees shall implement measures to minimize impacts to aquatic resources due to entrainment or impingement including, but not limited to, the installation of screens at the diversion facilities with a mesh size that will provide for a maximum flow through velocity of 0.5 feet per second.

G. Permittees shall install a measuring device which accounts for, within 5% accuracy, the quantity of water diverted from Lake Conroe. Permittees

shall allow representatives of the TCEQ reasonable access to the property to inspect the measuring device.

H. The exercise of rights under Paragraph 3. DIVERSION is conditioned upon the continued effectiveness of both: 1) the Settlement Agreement identified in the recitals of this permit and 2) authorization to use property granted by the San Jacinto River Authority and the City of Houston in the Settlement Agreement and the Encroachment Agreement identified in the recitals of this permit.

This water use permit is issued subject to all superior water rights in the San Jacinto River Basin.

Permittees agree to be bound by the terms, conditions, and provisions contained herein and such agreement is a condition precedent to the granting of this permit.

All other matters requested in the application which are not specifically granted by this water use permit are denied.

This water use permit is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of state water resources exercised by the Commission.

_____

For the Commission

Date Issued:

Exhibit A-2
Agreed Draft Permit for Issuance Pursuant to Huntsville's Application No. 12754

WATER USE PERMIT

PERMIT NO. 12754		TYPE §§ 11.042 & 11.121	
Permittee:	City of Huntsville	Address:	448 State Highway 75 N Huntsville, TX 77320
Filed:	October 17, 2016	Granted:	
Purpose:	Municipal, Industrial, and Agricultural	Counties:	Walker and Montgomery
Watercourses:	Unnamed Tributary of Persimmon Creek, Tributary of East Sandy Creek and Robinson Creek; Tributaries of the West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River	Watershed:	San Jacinto River Basin

WHEREAS, City of Huntsville (Applicant) seeks a Water Use Permit to authorize the use of the bed and banks of an unnamed tributary of Persimmon Creek, tributary of East Sandy Creek, tributary of the West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River, San Jacinto River Basin and Robinson Creek, tributary of the West Fork San Jacinto River (Lake Conroe), San Jacinto River Basin to convey up to 4,593 acre-feet per year of its historic and future groundwater and interbasin transfer surface water-based return flows authorized to be discharged by the City of Huntsville under Texas Pollutant Discharge Elimination System (TPDES) Permit Nos. WQ0010781004 and WQ0010781002, for subsequent diversion and use for municipal, industrial, and agricultural purposes in Montgomery County Municipal Utility District Nos. 8 and 9's service area in Montgomery County, San Jacinto River Basin; and

WHEREAS, Applicant indicates its groundwater and surface water-based return flows are discharged at two points being located at:

A. Robinson Creek Wastewater Treatment Plant authorized by TPDES Permit No. WQ0010781004 on Robinson Creek, San Jacinto River Basin at Latitude 30.645547°N, Longitude 95.595334°W, also bearing N24°E, 1,340 feet from the southwest corner of the W. McDonald Tract, Original Survey No. 471, Abstract No. 543, Walker County at a maximum discharge rate of 11.60 cfs (5,208 gpm); and

B. N.B. Davidson Wastewater Treatment Plant authorized by TPDES Permit No. WQ0010781002on an unnamed tributary of Persimmon Creek, San Jacinto River

Basin at Latitude 30.645275°N, Longitude, 95.553197°W, also bearing N65°E, 1,918 feet from the southwest corner of the San Antonio & Mexican Gulf Railroad Co. Tract, Original Survey No. 471, Abstract No. 552, Walker County at a maximum discharge rate of 3.96 cfs (1,778 gpm); and

WHEREAS, pursuant to a water supply contract, the Applicant further seeks authorization to make its groundwater and interbasin transfer surface water-based return flows available to Montgomery County Municipal Utility District Nos. 8 & 9 to divert from a point or points to be determined at or inland from the perimeter of Lake Conroe, San Jacinto River Basin, Montgomery County at a maximum diversion rate of 3.34 cfs (1,500 gpm); and

WHEREAS, Applicant, has provided, and the Executive Director has approved, an accounting plan (*Accounting Plan for Permit No. 12754);* and

WHEREAS, in and subject to the terms of the "Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment" entered by the Applicant with Montgomery County Municipal Utility District No. 8, Montgomery County Municipal Utility District No. 9, the City of Houston and the San Jacinto River Authority effective [insert date] (the "Settlement Agreement"), the Applicant has agreed to provide contractually for the term of that Settlement Agreement, to the San Jacinto River Authority and the City of Houston as owners of Certificate of Adjudication No. 10-4963, a quantity of water that is twenty-one percent (21%) of the amount of water the Applicant discharges to supply the Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9 with water pursuant to a water supply contract, as reflected in the accounting plan for the permit. Also in that Settlement Agreement, and in the "Encroachment Agreement" entered contemporaneously between the San Jacinto River Authority, City of Houston, and Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9, the San Jacinto River Authority and the City of Houston have given Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9 access to property on Lake Conroe for diversion facilities at the points authorized in Paragraph 3 of this permit.

WHEREAS, the Texas Commission on Environmental Quality finds that jurisdiction over the application is established; and

WHEREAS, the Executive Director recommends that special conditions be included in the permit; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality in issuing this permit; and

NOW, THEREFORE, this Water Use Permit No. 12754 is issued to City of Huntsville, subject to the following terms and conditions:

1. USE

A. Permittee is authorized to use the bed and banks of an unnamed tributary of Persimmon Creek, tributary of East Sandy Creek, tributary of the West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River, San Jacinto River Basin and Robinson Creek, tributary of the West Fork San Jacinto River (Lake Conroe), San Jacinto River Basin to convey up to 4,593 acre-feet per year of its historic and future groundwater and interbasin transfer surface water-based return flows for subsequent diversion and use for municipal, industrial, and agricultural purposes in Montgomery County Municipal Utility District Nos. 8 and 9's service area in Montgomery County, San Jacinto River Basin.

2. DISCHARGE

Permittee is authorized to discharge its groundwater and surface water-based return flows at two points being located at:

A. Robinson Creek Wastewater Treatment Plant authorized by TPDES Permit No. WQ0010781004 on Robinson Creek, San Jacinto River Basin at Latitude 30.645547 °N, Longitude 95.595334°W, also bearing N24°E, 1,340 feet from the southwest corner of the W. McDonald Tract, Original Survey No. 471, Abstract No. 543, in Walker County at a maximum discharge rate of 11.60 cfs (5,208 gpm).

B. N.B. Davidson Wastewater Treatment Plant authorized by TPDES Permit No. WQ0010781002 on an unnamed tributary of Persimmon Creek, San Jacinto River Basin at Latitude 30.645275°N, Longitude, 95.553197°W, also bearing N65°E, 1,918 feet from the southwest corner of the San Antonio & Mexican Gulf Railroad Co. Tract, Original Survey No. 471, Abstract No. 552, Walker County at a maximum discharge rate of 3.96 cfs (1,778 gpm).

3. DIVERSION

Permittee is authorized to divert under this permit at a maximum combined diversion rate of of 3.34 cfs (1,500 gpm) from a point or points to be determined at or inland from the perimeter of Lake Conroe.

4. PRIORITY

Permittee's groundwater-based and interbasin transfer water-based return flows authorized to be conveyed via the bed and banks of a State watercourse in this permit do not have a priority date and are not subject to priority calls by downstream senior water rights.

5. CONSERVATION

Permittee shall implement water conservation plans that provide for the utilization of those practices, techniques, and technologies that reduce or maintain the consumption

of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water, so that a water supply is made available for future or alternative uses. Such plans shall include a requirement that in every water supply contract entered into, on or after the effective date of this permit, including any contract extension or renewal, that each successive wholesale customer develop and implement conservation measures. If the customer intends to resell the water, then the contract for resale of the water shall have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures.

6. SPECIAL CONDITIONS

A. Ninety days prior to the diversion of interbasin transfer surface water-based return flows for industrial use, Permittee or contract customer shall submit a water conservation plan to the Texas Commission on Environmental Quality that meets the requirements of 30 TAC §288.3.

B. Ninety days prior to the diversion of interbasin transfer surface water-based return flows for agricultural use, Permittee or contract customer shall submit a water conservation plan to the Texas Commission on Environmental Quality that meets the requirements of 30 TAC §288.4.

C. Diversions authorized by this permit are dependent upon potentially interruptible return flows or discharges and are conditioned on the availability of those discharges. The right to divert the discharged return flows is subject to revocation if all discharges become permanently unavailable for diversion and may be subject to reduction if the return flows are not available in quantities and qualities sufficient to fully satisfy the permit. Should the discharges become permanently unavailable for diversion, Permittee shall immediately cease diversion under this permit and either apply to amend the permit, or voluntarily forfeit the permit. If Permittee does not amend or forfeit the permit, the Commission may begin proceedings to cancel this permit.

D. Permittee shall only divert and use return flows pursuant to Paragraph 1. USE and Paragraph 3. DIVERSION in accordance with the most recently approved accounting plan (*Accounting Plan for Permit No. 12754).* Permittee shall maintain the plan in electronic format and make it available upon request. Any modifications to the accounting plan shall be approved by the Executive Director. Any modification to the accounting plan that changes the permit terms must be in the form of an amendment to the permit. Should Permittee fail to maintain the accounting plan or notify the Executive Director of any modifications to the plan, Permittee shall immediately cease diversion of discharged return flows, and either apply to amend the permit, or voluntarily forfeit the permit. If Permittee fails to amend the accounting pan or forfeit the permit, the Commission may begin proceedings to cancel the permit. Permittee shall immediately notify the Executive Director upon modification of the accounting plan and provide copies of the appropriate documents effectuating such changes.

E. Prior to diversion of return flows in excess of the amount currently authorized by TPDES Permit Nos. WQ0010781004 and WQ0010781002, described in Paragraph 2. DISCHARGE, Permittee shall apply for, and must be granted, the right to reuse those return flows. Permittee shall amend the accounting plan to include these future return flows prior to diverting said return flows.

F. Permittee shall install and maintain a measuring device which accounts for, within 5% accuracy, the quantity of water diverted from the points authorized above in Paragraph 3. DIVERSION and maintain measurement records.

G. Permittee shall allow representatives of the Texas Commission on Environmental Quality reasonable access to the property to inspect the measuring device and records.

H. The exercise of rights under Paragraph 3. DIVERSION regarding diversions from authorized points in Lake Conroe is conditioned upon the continued effectiveness of both: 1) the Settlement Agreement identified in the recitals of this permit; and 2) the authorization to use property granted by the San Jacinto River Authority and the City of Houston in the Settlement Agreement and the Encroachment Agreement identified in the recitals of this permit.

This permit is issued subject to superior water rights in the San Jacinto River Basin.

Permittee agrees to be bound by the terms, conditions and provisions contained herein and such agreement is a condition precedent to the granting of this permit.

All other matters requested in the application which are not specifically granted by permit are denied.

This permit is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of State water resources exercised by the Commission.

_____

For the Commission

DATE ISSUED:

Exhibit B

THE STATE OF TEXAS §
§
COUNTY OF MONTGOMERY §

ENCROACHMENT AGREEMENT

This ENCROACHMENT AGREEMENT ("Agreement") is entered into as of the 28 day of July, 2017, by and between the SAN JACINTO RIVER AUTHORITY (the "Authority"), a conservation and reclamation district, body politic and corporate and a governmental agency of the State of Texas created and operating under the provisions of Chapter 426, Acts of the 45th Texas Legislature, Regular Session, 1937, as amended (compiled as Vernon's Annotated Texas Civil Statutes, Article 8280-121), enacted pursuant to the provisions of Section 59 of Article XVI of the Texas Constitution, the MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 8, a conservation and reclamation district, body politic and corporate and a governmental agency of the State of Texas created under the provisions of Section 59 of Article XVI of the Texas Constitution, and operating pursuant to Chapters 49 and 54, Texas Water Code ("MUD 8"), and the MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 9, a conservation and reclamation district, body politic and corporate and a governmental agency of the State of Texas created under the provisions of Section 59 of Article XVI of the Texas Constitution, and operating pursuant to Chapters 49 and 54, Texas Water Code ("MUD 9"). MUD 8 and MUD 9 are collectively referred to hereinafter at times as "MUDs 8 & 9" or the "MUDs." The Authority and the MUDs are collectively referred to hereinafter at times as the "Parties" or individually, and without distinction, referred to hereinafter at times as a "Party". The City of Houston, Texas ("Houston") joins in this Agreement as an intended beneficiary and for the limited purposes set forth hereinafter.

WHEREAS, Water Appropriation Permit No. 1962 was issued by the Texas Board of Water Engineers to the Authority on June 9, 1960, and amended from time to time thereafter (as amended, the "Lake Conroe Permit"), including by that certain order of the Texas Water Rights Commission (as successor to the Texas Board of Water Engineers) dated August 31, 1965; and

WHEREAS, the Lake Conroe Permit authorized the Authority to construct and operate a dam and reservoir at a designated point on the West Fork of the San Jacinto River in Montgomery County, Texas, near the City of Conroe, to appropriate, impound, and store waters of the West Fork of the San Jacinto River therein for the benefit of the Authority and Houston, and to divert and use such appropriated waters, all subject to the terms and conditions set forth therein; and

WHEREAS, the Authority and Houston entered into a contract for the construction, ownership, operation, and maintenance of such dam and reservoir (commonly referred to as the "Lake Conroe Dam and Reservoir" or "Lake Conroe") on or about May 9, 1968, which contract has been amended from time to time thereafter (as amended, the "Lake Conroe Contract"); and

WHEREAS, the Authority acquired the lands and other real property rights needed for the construction and operation of Lake Conroe in accordance with Section 2.03 of the Lake Conroe Contract; and

WHEREAS, the construction of Lake Conroe was completed in 1973 and, subsequent thereto, on February 25, 1987, the Lake Conroe Permit was recognized under and superseded by Certificate of Adjudication No. 10-4963, issued by the Texas Water Commission to the Authority and Houston, and subsequently amended by order of the Texas Commission on Environmental Quality (the "TCEQ," successor to the Texas Water Commission) issued July 20, 2010 (as amended, the "Lake Conroe Certificate"); and

WHEREAS, the Authority operates and shall continue to operate Lake Conroe for its own benefit and for the benefit of the City in accordance with the provisions, rights, and interests stated in the Lake Conroe Contract until the Lake Conroe Contract is superseded; and

WHEREAS, the MUDs submitted Application No. 12510 to the TCEQ on October 2, 2009, seeking authorization to convey discharged water through the bed and banks of Lake Conroe and the West Fork San Jacinto River for subsequent diversion at a point to be established on Lake Conroe; and

WHEREAS, the MUDs and the City of Huntsville, Texas ("Huntsville"), entered into a Water Supply Agreement and an Option to Purchase and Agreement to Pursue Water Supply, and, in furtherance of said agreements, Huntsville submitted Application No. 12754 to the TCEQ on August 15, 2011, also seeking to convey discharged water through the bed and banks of Lake Conroe and the West Fork San Jacinto River for subsequent diversion, including at a point to be established on Lake Conroe for diversion by the MUDs; and

WHEREAS, the Authority and Houston objected to Application No. 12510 and requested a contested case hearing before the TCEQ regarding said application, and also objected to Application No. 12754, to protect the rights of the Authority and Houston in and to Lake Conroe and the Certificate which were affected by said applications; and

WHEREAS, the Authority, Houston, the MUDs, and Huntsville reached certain agreements to resolve their differences regarding said applications and, to this end, entered into that certain SETTLEMENT AGREEMENT INCLUDING TERMS FOR WATER PASS-THROUGH, WATER COMMITMENT, AND ENCROACHMENT dated July 28, 2017 (the "Settlement Agreement"); and

WHEREAS, pursuant and subject to the Settlement Agreement, the Authority and Houston have agreed that the Authority will grant to the MUDs a consent to encroachment, upon certain real property acquired by and in the name of the Authority for Lake Conroe, sufficient to allow the MUDs to construct, operate and maintain the intake structure, pipeline, and diversion works ("MUDs' Lake Conroe Intake Facility") for the purpose of diverting water that will be

conveyed as authorized in TCEQ permits that are granted pursuant to Application No. 12510 (the "MUDs' B&B Permit") and Application No. 12754 (the "Huntsville B&B Permit"); and

WHEREAS, the Settlement Agreement was entered to compromise disputed claims, avoid litigation, and buy peace, and nothing in the Settlement Agreement or this Encroachment Agreement shall be used for any purpose collateral to the subject matter of the Settlement Agreement, or constructed as an admission or acknowledgement in any contested proceeding, unless expressly provided for otherwise herein; and

WHEREAS, the Authority and the MUDs are authorized to enter into this Agreement under the constitution and the general and special laws of the State of Texas including, without limitation, Sections 49.067-49.068 and 49.218 of the Texas Water Code;

NOW, THEREFORE, for and in consideration of the foregoing recitals, the covenants, conditions and undertakings hereinafter described, and the mutual benefits and covenants contained in this Agreement, the Settlement Agreement, and the other agreements entered into concurrently with the execution of this Settlement Agreement, and subject to each and every term and condition of this Agreement, the Authority, and the MUDs agree as follows:

GENERAL

1. GRANT OF CONSENT. The Authority hereby grants the MUDs a limited consent to encroach upon, over, under, through and across the Encroachment Area (as described hereinafter) for the sole purpose of developing, constructing, operating and maintaining the MUDs' Lake Conroe Intake Facility in accordance with the terms of this Agreement, the Settlement Agreement, and the MUDs' B&B Permit, as said permit may be amended from time to time in accordance with the terms and conditions of the Settlement Agreement. It is understood and agreed that this Agreement conveys no ownership to the MUDs and provides the MUDs only a conditional and terminable right to use property in, on, or under Lake Conroe solely for the express purposes provided in this Agreement.

2. RELATIONSHIP OF THE PARTIES. Notwithstanding anything in this Agreement, the Authority shall not in any sense be considered a partner of, or in joint venture with, the MUDs in the MUDs' Lake Conroe Intake Facility or in any other project or venture, nor shall MUDs be considered, or in any manner hold itself out as, an agent or representative of the Authority. MUDs 8 & 9, however, by execution of this Agreement, acknowledge the joint venture of the MUDs with respect to the construction, operation and maintenance of the Lake Conroe Intake Facility and the use of the Encroachment Area, and agree that the obligations and liability of the MUDs under this Agreement are joint and several in nature. Houston is a beneficiary and not a party to this Agreement as further set forth in paragraph 47 hereof.

3. DESCRIPTION OF ENCROACHMENT AREA. For purposes of this Agreement, the "Encroachment Area" is described as that certain tract or parcel associated with Lake Conroe held in the name of the Authority, which is out of the William C. Clark Survey, Abstract No. 6, Montgomery County, Texas, as further described and/or depicted on Encroachment **Exhibit 1** attached hereto and incorporated herein for all purposes. It is understood and agreed that the description of the Encroachment Area set out in Encroachment **Exhibit 1** is deemed adequate for all purposes of this Agreement.

4. ALTERATION OF ENCROACHMENT AREA. The consent to encroachment granted under this Agreement is effective with respect to the Encroachment Area only. The MUDs shall not encroach upon any other part of Lake Conroe or any other property of the Authority except to the extent permitted in writing by the Authority or otherwise permitted under the generally applicable rules and regulations of the Authority. The boundaries of the Encroachment Area shall be subject to alteration only by written agreement among the Authority and the MUDs.

5. MATTERS OF RECORD. This Agreement is subject to all covenants, conditions, restrictions, easements, liens, reservations, and other matters of record in the Office of the County Clerk of Montgomery County, Texas, as of the date hereof, which affect the Encroachment Area.

MONETARY COMPENSATION

6. MONETARY COMPENSATION. On the date hereof, the MUDs have paid to the Authority the sum of TEN DOLLARS ($10.00) as monetary compensation and provided other good and valuable consideration for the use of the Encroachment Area under this Agreement, the sufficiency and receipt of which is hereby acknowledged. Further, the Parties hereby acknowledge that the MUDs' water commitment and payment of fees as provided in the Settlement Agreement is an essential element of the consideration for the Authority to enter into this Agreement.

RESERVED RIGHTS

7. INUNDATION. On behalf of Houston and the Authority, the Authority reserves the right to flood and inundate (together with any consequential siltation or erosion) all or any portions of the Encroachment Area, and any appurtenances thereto or improvements thereon, with normal or flood waters resulting from the operation of Lake Conroe up to a maximum elevation of 207 feet, mean sea level, and the MUDs shall assume, and do hereby acknowledge assumption of, all risks of loss, injuries and damages to the Encroachment Area, and any appurtenances thereto or improvements now or hereafter situated thereon, that may ever be caused by or result from said flooding, inundation, siltation or erosion, or the existence, use, operation and maintenance of Lake Conroe by the Authority, provided that the Authority will provide reasonable notice if and when

Authority employs extraordinary operation and maintenance of Lake Conroe that will impact the Encroachment Area differently than the rest of Lake Conroe.

8. EXISTING IMPROVEMENTS. On behalf of Houston and the Authority, the Authority reserves the right to continue to reasonably operate and maintain any improvements located within the Encroachment Area, if any, as of the date hereof. The MUDs shall not disturb any such existing improvements or interfere with the use, repair, maintenance or replacement of such improvements, without the prior written consent of the Authority.

9. RESERVED RIGHTS OF USE.

(a) On behalf of Houston and the Authority, the Authority expressly excepts and reserves the right, to be exercised by the Authority and any other parties who may obtain written permission or authority from the Authority, to use the Encroachment Area in any manner as the Authority in its sole discretion deems appropriate, provided the Authority shall use reasonable efforts to avoid material interference with the use of the Encroachment Area by the MUDs for the limited purposes permitted hereunder.

(b) Without limiting the generality of subparagraph (a), the Authority, and its employees, agents and authorized representatives' shall have the right (but neither the duty nor obligation) to enter the Encroachment Area for the purpose of clearing, removal, destruction or disposal of any trash, obstructions, debris, construction or any other condition or matter that may, in the sole judgment and discretion of the Authority, in any way pollute or interfere with the use, operation and/or maintenance by the Authority of the Lake Conroe Dam and Reservoir, and the Authority shall specifically have the right to place equipment or material upon the Encroachment Area for the use, maintenance or operation of said dam and reservoir as it deems reasonable and necessary under the circumstances. Provided, however, the Authority agrees to use reasonable efforts give the MUDs three (3) calendar days' notice of the Authority's intention to place equipment or materials within the Encroachment Area unless such placing of equipment or materials shall need to be done in an emergency situation, the declaration of an emergency situation to be within the reasonable judgment of the Authority.

THE MUDS' LAKE CONROE INTAKE FACILITY

10. GENERAL CONDITIONS. With the Authority's prior written approval, the MUDs may, from time to time during the term of this Agreement, construct, reconstruct, rebuild, replace, modify and remove the MUDs' Lake Conroe Intake Facility and related improvements and appurtenances within the Encroachment Area, subject to the following terms and conditions.

(a) The MUDs bear the cost of any such work.

(b) The Encroachment Area must at all times be kept free of mechanics' and materialmen's liens.

(c) The Authority must be notified of the time for beginning and the general nature of any such work not less than five (5) calendar days in advance.

(d) The conditions concerning the Authority's approval of plans, as set forth in this Agreement, must be fully satisfied.

11. APPROVAL OF PLANS; CONSTRUCTION. The following terms and conditions govern the Authority's approval of the initial construction of the MUDs' Lake Conroe Intake Facility and related improvements and appurtenances within the Encroachment Area, as well as any subsequent modifications or additions to same.

(a) No facilities comprising, in whole in part, the MUDs' Lake Conroe Intake Facility or any related improvements or appurtenances may be constructed within the Encroachment Area until the plans and specifications for same have been submitted to and approved by the Authority, and all applicable permits have been issued by authorities with jurisdiction. No addition to or alteration of the MUDs' Lake Conroe Intake Facility or any related improvements or appurtenances may be begun until plans and specifications covering same have been first submitted to and approved by the Authority, and all applicable permits and approvals have been issued by authorities with jurisdiction. Notwithstanding the above, the following items do not require approval of plans and specifications by the Authority:

(i) minor repairs and alterations necessary to maintain existing structures and improvements in a useful state of repair and operation.

(ii) changes and alterations required by an authorized public official with authority or jurisdiction over the buildings or improvements, to comply with legal requirements.

(b) The MUDs shall, at no expense to the Authority, engage a Professional Engineer duly registered in the State of Texas, to prepare plans and specifications for constructing the MUDs' Lake Conroe Intake Facility and related improvements and appurtenances, or any additions of or alterations to same, if and to the extent the Authority's approval is required under subparagraph (a) above. The MUDs must submit three (3) copies of detailed plans and specifications for the Authority's approval not less than sixty (60) calendar days prior to the proposed date for commencement of construction, or the proposed date upon which the

plans and specifications will be submitted for permits and approvals, whichever is first in time.

(c) The Authority will promptly review and approve all plans and specifications submitted under subparagraph (b) above or note in writing any required changes or corrections that must be made to the plans and specifications. Any required changes or corrections must be made, and the plans resubmitted to the Authority, within thirty (30) calendar days after the corrections or changes have been noted.

(d) The Authority's approval of any plans and specifications for the MUDs' Lake Conroe Intake Facility and related improvements and appurtenances does not constitute approval or feasibility of the engineering design, and the Authority, by approving the plans and specifications, assumes no liability or responsibility for the engineering design or for any defect in any building or improvement constructed from the plans or specifications.

(e) As among the Parties, the MUDs shall be responsible for obtaining all necessary permits and approvals for construction of the MUDs' Lake Conroe Intake Facility and related improvements and appurtenances, and any addition to or alteration of the same. The MUDs shall promptly advise the Authority of any changes to the plans and specifications approved by the Authority requested by any agencies with permitting and approval jurisdiction. Unless waived by the Authority in writing, changes to plans and specifications previously approved by the Authority in response to such request require resubmittal to and approval by the Authority. The Authority shall immediately review plans and specifications resubmitted under such circumstances and provide approval or note in writing any required changes or corrections that must be made to the plans and specifications. Any corrections shall be immediately resubmitted to the Authority for its subsequent approval.

(f) Actual construction of the MUDs' Lake Conroe Intake Facility and related improvements and appurtenances, and any addition to or alteration of the same, shall comply with the plans and specifications approved by the Authority in accordance with the applicable requirements above. Unless waived by the Authority in writing, changes in work or materials during construction shall require prior approval by the Authority.

(g) The MUDs shall, upon demand, furnish to the Authority full and satisfactory written evidence of the actual costs for the construction of the MUDs Lake Conroe Intake Facility and related improvements and appurtenances, and any addition to or alteration of the same, and proof of payment thereof, and shall warrant that the MUDs' Lake Conroe Intake Facility and related improvements and appurtenances are free and clear of all mechanic's and other similar liens and from liability thereto arising from the construction. Nothing herein shall imply

that the MUDs have waived any rights to claim any such liens are illegal or invalid under law.

(h) Final, as-built drawings shall be submitted to the Authority within ninety (90) calendar days following final completion of the initial construction of the MUDs' Lake Conroe Intake Facility and related improvements and appurtenances, and following any addition to or alteration of the same if and to the extent Authority approval is required under subparagraph (a).

12. OWNERSHIP AND OPERATION. As among the Parties, the MUDs shall own the Lake Conroe Intake Facility and related improvements and appurtenances within the Encroachment Area, and the same shall not be considered part of the real property of the Encroachment Area or Lake Conroe. As among the Parties, the MUDs shall be responsible for the operation of the Lake Conroe Intake Facility in such a manner as deemed appropriate by the MUDs but subject to the terms of this Agreement, the Settlement Agreement, and the MUDs' B&B Permit.

13. UTILITIES. As among the Parties, the MUDs will arrange for and pay or cause to be paid all costs and charges (including, without limitation, installation costs and related service charges) for electricity and all other utilities used within the Encroachment Area for the operation of the MUDs Lake Conroe Intake Facility during the term of this Agreement. In no event shall the Authority be liable to the MUDs in any way for any cessation or interruption in any utilities services. Nor shall the Authority be responsible or liable for the payment for any utility installation costs or service charges associated with the use of the Encroachment Area by the MUDs for the operation of the MUDs Lake Conroe Intake Facility, and the MUDS shall defend, indemnify and hold harmless the Authority and/or the City from all claims, damages and/or suits for recovery of such costs or charges, to the extent allowed by law.

USE OF THE ENCROACHMENT AREA

14. PERMITTED USE. On behalf of Houston and the Authority, the Authority consents to the use of the Encroachment Area by the MUDs for the sole purpose of developing, constructing, operating and maintaining the MUDs' Lake Conroe Intake Facility in accordance with the terms of this Agreement and the Settlement Agreement. The Encroachment Area shall not be used for any other purposes without the prior written consent of the Authority. The MUDs shall be trespassing if the MUDs, without prior written approval from the Authority, consistent with the terms of this Agreement, (a) occupy any part of the Encroachment Area or Lake Conroe; or (b) install or cause to be installed any improvement or appurtenance placed in, on, or under the Encroachment Area or Lake Conroe.

15. ILLEGAL USE NOT PERMITTED; USE SUBJECT TO LAWS AND REGULATIONS. The MUDs covenant and agree not construct, operate or maintain the MUDs' Lake Conroe Intake Facility and/or use any part of the Encroachment Area for any use or purpose that violates any applicable law, regulation, or ordinance of the United States, the State of Texas, the TCEQ, the Texas Parks and Wildlife Department ("TPWD"), the County of Montgomery, and the Cities of Conroe, Montgomery and Willis, Texas, or other lawful authority with jurisdiction, or any term or provision of the Settlement Agreement, the MUDs' B&B Permit or the Huntsville B&B Permit, including any subsequent, approved amendments of those permits. Without limiting the generality of the foregoing, the consent to encroachment granted hereunder is specifically subject to the following terms and conditions.

(a) The construction, operation and maintenance of the MUDs' Lake Conroe Intake Facility and the use of the Encroachment Area shall be subject to compliance with all applicable building and zoning laws, ordinances, regulations and restrictions.

(b) The MUDs covenant and agree to at all times comply with all applicable laws and regulations pertaining to the use (including any prohibitions on the use) of Lake Conroe and the water surface of Lake Conroe in connection with the construction, operation and maintenance of the MUDs' Lake Conroe Intake Facility and the use the Encroachment Area.

(c) The MUDs specifically covenant and agree to, at all times, comply with all applicable regulations of the United States Army Corps of Engineers that pertain to the construction, operation and maintenance, repair, replacement and/or modification of the MUDs' Lake Conroe Intake Facility and the use the Encroachment Area.

(d) Under no circumstances during the term of this Agreement will the MUDs use or cause to be used within the Encroachment Area any hazardous or toxic substances or materials, or store or dispose of any such substances in, on, over, under or within the Encroachment Area. The MUDs shall comply in all respects throughout the term of this Agreement with all federal, state and local laws, ordinances, rules and regulations, pertaining to the regulation or protection of the environment, wetlands or endangered species, to the extent applicable to the MUDs' use of the Encroachment Area including, without limitation, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), 42 U.S.C. Section 9601 et seq.; the Resource Conservation and Recovery Act of 1976 ("RCRA"), 42 U.S.C. Section 6901 et seq.; the Hazardous Materials Transportation Act, 49 U.S.C. Section 5101 et seq.; the Clean Air Act and Amendments of 1990, 41 U.S.C. Section 7401 et seq.; the Clean Water Act of 1977, 33 U.S.C. Section 1251 et seq.; the Oil Pollution Act of 1990, 33 U.S.C. Section 2701 et seq.; the Toxic Substances Control Act, 15

U.S.C. Section 2606; the Texas Solid Waste Disposal Act, Chapter 361, Texas Health and Safety Code; the Texas Clear Air Act, Chapter 382, Texas Health and Safety Code; the Oil Spill Prevention Act of 1991, Chapter 40, Texas Natural Resource Code; and the Texas Water Quality Act, Chapter 26, Texas Water Code (collectively, "Environmental Laws").

16. COMPLIANCE WITH AUTHORITY RULES AND REGULATIONS. The MUDs shall observe and comply with the rules and regulations of the Authority as the Authority may prescribe or promulgate from time to time for the safety, security, care, and cleanliness of the Encroachment Area and the surrounding area and with respect to the operation and maintenance, use, water quality, safety or conditions of the Lake Conroe Dam and Reservoir. Furthermore, the MUDs shall post and maintain at all times in conspicuous places in, on and around the Encroachment Area cautionary signage warning of the risks of swimming, diving, and boating activities and navigational hazards in and around the MUDs' Lake Conroe Intake Facility. All such signage shall identify the MUDs' contact information for purposes of public complaints relating to the Encroachment Area and applicable water surface. Subject to applicable TCEQ and/or TPWD requirements, the Authority may, but need not specify the size, type, location(s), color and content of such cautionary signage, but the Authority assumes no liability or responsibility for such signage as a result.

17. RESTORATION. Following the completion of any construction work or other ground-disturbing activities with the Encroachment Area, the MUDs shall reclaim and restore the surface of the Encroachment Area and any facilities or equipment owned or operated by the Authority therein, to as good, or better, condition than existed prior to the commencement of such activities. If any Lake Conroe property is damaged by the MUDs in connection with the exercise of rights pursuant to this Agreement, and remains damaged for more than fifteen (15) calendar days, then Authority may make repairs to restore the damaged property to as good, or better, condition than existed prior to such damage. Within forty five (45) calendar days of the Authority's demand, the MUDs shall reimburse the Authority for their reasonable costs and expenses to restore the damaged property to as good as the condition that existed prior to such damage, with interest at the rate of eight percent (8%) percent annually from such date of demand until reimbursement by the MUDs.

18. NO ABANDONMENT.

(a) The MUDs shall not, without first providing written notice to the Authority, abandon, vacate or surrender the Encroachment Area. The Authority may, in its sole discretion, consider the Encroachment Area to be abandoned for the purposes hereof by the MUDs if:

(i) the purpose for which the Encroachment Area is intended is cancelled before the MUDs use the Encroachment Area;

(ii) no actual progress is made toward the intended use of the Encroachment between the date of either (1) the date that the MUDs B&B Permit is issued by the TCEQ; or (2) the date that the Huntsville B&B, whichever is later, and the 10th anniversary of that date; or

(iii) the Encroachment Area becomes unnecessary for its intended purpose.

The term "actual progress", as used hereinabove, shall have the meaning given to it in Section 21.101(b) of the Texas Property Code.

Abandonment of the Encroachment Area by the MUDs shall constitute a default of the MUDs under this Agreement. Abandonment of the Encroachment Area is further subject to the provisions of paragraph 33 hereof.

(b) The MUDs shall not allow existing bulkheading or shoreline improvements, if any, located within the Encroachment Area to fall into disrepair, and the MUDs shall be responsible for the maintenance of same during the term of this Agreement. In the event any such existing bulkheading or shoreline improvements shall fall into a state of disrepair, as reasonably determined by the Authority, the Authority shall provide notice to the MUDs that the MUDs shall remedy the disrepair within ten (10) days, at such time the Authority shall be entitled, but shall have no obligation, to exercise the right to re-enter and repair same, without being liable for damages nor guilty in any manner of trespass, at the expense of the MUDs. Within forty five (45) calendar days of the Authority's demand, the MUDs shall reimburse the Authority the full amount of any such cost and expenses, with interest at the rate of eight percent (8%) percent annually from such date of demand until reimbursement by the MUDs. Further, the MUDs shall not allow property, specifically including, without limitation, boats, watercraft, and other vessels, to be abandoned within the Encroachment Area. In the event of such abandonment of property, the Authority shall provide notice to the MUDs that the MUDs shall remove any abandoned property from the Premises within ten (10) days, at such time the Authority shall be entitled, but shall have no obligation, to exercise the right to re-enter and take possession of and remove the abandoned property from the Premises, without being liable for damages nor guilty in any manner of trespass, at the expense of the MUDs. Within forty five (45) calendar days of the Authority's demand, the MUDs must reimburse the Authority the full amount of any such cost and expenses, with interest at the rate of eight percent (8%) percent annually from such due date until reimbursement by the MUDs.

19. INSPECTION. It is agreed that the Authority, its field engineers, employees or agents, shall have a right to enter the Encroachment Area at reasonable times for the purposes of inspection; determining whether the MUDs are complying with this Agreement, the

Settlement Agreement and or the MUDs' B&B Permit; maintaining, repairing, or altering the Encroachment Area; or otherwise exercising any rights available to the Authority under this Agreement and/or the Settlement Agreement, at law, or in equity. In particular, the Authority may direct one or more of its field engineers, employees, or agents to observe or inspect the construction and/or operations and maintenance of the MUDs' Lake Conroe Intake Facility at any time for compliance with the terms and conditions of this Agreement, the Settlement Agreement, and/or the MUD's B&B Permit, provided the Authority shall provide a written report to the MUDs within twenty-four (24) hours of such inspection, which provides the names of those persons attending such inspection, and all findings made related to such inspection. The Authority may provide notice in such written inspection report that the MUDs are ordered to halt construction and/or operations and maintenance of the MUDs' Lake Conroe Intake Facility due to non-compliance with the terms of this Agreement, the Settlement Agreement and/or the MUDs' B&B Permit, or any condition which pose an unacceptable risk to public safety. Upon receipt the MUDs shall correct such non-compliance or condition within twenty-four (24) hours, unless it is unreasonable to correct such situation, then within a reasonable time. Notwithstanding the foregoing, the Authority has no duty or obligation to observe or inspect, or to halt work on or at, the Lake Conroe Intake Facility, it being the responsibility of the MUDs to ensure that the Lake Conroe Intake Facility is constructed in strict accordance with the approved plans and specifications for same and constructed, operated and maintained in a safe and workmanlike manner in compliance with all terms hereof. Notwithstanding anything to the contrary in this paragraph 19, the provisions of Section 8.01 of the Settlement Agreement shall control over the provisions of this Agreement with regarding to inspection or adjustment of flow meters and recording devices.

20. NO INTERFERENCE. Except as required by a valid order of the TCEQ and subject to the terms of the Settlement Agreement, the MUDs shall not take any action that impairs or interferes with the Authority's operation of the Lake Conroe Dam and Reservoir, or that impairs or interferes with adjudicated rights of the Authority or Houston to water stored in or released from Lake Conroe. The Parties expressly acknowledge with regard to the diversion and use of water conveyed in Lake Conroe pursuant to both the MUDs B&B Permit and the Huntsville B&B Permit, that the Settlement Agreement controls over this provision.

21. AUTHORITY'S RIGHT OF REMOVAL OR RELOCATION. Except as provided by a valid order of the TCEQ, the rights herein granted to the MUDs shall now and hereafter be subservient to any and all future uses the Authority may determine, to make of the Lake Conroe Dam and Reservoir, and to any future changes, modifications, improvements, enlargements, extensions or alterations thereto which, in its sole discretion and judgment, the Authority may determine to make in said dam and reservoir or in the use, operation or maintenance of same, provided the Authority allows the MUDs' representatives and consultants an opportunity to participate in any evaluations by the Authority's staff that contemplate actions that impact the MUDs use of the Lake

Conroe Intake Facility within the Encroachment Area, and provides the MUDs with a written report on such options and the Authority's preferred action. Accordingly, if the Authority, in the exercise of its reasonable discretion, determines it necessary to the orderly and proper operations, maintenance, repair or improvement of the Lake Conroe Dam and Reservoir, the Authority shall have the right to require the MUDs immediately to cease current operations and remove, relocate and/or alter any such portion of the MUDs' Lake Conroe Intake Facility to a new location and surrender the Encroachment Area, in whole or in part, as reasonable and necessary for the Authority to make or perform such maintenance, alteration, removal, repair, or replacement ("Alterations"). To the extent reasonably practicable, the Authority will permit the MUDs to relocate the MUDs' Lake Conroe Intake Facility to another location upon property owned by the Authority, subject to the amendment of the description of the Encroachment Area under this Agreement to cover the new location, or the execution of a new agreement, in a form substantially similar to this Agreement, covering the new location. In the event that MUDs fail to perform such Alterations within ninety (90) days after written demand from the Authority's General Manager, the Authority shall have the right and option to perform such Alterations at the expense of the MUDs. Upon the Authority's demand, the MUDs must reimburse the Authority the full amount of any such cost and expenses, with interest at the rate of eight percent (8%) percent annually from the date of the Authority's demand until reimbursement by the MUDs. In cases of emergency, and only as necessary to protect public health and safety, the Authority shall have the right to perform such Alterations without written demand, and the MUDs shall be obligated to immediately reimburse the Authority for all related costs and expenses incurred by the Authority. THE MUDS HEREBY RELEASE THE AUTHORITY AND HOUSTON FROM ANY AND ALL LIABILITY FOR ANY DAMAGES TO THE IMPROVEMENTS CAUSED BY ANY SUCH REMOVAL, RELOCATION OR ALTERATION.

LIABILITY, INDEMNITY AND INSURANCE

22. RELEASE OF LIABILITY BY THE MUDS. THE MUDS HEREBY WAIVE ALL CLAIMS AGAINST THE AUTHORITY AND HOUSTON FOR DAMAGES TO THE MUDS' LAKE CONROE INTAKE FACILITY, OR OTHER BUILDINGS, IMPROVEMENTS, OR PROPERTY THAT ARE NOW ON, OR HEREAFTER SHALL BE PLACED ON OR BUILT ON, THE ENCROACHMENT AREA, AND FURTHER WAIVES ALL CLAIMS AGAINST THE AUTHORITY AND HOUSTON FOR INJURIES TO PERSONS OR PROPERTY IN, ON OR ABOUT THE ENCROACHMENT AREA FROM ANY CAUSE AT ANY TIME, REGARDLESS OF CAUSE OR ORIGIN, INCLUDING ANY ACT, OMISSION, FAULT, STRICT LIABILITY OR NEGLIGENCE IN ANY FORM, OF ANY MEMBER OF THE LANDOWNER GROUP (AS DEFINED BELOW).

23. INDEMNITY. TO THE EXTENT PERMITTED BY LAW, THE MUDS AGREE TO JOINTLY AND SEVERALLY INDEMNIFY, HOLD HARMLESS AND DEFEND

THE AUTHORITY AND HOUSTON, AND THEIR RESPECTIVE BOARD MEMBERS, COUNCIL MEMBERS, OFFICERS, EMPLOYEES, CONTRACTORS, SUBCONTRACTORS, AGENTS, REPRESENTATIVES, INVITEES OR GUESTS (COLLECTIVELY, THE "INDEMNITEE GROUP") FROM AND AGAINST ANY AND ALL CLAIMS, DEMANDS, DAMAGES, JUDGMENTS, AWARDS, COSTS AND EXPENSES, INCLUDING BUT NOT LIMITED TO REASONABLE ATTORNEY AND EXPERT WITNESS FEES AND ALL OTHER LITIGATION AND COURT COSTS, INCLUDING LOST REVENUE OR DAMAGES FROM ILLNESS, BODILY INJURY OR DEATH TO ANY PERSON, AND FOR PHYSICAL DAMAGE TO ANY TANGIBLE PROPERTY (WHETHER REAL OR PERSONAL PROPERTY), WHICH THE MUDS AND THEIR RESPECTIVE BOARD MEMBERS, COUNCIL MEMBERS, OFFICERS, EMPLOYEES, CONTRACTORS, SUBCONTRACTORS, AGENTS, REPRESENTATIVES, INVITEES, GUESTS OR CUSTOMERS OF THE MUDS (COLLECTIVELY, THE "INDEMNITOR GROUP"), OR ANY THIRD PARTY MAY EVER SUFFER ARISING OR ALLEGED TO HAVE ARISEN DIRECTLY OR INDIRECTLY FROM:

(a) HIGH WATER LEVEL, FLOODING, INUNDATION, WAVE ACTION, SILTATION, EROSION, LOW WATER LEVEL, OR OTHER CONDITIONS OF LAKE CONROE, THE MAINTENANCE AND OPERATION OF THE LAKE CONROE DAM AND RESERVOIR BY ANY MEMBER OF THE INDEMNITEE GROUP;

(b) INVERSE CONDEMNATION OR TRESPASS;

(c) ANY BREACH ON THE PART OF THE MUDS OF ANY OF THE TERMS AND CONDITIONS OF THIS AGREEMENT;

(d) ANY VIOLATION BY ANY MEMBER OF THE INDEMNITOR GROUP OF ANY APPLICABLE LAWS OR REGULATIONS PERTAINING TO THE CONSTRUCTION, OPERATION OR MAINTENANCE OF THE MUDS' LAKE CONROE INTAKE FACILITY OR THE USE OF THE ENCROACHMENT AREA, INCLUDING, WITHOUT LIMITATION, ANY ENVIRONMENTAL LAWS;

(e) THE CONDUCT, OPERATION OR MANAGEMENT OF THE MUDS' ACTIVITIES WITHIN THE ENCROACHMENT AREA; OR

(f) ANY ACT, OMISSION OR NEGLIGENCE OF ANY MEMBER OF THE INDEMNITOR GROUP, IN OR ABOUT THE ENCROACHMENT AREA, INCLUDING ANY CONDITION OR PRE-EXISTING CONDITION OF THE ENCROACHMENT AREA. A MEMBER OF THE INDEMNITEE GROUP SHALL HAVE THE SOLE EXCLUSIVE OPTION TO DEFEND ANY ACTION WITH AN ATTORNEY OF ITS CHOICE AND INDEMNITOR

GROUP IS OBLIGATED TO REIMBURSE ALL REASONABLE ATTORNEY'S AND EXPERT WITNESS FEES INCURRED IN THE DEFENSE OF SUCH ACTION.

24. LIABILITY INSURANCE. At all times during the term of this Agreement, the MUDs shall provide and keep in force liability insurance for liability for property damage, commercial general liability, and personal injury for any occupation, use, or condition of the Encroachment Area. This insurance shall be carried by one or more insurance companies duly authorized or admitted to transact business in Texas with a Best's Insurance Rating of AAA or better, selected by the MUDs and in a form approved by the Authority, and shall be paid for by the MUDs. Such liability insurance shall be in the amount of not less than $100,000.00 for property damage and not less than $1,000,000.00 for one person and $3,000,000.00 for one accident for general liability and personal injury. Not less than once every five years, the MUDs shall automatically adjust the coverage amounts listed above to account for all annual increases in the Consumer Price Index for the Houston-Sugarland-Baytown Metropolitan Statistical Area published by the U.S. Bureau of Labor Statistics or any successor agency. The MUDs shall also maintain and/or cause any contractors and/or agents to maintain workers' compensation coverage to protect the Authority, Houston, and the MUDs against liability to any employees or servants of the MUDs.

25. CONSTRUCTION LIABILITY INSURANCE. The MUDs will obtain and maintain (to the extent reasonably procurable) construction liability insurance at all times when demolition, excavation, or construction work is in progress within the Encroachment Area. This insurance must be carried by insurance companies authorized or admitted to transact business in Texas with a Best's Insurance Rating of AAA or better, selected by the MUDs and approved by the Authority, and must be paid for by the MUDs. The insurance will have limits of not less than $100,000.00 for property damage and $1,000,000.00 for one person and $3,000,000.00 for one accident for personal injury and must protect the Authority, Houston, and the MUDs, as well as any other person or persons the MUDs may designate, against all liability for injury or damage to any person or property in any way arising out of demolition, excavation, or construction work within the Encroachment Area.

26. SURETY BOND. Prior to starting initial construction, additions to, or alterations of the MUDs' Lake Conroe Intake Facility and related improvements and appurtenances within the Encroachment Area which require the approval of the Authority pursuant to this Agreement, the MUDs shall secure and provide the Authority with a bond to secure the MUDs' performance of the obligations set forth in paragraph 33 below. The bond shall be issued by a surety acceptable to the Authority and authorized to issue such bonds in the State of Texas. For the benefit of Houston and the Authority, the Authority shall have the right to draw on the bond in the event that the MUDs fail to fully and/or timely perform the obligations forth in paragraph 33. The form of the bond shall be acceptable to the Authority and shall name the Authority as the obligee therein and the MUDs (or

one of the MUDs) as the principal therein. The minimum amount of the bond shall be as reasonably determined by the Authority to approximate the costs for the Authority to remove the MUDs' Lake Conroe Intake Facility and related improvements and appurtenances within the Encroachment Area and restore the area to as good, or better condition than prior to commencement should the MUDs fail to do so in accordance with paragraph 33. The Authority will advise the MUDs of the minimum amount of the bond, or of any necessary modification to the minimum amount of an existing bond, in connection with the Authority's review of drawings, plans, and specifications under paragraph 11 above. Thereafter, the Authority shall also have the right from time to time, but not more frequently than once per calendar year, to review and modify the minimum amount of an existing bond consistent with above. The bond shall be maintained in force and effect by the MUDs through the first anniversary of the expiration or termination of this Agreement unless otherwise approved in writing by the Authority. If the bond is renewable, the Authority may condition acceptance of the form of bond, among other items, upon the inclusion of provisions requiring renewal of the bond on or before a specified number of days prior to expiration of the bond and the right of the Authority to (i) pay the cost for the renewal of the bond in the event of the failure of the MUDs to renew the bond (or procure an acceptable bond issued by an alternative surety) by such deadline, or (ii) draw the full amount of the bond in the event of the failure of the MUDs to renew the bond (or procure an acceptable bond issued by an alternative surety) by such deadline. If the Authority makes such renewal payment, then within forty five (45) calendar days of the Authority's demand, the MUDs shall reimburse the Authority the full amount of any renewal cost paid by the Authority, with interest at the rate of eight percent (8%) percent annually from such due date until reimbursement by the MUDs.

27. INSURANCE CERTIFICATES. The MUDs shall furnish the Authority with a certificate of liability insurance required by paragraph 24 within thirty (30) calendar days of the date hereof. The MUDs shall furnish the Authority with a certificate of construction liability insurance required by paragraph 25 at the time plans and specifications are submitted to the Authority for review and approval pursuant to paragraph 11. The MUDs' property insurance policy shall name the Authority and the MUDs as loss payees as their interests appear. The MUDs' liability policies shall name the Authority as an additional insured. Such policies shall provide that the insurers shall endeavor to provide the Authority at least thirty (30) calendar days prior written notice of termination or material reduction in coverage or exceedance of coverage in any given policy year. If the MUDs do not keep this insurance in full force, the Authority may notify the MUDs of this failure, and if the MUDs do not deliver to the Authority certificates showing all such insurance to be in full force within ten (10) calendar days after this notice, the Authority may, at its option, take out or pay the premiums on the insurance needed to fulfill the MUDs' obligations. Within forty five (45) calendar days of the Authority's demand, the MUDs must reimburse the Authority the full amount of any insurance premiums paid by the Authority under this paragraph, with interest at the rate of ten percent (10%) percent annually from such due date until reimbursement by the MUDs.

DISCLAIMER OF WARRANTIES

28. NO WARRANTIES. THE AUTHORITY MAKES NO WARRANTY OF FITNESS, HABITABILITY, SUITABILITY (OR ANY OTHER IMPLIED WARRANTY) WITH RESPECT TO THE ENCROACHMENT AREA REGARDING THE USE AND/OR INTENDED PURPOSES CONTEMPLATED BY THE MUDS. THE MUDS ACKNOWLEDGE THAT THE AUTHORITY CANNOT, AND DOES NOT, MAKE ANY REPRESENTATIONS, PROMISES OR WARRANTIES OF FITNESS, HABITABILITY, SUITABILITY (OR ANY OTHER IMPLIED WARRANTY) WITH RESPECT TO THE ENCROACHMENT AREA FOR THE MUDS INTENDED USE, OR THE CONDITION OF LAKE CONROE, INCLUDING, WITHOUT LIMITATION, WATER QUALITY OR SAFETY, OR WATER LEVELS IN LAKE CONROE. ANY AND ALL WARRANTIES AND/OR REPRESENTATIONS ARE EXPRESSLY DISCLAIMED; NO PRIOR REPRESENTATIONS, ETC. CAN BE RELIED UPON; MUDS ARE SOPHISTICATED AND ARE RELYING EXCLUSIVELY AND EXPRESSLY UPON THEIR OWN DUE DILIGENCE, ETC..

LIENS, ENCUMBRANCES AND TAXES

29. NO LIENS OR ENCUMBRANCES. The MUDs shall have no authority or power to cause or permit (and shall not cause or permit) any lien or encumbrance of any kind whatsoever, whether created by act or omission of the MUDs, operation of law or otherwise, to attach to or be placed upon the Encroachment Area. The Authority has the right at all times to post and keep posted on the Encroachment Area any notice that it considers necessary for protection from liens the MUDs creates. In the event mechanics or materialmen or others place liens against the Encroachment Area in connection with work or services they claim to have performed at the request or on behalf of the MUDs, or in connection with materials they claim to have furnished to the MUDs, or the Encroachment Area at the request or on behalf of the MUDs, or for any other reason and, if the MUDs fail to cause the lien to be released and removed of record (by payment or bonding around) within thirty (30) calendar days following the date on which the Authority delivers notice of the lien to the MUDs (or any earlier date that the MUDs otherwise becomes aware of such lien, as applicable), the Authority is hereby authorized and may immediately take all action necessary to release and remove the lien without any duty to investigate the validity of the lien claim. Within forty five (45) calendar days after the Authority's demand, the MUDs shall pay to the Authority all actual out-of-pocket costs and expenses, including reasonable attorneys' fees and costs, the Authority incurs in connection with the release and removal of the lien, with interest at the rate of ten percent (10%) percent annually from such date of demand until reimbursement by the MUDs. If applicable law permits a property owner to furnish a bond and thereby compel lien claimants to assert claims against the surety providing the bond in lieu of enforcing lien rights against the property owner's property, the Authority will consider the MUDs as having released and removed a lien against the Encroachment Area if the MUDs furnish the bond in accordance with the requirements of the applicable law. If the MUDs

contest any lien, the MUDs will indemnify Houston and the Authority and hold them harmless from all liability for damages occasioned by the lien or the lien contest and will, in the event of a judgment of foreclosure on the lien, cause the lien to be discharged and removed before the judgment is executed.

30. TAXES.

(a) To the extent required by law, the MUDs will pay all the taxes, charges, and assessments directly to the public officer charged with their collection not fewer than forty five (45) calendar days before they become delinquent, and the MUDs will indemnify the Authority and hold it harmless from all such taxes, charges, and assessments. The MUDs may, in good faith at no expense to the Authority, contest any such taxes, charges, and assessments and must pay the contested amount, plus any penalties and interest imposed, if and when finally determined to be due. The MUDs shall obtain and deliver to the Authority receipts or duplicate receipts for all taxes, assessments, and other items required under this paragraph to be paid by the MUDs, promptly on payment thereof.

(b) At any time that the payment of any item of taxes, special assessments, or governmental charges that the MUDs must pay under this subparagraph (a) remains unpaid and uncontested later than thirty (30) calendar days before becoming delinquent, the Authority may give written notice of default to the MUDs. If the MUDs continue to fail to pay the taxes, special assessments, or governmental charges, or to contest them in good faith within ten (10) calendar days after the written notice, the Authority may pay the items specified in the notice. Within forty five (45) calendar days after demand by the Authority, the MUDs shall reimburse the Authority any amount paid or expended by the Authority for this purpose, with interest on the amount at the rate of ten percent (10%) annually from such due date until reimbursement by the MUDs.

TERM, TERMINATION, DEFAULT AND SURRENDER

31. TERM. Except as may be otherwise provided hereinafter, this Agreement shall be effective as of the date first written above and shall terminate upon the first to occur of (a) the expiration or termination of the Settlement Agreement, as to all parties to that agreement, as provided in Section 7.02 therein, (b) the date of termination pursuant to paragraph 34 hereof, or (c) at the option of the Authority as provided in paragraph 41(b) hereof. The Parties further agree and acknowledge that: (1) this Agreement may be terminated only as expressly authorized herein; (2) the Settlement Agreement may be terminated only as expressly authorized in Section 7.02 therein; and notwithstanding the foregoing (1) and (2), (a) termination of the Settlement Agreement shall result in the termination of this Agreement without further action of the Parties; and (b) termination of this Agreement shall result in the termination of the Settlement Agreement without further action of the Parties.

32. SURRENDER. The MUDs covenant that they will quit, surrender and deliver the Encroachment Area to the Authority peacefully and quietly upon termination of this Agreement or in the event it becomes necessary for the Authority to retake possession of the Encroachment Area, in whole or in part, pursuant to the provisions of this Agreement, particularly paragraph 34 hereof.

33. REMOVAL FOLLOWING EXPIRATION OR TERMINATION OF AGREEMENT. Unless waived in writing by the Authority, the MUDs shall remove the Lake Conroe Intake Facility and related improvements and appurtenances (including any furniture or trade fixtures) from the Encroachment Area within one hundred and eighty (180) calendar days following the expiration or termination of this Agreement, or following the date of any abandonment or required surrender of the Encroachment Area, in whole or in part, under the terms of this Agreement, and reclaim and restore the Encroachment Area to as good, or better, a condition as existed as of date the hereof, according to plans and specifications reasonably acceptable to the Authority and at no cost or expense to the Authority. The obligations of this paragraph shall survive the expiration or termination of this Agreement.

34. DEFAULT AND TERMINATION.

(a) In the event the MUDs breach any of the provisions, conditions or covenants of this Agreement, then the Authority, in addition to the other rights or remedies available, may terminate this Agreement upon written notice to the MUDs, or in the alternative, the Authority may, but shall have no obligation to, re-enter and take possession of the Encroachment Area and remove all persons, property and improvements therefrom without being liable for damages nor guilty in any manner of trespass; provided the MUDs shall have sixty (60) calendar days after notice of such termination or sixty (60) calendar days prior to such re-entry by the Authority within which to cure any breach of any of the provisions, conditions or covenants of this Agreement. Re-entry only, without notice of termination will not terminate this Agreement, but any time after re-entry, the Authority may terminate this Agreement by written notice to the MUDs. Should the Authority at any time terminate this Agreement for breach, in addition to any other remedy it may have, the Authority may recover from the MUDs all damages incurred by reason of such breach, to the extent provided by law. Notwithstanding anything contained in this paragraph to the contrary, in no event shall the Authority be entitled to exercise any of the remedies provided to the Authority under this paragraph or at law or in equity unless and until a monetary or non-monetary default of the MUDs remains uncured for sixty (60) calendar days after the MUDs' receipt of written notice of such default from the Authority. The right to seek injunctive relief shall be available at all times to the Authority without the necessity of compliance with the notice and cure provisions specified hereinabove, provided that the Authority shall be liable for all reasonable

expenses incurred by the MUDs in defending any injunctive relief sought by the Authority, if such relief is not granted in favor of the Authority.

(b) Notwithstanding anything in this Agreement to the contrary, the Parties further agree and acknowledge that references in this Agreement to the Settlement Agreement, the MUDs B&B Permit, and the Huntsville B&B Permit are to be construed as references to separate obligations under such permits and Settlement Agreement, and do not constitute separate provisions, conditions or covenants for purposes of this Section. Any breach of such permits and/or Settlement Agreement shall be subject to the terms of the permits and/or Settlement Agreement, as applicable, with such breach not constituting independent grounds for termination or reentry under this Agreement.

35. REMEDIES CUMULATIVE. The remedies given hereinabove in the event of default shall be cumulative of any remedies now or hereafter given under the laws of the State of Texas, and an election of any or all such remedies is hereby granted to the Authority.

36. ATTORNEYS' FEES. If a Party is required to retain an attorney because of a breach of another Party of any of the terms and conditions hereof, the breaching Party shall be liable to the non-breaching Party for all reasonable attorneys' fees incurred, as well as any other costs incurred because of such breach.

37. RIGHT TO CURE BREACH. If the MUDs breach any covenant or condition of this Agreement and after sixty (60) days have passed after notice from the Authority the MUDs have not cured such breach (except that no notice need be given in case of emergency), the Authority may, at its option and in its sole discretion, cure such breach at the expense of the MUDs and the reasonable amount of all expenses, including attorneys' fees, incurred by the Authority in so doing shall be payable on demand by the MUDS.

MISCELLANEOUS PROVISIONS

38. PARTIES. This Agreement is binding upon the Parties, their successors and assigns.

39. ASSIGNABILITY. No Party may assign this Agreement or any right or obligation contained within this Agreement without the other Parties' written consent; provided, that any such assignment shall only become effective upon the assignor's delivery to the other Parties of a binding executed acknowledgement of the assignee's agreement to be bound by this Agreement. Provided, further, that the assignor shall remain liable for any and all obligations and liabilities under this Agreement which arose or accrued prior to the effective date of the assignment.

40. NOTICE. Any notice required or permitted to be given hereunder shall be so given in the manner, and to the applicable address(es), specified under Section 8.03 of the Settlement Agreement.

41. GOVERNING LAW AND VENUE; GOVERNMENTAL IMMUNITY.

(a) This Agreement and the rights and obligations of the Parties arising out of this Agreement shall be subject to, governed by, and construed in accordance with, the laws of the State of Texas. Venue for any action arising under this Agreement will be in a court of competent jurisdiction located within Montgomery County, Texas.

(b) In giving consent hereunder, it is a material consideration to the Authority that this Agreement should be enforceable in accordance with its terms by a court of competent jurisdiction. To the extent allowed by law, governmental and/or sovereign immunity of the MUDs (collectively and individually) is hereby waived to the limited extent necessary for the Authority to enforce the terms of this Agreement against the MUDs and each of them. If such waiver is held to be ineffective by a final, non-appealable decision of a court of competent jurisdiction, and if it is held that the MUDs are immune from suit or liability hereunder, the Authority shall have the option immediately to terminate this Agreement at its sole discretion without liability to the MUDs.

42. SEVERABILITY. In the event that any provision of this Agreement is held to be unenforceable or invalid by any court of competent jurisdiction, the Parties shall negotiate an equitable adjustment to its provisions with the view to effecting, to the extent possible, the original purpose and intent of this Agreement, and the validity and enforceability of the remaining provisions shall not be affected thereby.

43. INTERPRETATION AND RELIANCE. No presumption will apply in favor of or against any Party in the interpretation of this Agreement or in the resolution of any ambiguity of any provision thereof, regardless of who participated in drafting of the Agreement. Each Party is sophisticated and experienced in the substantive matters that are the subject of this Agreement, and each Party has consulted with legal counsel of its own choosing prior to execution of this Agreement.

44. RELATIONSHIP WITH OTHER AGREEMENTS. Notwithstanding any provision in this Agreement to the contrary, this Agreement is not intended to, and shall never be construed, as superseding the terms of the separate Settlement Agreement. The Parties expressly agree that neither the Settlement Agreement nor any other agreement among the Parties shall be merged into this Agreement and that such agreements shall survive the execution of this Agreement. Nothing in this Agreement shall constitute, nor be construed as a waiver of either the Authority's or Houston's rights under the Settlement Agreement or under any other agreements with the MUDS.

45. MUDS' B&B PERMIT. Except to the extent provided in the Settlement Agreement, nothing in this Agreement shall constitute, nor be construed as a waiver of either the Authority's or Houston's right to protest or challenge the MUDs B&B Permit and/or the Huntsville B&B Permit, and any amendment, proposed renewal, modification, extension or transfer of said permit to the extent that the same would be inconsistent with this Agreement or the Settlement Agreement or would otherwise impair, harm, limit, take or otherwise prejudice the rights, privileges or benefits of the Authority or Houston as determined in their sole discretion.

46. AUTHORITY TO ENTER INTO AGREEMENT. Each Party represents and warrants to the other Parties that it is authorized to enter into this Agreement under the constitution and the laws of the State of Texas and any applicable ordinances, rules, or policies of such Party, and that the execution of this Agreement by the undersigned representative of such Party has been duly authorized.

47. HOUSTON'S BENEFICIARY STATUS. Houston is a beneficiary of, and not a party to, this Agreement. The Authority is authorized to exercise all of Houston's rights and interests in Lake Conroe as they relate to this Agreement to the extent that the Authority complies with the Lake Conroe Contract or any successor agreement and acts as trustee of Houston's rights and interests in Lake Conroe. As long as the Authority acts as trustee of Houston's rights and interests in Lake Conroe, and protects and defends the same, Houston shall have no rights, obligations, or responsibilities to exercise under this Agreement. Upon the written request of Houston and/or the Authority with reference to this paragraph, the Parties shall work in good faith in cooperation with Houston to amend this Agreement to provide Houston with any applicable rights, obligations, or responsibilities commensurate with Houston's then-current rights and interests in Lake Conroe.

48. APPROVALS OR CONSENTS. Each Party agrees that any approvals or consents required under this Agreement shall not be unreasonably withheld by the Party responsible for providing such approval or consent.

49. CONSISTENCY WITH SETTLEMENT AGREEMENT. The Parties agree that all issues and/or disputes regarding this Agreement shall not be resolved in such a way that would be inconsistent with the terms and conditions of the Settlement Agreement. Also, inconsistencies between provisions of this Agreement and those of the Settlement Agreement, shall be resolved consistent with the Settlement Agreement.

50. MULTIPLE ORIGINALS. The authorized representatives of the Parties and Houston may execute this Agreement in any number of separate counterparts, each of which when so executed and delivered shall be deemed an original, but all counterparts shall together constitute one and the same agreement. All signatures need not be on the same

counterpart and this Settlement Agreement may be executed by facsimile or electronic signatures.

[SIGNATURES COMMENCE ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the signatories hereto acting under the authority of their respective governing bodies have caused this Agreement to be executed as of the date first hereinabove written.

SAN JACINTO RIVER AUTHORITY

By: _____
Jace A. Houston
General Manager

THE STATE OF TEXAS §
§
COUNTY OF MONTGOMERY §

This instrument was acknowledged before me on this 27 day of June, 2017, by Jace A. Houston, General Manager of the San Jacinto River Authority, on behalf of said authority.

CYNTHIA A. BOWMAN
Notary Public, State of Texas
Comm. Expires 01-11-2020
Notary ID 123959877

_____
Notary Public in and for the
State of T E X A S

(SEAL)

MONTGOMERY COUNTY MUNICIPAL
UTILITY DISTRICT NO. 8

By: John Tryon

Name: John Tryon

Title: President

THE STATE OF TEXAS §
§
COUNTY OF MONTGOMERY §

This instrument was acknowledged before me on this 14 day of June, 2017, by John Tryon, President of Montgomery County Municipal Utility District No. 8, on behalf of said district.

Elliot Mitchell Barner
Notary Public in and for the
State of T E X A S

(SEAL)

ELLIOT MITCHELL BARNER
Notary Public, State of Texas
My Commission Expires
August 29, 2018

MONTGOMERY COUNTY MUNICIPAL
UTILITY DISTRICT NO. 9

By: Linda R. Wilson

Name: LINDA R. WILSON

Title: President

THE STATE OF TEXAS §
§
COUNTY OF MONTGOMERY §

This instrument was acknowledged before me on this 13th day of June, 2017, by Linda R. Wilson, President of Montgomery County Municipal Utility District No. 9, on behalf of said district.

RENEE Y WEST
Notary Public, State of Texas
My Commission Expires
September 21, 2018

Renee Y. West
Notary Public in and for the
State of TEXAS

(SEAL)

ATTEST/SEAL:

City Secretary

CITY OF HOUSTON, TEXAS

Signed by:

Mayor

APPROVED:

Director, Public Works and Engineering Department

COUNTERSIGNED BY:

City Controller

APPROVED AS TO FORM:

Senior Assistant City Attorney
L.D. File No. 0801600234001

DATE COUNTERSIGNED:

7-28-17

ENCROACHMENT EXHIBIT 1

JEFFREY MOON & ASSOCIATES, INC.
LAND SURVEYORS
www.moonsurveying.com
P.O. Box 2501
Conroe, Texas 77305
(936)756-5268 Fax: (936)756-3261

January 24, 2013

BEING 0.360 ACRE OF LAND IN THE WILLIAM C. CLARK SURVEY, A-6, MONTGOMERY COUNTY, TEXAS, SAID 0.360 ACRE BEING DESCRIBED MORE PARTICULARLY AS FOLLOWS:

COMMENCING at a 5/8" iron rod found for the Northeast corner of Lot 58A, Block 2, Walden on Lake Conroe, Section 14, a Subdivision, map of which is recorded in Cabinet C, Sheet 4, Montgomery County Map Records;

THENCE S. 02° 48' 15" E., along the East line of said Lot 58A for a distance of 234.51 feet to its' Southeast corner, in the 201 Fee line of Lake Conroe, (San Jacinto River Authority);

THENCE S. 73° 27' 27" E., along said 201 Fee line for a distance of 6.38 feet to the Northwest corner and POINT OF BEGINNING of the herein described tract;

THENCE S. 73° 27' 27" E., continuing along the above mentioned line for a distance of 10.50 feet to the Northeast corner of the herein described tract;

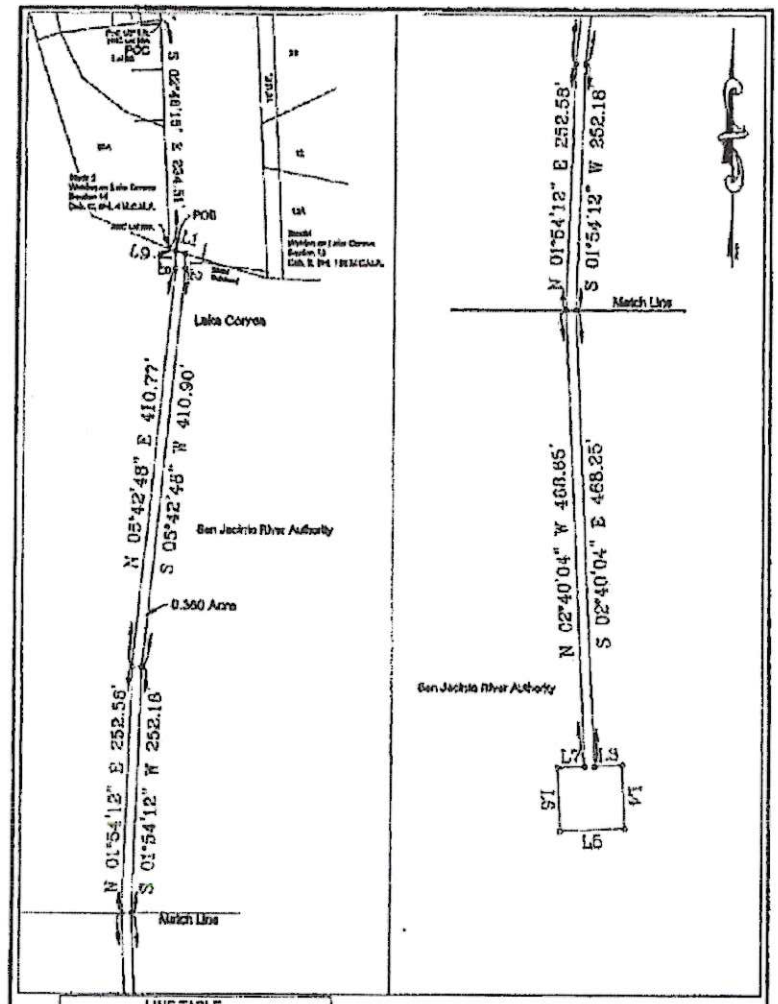
THENCE leaving the above mentioned line across the San Jacinto River Authority tract as follows:

1. S. 01° 14' 22" E., 15.20 feet,
2. S. 05° 42' 48" W., 410.90 feet,
3. S. 01° 54' 12" W., 252.18 feet,
4. S. 02° 40' 04" E., 468.25 feet,
5. N. 87° 19' 56" E., 27.47 feet,
6. S. 02° 40' 04" E., 65.00 feet,
7. S. 87° 19' 56" W., 65.00 feet,
8. N. 02° 40' 04" W., 65.00 feet,
9. N. 87° 19' 56" E., 27.53 feet,
10. N. 02° 40' 04" W., 468.65 feet,
11. N. 01° 54' 12" E., 252.58 feet,
12. N. 05° 42' 48" E., 410.77 feet,
13. N. 01° 14' 22" W., 17.98 feet to the POINT OF BEGINNING and containing in all 0.360 acre of land.

Jeffrey Moon
Registered Professional
Land Surveyor No. 4639

STATE OF TEXAS
REGISTERED
JEFFREY MOON
LAND SURVEYOR

sjracsnt



LINE TABLE		
LINE	BEARING	DISTANCE
L1	[illegible]	[illegible]
L2	[illegible]	[illegible]
L3	[illegible]	[illegible]
L4	[illegible]	[illegible]
L5	[illegible]	[illegible]
L6	[illegible]	[illegible]
L7	[illegible]	[illegible]
L8	[illegible]	[illegible]
L9	[illegible]	[illegible]

Notes:
1. Bearings are based on State Plane, Coordinate Texas Central Zone, U.S. Feet, (Grid)
2. This Exhibit is based in part on a Metes and Bounds description of even date.
3. This Exhibit was done without the benefit of a Title Report that would reflect any Easements, Building lines, or other Restrictions.
4. This Exhibit does NOT represent and Land Survey and shall NOT be recorded for any reason.

EXHIBIT
0.360 ACRE
OF LAND IN THE
WILLIAM C. CLARK SURVEY, A - 8
MONTGOMERY COUNTY, TEXAS
Scale 1" = 100'
Date: January 24, 2013

CF#_____ File # 12-0-04 Book _____ Pg._____

JEFFREY MOON & ASSOC., INC., P.O. Box 2501, Conroe, TX. 77305
(936) 756-2266 Fax (936) 756-5291
All rights reserved Copyright 2013 Jeffrey Moon & Assoc., Inc. ©

Exhibit C-1
Delivery of Accounting Protocols by MUDs 8&9 and Huntsville

From: Carolyn Ahrens [redacted]
Subject: Exhibit C-1 to Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment (2017)
Date: May 19, 2017 at 2:47 PM
To: Nathan Vassar [redacted] Mitchell Page [redacted] Ed McCarthy [redacted]
Citino, Sharon - LGL [redacted] Emily Rogers [redacted]
Cc: carolyn ahrens [redacted], Lord, Clark [redacted] Barner Elliot [redacted] Bob Brandes

[redacted]

Legal Counsels:

By this email, the attached accounting package is circulated to San Jacinto River Authority and City of Houston, on behalf of Montgomery County MUD No. 8 and Montgomery County MUD No. 9 and also on behalf of the City of Huntsville (by authorization of E. Rogers).

Circulation of the accounting package by email is contemplated in Paragraph 1, Parts of Agreement, of the Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment ("Settlement Agreement") being entered by the five parties.

This email will be attached to the Settlement Agreement as Exhibit C-1.



MUDs8&9andHuntsville_
WaterAcco...randes.xlsx

Exhibit C-2
Receipt of Accounting Protocols by the Authority

From: Nathan Vassar [redacted]
Subject: Exhibit C-2: Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment (2017)
Date: May 24, 2017 at 3:47 PM
To: [redacted]
Cc: [redacted]

By this email, the San Jacinto River Authority acknowledges receipt of the Accounting Protocols delivered electronically on May 19, 2017, in accordance with the Settlement Agreement referenced below.

From: Carolyn Ahrens [redacted]
Sent: Friday, May 19, 2017 2:47 PM
To: Nathan E. Vassar; Mitchell Page; Ed McCarthy; Citino, Sharon - LGL; Emily Rogers
Cc: Carolyn Ahrens; Lord, Clark; Barner Elliot; Bob Brandes
Subject: Exhibit C-1 to Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment (2017)

Legal Counsels:

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This email will be attached to the Settlement Agreement as Exhibit C-1.

****ATTENTION TO PUBLIC OFFICIALS AND OFFICIALS WITH OTHER INSTITUTIONS SUBJECT TO THE OPEN MEETINGS ACT ****

A "REPLY TO ALL" OF THIS EMAIL COULD LEAD TO VIOLATIONS OF THE TEXAS OPEN MEETINGS ACT. PLEASE REPLY ONLY TO LEGAL COUNSEL.

CONFIDENTIALITY NOTICE:
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Exhibit C-3
Receipt of Accounting Protocols By Houston

From: Citino, Sharon - LGL [redacted]
Subject: Exhibit C-3 to Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment (2017)
Date: May 24, 2017 at 3:49 PM
To: [redacted]
Cc: [redacted]

By this email, the City Houston acknowledges receipt of the Accounting Protocols delivered electronically on May 19, 2017 in accordance with the Settlement Agreement referenced below.

Sharon

Sharon L. Citino
Senior Assistant City Attorney
Contracts Section
City of Houston Legal Department
900 Bagby, 4th Floor
Houston, Texas 77002
[redacted]

From: Carolyn Ahrens [redacted]
Sent: Friday, May 19, 2017 2:47 PM
To: Nathan Vassar; Mitchell Page; Ed McCarthy; Citino, Sharon - LGL; Emily Rogers
Cc: Carolyn Ahrens; Lord, Clark; Barner Elliot; Bob Brandes
Subject: Exhibit C-1 to Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment (2017)

Legal Counsels:

By this email, the attached accounting package is circulated to San Jacinto River Authority and City of Houston, on behalf of Montgomery County MUD No. 8 and Montgomery County MUD No. 9 and also on behalf of the City of Huntsville (by authorization of E. Rogers).

Circulation of the accounting package by email is contemplated in Paragraph 1, Parts of Agreement, of the Settlement Agreement Including Terms for Water Pass-Through, Water Commitment, and Encroachment ("Settlement Agreement") being entered by the five parties.

This email will be attached to the Settlement Agreement as Exhibit C-1.

CERTIFICATE OF ADJUDICATION

CERTIFICATE OF ADJUDICATION: 10-4963

OWNERS: San Jacinto River Authority
P. O. Box 329
Conroe, Texas 77305.

City of Houston
Attn: Department of Public Works
P. O. Box 1562
Houston, Texas 77007

Texas Water Development Board
Water Availability Data & Studies
P. O. Box 13231, Capitol Station
Austin, Texas 78711

COUNTIES: Montgomery and Harris

PRIORITY DATES: January 12, 1959 and June 28, 1965

WATERCOURSE: West Fork San Jacinto River, tributary of the San Jacinto River

BASIN: San Jacinto River

WHEREAS, by final decree of the 155th Judicial District Court of Waller County, in Cause No. 10,023A, In Re: The Exceptions of the San Jacinto River Authority to the Adjudication of Water Rights in the San Jacinto River Basin dated December 1, 1986, a right was recognized under Permit 1962B authorizing the San Jacinto River Authority, the City of Houston and the Texas Water Development Board to appropriate waters of the State of Texas as set forth below;

NOW, THEREFORE, this certificate of adjudication to appropriate waters of the State of Texas in the San Jacinto River Basin is issued to the San Jacinto River Authority, the City of Houston and the Texas Water Development Board, subject to the following terms and conditions:

1. IMPOUNDMENT

Owners are authorized to maintain an existing dam and reservoir on the West Fork San Jacinto River (Lake Conroe) and impound therein not to exceed 430,260 acre-feet of water. The dam is located in the James Smith Grant, Abstract 37; the James Edwards Survey, Abstract 189; the James Edwards Survey, Abstract 190; the Robert Marsh Survey, Abstract 355 and the James W. Singleton Survey, Abstract 496, Montgomery County, Texas.

2. USE

A. Owners are authorized to divert or release and use not to exceed 100,000 acre-feet of water per annum from the aforesaid Lake Conroe for purposes as follows:

Municipal Purposes - - - - - - - - - - 66,000 acre-feet

Industrial Purposes - - - - - - - - - - 28,500 acre-feet

Mining Purposes - - - - - - - - - - - - 5,500 acre-feet

B. Owners are also authorized to use the impounded water for recreation purposes.

3. DIVERSION

A. Location
At the perimeter of the aforesaid reservoir.

B. Maximum rate: 700.00 cfs (315,000 gpm).

4. PRIORITY

A. The time priority of owners' right is January 12, 1959 for the impoundment of 380,430 acre-feet of water and the diversion and use of water for purposes authorized herein.

B. The time priority of owners' right is June 28, 1965 for the impoundment of the additional 49,830 acre-feet of water.

5. SPECIAL CONDITIONS

A. Owners are authorized to use the bed and banks of the West Fork San Jacinto River for the purpose of conveying all or any part of the water authorized to be diverted hereunder from the place of impoundment (Lake Conroe) downstream to Lake Houston in Harris County.

B. Owners shall maintain a suitable outlet in the aforesaid dam authorized herein to allow the free passage of water that the owners are not entitled to divert or impound.

C. Owners shall install a metering instrument at each diversion point which will automatically record to within five percent of accuracy the total amount of water diverted. Owners shall make daily determinations of water surface elevations in the reservoir by means of a recording gage, set to mean sea level datum, which shall be protected by a well house designed for such purposes. Owners shall also install a recording

streamflow station, set to mean sea level datum, to measure the inflow from the West Fork San Jacinto River into the reservoir. The Commission shall be furnished complete records of all determinations required herein.

The locations of pertinent features related to this certificate are shown on Pages 5 and 15 of the San Jacinto River Basin Certificates of Adjudication Maps, copies of which are located in the offices of the Texas Water Commission, Austin, Texas.

This certificate of adjudication is issued subject to all terms, conditions and provisions in the final decree of the 155th Judicial District Court of Waller County, Texas, in Cause No. 10,023A, In Re: The Exceptions of the San Jacinto River Authority to the Adjudication of Water Rights in the San Jacinto River Basin dated December 1, 1986 and supersedes all rights of the owner asserted in that cause, provided, however, that no attempt has been made to adjudicate private contractural rights.

This certificate of adjudication is issued subject to senior and superior water rights in the San Jacinto River Basin.

This certificate of adjudication is issued subject to the Rules of the Texas Water Commission and its continuing right of supervision of State water resources consistent with the public policy of the State as set forth in the Texas Water Code.

TEXAS WATER COMMISSION

Paul Hopkins

Paul Hopkins, Chairman

DATE ISSUED:

FEB 25 1987

ATTEST:

Mary Ann Hefner

Mary Ann Hefner, Chief Clerk

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AMENDMENT TO A CERTIFICATE OF ADJUDICATION

CERTIFICATE NO. 10-4963A TYPE § 11.122

Owners:	San Jacinto River Authority	Addresses:	P.O. Box 329 Conroe, Texas 77305
	City of Houston		P.O. Box 1562 Houston, Texas 77007
Filed:	April 29, 2010	Granted:	JUL 20 2010
Purpose:	Industrial, Agricultural, Municipal, Mining	Counties:	Harris, Montgomery
Watercourse:	West Fork San Jacinto, tributary of San Jacinto River	Watershed:	San Jacinto River Basin

WHEREAS, Certificate of Adjudication No. 10-4963 (Certificate) authorizes the San Jacinto River Authority and the City of Houston (Owners) to maintain an existing dam and reservoir (Lake Conroe) on the West Fork San Jacinto River, San Jacinto River Basin and to impound therein not to exceed 430,260 acre-feet of water for recreational purposes in Montgomery County; and

WHEREAS, Owners are also authorized to divert or release and use not to exceed 100,000 acre-feet of water per year from the perimeter of Lake Conroe at a maximum diversion rate of 700 cfs (315,000 gpm) as follows: 66,000 acre-feet for municipal purposes, 28,500 acre-feet for industrial purposes, and 5,500 acre-feet for mining purposes; and

WHEREAS, Owners are also authorized to use the bed and banks of the West Fork San Jacinto River to convey all or any part of the 100,000 acre-feet of water downstream to Lake Houston in Harris County; and

WHEREAS, the priority dates for this right are January 12, 1959 for the impoundment of 380,430 acre-feet of water and the diversion and use of the 100,000 acre-feet of water, and June 28, 1965 for the impoundment of an additional 49,830 acre-feet of water, and

WHEREAS, the Certificate contains Special Conditions; and

WHEREAS, Owners seek an amendment to Certificate of Adjudication No. 10-4963 to add multi-use (municipal, industrial, mining, and agricultural) to the 100,000 acre-feet of water currently authorized for diversion; and

WHEREAS, the Texas Commission on Environmental Quality (Commission) finds that jurisdiction over the application is established; and

WHEREAS, no requests for a contested case hearing were received for this application; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality in issuing this amendment;

NOW, THEREFORE, this amendment to Certificate of Adjudication No. 10-4963, designated Certificate of Adjudication No. 10-4963A, is issued to the San Jacinto River Authority and the City of Houston, subject to the following terms and conditions:

1. USE

A. In lieu of the previous authorization to divert or release and use not to exceed 100,000 acre-feet of water per year for municipal purposes (66,000 acre-feet), industrial purposes (28,500 acre-feet), and mining purposes (5,500 acre-feet), Owners are now authorized to divert or release and use not to exceed 100,000 acre-feet of water per year for municipal, industrial, mining, and agricultural purposes.

B. Any water diverted or released for agricultural purposes pursuant to Use paragraph 1.A. shall be utilized within the Owners' service areas in the San Jacinto River Basin.

C. Owners are also authorized to use the impounded water for recreation purposes.

2. CONSERVATION

Owners shall implement water conservation plans that provide for the utilization of those practices, techniques, and technologies that reduce or maintain the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water, so that a water supply is made available for future or alternative uses. Such plans shall include a requirement that in every wholesale water contract entered into, on or after the effective date of this amendment, including any contract extension or renewal, that each successive wholesale customer develop and implement conservation measures. If the customer intends to resell the water, then the contract for resale of the water must have water conservation requirements so that each successive wholesale customer in the resale of the water be required to implement water conservation measures.

This amendment is issued subject to all terms, conditions and provisions contained in Certificate No. 10-4963 except as specifically amended herein.

This amendment is issued subject to all superior and senior water rights in the San Jacinto River Basin.

Owners agree to be bound by the terms, conditions and provisions contained herein and such agreement is a condition precedent to the granting of this amendment.

All other matters requested in the application which are not specifically granted by this amendment are denied.

This amendment is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of State water resources exercised by the Commission.

For the Commission

ISSUED: JUL 20 2010

LAW OFFICES OF
BOOTH, AHRENS & WERKENTHIN, P.C.
A PROFESSIONAL CORPORATION
515 CONGRESS AVENUE, SUITE 1515
AUSTIN, TEXAS 78701-3503
512/472-3263 • 512/473-2609

MICHAEL J. BOOTH
FRED B. WERKENTHIN, JR.
WIL GALLOWAY
TREY NESLONEY
RYAN J. SULLIVAN

CAROLYN AHRENS
OF COUNSEL

October 2, 2009

RECEIVED
TCEQ
2009 OCT 2 PM 2 08
WATER SUPPLY DIV.

VIA HAND DELIVERY

Executive Director
Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, Texas 78753

ATTN: Ms. Iliana Delgado

Re: Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9 / Application for Bed and Banks Conveyance

Dear Ms. Delgado:

With this letter, Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9 ("the Districts") submit for filing the original and six copies of a joint application for bed and banks conveyance. A check in the amount of $765.25 is included for filing, recording, and one-half use fees.

The Districts must request your earliest possible processing of this application, for reasons explained below.

The Districts' have an urgent regulatory need to diversify their water supply. Currently, the Districts' sole source of water for retail potable water service is groundwater withdrawn from the Gulf Coast Aquifer within the boundaries of the Lone Star Groundwater Conservation District ("Lone Star"). Lone Star's groundwater management plan provides that in 2015, the groundwater withdrawal component of the Districts' total supply will be cut back by 30%.

Filing the application has been accelerated in response to Lone Star's proposed DRP Phase II(B), published on September 23, 2009, that would require the Districts to declare their intent with regard to securing an alternative water supply by March 1, 2010, subject to administrative penalties and other enforcement measures. By October 1, 2010, the Districts would be required to submit a groundwater reduction plan that includes detailed information regarding water supply design, engineering, construction, water rights, and financing, also subject to administrative penalties and other enforcement measures.

Please let us know if there is any additional information that we or the Districts can provide in order to expedite your consideration. Also, please do not hesitate to contact me should you have any questions regarding the application.

Very truly yours,

Carolyn Ahrens

Enclosures

Cc / with enclosures, by regular mail:

For MUD 8
Mr. Roy McCoy
Mr. Ross Racliffe

For MUD 9
Mr. Jim Bustin
Mr. Clark Lord

For NRS Engineers
Mr. Mike Irlbeck
Mr. Bill Norris

For San Jacinto River Authority
Mr. Reed Eichelberger
Mr. Jace Houston
Mr. Michael Page

For City of Houston
Mr. Ed McCarthy

Texas Commission on Environmental Quality

APPLICATION FOR PERMIT TO CONVEY WATER BY BED AND BANKS
(SECTION 11.042, ET AL., TEXAS WATER CODE)
(TAC CHAPTERS 295 and 297)
Water Supply Division, Water Rights Permitting MC-160
P.O. Box 13087
Austin, Texas 78711-3087
Telephone (512) 239-4691, FAX (512) 239-4770

RECEIVED
TCEQ
2009 OCT 2 PM 2 08
WATER SUPPLY DIV.

1.1. Name: **Montgomery County Municipal Utility District No. 8 ("MUD 8")**
1001 McKinney, Suite 1001, Houston, Texas 77002-6424
c/o Ross Radcliffe [redacted], and Carolyn Ahrens, [redacted]

A. Customer Reference Number (if issued): **RN101396323**
B. Applicant owes fees or penalties? **No**

1.1. Name: **Montgomery County Municipal Utility District No. 9 ("MUD 9")**
1001 Fannin, Suite 2500, Houston, Texas 77002-6760
C/o Clark Lord, [redacted] and Carolyn Ahrens, [redacted]

A. Customer Reference Number (if issued): **RN101400208**
B. Applicant owes fees or penalties? **No**

2. Dam (structure), Reservoir and Watercourse Data:

This Application does not involve storage in a reservoir. However, Applicants Mud 8 and Mud 9 request authority to convey groundwater-based return flows by the bed and banks now associated with Lake Conroe (see Certificate of Adjudication No. 10-4963), for subsequent diversion and use. The requested authorization does not involve any alteration to the facilities constructed pursuant to Certificate of Adjudication No. 10-4963. Please also see the Supplemental Statement and accompanying documents submitted as "Attachment B" with this Application.

3. Appropriation Request (total amount of water needed, including maximum projected uses and accounting for evaporative losses for off-channel storage, if applicable).

This Application relates to the bed and banks conveyance, diversion, and reuse of return flows from privately owned groundwater. The Supplemental Statement addresses quantity, diversion point, diversion rate, and the purpose and place of use for the water to be conveyed, among other things.

A. Appropriated water will be used as follows: **N/A**

B. Lands to be irrigated (if applicable): **N/A**

C. Diversion Point No. 1. **See Diversion Point Information Sheet and Supplemental Statement.**

D. Return Water or Return Flow (location and quantity information): **Water remaining would be returned to Lake Conroe, subject to this application.**

E. Surplus Water: **Any surplus water would be returned to Lake Conroe.**

F. The drainage area above the diversion point: **N/A**

4. General Information:

A. Proposed or existing works: **See Supplemental Statement.**

B. If an application for the appropriation is granted, either in whole or in part, construction works will begin within _____ after such permit is issued. The proposed work will be completed within_____from the date the permit is issued. **N/A**

C. A Water Conservation Plan is attached? **N/A**

D. Interbasin transfer: **No.**

E. Bed and Banks request to transfer **all present and future discharges of District Groundwater** within the bed and banks **associated with Lake Conroe in Segment No. 1012 of the San Jacinto** River Basin. **See Supplemental Statement.**

F. Is this project located within 200 river miles of the coast? **Yes.**

5. Maps, plats, plans, and drawings accompany this application as required by applicable TAC Sections.

   See Supplemental Statement.

6. The dams and reservoirs shown on the attached application were constructed for domestic and livestock purposes and we elect to seek a permit under Section 11.143 of the Texas Water Code. **N/A**

7. Provide information describing how this application addresses a water supply need in a manner that is consistent with the state water plan or the applicable approved regional water plan for any area in which the proposed appropriation is located or, in the alternative, describe conditions that warrant a waiver of this requirement. **N/A**

Roy McCoy, Board President
For Montgomery County Municipal District No. 8

James E. Bustin, Board President
For Montgomery County Municipal District No. 9
(See "Attachment A" Authorizing Signatures)

SWORN TO AND SUBSCRIBED before me this 1st day of October, 2009.

ROSS JAY RADCLIFFE
MY COMMISSION EXPIRES
February 4, 2010

Notary Public for the State of Texas

SWORN TO AND SUBSCRIBED before me this 1st day of October, 2009.

ROSS JAY RADCLIFFE
MY COMMISSION EXPIRES
February 4, 2010

Notary Public for the State of Texas

Supplemental Diversion Point Information Sheet

Diversion Point No. 1.

1) Watercourse: **At a point to be determined at or inland from the perimeter of Lake Conroe, San Jacinto River, San Jacinto River Basin, within or adjacent to the Applicants' boundaries.**

2) Location of point of diversion at Latitude _____°N, Longitude _____°W, also, bearing ___°_____, _____feet (distance) from the _____ corner of the _____ Original Survey No. _____, Abstract No. _____, in _____ County, Texas.

3) Location from County Seat: **13.7** miles in a **NW** direction from **Montgomery** County, Texas. Location from nearby town (if other than County Seat): ____ miles in a _____ direction from _____, a nearby town shown on county highway map.

4) The diversion will be (check all appropriate boxes and if applicable, indicate whether existing or proposed):

X	Directly from stream		Proposed
	From an on-channel reservoir		
	From stream to an off-channel reservoir		
	From a stream to an on-channel reservoir		
	From an off-channel reservoir		
	Other method (explain fully, use additional sheets if necessary)		

5) Rate of Diversion (Check () applicable provision):

X 1. Diversion Facility:

A._____ Maximum gpm (gallons per minute) **(Rate per minute is unknown at this time.)**

1) _____ Number of pumps
2) _____ Type of pump
3) _____ gpm, Pump capacity of each pump
4) Portable pump _ Yes or X No

___2. If by gravity:

A._____ Headgate _____ Diversion Dam _____ Maximum gpm

B._____ Other method (explain fully - use additional sheets if necessary)

6) The drainage area above the diversion point is _____ acres or _____ square miles. N/A

RESOLUTION OF BOARD OF DIRECTORS OF MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 8 AND MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 9 AUTHORIZING APPLICATION TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY FOR WATER RIGHTS

WHEREAS, Montgomery County Municipal Utility District No. 8 ("MUD 8") and Montgomery County Municipal Utility District No. 9 ("MUD 9") are municipal utility districts created and existing under the authority of Chapter 49 and Chapter 54 of the Texas Water Code; and

WHEREAS, the powers and duties of MUD 8 and MUD 9 include purchasing, operating and maintaining all facilities, plants and improvements necessary to provide primarily water, sanitary sewer, and storm sewer drainage services for the residents and property owners of MUD 8 and MUD 9; and

WHEREAS, MUD 9 was formed subsequent to MUD 8, and both districts serve parts of the Walden on Lake Conroe area, and it has been advantageous for the Districts to enter into mutually beneficial agreements providing for interconnection of potable water supply lines, joint use of the water reclamation plant (operated by MUD 8) and installation and operation of a computer control system ("SCADA") for potable water systems; and

WHEREAS, MUD 8 and MUD 9 pay fees to the Lone Star Groundwater Conservation District ("LSGCD") to enable LSGCD to perform its regulatory and planning functions, including the development of LSGCD's groundwater conversion to surface water plan; and

WHEREAS, MUD 8 and MUD 9 seek to reduce their dependence on groundwater to supply potable water by obtaining authorization to divert water from Lake Conroe, which would be treated and used in their service areas, from the Texas Commission on Environmental Quality, after adequate concurrence from the San Jacinto River Authority and the City of Houston, Texas.

NOW, THEREFORE, be it resolved by the Boards of Directors of MUD 8 and MUD 9 that:

1. The Presidents of the Boards of Directors ("Presidents") of MUD 8 and MUD 9 are hereby authorized, on behalf of the Boards of Directors, to take such action before any administrative or judicial forums, consistent with this resolution, which the Presidents determine to be reasonable and necessary to secure authorizations to divert water from Lake Conroe located in the San Jacinto River of the State of Texas, and to authorize the use of the bed and banks of Lake Conroe and the San Jacinto River and to allow for MUD 8's and MUD 9's use of such transported water; and

2. The Presidents are authorized and directed to approve and sign such documents and verifications on behalf of MUD 8 and MUD 9 and to provide for payment of all necessary fees for any regulatory requirements; and

3. The Presidents are further hereby authorized and directed, on behalf of the Boards of Directors, to take such other steps the Presidents determine to be reasonable and necessary to secure and enforce the right of MUD 8 and MUD 9 to appropriate and transport said water.

ADOPTED AND APPROVED this 10th day of September, 2009.

MONTGOMERY COUNTY
MUNICIPAL UTILITY DISTRICT NO. 8

ATTEST:

By: _____
President, Board of Directors

_____
Secretary, Board of Directors

MONTGOMERY COUNTY
MUNICIPAL UTILITY DISTRICT NO. 9

ATTEST:

By: _____
President, Board of Directors

_____
Secretary, Board of Directors

APPLICATION FOR BED AND BANKS CONVEYANCE

MONTGOMERY COUNTY MUDs 8 & 9

SUPPLEMENTAL STATEMENT

Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9 ("Districts" or "Applicants") jointly seek bed and banks authorization from the Texas Commission on Environmental Quality ("TCEQ") to facilitate the Districts' alternative water supply project (the "Project"). The Project requires transporting and accounting the Districts' existing and future groundwater-based return flows ("District Groundwater") discharged at Lake Conroe, in the San Jacinto River Basin, and establishing a diversion point or points at or inland from the perimeter of Lake Conroe. Water diverted at Lake Conroe would be used for municipal, industrial, and agricultural purposes in the Districts' service areas in Montgomery County, also in the San Jacinto River Basin.

This application is made pursuant to Water Code §11.042 (b) and all other statutory and regulatory authority that may apply to the Project. The Districts will hold the permit requested as joint permittees, subject to the Contract for Financing, Construction and Operation of Regional Wastewater Treatment Facilities entered into by and between Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9, dated March 29, 1977, as amended, and submitted with this Supplemental Statement as Attachment B–1.

This application is necessitated by the Districts' urgent regulatory need to diversify their water supply. The Districts together serve more than 6,000 people in Montgomery County. Their sole source of water for retail potable water service at the present time is groundwater, withdrawn from wells they own individually, producing from the Gulf Coast Aquifer within the boundaries of the Lone Star Groundwater Conservation District ("Lone Star"). Lone Star has determined that Montgomery County will exceed the safe yield of the Gulf Coast Aquifer over the next few years. Lone Star's groundwater management plan provides that in 2015, the groundwater component of the Districts' total supply can be no more than seventy percent (70%) of their total water demand, with an alternative water supply component required to meet the remaining demand. Proposed rules published by Lone Star as DRP Phase II(B) on September 23, 2009, would require the Districts to declare their intent with regard to alternative water supply by March 1, 2010, subject to administrative penalties and other enforcement measures. By October 1, 2010, the Districts would be required to submit a groundwater reduction plan that includes detailed information regarding water supply design, engineering, construction, water rights, and financing, also subject to administrative penalties and other enforcement measures.

The wastewater treatment facility operated pursuant to TCEQ permit number WQ0011371001 ("WWTP") presently treats wastewater collected in the service areas of both Districts. By this application, the Districts request authorization to convey and divert all present and future return flows attributable to groundwater supplied for use within the Districts' service areas and specifically including all discharges of return flow from the WWTP ("District Groundwater"), less carriage losses if any.

District Groundwater would be diverted from a point or points at or inland from the perimeter of Lake Conroe without storage of District Groundwater in the reservoir. Diversion without storage of water in the reservoir would be determined by coordinating discharge and diversion on a 24-hour cycle. A proposed accounting plan for this purpose is submitted with this Supplemental Statement as Attachment B–2.

Lake Conroe is authorized pursuant to Certificate of Adjudication No. 10-4963, as may be amended, and owned by the San Jacinto River Authority ("SJRA") and the City of Houston ("Houston"). Although this application does not contemplate storing water in Lake Conroe or diverting water from storage, the Districts are seeking SJRA's and Houston's support. The proposed rules of the Lone Star Groundwater Conservation District have necessitated the immediate filing of this application while discussions with SJRA and Houston continue.

In specific response to the requirements of TCEQ Rules § 295.112, the Districts provide the following information as part of their application.

(1) The name, mailing address, and telephone number of the applicants.

Montgomery County Municipal Utility District No. 8
1001 McKinney, Suite 1000
Houston, Texas 77002-6424
713.237.1221

Montgomery County Municipal Utility District No. 9
1001 Fannin, Suite 2500
Houston, Texas 77002-6760
713.758.2350

Please send all correspondence or requests for information related to this application to the following contact persons:

Ross Radcliffe
At the address and phone number listed above for Montgomery County MUD No. 8.
[redacted]

and

Clark Lord
At the address and phone number listed above for Montgomery County MUD No. 9.
[redacted]

and

Carolyn Ahrens
Booth, Ahrens & Werkenthin, P.C.
515 Congress Avenue, Suite 1515
Austin, Texas 78701
512.472.3263
[redacted]

(2) Stream: Bed and banks conveyance will be from discharge at Lake Conroe to diversion at or near the perimeter of Lake Conroe, in the San Jacinto River Basin.

(3) Points of Discharge: District Groundwater will be discharged at the existing and future points of discharge authorized in TCEQ Permit No. WQ0011371001, being at Lake Conroe in Segment No. 1012 of the San Jacinto River Basin. A copy of that permit as issued on August 29, 2007, is Attachment B–3 to this Supplemental Statement. Specifically, discharge from Outfall 1 is at 30° 23' 27" N / 95° 36' 17" W and discharge from proposed Outfall 2 will be at 30° 23' 23" N / 95° 36' 15" W.

(4) Diversion: Diversion will be from a point or points to be established at or inland from the perimeter of Lake Conroe, within or adjacent to the Districts' service areas. A gallons per minute maximum diversion rate for perimeter diversions has not yet been determined. Inland diversions, if any, would be by diversion well, shown to be pumping lake water. Applicants have the power of eminent domain.

(5) Map: A USGS 7.5 minute topographical map, showing the location of the points of discharge is Attachment B–4 to this Supplemental Statement. Although an actual diversion facility has not yet been sited, it will be located at or inland from the perimeter of Lake Conroe, within or adjacent to the District's boundaries. For further clarification, a Location Map for the Districts is Attachment B–5 to this Supplemental Statement.

(6) Source: The Districts seek authorization to convey, divert, and use all existing and future District Groundwater discharged at Lake Conroe, less carriage losses if any. District Groundwater is attributable to privately owned groundwater discharged at the WWTP or that is supplied within the Districts' service area. Water supplied within the Districts' service area originates from groundwater pumped from the Districts' groundwater wells permitted within the Lone Star Groundwater Conservation District. These well permits are Attachment B–6 to this Supplemental Statement.

(7) Discharge: Permit No. WQ0011371001 currently authorizes a combined final phase maximum discharge up to an average flow of 0.900 million gallons per day (MGD).

(8) Water Quality: The quality of District Groundwater discharged at Lake Conroe will be in accordance with the limitations included in Permit No. WQ0011371001. Information regarding the actual quality of historical discharges will be separately provided.

(9) Historic Discharge: The date of initial discharge from the WWTP to Lake Conroe is unknown; however, the Districts were created in 1971 and 1972. The WWTP was constructed to replace a temporary structure in 1982. Additional information regarding the commencement of discharge will be provided if it becomes available. The Districts believe that the current average daily flow from the WWTP is no more than 0.400 MGD, which also would be the maximum amount of historical discharge from the WWTP. Additional information regarding monthly average discharges will be separately provided.

(10) Carriage Losses: Average daily carriage losses have been estimated to be approximately five one-hundredths of one percent (0.05%) of the MUD's daily wastewater discharge volume, considering (1) the historical average of daily evaporation volume for Lake Conroe at conservation pool elevation and (2) the ratio of the Districts' daily discharge volume to total reservoir storage volume at conservation pool. The range on a monthly basis is from three one-hundredths of one percent (0.03%) to eight one-hundredths of one percent (0.08%). Therefore, in light of the de minimus loss, carriage losses are proposed to be calculated as eight one-hundredths of one percent (0.08%) of the daily discharge volume rather than conducting actual daily evaporation calculations.

(11) Instream Uses: The Districts understand that the Executive Director of the TCEQ may recommend special conditions to help maintain instream uses downstream of the diversion point(s). However, the Districts believe that there will be no measurable impact to quantity and quality of flows remaining for environmental purposes after the proposed diversion, considering the nature of discharge and diversion of the relatively very small amount of District Groundwater in Lake Conroe.

(12) Freshwater Inflows: the Districts understand that the Executive Director of the TCEQ may recommend special conditions to help meet bay and estuary freshwater inflow needs. However, the Districts believe that there will be no measurable impact on freshwater inflows after the proposed diversion, considering the nature of discharge and diversion of the relatively very small amount of District Groundwater in Lake Conroe.

(13) Downstream Water Rights: The Districts understand that the Executive Director of the TCEQ may recommend special conditions to protect existing water rights that have been granted based on the use or availability of the return flows to be diverted. However, the Districts are not aware of any downstream water rights that were so granted or that could be impacted by the proposed diversion of District Groundwater in Lake Conroe.

As additional information related to the application, but not required pursuant to TCEQ Rules, the Districts also submit the following.

Attachment B–7: Resolutions of support, for the Districts pursuing a reuse project, that have been provided by the Montgomery County Commissioners Court; the Lone Star Groundwater Conservation District; the San Jacinto River Authority; the City Council of Conroe, Texas; the Lake Conroe Communities Network; and the Walden on Lake Conroe Community Improvement Association.

Attachment B–8: Drought Contingency Plans of Montgomery County Municipal Utility District No. 8 and of Montgomery County Municipal Utility District No. 9

Concurrently with this application, the Districts have submitted $765.25, by check. This amount is calculated in consideration of filing fees ($250.00) and recording fees (nine pages at $1.25 per page) as required by TCEQ Rules § 295.132, and including $504.00, representing one-half of the one-time use fee, as indicated in TCEQ Rules § 295.133. The Districts request that the Executive Director calculate any additional fees that may be associated with filing and providing notice of this application and notify them of any amounts owed.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

WATER USE PERMIT

PERMIT NO. 12510 TYPE § 11.042

Permittee:	Montgomery County Municipal Utility District No. 8	Address:	2929 Allen Parkway, Suite 3450 Houston, Texas 77002-6424
	Montgomery County Municipal Utility District No. 9		711 Louisiana Street, Suite 2300 Houston, Texas 77002-6760
Filed:	April 12, 2010	Granted:	August 7, 2017
Purpose:	Municipal, Industrial, and Agricultural	County:	Montgomery
Watercourse:	West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River	Watershed:	San Jacinto River Basin

WHEREAS, Applicants seek authorization to use the bed and banks of the West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River, San Jacinto River Basin, to convey their present and future groundwater-based return flows; and

WHEREAS, TPDES Permit No. WQ0011371001 authorizes a final phase combined discharge rate of 0.9 MGD (1,008.86 acre-feet/year) from two outfall points into Lake Conroe; and

WHEREAS, Applicants indicate the water will be diverted, less carriage losses, from diversion point(s) at or inland of the perimeter of Lake Conroe, Montgomery County at a maximum combined diversion rate of 3.422 cfs (1,500 gpm) for municipal, industrial, and agricultural purposes within the Districts' service areas in Montgomery County in the San Jacinto River Basin; and

WHEREAS, Lake Conroe is authorized by Certificate of Adjudication No. 10-4963, issued jointly to San Jacinto River Authority and the City of Houston; and

WHEREAS, in and subject to the terms of the "Settlement Agreement Including Terms for Water Pass-Through, Water Commitment and Encroachment" (the "Settlement Agreement") entered by the Applicants with the City of Huntsville, the City of Houston, and the San Jacinto River Authority dated July 28, 2017, Applicants have agreed to provide contractually for the term of that Settlement Agreement, to the San Jacinto River Authority and the City of Houston as owners of Certificate of Adjudication No. 10-4963, a quantity of water that is twenty-one percent (21%) of the quantity of water the Applicants actually discharge, convey, and otherwise make available for diversion from Lake Conroe pursuant to this permit. Also in that Settlement Agreement, and in the "Encroachment Agreement" entered contemporaneously by Applicants with the San Jacinto River Authority and the City of Houston, the San Jacinto River Authority and the City of Houston have given Applicants access to property on Lake Conroe for diversion facilities at the points authorized in Paragraph 3. DIVERSION of this permit; and

WHEREAS, the Texas Commission on Environmental Quality (TCEQ) finds that jurisdiction over the application is established; and

WHEREAS, Applicants submitted an accounting plan on October 30, 2009, which was accepted by the Executive Director; and

WHEREAS, the Executive Director recommends special conditions be included in the permit; and

WHEREAS, no requests for a contested case hearing were received for this application; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality in issuing this water use permit;

NOW, THEREFORE, Water Use Permit No. 12510 is issued to Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9 subject to the following terms and conditions:

1. USE

Permittees are authorized to use the bed and banks of the West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River, San Jacinto River Basin, to convey their current and future groundwater-based return flows for subsequent diversion and reuse of up to 1,008.86 acre-feet per year (less losses) of those return flows for municipal, industrial and agricultural purposes within their service areas in Montgomery County in the San Jacinto River Basin.

2. DISCHARGE

TPDES Permit No. WQ0011371001 authorizes the Permittees to discharge up to 1,008.86 acre-feet of water per year (0.9 MGD) into Lake Conroe on the West Fork San Jacinto, tributary of the San Jacinto River, San Jacinto River Basin, at two points as described below:

Outfall 1 - Latitude 30.390833°N, Longitude 95. 604722°W, also bearing N81.350000°E, 5,270 feet from the westernmost corner of the W.C. Clark Survey, Abstract No. 3, Montgomery County.

Outfall 2 - Latitude 30.389722°N, Longitude 95.604167°W, also bearing S34.531667°W, 237 feet from the east corner of Lot 44 in Block 36 of Walden On Lake Conroe, Section 5 out of the William Clark Survey, Abstract No. 6, Montgomery County.

3. DIVERSION

Permittee is authorized to divert the groundwater-based return flows at a maximum combined diversion rate of 3.422 cfs (1,500 gpm) from a point or points to be determined at or inland from the perimeter of Lake Conroe.

4. TIME PRIORITY

The groundwater-based return flows authorized to be conveyed via the bed and banks of a State watercourse in this permit do not have a priority date and are not subject to priority calls from downstream senior water rights.

5. SPECIAL CONDITIONS

A. The diversions authorized by this permit are dependent upon potentially interruptible return flows or discharges and are conditioned on the availability of those discharges. The right to divert the discharged return flows is subject to revocation if all discharges become permanently unavailable for diversion. Should all discharges become permanently unavailable for diversion, Permittees shall immediately cease diversion under this permit and either apply to amend the permit or voluntarily forfeit the permit. If Permittees do not amend or forfeit the permit, the Commission may begin proceedings to cancel this permit. This permit is subject to reduction if the return flows are not available in quantities and qualities sufficient to fully satisfy the permit. Permittees shall only divert the return flows that are actually discharged, and if there is a permanent reduction in available return flows, Permittees shall immediately seek an amendment to the permit to reflect the reductions.

B. Permittees shall only divert and use groundwater-based return flows pursuant to Paragraph 1. USE and Paragraph 3. DIVERSION in accordance

with the most recently approved accounting plan. Permittees shall maintain the plan in electronic format and make the data available to the Executive Director and the public upon request. Any modifications to the accounting plan shall be approved by the Executive Director. Any modification to the accounting plan that changes the permit terms must be in the form of an amendment to the permit. Should Permittees fail to maintain the accounting plan or notify the Executive Director before making any such modifications to the plan, Permittees shall immediately cease diversion of discharged return flows and either apply to amend the permit or voluntarily forfeit the permit. If Permittees fail to amend the accounting plan or forfeit the permit, the Commission may begin proceedings to cancel the permit. Permittees shall immediately notify the Executive Director upon modification of the accounting plan and provide copies of the appropriate documents effectuating such changes.

C. Prior to diversion of groundwater-based return flows in excess of the amount currently authorized by TPDES Permit No. WQ0011371001, described in Paragraph 2. DISCHARGE, Permittees shall apply for and be granted the right to reuse those return flows. Permittees shall amend the accounting plan to include future discharges of groundwater-based return flows prior to diverting said return flows.

D. To the extent that the exercise of the authority granted in Paragraph 3. DIVERSION, requires an easement or agreement for installation of diversion works upon the land of another, Permittees shall, prior to the diversion and use of the groundwater-based return flows, submit a signed document showing that such easement or agreement exists.

E. To the extent that Special Condition 5.D. of this Permit requires submission of an easement or agreement, the exercise of rights under Paragraph 3. DIVERSION is conditioned upon the continued effectiveness of such easement or agreement. Upon expiration of the easement or agreement, Permittees shall immediately cease diversion of the water and either apply to amend the permit or voluntarily forfeit the permit. If Permittees fail to acquire and maintain the easement or agreement, or forfeit the permit, the Commission may begin proceedings to cancel the permit. The Permittees shall immediately notify the Commission upon amendment or expiration of the easement or agreement and provide copies of appropriate documents effectuating such changes.

F. Permittees shall implement measures to minimize impacts to aquatic resources due to entrainment or impingement including, but not limited to, the installation of screens at the diversion facilities with a mesh size that will provide for a maximum flow through velocity of 0.5 feet per second.

G. Permittees shall install a measuring device which accounts for, within 5% accuracy, the quantity of water diverted from Lake Conroe. Permittees shall allow representatives of the TCEQ reasonable access to the property to inspect the measuring device.

H. The exercise of rights under Paragraph 3. DIVERSION is conditioned upon the continued effectiveness of both: 1) the Settlement Agreement identified in the recitals of this permit and 2) authorization to use property granted by the San Jacinto River Authority and the City of Houston in the Settlement Agreement and the Encroachment Agreement identified in the recitals of this permit.

This water use permit is issued subject to all superior water rights in the San Jacinto River Basin.

Permittees agree to be bound by the terms, conditions, and provisions contained herein and such agreement is a condition precedent to the granting of this permit.

All other matters requested in the application which are not specifically granted by this water use permit are denied.

This water use permit is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of state water resources exercised by the Commission.

For the Commission

Date Issued: **August 7, 2017**

City of
Huntsville
Incorporated in 1845 under the Republic of Texas

8-15-2011

Ms. Kellye Rila, Section Manager
Water Rights Permitting and Availability Section
Texas Commission on Environmental Quality
P.O. Box 13087, MC-160
Austin, Texas 78711-3087

RE: Application for Bed and Banks Permit for Authorization for City of Huntsville, TX to Convey Existing and Future Return Flows in the San Jacinto River Basin.

Dear Ms. Rila:

On behalf of the City of Huntsville (COH or City), and pursuant to the requirements of § 11.042 and other provisions of the Texas Water Code determined to be appropriate, please accept this application requesting a permit to authorize the use of the City's groundwater-based and imported return flows and the use of the bed and banks of several watercourses in Montgomery County, Texas, to convey for subsequent diversion, by others, the existing and future return flows from two existing wastewater treatment plants owned and operated by the City of Huntsville, Department of Public Utilities.

In accordance with TCEQ rules 30 TAC §295, Division 1 – General Requirements and Division 11 – Requirements for Applications for Authorization to Use Bed and Banks, please find the following information to support this application:

I. Background Information

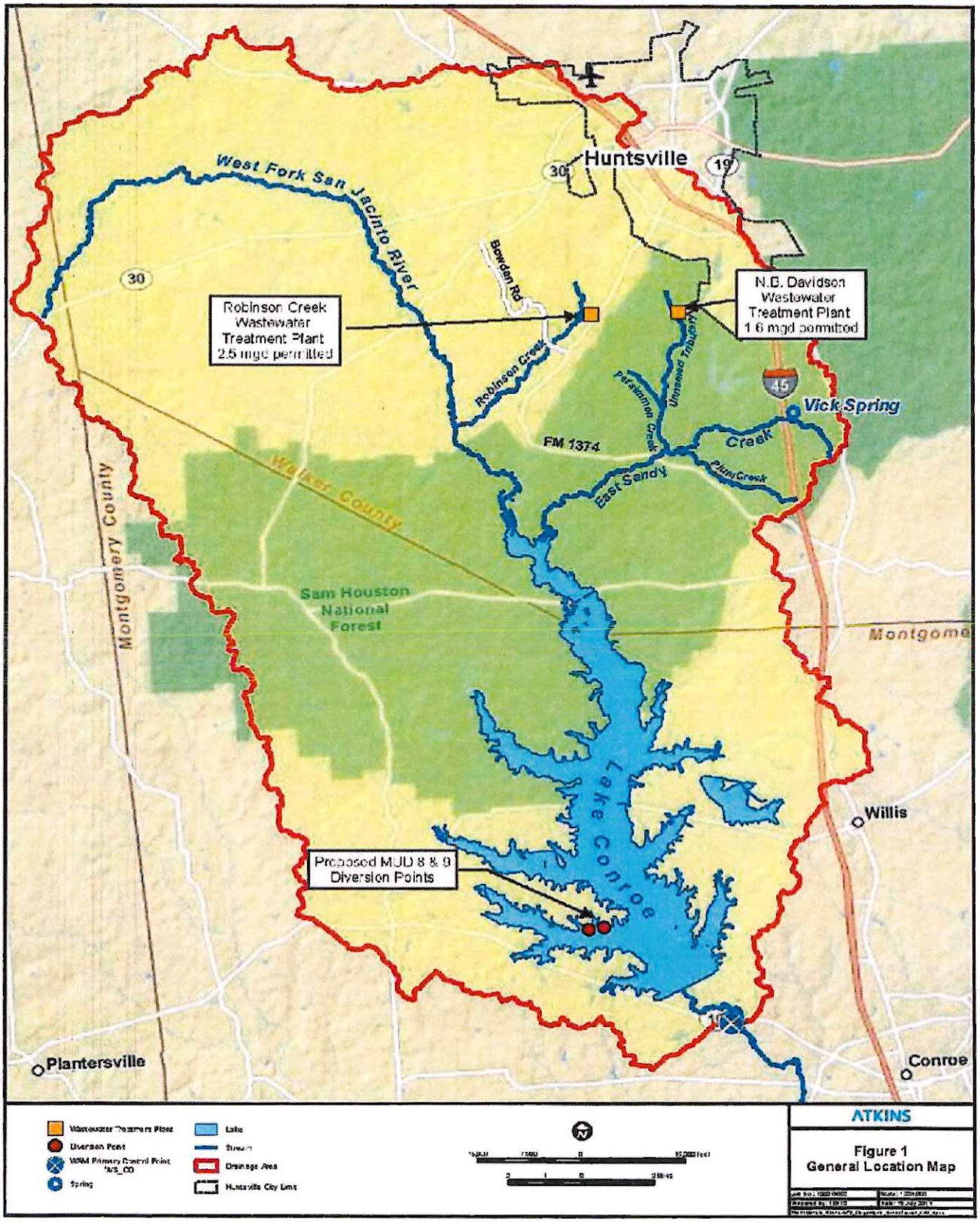
The COH has entered into an agreement with Montgomery County Municipal Utility Districts (MUDs) 8 and 9 to sell the City's current and future wastewater effluent from the COH's Robinson Creek and N. B. Davidson Wastewater Treatment Plants (WWTP) to the MUDs. The MUDs' service area is located downstream, bordering the perimeter of Lake Conroe on the West Fork San Jacinto River. Figure 1 is a general location map that identifies the locations of the outfalls for the two City WWTPs and the diversion points on Lake Conroe where the conveyed effluent is to be withdrawn by the MUDs.

Historically, the MUDs have relied solely on groundwater from the Gulf Coast aquifer to meet their water supply needs. With the availability of the COH's return flows, the MUDs will be able to reduce their future use of groundwater and thereby comply with the Lone Star Groundwater Conservation District's mandated groundwater-use reduction rules in Montgomery County. This application requests authorization to use of the bed and banks of several creeks and streams tributary to the West Fork San Jacinto River and the West Fork San Jacinto River itself to convey the COH's return flows to the MUDs' proposed intake. This bed and banks permit will facilitate the MUDs' ability to meet their current and future water demands in compliance with the groundwater district's rules.

City of

Huntsville

Incorporated in 1845 under the Republic of Texas



City of
Huntsville
Incorporated in 1845 under the Republic of Texas

II. Applicant Information (30 TAC §295.3)

Name of Applicant: City of Huntsville, Texas, Department of Public Utilities
Address: 448 State Highway 75 N, Huntsville, Texas 77320
Federal ID Number: 746001426
Principal Contact: Ms Carol Reed, Public Utilities Director [redacted]
Contact Information: Phone: (936) 294-5768
Facsimile: (936) 294-9032

III. Source of Supply (30 TAC §295.4)

Water supply for the City of Huntsville is obtained from two sources: (a) seven groundwater wells owned and operated by the City, and (b) surface water imported from the Trinity River Basin that is treated at the Huntsville Regional Water Supply System (HRWSS), which is owned and operated by the Trinity River Authority (TRA) of Texas . These two sources are blended, as needed, to provide an ample supply of water year round for the City's customers. The water source for the return flows from the two wastewater treatment plants referenced in this application is comprised of approximately 90% groundwater and 10% surface water, with the latter supply originating from the HRWSS. Annual amounts of effluent historically discharged from these plants are summarized in Table 1.

Year	Annual Discharge (mgd)	
	N B Davidson WWTP	Robinson Creek WWTP
1999	0.99	Robinson Creek WWTP discharges began in 2003
2000	1.21	
2001	1.26	
2002	1.16	
2003	0.73	0.20
2004	0.77	0.26
2005	0.59	0.65
2006	0.57	0.65
2007	0.77	0.65
2008	0.65	0.85
2009	0.60	0.95
2010	0.54	1.13
2006-10 Average	0.63	0.85
Permitted (mgd)	1.60	2.50

1 Water from the Huntsville Regional Water Supply System originates as surface water from the Trinity River Basin and is supplied to the City of Huntsville through a contract with the Trinity River Authority.

Pertinent information regarding the COH's Robinson Creek and N. B. Davidson WWTPs as the source of the return flows for the subject bed and banks permit is summarized below. Attachment A contains a detailed map based on the *Huntsville* 7.5' Series U.S. Geological Survey topographic sheet that identifies the locations of the Robinson Creek and the N. B. Davidson WWTP outfalls within the San Jacinto River Basin where the subject return flows are discharged. Attachment B contains a similar map based on the same topographic sheet that shows the locations of the downstream diversion points on Lake Conroe where the MUDs propose to withdraw the conveyed return flows. Photographs of the streams along the conveyance route downstream of the two WWTP outfalls and of the proposed diversion points on Lake Conroe are contained in Attachment C. Through the Texas Pollutant Discharge Elimination System (TPDES), the existing discharges of effluent from the Robinson Creek and N. B. Davidson WWTPs are already permitted and subject to compliance with State and Federal discharge regulations and water quality standards; consequently, the proposed bed and banks permit authorizing the conveyance and diversion of these return flows will not change or affect the existing water quality of the receiving water bodies.

A. *Robinson Creek Wastewater Treatment Plant*

TPDES Permit No. WQ0010781004 (NPDES TX0116572)
Permitted Average Annual Discharge Rate: 2.5 million gallons per day
2,801 acre-feet per year
Permitted Maximum 2-Hour Discharge Rate: 5,208 gallons per minute
Latitude of Outfall: 30.645547° N
Longitude of Outfall: 95.595334° W
Location of Outfall: 24.564645° E, 1,339.95 feet from the southwest corner of the W. McDonald tract; Original Survey No. 471; Abstract No. 543 in Walker County, Texas.
2006-2010 Average Annual Flow: 0.85 million gallons per day
852 acre-feet per year
Effluent Receiving Water: Robinson Creek to West Fork San Jacinto River and then to Lake Conroe in Segment No. 1012 of the San Jacinto River Basin

B. *N.B. Davidson Wastewater Treatment Plant*

TPDES Permit No. WQ0010781002 (NPDES TX0022373)
Permitted Average Annual Discharge Rate: 1.6 million gallons per day
1,792 acre-feet per year
Permitted Maximum 2-Hour Discharge Rate: 1,778 gallons per minute
Latitude of Outfall: 30.645275° N
Longitude of Outfall: 95.553197° W
Location of Outfall: 65.693236° E, 1,918.38 feet from the southwest corner of the San Antonio & Mexican Gulf Railroad Co. tract; Original Survey No. 471; Abstract No. 552 in Walker County, Texas
2006-2010 Average Annual Flow: 0.63 million gallons per day
706 acre-feet per year
Effluent Receiving Water: Unnamed tributary of Persimmon Creek, then to Persimmon Creek, then to East Sandy Creek, and then to Lake Conroe in Segment No. 1012 of the San Jacinto River Basin

I. Amount and Purpose of Diversion and Use (30 TAC §295.5)

The purpose of the proposed diversion of the COH's wastewater effluent by MUDs 8 & 9 is to provide an additional source of water supply for the MUDs that is not dependent on groundwater pumped in Montgomery County. This additional water supply will be used by the MUDs as part of their overall water supply system to meet the present and future water needs of their customers for municipal, industrial and agricultural purposes.

Under the proposed bed and banks permit, the daily diversion and use of the COH's wastewater effluent by MUDs 8 & 9 will be limited to the quantity of effluent actually discharged from the COH's Robinson Creek and N. B. Davidson WWTPs, less carriage losses between the points of discharge and the point of diversion. A daily accounting plan will be developed and used to determine the allowable quantity of wastewater effluent that the MUDs can divert on any given day considering travel time. The stream travel time calculations for each of the WWTPs are summarized in Attachment D. For purposes of the daily accounting, based on whole-day increments, a one-day travel time has been established for the effluent to flow from the WWTP outfalls to Lake Conroe, and another day of travel time has been used for transport through Lake Conroe. Thus, the total travel time to be used in the accounting plan for conveyance of the effluent from each of the WWTPs to the MUDs' intake on Lake Conroe is 2.0 days.

At any time in the future during the time this bed and banks permit is in effect, without being amended, the maximum amount of wastewater effluent diverted by the MUDs will be limited to the sum of the maximum discharge quantities stipulated in the current TPDES permits for the COH's Robinson Creek and N. B. Davidson WWTPs, less carriage losses. The currently authorized combined average annual discharge rate for these two WWTPs is 4.1 million gallons per day, or on an annual basis 4,593 acre-feet per year.

Calculations of average carriage losses for the conveyance of the wastewater effluent from the Robinson Creek WWTP and the N. B. Davidson WWTP to the MUDs 8 & 9 intake on Lake Conroe also are described and summarized in Attachment D. For the Robinson Creek WWTP, the total travel distance is approximately 27.8 miles, and the average carriage loss has been estimated to be 2.2% of the amount of effluent discharged from the plant under conditions of average naturalized streamflow and currently-permitted WWTP discharge. For the N. B. Davidson WWTP, the total travel distance is approximately 25.0 miles, and the average carriage loss has been estimated to be 1.6% of the amount of effluent discharged from the plant under conditions of average naturalized streamflow and currently-permitted WWTP discharge. These carriage loss estimates are considered to be conservative. As explained in Attachment D, the total carriage losses are expected to be much less.

II. Diversion Point Information (30 TAC §295.6, §295.7)

The diversion point or points at or inland of the perimeter of Lake Conroe that will be used by the MUDs for the withdrawal of the COH's wastewater effluent are the same diversion points referenced in the MUDs' draft Permit No. 12510 for reuse of the MUDs' own wastewater effluent. Attachment E contains the Supplemental Diversion Point Information Sheet that was submitted by the MUDs to the TCEQ in support of the MUDs' application for Permit No. 12510, and the locations of the diversion points being considered by the MUDs pursuant to this application for reuse of the COH's wastewater effluent are identified on this sheet. Both the COH and the MUDs have the power of eminent domain. The maximum diversion rate for the

MUDs' intake facility is stipulated as 1,500 gallons per minute, or 3.42 cubic feet per second. This maximum diversion rate includes diversions made under Permit No. 12510.

VI. Surplus or Re-Use (30 TAC §295.8)

Any of the COH's wastewater effluent discharged into the San Jacinto River Basin that MUDs 8 & 9 are entitled to divert and use under this application but that is not consumptively used by MUDs 8 & 9 will either remain in or be discharged to the West Fork San Jacinto River (Lake Conroe) in the San Jacinto River Basin.

VII. Water Conservation and Drought Contingency Plans (30 TAC §295.9)

The COH has an approved water conservation and drought contingency plan on file with the TCEQ. As required by 30 TAC §288.5, the COH's Water Supply Agreement with the MUDs at Section 2.05(g) includes the requirement that the MUDs develop and implement water conservation and drought contingency plans using the applicable elements of Chapter 288 of Title 30 of the Texas Administrative Code. The Water Supply Agreement between the COH and the MUDs is attached as Attachment F.

VIII. Storage in Another's Reservoir (30 TAC §295.12)

Under the proposed bed and banks permit being applied for herein, the COH is not seeking authority to store, nor will it store, in any reservoir on an intervening watercourse any of the wastewater effluent being conveyed from the COH's Robinson Creek and N. B. Davidson WWTPs to the MUDs 8 & 9 intake on Lake Conroe.

IX. Consistency With State and Regional Water Plans (30 TAC §295.16)

Indirect reuse by MUDs 8 & 9 is one of several recommended water management strategies to meet the future water needs in Montgomery County identified in the 2011 Region H Regional Water Plan. This application serves to expand the ongoing reuse project of MUDs 8 & 9.

X. Existing Water Rights Granted Based on Use or Availability of COH Return Flows

All of the existing water rights located downstream of the outfalls for the COH's Robinson Creek and N. B. Davidson WWTPs are listed by certificate of adjudication or permit number in Table 2. These are the water rights that potentially could divert or impound the return flows discharged from these WWTPs because they are located on a downstream watercourse that physically could convey these return flows, including the West Fork San Jacinto River, Lake Conroe, Lake Houston, the San Jacinto River, and the Houston Ship Channel. Included in the table for each water right are the priority date, owner's name, description of the authorized water right activity, and the authorized annual diversion amount.

The water rights in Table 2 numbered 1 through 4 all have priority dates that are considerably older than 1974, the first year return flows were discharged from either of the two COH WWTPs (N. B. Davidson WWTP startup was September 1974 and the Robinson Creek WWTP initiated discharges in October, 2002); hence, these water rights could not have been granted based on the availability of the subject return flows. The water rights numbered 5 through 9, 12 and 13, all with priority dates more recent than 1974, are all located on the tidally-influenced Houston Ship

TABLE 2
EXISTING WATER RIGHTS ON WEST FORK SAN JACINTO RIVER, SAN JACINTO RIVER, AND HOUSTON SHIP CHANNEL DOWNSTREAM OF CITY OF HUNTSVILLE WWTP OUTFALLS IN SAN JACINTO RIVER BASIN

ITEM NO.	WATER RIGHT NO.	CERTIFICATE OF ADJ. OR PERMIT	OWNER	PRIORITY DATE	AUTHORIZED WATER RIGHT ACTIVITY	DIVERSION AMOUNT ac-ft/yr
1	10-4965	COA	City of Houston	5/7/1940	Lake Houston Impoundment & Diversions	168,000
2	10-4964	COA	San Jacinto River Authority	7/25/1942	Highlands Reservoir Lake Houston Diversion	55,000
3	10-3980	COA	Roy A Seaberg et al Riceland Properties	12/7/1942	Irrigation Diversions 2 Off-Channel Lakes	1,600
4	10-4963	COA	San Jacinto River Authority City of Houston	1/12/1959	Lake Conroe Impoundment & Diversions	105,500
5	10-5299	Permit	Southwest Shipyard LP	6/22/1990	Saline Diversion - Barge Washing	67
6	10-5334	Permit	Coopers Marine Service	11/27/1990	Saline Diversion - Barge Washing	0.4
7	10-5340	Permit	San Jacinto Barge Repair	1/16/1991	Saline Diversion - Barge Washing	30
8	10-5716	Permit	Magellan Terminals Holdings	11/7/2000	Houston Ship Channel Saline Diversion	1,540
9	10-5734	Permit	Texas Parks & Wildlife Dept.	3/5/2001	Houston Ship Channel Saline Diversion	213
10	10-5807	Permit	San Jacinto River Authority City of Houston	6/19/2003	Lake Houston Diversions	28,200
11	10-5808	Permit	San Jacinto River Authority City of Houston	6/19/2003	Lake Houston Diversions	80,000
12	10-12393	Permit	Intercontinental Terminals Co.	1/26/2009	Houston Ship Channel Saline Diversion	60
13	10-12585	Temp. Permit	Exxon Mobil Corp.	Issued 8/13/2010 Expires 8/13/2013	Houston Ship Channel Saline Diversion	1,452

Channel and divert saline water for their operations; consequently, it is unlikely these water rights were granted based on the use or availability of the subject return flows. The remaining two water rights in Table 2, numbers 10 and 11 for diversions from Lake Houston, were granted after the discharge of return flows was begun from both the Robinson Creek and the N. B. Davidson WWTPs; however, the authorized diversion amounts for these two water rights were determined based on simulations using the Run 3 version of TCEQ's water availability model (WAM) for the San Jacinto River Basin. This particular WAM version does not include nor account for any return flows from WWTPs in the basin; therefore, these two water rights also were not granted based on the availability of the return flows from the COH WWTPs. It is concluded, then, that none of the existing water rights located on watercourses downstream from either the Robinson Creek or the N. B. Davidson WWTPs were granted based on the use or availability of the return flows from these plants.

CLOSURE

Attached herewith is a check in the amount of $4,925.50, which is an estimate of the initial fees required to process this application. If additional fees are required at this time or in the future for notice or other activities, these fees will be paid by the City upon request from TCEQ.

We would appreciate your timely review and processing of this application and the supporting materials to achieve administrative completeness as soon as possible. The MUDs 8 & 9 are subject to a compressed time schedule for implementing this reuse project because of time constraints imposed by the Lone Star Groundwater Conservation District's mandated groundwater reduction rules in Montgomery County.

Should you have any questions or need additional information, please do not hesitate to contact me. Thank you for your time and consideration of this application.

Sincerely,
CITY OF HUNTSVILLE, TEXAS

Carol Reed

Carol Reed, Public Utilities Director

SWORN TO AND SUBSCRIBED before me this 19 day of August, 2011.

ANGELA LAWLER MARTIN
Notary Public, State of Texas
My Commission Expires
February 23, 2012

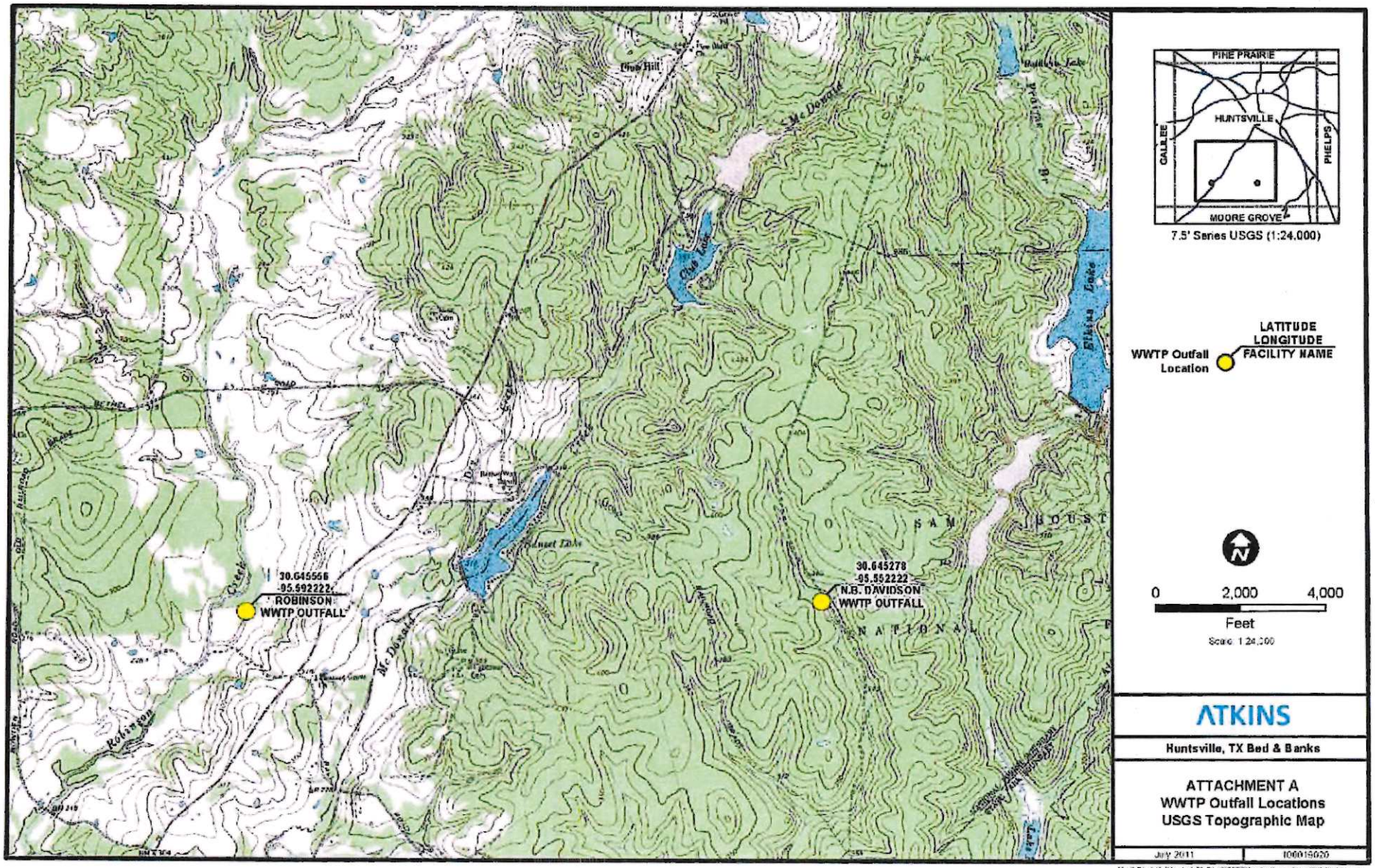
Angela Lawler Martin
Notary Public for the State of Texas

c: Emily Rogers, Bickerstaff, Heath, Delgado & Acosta, LLP
Robert J. Brandes, Ph.D., P.E., Atkins

Attachment A – USGS Map Showing Huntsville WWTP Outfall Locations
Attachment B – USGS Map Showing MUDs 8 & 9 Lake Conroe Diversion Points
Attachment C – Photographs of Streams Along Effluent Conveyance Route
Attachment D – Carriage Loss and Travel Time Calculations
Attachment E – MUDs 8&9 Application No. 12510 Supplemental Diversion Point Information
Attachment F – Water Supply Agreement between the City of Huntsville and MUDs 8&9

ATTACHMENT A

USGS Map Showing Huntsville WWTP Outfall Locations



ATKINS

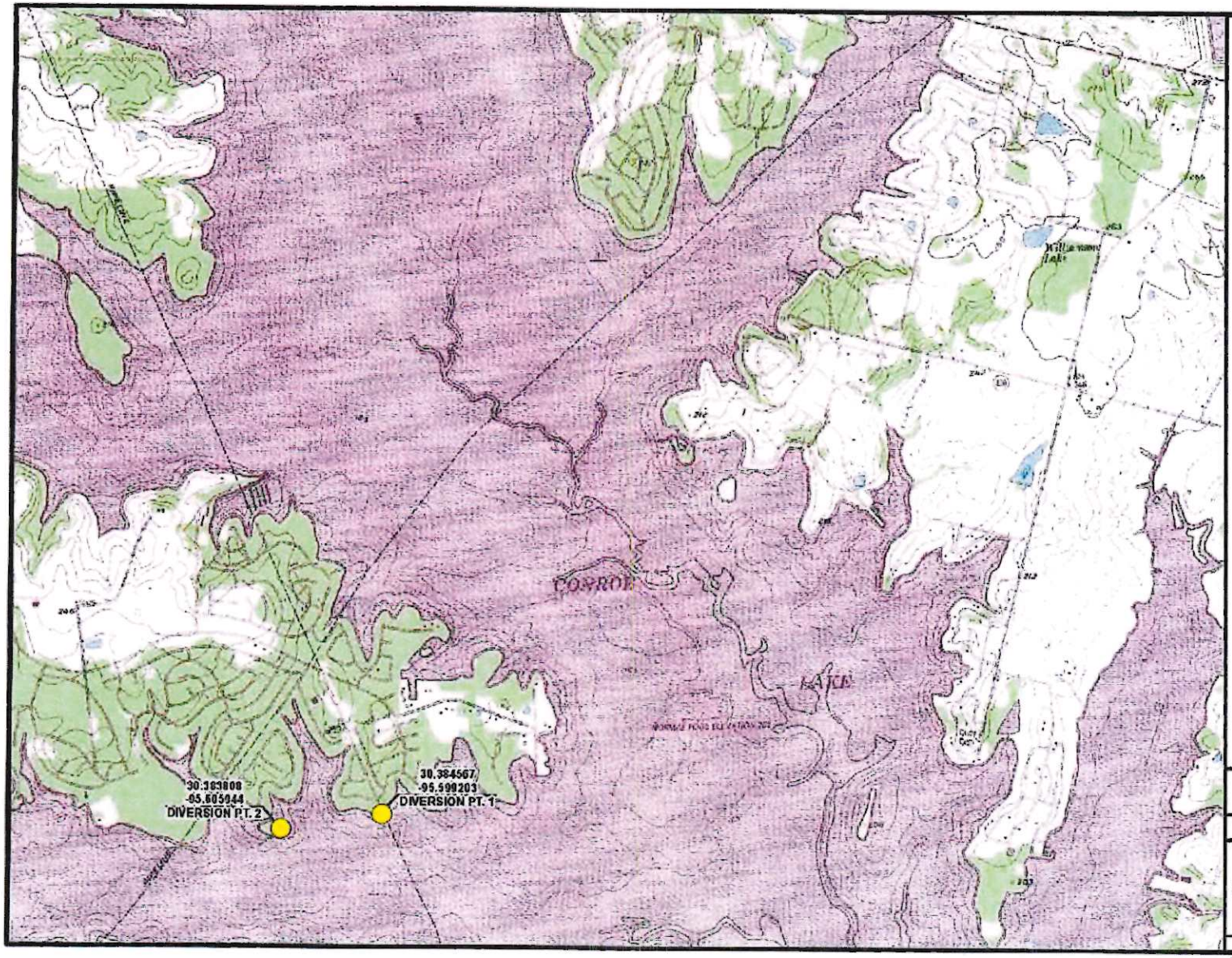
Huntsville, TX Bed & Banks

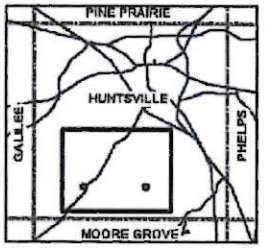
ATTACHMENT A
WWTP Outfall Locations
USGS Topographic Map

July 2011 | 100015020

ATTACHMENT B

USGS Map Showing MUDs 8 & 9 Lake Conroe Diversion Points





7.5' Series USGS (1:24,000)

Diversion Point — LATITUDE / LONGITUDE / NUMBER

N

0 2,000 4,000

Feet

Scale: 1:24,000

ATKINS

Huntsville, TX Bed & Banks

ATTACHMENT B
Proposed MUDs 8 & 9 Diversion Points
USGS Topographic Map

July 2011 | 100019020

ATTACHMENT C

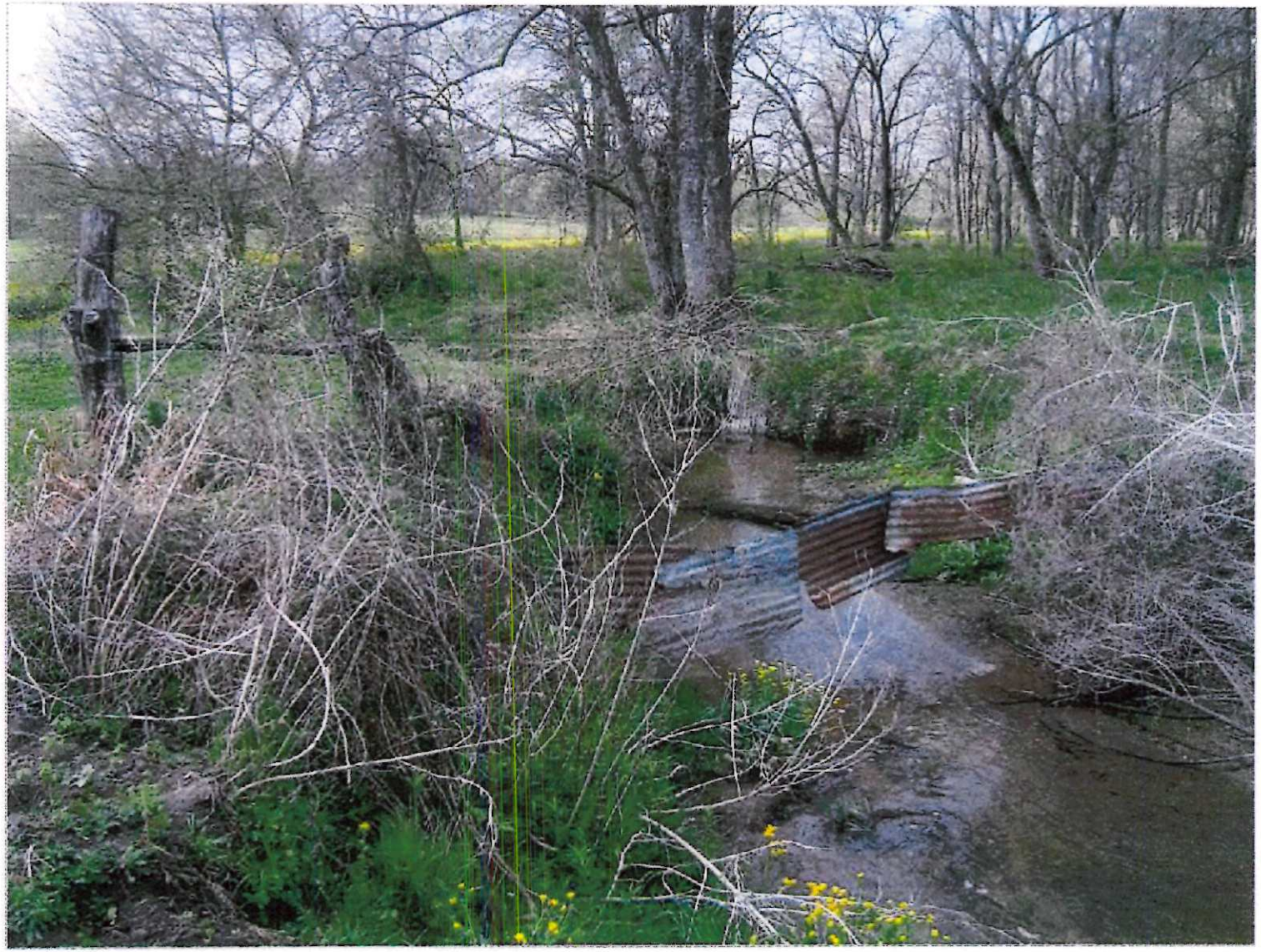
Photographs of Streams Along Effluent Conveyance Routes and Diversion Point Sites on Perimeter of Lake Conroe



Robinson Creek WWTP - Outfall



Robinson Creek WWTP – 20 Feet Downstream of Outfall (Arrow) Looking Upstream



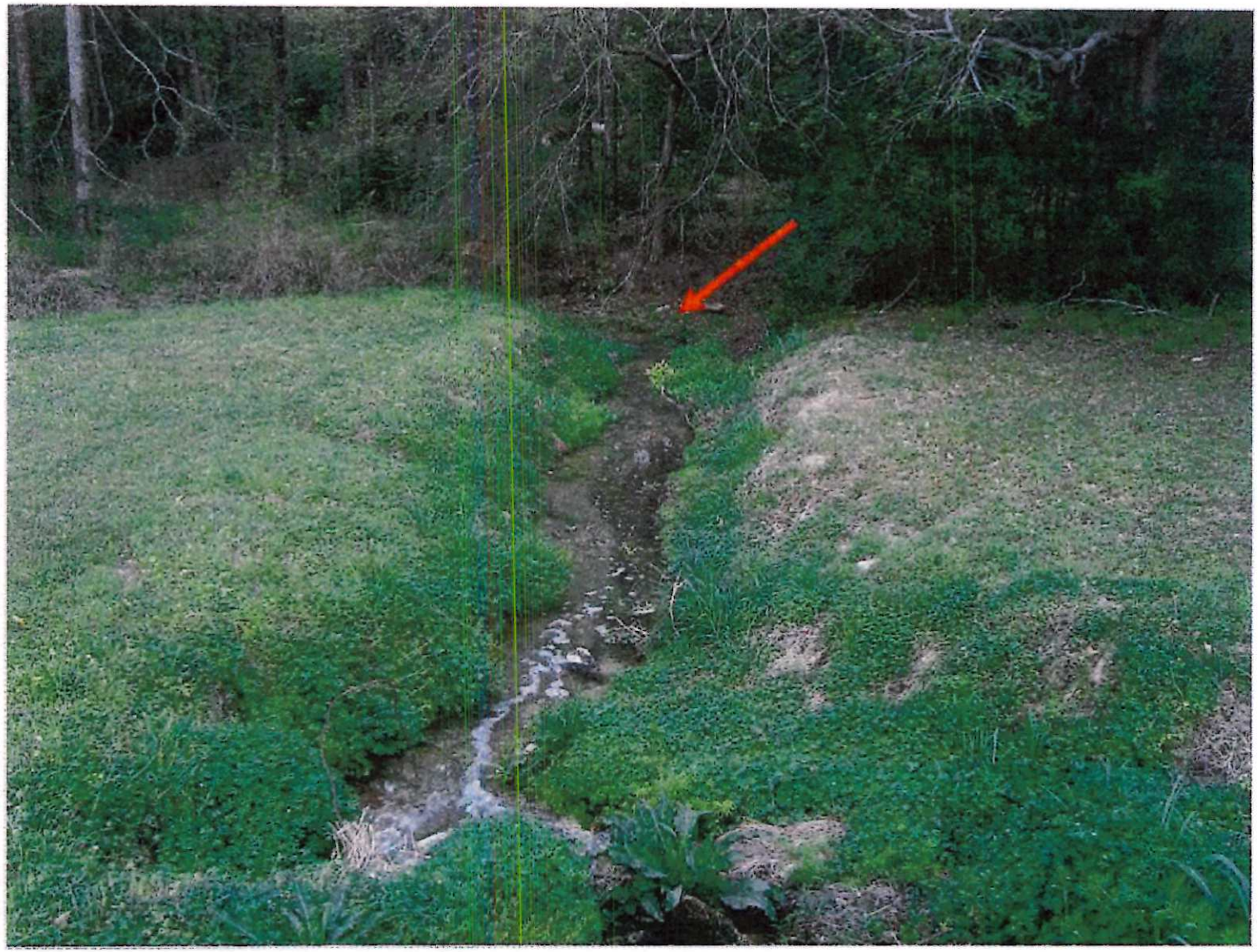
Robinson Creek WWTP – Looking Downstream ~30 Feet Downstream of Outfall



Robinson Creek WWTP – Looking Downstream ~100 Feet Downstream of Outfall



N. B. Davidson WWTP - Outfall



N. B. Davidson WWTP – 5 Feet Downstream of Outfall Prior to Flowing into Unnamed Tributary of Persimmon Creek (Arrow)



N. B. Davidson WWTP – Looking Upstream on Unnamed Tributary of Persimmon Creek at Confluence with Outfall



N. B. Davidson WWTP – Looking Downstream on Unnamed Tributary of Persimmon Creek at Confluence with Outfall



Robinson Creek ~1 Mile Upstream of Robinson Creek WWTP at Robinson Creek Road (or Bethel Road) Looking Downstream



Robinson Creek ~1 Mile Upstream of Robinson Creek WWTP at Robinson Creek Road (or Bethel Road) Looking Upstream



Robinson Creek ~1.5 Miles Downstream of Robinson Creek WWTP at Bowden Road Looking Downstream



Robinson Creek ~1.5 Miles Downstream of Robinson Creek WWTP at Bowden Road Looking Upstream



Robinson Creek ~1.5 Miles Downstream of Robinson Creek WWTP ~200 Feet Downstream of Bowden Road Looking Downstream



East Sandy Creek at FM 1374 (Possum Walk Road) Looking Upstream



East Sandy Creek at FM 1374 (Possum Walk Road) Looking Downstream



Unnamed Tributary of East Sandy Creek Uninfluenced by N. B. Davidson WWTP Discharge but with Sustained Flow Looking Upstream



Unnamed Tributary of East Sandy Creek Uninfluenced by N. B. Davidson WWTP Discharge but with Sustained Flow Looking Downstream



Plum Creek, Tributary of East Sandy Creek, Uninfluenced by N. B. Davidson WWTP Discharge but with Sustained Flow at Dipping Vat Road Looking Upstream



Plum Creek, Tributary of East Sandy Creek, Uninfluenced by N. B. Davidson WWTP Discharge but with Sustained Flow at Dipping Vat Road Looking Downstream



Upper Reach of East Sandy Creek near Vick Spring Upstream of Interstate 45 Looking Upstream



Upper Reach of East Sandy Creek near Vick Spring Upstream of Interstate 45 Looking Downstream (Visible Spring Discharge at Arrow)



Visible Spring Discharge into Upper Reach of East Sandy Creek near Vick Spring Upstream of Interstate 45



MUDs 8 & 9 - Road View of Proposed Lake Conroe Intake Option 1 Pipeline Easement (Intake Site Not Visible)



MUDs 8 & 9 - Road View of Proposed Lake Conroe Intake Option 2 Pipeline Easement and Intake Sit

ATTACHMENT D

Carriage Loss and Travel Time Calculations

ATTACHMENT D

CARRIAGE LOSS AND TRAVEL TIME CALCULATIONS
City of Huntsville Bed and Banks Application

The potential for subsurface seepage losses along the streams downstream of the City of Huntsville's (COH or City) Robinson Creek and N. B. Davidson Wastewater Treatment Plants (WWTP) to Lake Conroe was assessed based on information regarding local soil characteristics, hydrogeologic conditions, and springs in the area, and as a result of these analyses, it has been concluded that these streams most likely are not flow-losing streams but rather flow-gaining streams as far as seepage is concerned. This flow-gaining condition has been substantiated by sustained flows that were observed in tributary streams in the area that were not receiving effluent from either of the two COH WWTPs. Photographs of these streams that were taken during a site visit to the area on March 23rd, 2011, are presented on pages C-15 through C-18 of Attachment C that accompanies this application. Photographs of Vick Spring in the headwaters of East Sandy Creek, the principal receiving stream for the N. B. Davidson WWTP, also are shown on pages C-19 through C-21 of Attachment C. Hence, with this evidence of sustained base flows in the area to support the soils and hydrogeologic assessment, it is considered very unlikely that the wastewater effluent being discharged into the receiving streams from the two WWTPs experiences any significant losses due to channel seepage.

Based on the current surface water rights master file posted by the Texas Commission on Environmental Quality (TCEQ), there are no surface water rights of record authorized on any of the receiving streams downstream of the Robinson Creek and N. B. Davidson WWTPs and upstream of West Fork San Jacinto River; hence, it is also not likely there are any significant diversions of flow from these streams. Furthermore, given that no extensive stands of aquatic plants were observed along these streams during the March 23rd, 2011, site visit, it does not appear that plant uptake is a significant factor that could cause streamflow losses. Any potential losses of streamflow due to evapotranspiration would likely be offset by reduced surface evaporation resulting from tree canopy that extends along most of the streams. Consequently, it has been concluded that the primary cause of any reduction in the quantity of wastewater effluent that may occur as the effluent is conveyed down these streams most likely will be due to surface evaporation, and it is these evaporation losses that have been quantified for purposes of establishing carriage losses for the proposed COH bed and banks permit.

For assessing the stream channel geometry and travel times related to the conveyance of wastewater effluent from the COH's Robinson Creek and N. B. Davidson WWTPs to Lake Conroe on the West Fork San Jacinto River, uniform flow calculations have been performed for selected stream segments. Calculations have been made for two stream segments downstream of the Robinson Creek WWTP: (1) from the WWTP outfall on Robinson Creek to the Bowden Road crossing of Robinson Creek, a distance of approximately 1.5 miles; and (2) from Bowden Road to the mouth of Robinson Creek at its confluence with the West Fork San Jacinto River, a distance of approximately 4.9 miles. For the stream reach downstream of the N. B. Davidson WWTP, two segments also have been considered: (1) from the WWTP outfall on an unnamed tributary of Persimmon Creek to the confluence of Persimmon Creek with East Sandy Creek

(just upstream of the FM 1374 crossing), a distance of approximately 4.8 miles; and (2) along East Sandy Creek from Persimmon Creek to Lake Conroe, a distance of approximately 5.6 miles.

For these calculations, it has been assumed that the discharge from each of the City's WWTPs is equal to the currently authorized average annual amount specified in their respective TPDES permits. For the Robinson Creek WWTP, this is 2.5 million gallons per day (mgd), which is equivalent to a streamflow of 3.87 cubic feet per second (cfs) or an average annual flow of 2,801 acre-feet. For the N. B. Davidson WWTP, this authorized average annual discharge is 1.6 mgd, which is equivalent to a streamflow of 2.48 cfs or an average annual flow of 1,792 acre-feet.

Average flows for the streams conveying these discharges also have been assumed based on naturalized flows as used in the TCEQ's water availability models (WAM). Since there are no existing water rights on the subject stream segments, naturalized flows provide a useful representation of actual streamflow conditions. While there are some water rights located on other tributaries of East Sandy Creek that do appropriate some streamflow, the impact of these on downstream flows are insignificant based on a comparison of simulated regulated flows with corresponding naturalized flows. The naturalized flow data set from the San Jacinto Basin WAM for the primary control point identified as WS-CO located on the West Fork San Jacinto River just below Lake Conroe has been extracted and used to derive average annual naturalized flows at specific locations on the subject stream segments based on relative drainage area sizes. These values are summarized below:

STREAM LOCATION	AC-FT/YEAR
<u>Below Robinson Creek WWTP</u>	
Robinson Creek at Robinson Creek WWTP Outfall	5,227
Robinson Creek at Bowden Road Crossing	5,693
Robinson Creek at W. F. San Jacinto River Confluence	8,278
West Fork San Jacinto River at Lake Conroe	98,012
<u>Below N. B. Davidson WWTP</u>	
Unnamed Persimmon Ck Tributary at Davidson WWTP	182
Mouth of Unnamed Persimmon Ck Tributary	1,672
Persimmon Creek at East Sandy Creek Confluence	2,518
East Sandy Creek at Persimmon Creek Confluence	14,821
Mouth of East Sandy Creek at Lake Conroe	19,520

Observations of the various streams at available access points made during the site visit to the area on March 23rd, 2011, were used to establish general stream channel and flow characteristics for the subject streams, and this information, together with the reported discharges from the WWTPs on that day, were used to perform a general calibration of the uniform flow representations of channel hydraulics. The calibrated uniform flow calculation process then was applied using the permitted discharges from the WWTPs and the average naturalized flows to determine estimates of average channel surface areas and travel times. These calculations are presented in Table D-1 for the stream segments downstream of the Robinson Creek WWTP and in Table D-2 for the stream segments downstream of the N. B. Davidson WWTP. Because access limitations did not allow field observations of the channel of the West Fork San Jacinto River to be made between the mouth of Robinson Creek and Lake Conroe, it has been assumed

for purposes of the surface area and travel time calculations that the average width of this reach is 50 feet and its average velocity is 1.0 feet per second, values that appear reasonable based on aerial photography and the uniform flow calculations for Robinson Creek and East Sandy Creek. Using these parameter values with the average annual naturalized flow for the West Fork San Jacinto River at the headwaters of Lake Conroe, the uniform flow calculations produced an average depth of 2.79 feet, which also appears to be reasonable for this stream reach.

The surface areas resulting from the uniform flow calculations for the stream segments downstream of the Robinson Creek and the N. B. Davidson WWTPs under average naturalized flow conditions with the WWTP discharges assumed at their currently permitted values have been used in the evaporation loss calculations. These surface area values are highlighted and listed in Column 25 in Tables D-1 and D-2. The evaporation loss calculations are shown in Table D-3 for the stream segments downstream of the Robinson Creek WWTP and the N. B. Davidson WWTP. In these analyses, historical 1954-2010 average annual lake evaporation quantities from the Texas Water Development Board (TWDB) for Quadrant 712 are multiplied times the surface areas of the different stream segments under average naturalized flow and currently-permitted WWTP discharge conditions to calculate average annual evaporation loss quantities expressed in acre-feet per year. The portion of these evaporation losses attributable to the effluent flowing in each of the stream segments then has been determined by multiplying the evaporation loss amount times the fraction of the total flow in the segment that is comprised of effluent, both expressed as annual flow quantities. The sum of these effluent-based average annual evaporation quantities for all of the conveyance segments downstream of each WWTP then has been divided by the currently-permitted annual discharge from each WWTP to arrive at a percentage value for the evaporation losses associated with the discharge from each WWTP. As shown in Table D-3, this value is 1.02% for the stream segments downstream of the Robinson Creek WWTP and 0.67% for the stream segments downstream of the N. B. Davidson WWTP.

While none of the wastewater effluent from the COH's WWTPs will be stored in Lake Conroe, the effluent will be conveyed through Lake Conroe to the diversion point(s) on the perimeter of Lake Conroe where the effluent will be withdrawn by the Montgomery Municipal Utility District Nos. 8 and 9 (MUDs 8 & 9). The additional evaporation loss from Lake Conroe that may result from the conveyance of the effluent is minuscule when considering the extremely small increase in the surface area of Lake Conroe that the conveyance of the effluent may cause. For example, if Lake Conroe is assumed to be only half full with approximately 208,114 acre-feet of water in storage, the surface area of the reservoir would cover about 12,638.28 acres according to the most recent volumetric survey of Lake Conroe that was conducted by the TWDB in 1996[2]. With one day's volume of permitted effluent (12.6 acre-feet) from both the Robinson Creek and N. B. Davidson WWTPs being conveyed through the reservoir to the MUDs 8 & 9 intake, the surface area of the reservoir potentially could increase by about 0.44 acres, or only about 0.0035% of the total lake surface area. This small percentage increase in the surface area of Lake Conroe, and the correspondingly small increase in the evaporation loss from the reservoir, due to the conveyance of the COH's wastewater return flows is considered to be de minimus and beyond the realm of any reasonably discernable impact on storage in Lake Conroe or the available water supply from the reservoir.

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[2] "Volumetric Survey of Lake Conroe"; prepared for the San Jacinto River Authority; Texas Water Development Board; Austin, Texas; March 10, 2003.

However, in order to provide for some level of losses from Lake Conroe that arguably may be attributable to the conveyance of the subject return flows, additional loss factors have been determined for Lake Conroe considering the evaporation loss percentages calculated above for conveying the return flows down the receiving streams to Lake Conroe. These additional loss factors have been derived based on the relative return flow travel distances along the streams to Lake Conroe and through Lake Conroe to the MUDs 8 & 9 proposed intake location for each of the WWTPs. For the Robinson Creek WWTP, these travel distances are 12.9 miles for the stream segments and approximately 14.9 miles for Lake Conroe, which proportionally produces a loss factor of 1.18% for the Lake Conroe reach (1.02% x 14.9 / 12.9). Similarly, for the N. B. Davidson WWTP, these travel distances are 10.4 miles for the stream segments and approximately 14.6 miles for Lake Conroe, which proportionally produces a loss factor of 0.94% for the Lake Conroe reach (0.67% x 14.6 / 10.4). While the additional losses based on these loss factors substantially exceed what is believed to be the actual losses attributable to the conveyance of the COH return flows through Lake Conroe, they nonetheless have been adopted for purposes of the subject bed and banks permit in order to be overly conservative with regard to accounting for overall losses.

Based on the analyses described herein, the final carriage loss factors determined for purposes of this application for a bed and banks permit for conveying wastewater effluent from the COH's WWTPs to the MUDs 8 & 9 intake on the perimeter of Lake Conroe are 2.2% for the Robinson Creek WWTP (1.02% + 1.18%) and 1.6% for the N. B. Davidson WWTP (0.67% + 0.94%).

The total travel time for the conveyance of wastewater effluent from the Robinson Creek WWTP down Robinson Creek and the West Fork San Jacinto River to Lake Conroe has been determined to be 20.6 hours based on the uniform flow calculations presented in Table D-1 (see Column 26). Similarly, for the conveyance of effluent from the N. B. Davidson WWTP down the unnamed tributary of Persimmon Creek, then down Persimmon Creek, and then down East Sandy Creek to Lake Conroe, the total travel time has been determined to be 16.1 hours as shown in Table D-2 (see Column 26). For purposes of accounting using increments of whole days, both of these travel times have been scaled up to one day. Assuming a one-day travel time for Lake Conroe, again to facilitate the whole-day accounting, **the total travel time for conveying effluent from either the Robinson Creek WWTP or the N. B. Davidson WWTP to the MUDs 8 & 9 intake on Lake Conroe is set at 2.0 days.** This is the lag time that is to be used for accounting purposes when determining the allowable quantity of the COH's effluent that can be diverted from the West Fork San Jacinto River in Lake Conroe on any given day by the MUDs 8 & 9. In essence, the pumping rate for withdrawals of effluent by the MUDs 8 & 9 will be adjusted at least daily to ensure that the quantity of effluent diverted on any given day is the same as the combined quantity of wastewater effluent that was discharged from the COH's Robinson Creek and N. B. Davidson WWTPs two days earlier.

Table D-1 Receiving Stream Channel Hydraulics for Robinson Creek WWTP
(Robinson Creek and West Fork San Jacinto River)

Observed Conditions on March 23, 2011: Target Flow = 0.79 mgd = 1.22 cfs (Robinson Creek WWTP Discharge at 0.79 mgd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Reach Definition			Reach Characteristics					Trapezoidal Channel Section Characteristics						
River	Upstream	Downstream	Length	Up Elev	Dn Elev	Mannings	Reach	Top/Bottom Widths, Side Slopes, Depth, Area & Wetted Perimeter						
Reach	Point	Point	feet	feet msl	feet msl	n value	Slope ft/ft	T (ft)	b (ft)	z1 (ft)	z2(ft)	Depth (ft)	Area (sq ft)	P (ft)
RCB	WWTP	Bowden Rd	7,854	268.44	244.46	0.075	0.00305	8.0	7.0	1.50	1.50	0.33	2.48	8.2
RCC	Bowden Rd	Mouth of Robin Ck	25,724	244.46	209.35	0.075	0.00136	10.0	8.0	2.00	2.00	0.50	4.50	10.2

(16)	(17)	(18)	(19)	(20)	(21)	(22)
Reach Definition			Conveyance		Surface	Travel
River	Upstream	Downstream	Velocity	Flow	Area	Time
Reach	Point	Point	fps	cfs	acres	hours
RCB	WWTP	Bowden Rd	0.49	1.22	1.44	4.4
RCC	Bowden Rd	Mouth of Robin Ck	0.42	1.91	5.91	16.8

3/23/2011 Stream Observations				
River	Flow	Velocity	Depth	TopWidth
Reach	cfs	fps	feet	feet
RCB	1 - 2	0.5 - 1	~ 0.33	8 - 10
RCC	1 - 2	0.5 - 1	0.5 - 2	10 - 12

Average Naturalized Flow Conditions With Permitted Robinson Creek WWTP Discharge: Target Flow = Avg Nat Flow + 3.87 cfs (2.50 mgd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Reach Definition			Reach Characteristics					Trapezoidal Channel Section Characteristics						
River	Upstream	Downstream	Length	Up Elev	Dn Elev	Mannings	Reach	Top/Bottom Widths, Side Slopes, Depth, Area & Wetted Perimeter						
Reach	Point	Point	feet	feet msl	feet msl	n value	Slope ft/ft	T (ft)	b (ft)	z1 (ft)	z2(ft)	Depth (ft)	Area (sq ft)	P (ft)
RCB	WWTP	Bowden Rd	7,854	268.44	244.46	0.075	0.00305	10.7	7.0	1.50	1.50	1.22	10.78	11.4
RCC	Bowden Rd	San Jac Rv	25,724	244.46	209.35	0.075	0.00136	14.1	8.0	2.00	2.00	1.52	16.78	14.8
WFSJR	Mouth of Robin Crk	HW of Lk Conroe	34,526	n/a	n/a	n/a	n/a	50.0	n/a	n/a	n/a	2.79	139.50	55.6
		Combined Reaches:	68,105	or	12.90	miles								

(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
Reach Definition			Conveyance						Surface	Travel
River	Upstream	Downstream	Velocity	Nat Q	Nat Q	WWTP	Target Q	Flow	Area	Time
Reach	Point	Point	fps	ac-ft/yr	cfs	cfs	cfs	cfs	acres	hours
RCB	WWTP	Bowden Rd	1.06	5,460	7.5	3.87	11.4	11.4	1.92	2.1
RCC	Bowden Rd	San Jac Rv	0.80	6,985	9.6	3.87	13.5	13.4	8.31	9.0
WFSJR	Mouth of Robin Crk	HW of Lk Conroe	1.00	98,012	135.4	3.87	139.3	139.5	39.63	9.6
								Total Travel Time:		20.6

Trapezoidal Open Channel Design & Equations

$$Q = VA \qquad V = \frac{k}{n} R^{2/3} S^{1/2} \qquad R = \frac{A}{P} \qquad A = \frac{y}{2}(b + T)$$

$$P = b + y\left(\sqrt{1 + z_1^2} + \sqrt{1 + z_2^2}\right) \qquad T = b + y(z_1 + z_2)$$

$$F = V\sqrt{\frac{T}{gA\cos\theta}} \qquad \theta = Tan^{-1}(S)$$

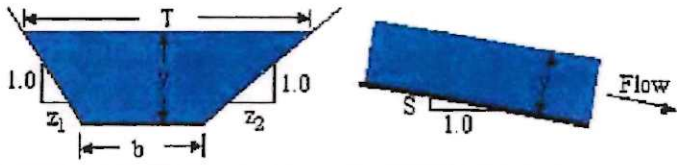


Table D-2 Receiving Stream Channel Hydraulics for N. B. Davidson WWTP
Unnamed Tributary, Persimmon Creek and East Sandy Creek

Observed Conditions on March 23, 2011 - Target Flow = 0.73 mgd = 1.13 cfs (Davidson WWTP Discharge at 0.73 mgd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Reach Definition			Reach Characteristics					Trapezoidal Channel Section Characteristics						
River	Upstream	Downstream	Length	Up Elev	Dn Elev	Mannings	Reach	Top/Bottom Widths, Side Slopes, Depth, Area & Wetted Perimeter						
Reach	Point	Point	feet	feet msl	feet msl	n value	Slope ft/ft	T (ft)	b (ft)	z1 (ft)	z2(ft)	Depth (ft)	Area (sq ft)	P (ft)
ESCA	WWTP	PC-ESC Confluence	25,388	343.60	231.43	0.075	0.00442	4.1	2.6	1.50	1.50	0.50	1.68	4.4
ESCB	PC-ESC Confluence	Lake Conroe	29,523	231.43	202.17	0.075	0.00099	7.6	4.8	2.00	2.00	0.70	4.34	7.9

(16)	(17)	(18)	(19)	(20)	(21)	(22)
Reach Definition			Conveyance		Surface	Travel
River	Upstream	Downstream	Velocity	Flow	Area	Time
Reach	Point	Point	fps	cfs	acres	hours
ESCA	WWTP	PC-ESC Confluence	0.69	1.16	2.39	10.2
ESCB	PC-ESC Confluence	Lake Conroe	0.42	1.82	5.15	19.6

3/23/2011 Stream Observations				
River	Flow	Velocity	Depth	TopWidth
Reach	cfs	fps	feet	feet
ESCA	1 - 2	0.5 - 1	0.5 - 1	3 - 10
ESCB	1 - 2	0.5 - 1	0.5 - 2	10 - 15

Average Naturalized Flow Conditions With Permitted N. B. Davidson WWTP Discharge: Target Flow = Avg Nat Flow + 2.48 cfs (1.60 mgd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Reach Definition			Reach Characteristics					Trapezoidal Channel Section Characteristics						
River	Upstream	Downstream	Length	Up Elev	Dn Elev	Mannings	Reach	Top/Bottom Widths, Side Slopes, Depth, Area & Wetted Perimeter						
Reach	Point	Point	feet	feet msl	feet msl	n value	Slope ft/ft	T (ft)	b (ft)	z1 (ft)	z2(ft)	Depth (ft)	Area (sq ft)	P (ft)
ESCA	WWTP	PC-ESC Confluence	25,388	343.60	231.43	0.075	0.00442	5.8	2.6	1.50	1.50	1.05	4.38	6.4
ESCB	PC-ESC Confluence	Lake Conroe	29,523	231.43	202.17	0.075	0.00099	16.1	4.8	2.00	2.00	2.83	29.60	17.5
		Combined Reaches:	54,910	or	10.40	miles								

(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
Reach Definition			Conveyance						Surface	Travel
River	Upstream	Downstream	Velocity	Nat Q	Nat Q	WWTP	Target Q	Flow	Area	Time
Reach	Point	Point	fps	ac-ft/yr	cfs	cfs	cfs	cfs	acres	hours
ESCA	WWTP	PC-ESC Confluence	1.03	1,457	2.0	2.48	4.5	4.5	3.35	6.9
ESCB	PC-ESC Confluence	Lake Conroe	0.89	17,171	23.7	2.48	26.2	26.3	10.93	9.2
								Total Travel Time:		16.1

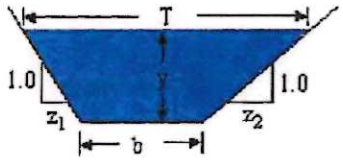
Trapezoidal Open Channel Design & Equations

$$Q = VA \qquad V = \frac{k}{n} R^{2/3} S^{1/2} \qquad R = \frac{A}{P} \qquad A = \frac{y}{2}(b+T)$$

$$P = b + y\left(\sqrt{1+z_1^2} + \sqrt{1+z_2^2}\right) \qquad T = b + y(z_1 + z_2)$$

$$F = V\sqrt{\frac{T}{gA\cos\theta}} \qquad \theta = Tan^{-1}(S)$$

Cross-Section of Channel



Channel Side View



Table D-3 Calculation of Stream Surface Water Evaporation Losses Attributable to Conveyance of City of Huntsville Wastewater Effluent

	HISTORICAL WATER SURFACE EVAPORATION DATA	
	TWDB Quad 712 1954-2010 Average Lake Evaporation Rate (inches/year):	49.84
	TWDB Quad 712 1954-2010 Average Lake Evaporation Rate (feet/year):	4.15
	ROBINSON CREEK WWTP STREAM SEGMENT EVAPORATION LOSS CALCULATIONS	
(1)	Robinson Creek WWTP Permitted Discharge Capacity (mgd):	2.50
(2)	Robinson Creek WWTP Permitted Discharge Capacity (ac-ft/yr):	2,801
	Reach RCB - Robinson WWTP to Bowden Road	
(3)	1940-96 Average Naturalized Flow Between WWTP and Bowden Road (ac-ft/yr):	5,460
(4)	Combined WWTP Flow and Naturalized Flow Between WWTP and Bowden Road (ac-ft/yr):	8,261
(5)	Average Channel Surface Area Between WWTP and Bowden Road (acres):	1.92
(6)	Average Water Surface Evaporation Loss Between WWTP and Bowden Road (ac-ft/yr):	7.99
(7)	Flow-Weighted Average Evaporation Loss Attributable to WWTP Flow (ac-ft/yr):	2.71
	Reach RCC - Bowden Road to Mouth of Robinson Creek	
(8)	1940-96 Average Naturalized Flow Between Bowden Road and Mouth (ac-ft/yr):	6,985
(9)	Combined WWTP Flow and Naturalized Flow Between Bowden Road and Mouth (ac-ft/yr):	9,786
(10)	Average Channel Surface Area Between Bowden Road and Mouth (acres):	8.31
(11)	Average Water Surface Evaporation Loss Between Bowden Road and Mouth (ac-ft/yr):	34.53
(12)	Flow-Weighted Average Evaporation Loss Attributable to WWTP Flow (ac-ft/yr):	9.88
	Reach WFSJR - West Fork San Jacinto River from Robinson Creek to Lake Conroe	
(13)	1940-96 Average Naturalized Flow Between Robinson Creek and Lake Conroe (ac-ft/yr):	98,012
(14)	Combined WWTP Flow and Naturalized Flow Between Robinson Creek and Lake Conroe (ac-ft/yr):	100,812
(15)	Average Channel Surface Area Between Robinson Creek and Lake Conroe (acres):	139.50
(16)	Average Water Surface Evaporation Loss Between Robinson Creek and Lake Conroe (ac-ft/yr):	579.39
(17)	Flow-Weighted Average Evaporation Loss Attributable to WWTP Flow (ac-ft/yr):	16.10
	Combined Reaches RCB, RCC and WFSJR - Robinson Creek WWTP to Lake Conroe	
(18)	Average Evaporation Loss Between WWTP and Lake Conroe (ac-ft/yr):	621.92
(19)	Average Evaporation Loss Between WWTP and Lake Conroe Attributable to WWTP Flow (ac-ft/yr):	28.69
(20)	Average Percentage of WWTP Discharge Lost to Evaporation (%):	1.02%
	N. B. DAVIDSON WWTP STREAM SEGMENT EVAPORATION LOSS CALCULATIONS	
(21)	Davidson WWTP Permitted Discharge Capacity (mgd):	1.60
(22)	Davidson WWTP Permitted Discharge Capacity (ac-ft/yr):	1,792
	Reach ESCA - Davidson WWTP to Confluence of Persimmon Creek and E Sandy Creek	
(23)	1940-96 Average Naturalized Flow Between WWTP and ESC/PC Confluence (ac-ft/yr):	1,457
(24)	Combined WWTP and Naturalized Flow Between WWTP and ESC/PC Confluence (ac-ft/yr):	3,250
(25)	Average Channel Surface Area Between WWTP and ESC/PC Confluence (acres):	3.35
(26)	Average Water Surface Evaporation Loss Between WWTP and ESC/PC Confluence (ac-ft/yr):	13.92
(27)	Flow-Weighted Average Evaporation Loss Attributable to WWTP Flow (ac-ft/yr):	7.68
	Reach ESCB - Confluence of Persimmon Creek and E Sandy Creek to Lake Conroe	
(28)	1940-96 Average Naturalized Flow Between ESC/PC Confluence and Lake Conroe (ac-ft/yr):	17,171
(29)	Combined WWTP and Naturalized Flow Between ESC/PC Confluence and Lake Conroe (ac-ft/yr):	18,963
(30)	Average Channel Surface Area Between ESC/PC Confluence and Lake Conroe (acres):	10.93
(31)	Average Water Surface Evaporation Loss Between ESC/PC Confluence and Lake Conroe (ac-ft/yr):	45.38
(32)	Flow-Weighted Average Evaporation Loss Attributable to WWTP Flow (ac-ft/yr):	4.29
	Combined Reach ESCA and ESCB - Davidson WWTP to Lake Conroe	
(33)	Average Evaporation Loss Between WWTP and Lake Conroe (ac-ft/yr):	59.30
(34)	Average Evaporation Loss Between WWTP and Lake Conroe Attributable to WWTP Flow (ac-ft/yr):	11.97
(35)	Average Percentage of WWTP Discharge Lost to Evaporation (%):	0.67%

ATTACHMENT E

MUDs 8&9 Application No. 12510
Supplemental Diversion Point Information Sheets

Supplemental Diversion Point Information Sheet

Diversion Point No. **1 (Alternative to Diversion Point No. 2)**.

1) Watercourse: **At a point to be determined at or inland from the perimeter of Lake Conroe, San Jacinto River, San Jacinto River Basin, within or adjacent to the Applicants' boundaries.**

2) Location of point of diversion at Latitude **30deg23'4.44"N**, Longitude **95deg35'57.13"W**, also, bearing ° , feet (distance) from the corner of the Original Survey No. , Abstract No. , in County, Texas.

3) Location from County Seat: **13.7** miles in a **NW** direction from **Montgomery** County, Texas. Location from nearby town (if other than County Seat): miles in a direction from , a nearby town shown on county highway map.

4) The diversion will be (check all appropriate boxes and if applicable, indicate whether existing or proposed):

X			
	Directly from stream		**Proposed**
	From an on-channel reservoir		
	From stream to an off-channel reservoir		
	From a stream to an on-channel reservoir		
	From an off-channel reservoir		
	Other method (explain fully, use additional sheets if necessary)		

5) Rate of Diversion (Check () applicable provision): **X** 1.

Diversion Facility:

A. 1500 Maximum gpm (gallons per minute) 1) ___Number of pumps **(Number, type, and capacity of pumps are unknown at this time.)** 2) Type of pump 3) gpm, Pump capacity of each pump 4) Portable pump Yes or **X** No

___2. If by gravity:

A. Headgate Diversion Dam Maximum gpm
B. Other method (explain fully -use additional sheets if necessary)

6) The drainage area above the diversion point is acres or square miles. **N/A**

Supplemental Diversion Point Information Sheet

Diversion Point No. **2 (Alternative to Diversion Point No. 1).**

1) Watercourse: **At a point to be determined at or inland from the perimeter of Lake Conroe, San Jacinto River, San Jacinto River Basin, within or adjacent to the Applicants' boundaries.**

2) Location of point of diversion at Latitude **30deg23'1.71"N**, Longitude **95deg36'21.4"W**, also, bearing ° , feet (distance) from the corner of the Original Survey No. , Abstract No. , in County, Texas.

3) Location from County Seat: **13.7** miles in a **NW** direction from **Montgomery** County, Texas. Location from nearby town (if other than County Seat): miles in a direction from , a nearby town shown on county highway map.

4) The diversion will be (check all appropriate boxes and if applicable, indicate whether existing or proposed):

X			
	Directly from stream		**Proposed**
	From an on-channel reservoir		
	From stream to an off-channel reservoir		
	From a stream to an on-channel reservoir		
	From an off-channel reservoir		
	Other method (explain fully, use additional sheets if necessary)		

5) Rate of Diversion (Check () applicable provision): **X** 1.

Diversion Facility:

A. 1500 Maximum gpm (gallons per minute) 1) ___Number of pumps **(Number, type, and capacity of pumps are unknown at this time.)** 2) Type of pump 3) gpm, Pump capacity of each pump 4) Portable pump Yes or **X** No

___2. If by gravity:

A. Headgate Diversion Dam Maximum gpm
B. Other method (explain fully -use additional sheets if necessary)

6) The drainage area above the diversion point is acres or square miles. **N/A**

ATTACHMENT F

Water Supply Agreement
Between the City of Huntsville and MUDs 8&9

WATER SUPPLY AGREEMENT

This WATER SUPPLY AGREEMENT ("Agreement") is entered into by and between MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 8 of Montgomery County, Texas ("MUD 8") and MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 9 of Montgomery County, Texas ("MUD 9") on the one hand, and the CITY OF HUNTSVILLE (the "City"), on the other hand. The Effective Date of this Agreement is September 9, 2010.

References to the "Districts" are to MUD 8 and MUD 9, collectively. References to the "Parties" are to the Districts and the City, collectively.

RECITALS

WHEREAS, the Districts desire to obtain a reliable and cost-effective water source or sources that are alternative to continued sole reliance on fresh groundwater and that meet the requirements of the Lone Star Groundwater Conservation District, in whose boundaries the Districts are located;

WHEREAS, the City desires to sell and supply, to the Districts, an amount of water that the City discharges in the San Jacinto River Basin from the City's wastewater treatment plants; and

WHEREAS, concurrently with this Agreement, the Parties have entered into an Option Agreement, in order to establish the terms under which the Districts and the City will pursue obtaining authorizations related to the Districts using an amount of the City's discharges and under which the Districts are granted an option to purchase and receive discharges from the City pursuant to this Agreement;

NOW, THEREFORE, pursuant to the general laws applicable to cities and municipal utility districts, including Chapter 791, Texas Government Code and Chapter 572, Texas Local Government Code, and as otherwise authorized and permitted by the laws of the State of Texas; for and in consideration of the covenants, conditions and undertakings hereinafter described, and for further good and valuable consideration provided pursuant to the Option Agreement executed concurrently herewith; and subject to each and every term and condition of this Agreement, the Parties contract, covenant and agree as follows:

ARTICLE 1

Definitions and Interpretations

1.01 Definitions.

"Agreement Term" means the initial term of this Agreement and any extensions of term pursuant to Section 3.02 of this Agreement (Agreement Term).

"Amount Supplied" means the actual quantity of Huntsville Discharges, not to exceed the Contracted Amount, that the City makes available at the Point of Diversion during a particular day and that the Districts may divert consistently with the Water Right.

"City" means the City of Huntsville, Texas, a home-rule city, and it's successors and assigns insofar as such succession or assignment includes title to and ownership of Huntsville Discharges prior to or at the time of discharge to the San Jacinto River Basin.

"Contracted Amount" means the maximum amount of Huntsville Discharges expressed in MGD that the City agrees to make available to the Districts every day during the Agreement Term at the Point of Diversion and that the Districts will pay for pursuant to the Agreement. Except as provided in Section 2.02 (Right of First Refusal to Purchase Above Contracted Amount During Agreement Term), the Contracted Amount quantity will be declared as part of a Notice of Exercise and pursuant to Section 3.01 of this Agreement (Conditions Precedent).

"Day" means a 24-hour period from 12:00 a.m. to 11:59 p.m.

"Districts" means MUD 8 and MUD 9, collectively. Districts are water conservation and reclamation districts created pursuant to the general laws of the State of Texas and under the provisions of Chapters 49 and 54 of the Texas Water Code.

"Effective Date" means the effective date of this Agreement designated above, provided, however, that the Districts' right to commence diversions of the Contracted Amount and the City's right to receive payment are subject to Section 3.01 of this Agreement (Conditions Precedent).

"Huntsville Discharges" means all of the current and future wastewater treatment plant return flows discharged by the City, or on the City's behalf, to the San Jacinto River Basin.

"MGD" means millions of gallons per day, and is NOT intended to be an annual average of daily flows.

"Option Agreement" means the Option to Purchase and Agreement to Pursue Water Supply, by and between the Districts and the City executed and effective concurrently with this Agreement.

"Point of Diversion" means such point or points, at or near the perimeter of Lake Conroe and within or adjacent to the Districts' boundaries, as are authorized by the TCEQ and convenient to the Districts' use in diverting the Contracted Amount pursuant to this Agreement.

"TCEQ" and "Commission" means the Texas Commission on Environmental Quality.

"Water Rate" means the rate to be paid, pursuant to Article 3 (Agreement Administration) of this Agreement, by the Districts. The amount of the Water Rate will be determined from time to time pursuant to Section 3.05 of this Agreement (Water Rate).

"Water Right" means such authorizations as are granted by the TCEQ related to the conveyance, diversion, and use of Huntsville Discharges, including any special conditions imposed on those authorizations, without regard to whether or not those authorizations are granted in more than one permit or with more than one effective date.

1.02. Interpretations. The following principles control the interpretation of this Agreement:

(a) Unless otherwise stated, reference to any document, including to a water rights permit, means the document as amended or supplemented from time to time.

(b) Reference to any party or governmental regulatory agency means that entity and its successors and assigns.

(c) Misspelling of one or more words in this Agreement shall not void the Agreement. Misspelled words shall be read so as to have the meaning apparently intended by the Parties.

(d) Words in the singular number shall be held to include the plural, unless the context otherwise requires.

(e) Article and Section headings contained herein are for convenience and reference and are not intended to define or limit the scope of any provision of this contract.

ARTICLE 2

Water Supply

2.01. Quantity of Water Supply. Huntsville agrees to supply, at the Point of Diversion, an amount of Huntsville Discharges up to and including the Contracted Amount, but in no event may the Districts divert more water than is authorized for diversion pursuant to the Water Right. The Contracted Amount shall be designated by the Districts in a Notice of Exercise provided to the City in accordance with Section 3.01 (Conditions Precedent) of this Agreement, and in a quantity not to exceed the Option Amount as that term is used in the Option Agreement.

2.02. Right of First Refusal to Purchase Above Contracted Amount During Agreement Term. After the exercise of the Option contained in the Option Agreement and during the Agreement Term, the City, subject to the terms and conditions of this Agreement, irrevocably grants to the Districts a right of first refusal to purchase as set forth below.

(a) If the City receives a bona fide offer from a third party (a "Purchase Offer") to purchase all or a portion of the additional Huntsville Discharges above the Contracted Amount, and the City is willing to accept such Purchase Offer as evidenced by formal action by City Council to accept the Purchase Offer subject to the rights of the Districts under this Agreement, City shall provide written notice of such event to the Districts whereupon Districts shall have sixty (60) business days from receipt of the Purchase Offer to notify the City in writing of their intent to purchase the portion of the additional Huntsville Discharges covered by the Purchase Offer.

(b) If and to the extent that the Districts exercise the right to purchase additional Huntsville Discharges at the price in the Purchase Offer, such additional amounts of Huntsville Discharges shall increase the Contracted Amount for all purposes under this Agreement.

(c) In the event the Districts elect not to purchase the additional Huntsville Discharges (or fail to notify the City in writing of their intent to purchase the additional Huntsville Discharges within the time periods and as otherwise hereinabove provided) the right of first refusal granted herein shall terminate as to the amount of Huntsville Discharges covered in the Purchase Offer, and the City shall be free, subject to Section 2.04 (Availability of Water) of this Agreement to sell the amount of Huntsville Discharges covered in the Purchase Offer to the third party designated in and otherwise in accordance with and pursuant to the terms and provisions of the Purchase Offer.

(d) In the event the Districts fail to exercise the right of first refusal to purchase granted herein and City fails to complete the transaction with the third party who made the Purchase Offer in accordance with the terms embodied in the Purchase Offer, then the Districts' right of first refusal to purchase as to that amount of Huntsville Discharges shall be automatically reinstated for the remaining portion of the Agreement Term.

2.03. Priority of Water Supply. For all purposes, the City will account, to first satisfying the Contracted Amount, water rights authorizations of the highest available reliability and time priority under the Water Right.

2.04. Availability of Water.

(a) Notwithstanding any other provision of this Agreement, City will not sell or commit to sell to any other person or entity, or otherwise use, any amount or rate of Huntsville Discharges that would affect the ability of the City to supply the Contracted Amount of Huntsville Discharges to the Districts at the Point of Diversion and at the highest available reliability and time priority under the Water Right.

(b) City will timely take all such actions as are reasonable and necessary to authorize, implement, defend, and enforce the City's right and ability to supply, to the Districts, Huntsville Discharges up to the Contracted Amount pursuant to this Agreement.

(c) The City will not, through direct or other reuse by the City, through providing Huntsville Discharges to others, or through any other action or failure to act, diminish the amount or rate of discharge of Huntsville Discharges necessary to supply the Contracted Amount to the Districts. Notwithstanding the foregoing, the Districts understand and acknowledge that the City does not warrant that the amount of Huntsville Discharges will not diminish due to fluctuations in usage by the City's sewer service customers or due to changes in the City's population or

per capita discharge, and such fluctuations will not be considered a failure to act or an action of diminishment described in this Subsection.

(d) Except to the extent specified above in Subsections (a) through (c) of this Section, the City makes no guarantee that the water supplied under this Agreement will be available at any particular time or place. The City is not obligated to ensure that the levels in the San Jacinto River or Lake Conroe are at a sufficient elevation at the Point of Diversion to allow the Districts' intake or diversion facility to operate and divert the Contracted Amount.

2.05. Delivery and Use of Water.

(a) The City agrees to deliver the Contracted Amount at the Point of Diversion, except that the City may interrupt or curtail the water supplied under this Agreement in accordance with the Water Right and any associated accounting plan.

(b) As soon as practicable after the terms of the Water Right are known, the Parties will develop an operating protocol, consistent with this Agreement, for purposes of implementing compliance with the Water Right. The Parties further agree to work together in good faith to amend such operating protocol as may be necessary or required from time to time to comply with TCEQ requirements or the Water Right, or to ensure that delivery of the Contracted Amount to the Districts, and the diversion and treatment for use of same by the Districts, is efficient and economical.

(c) Districts agree, at their own expense, to install and maintain such flow meters and recording devices ("District Meters") as will be sufficient to account diversions of the Contracted Amount consistently with the Water Right and this Agreement. Districts agree that the Districts Meters shall be periodically tested for accuracy by qualified personnel at the Districts' expense. Districts shall furnish to City a report of such test results, upon the City's request. Districts, upon two (2) weeks notice from City, shall provide City with reasonable access to the District Meters for purposes of making periodic inspections. Districts shall be required to take necessary steps to correct any meter inaccuracy discovered during any test. Readings within five percent (5%) of accuracy shall be considered correct.

(d) City will, at its own expense, install and maintain such flow meters and recording devices ("City Meters") as will be sufficient to account discharges related to calculating the Amount Supplied. City agrees that the City Meters shall be periodically tested for accuracy by qualified personnel at the City's expense. City shall furnish to Districts a report of such test results, upon the Districts' request. City, upon two (2) weeks notice from Districts, shall provide Districts with reasonable access to the City Meters for purposes of making periodic inspections. City shall be required to take necessary steps to correct any meter inaccuracy discovered during any test. Readings within five percent (5%) of accuracy shall be considered correct.

(e) If, as a result of any test performed under this Section, City's or the Districts' meters are found to be registering inaccurately (i.e., in excess of five percent [5%] of accuracy), the readings of such meter shall be corrected, for purposes of adjusting past invoices, at the rate of its inaccuracy for any period which is definitely known and agreed upon or, if no such period is known and agreed upon, the shorter of the following periods shall be used as the basis for correction:

(i) if a demand for the test was made, a period extending back sixty (60) days from the date of demand for the test; or,

(ii) if no demand for the test was made, a period extending back sixty (60) days from the date of the test; or

(iii) if the Meter has been tested within sixty (60) days prior to the test performed in accordance with this Subsection (e), a period extending back half of the time elapsed since the last previous test.

(f) Upon diversion, but not before, title to the Contracted Amount diverted by the Districts shall pass from the City to the Districts for all purposes, including for reuse without regard to whether or not such water as is diverted is subsequently returned to a state watercourse.

(g) The District shall develop and implement water conservation and drought contingency plans using applicable elements of Chapter 288 of Title 30 of Texas Administrative Code, as may be amended from time to time. To the extent permitted by this Agreement, if the Districts intend to resell the water pursuant to a contract, the Districts shall provide in the contract for resale of the water that the successive customers in the resale of the water implement water conservation and drought contingency measures in accordance with the applicable provisions of Chapter 288 of Title 30 of the Texas Administrative Code, as may be amended from time to time.

2.06. Quality of Water. The City makes no representations as to the quality of the water supplied under this Agreement and the Districts release the City and agree to hold the City harmless for any and all claims that the Districts or the Districts' customers or users have or may have against the City for any diminution in or impairment of the quality of water supplied under this Agreement.

2.07. Use of Water. The water supplied under this Agreement may only be used by the Districts in a manner that is consistent with and that does not cause the City to violate its Water Right. The Districts may not resell to any other entity, except an entity that is located within either of the Districts' boundaries, all or a portion of the Contracted Amount as raw water.

ARTICLE 3

Agreement Administration

3.01. Conditions Precedent.

(a) This Agreement is subject to the following conditions precedent being satisfied:

(i) the Water Right is final and non-appealable; and

(ii) the Districts have exercised their Option, as that term is used in the Option Agreement, and declared the Contracted Amount, both by providing a Notice of Exercise substantially in the form attached to this Agreement as Exhibit A.

(b) Any other provisions of this Agreement notwithstanding, the Notice of Exercise is deemed delivered on the earlier of the date actually delivered to the City or the date that the Districts place the Notice of Exercise in the United States Mail. Upon actual receipt, the City will acknowledge such receipt by signature of the Director of Utilities of the City or the City's other authorized representative and will return a signed copy of the Notice of Exercise to the Districts.

3.02. Agreement Term. This Agreement shall be for a term of forty (40) years commencing on the Effective Date, and ending on the fortieth year anniversary of the Effective Date ("Initial Term"). The City and the Districts, as allowed by law, agree to negotiate in good faith regarding terms for renewal of this Agreement prior to the expiration of the Initial Term in accordance with the following procedures:

(a) Upon the date that is five (5) years from the expiration of the Initial Term, the City and the District agree to commence negotiations to extend the term of this Agreement for a new forty (40)-year term.

(b) If the Parties agree that the Water Rate, Contracted Amount and all other terms of the Agreement are mutually beneficial and acceptable then the Parties may extend the Agreement for a new forty (40)-year term commencing upon the termination of the Initial Term by each Party providing notice to the other Parties of its agreement to such extension.

(c) If the Parties do not reach an agreement to extend the term under Subsection 3.02 (a) or (b) above, then the Districts' right of first refusal to purchase all or a portion of the Huntsville Discharges shall extend beyond the Agreement Term in accordance with the following:

(i) If within five (5) years before or following the expiration of the Initial Term the City receives a bona fide offer from a third party (a "Discharge Purchase Offer") to purchase all or a portion of the Huntsville Discharges upon or after termination of this Agreement, and the City is willing to accept such Discharge Purchase Offer as evidenced by formal action by

City Council to accept the Discharge Purchase Offer subject to the rights of the Districts under this Agreement, the City shall provide written notice of such event to the Districts whereupon the Districts shall have sixty (60) business days from receipt of the Discharge Purchase Offer to notify the City in writing of their intent to purchase the portion of the Huntsville Discharges covered by the Discharge Purchase Offer.

(ii) If and to the extent that the Districts exercise the right to purchase all or a portion of the Huntsville Discharges at the price and on the terms and conditions in the Discharge Purchase Offer, within five (5) years before or following the expiration of the initial term, then this Agreement shall be extended for an additional forty (40)-year term on the same terms and conditions of the Discharge Purchase Offer.

(iii) In the event the Districts elect not to purchase the Huntsville Discharges based on the Discharge Purchase Offer, within five (5) years before or following the expiration of the Initial Term, the right of first refusal granted herein shall terminate and the City shall be free to sell the Huntsville Discharges to the third party designated in and otherwise in accordance with and pursuant to the terms and provisions of the Discharge Purchase Offer.

(iv) The Districts' extended right of first refusal to purchase hereunder shall survive termination of this Agreement and shall itself terminate on the fifth (5th) anniversary of the expiration of the Initial Term.

(d) If the Parties agree to an extension pursuant to Section 3.02(b), then, for each subsequent term, upon the date that is five (5) years from the expiration of such subsequent term, the Parties agree to follow the procedures provided for in this Section 3.02 for subsequent forty-year terms.

3.03. Payment Period. The Payment Period shall commence immediately upon conclusion of the Reservation Charge Period provided for in Section 3.04 of this Agreement (Reservation Charge Period) and extend through the Agreement Term. Districts agree to pay to City during the Payment Period an amount of money equal to:

(a) the Water Rate applied to the Amount Supplied, less any recoupment amount due to the Districts pursuant to Section 3.06 (Costs Associated with Option Agreement) of this Agreement; and

(b) any late charges assessed or interest accrued from unpaid balances.

City shall calculate the amount due to City under this Section on a monthly basis and provide to the Districts an invoice as described in Section 3.07 of this Agreement (Billing and Payment).

3.04. Reservation Charge Period. The Reservation Charge Period shall commence on the date on which the Districts deliver to the City the Notice of Exercise described in Section

3.01 (Conditions Precedent) of this Agreement and shall end on the earlier of the last day of the month in which the Districts begin delivering water from any source at the Point of Diversion to the Districts' customers, three (3) years from the date of the Notice of Exercise, and December 31, 2019. The Districts agree to pay to City during the Reservation Charge Period, an amount of money equal to:

(a) one-half (1/2) of the Water Rate applied to the Amount Supplied, less any recoupment amount due to the Districts pursuant to Section 3.06 (Costs Associated with Option Agreement) of this Agreement; and

(b) any late charges assessed or interest accrued from unpaid balances.

City shall calculate the amount due to City under this Section on a monthly basis and provide to the Districts an invoice as described in Section 3.07 of this Agreement (Billing and Payment).

3.05 Water Rate.

(a) The initial Water Rate applied pursuant to Sections 3.03 (Payment Period) and 3.04 (Reservation Charge Period) of this Agreement shall be twenty-nine cents ($0.29) per one thousand (1000) gallons ("Initial Rate").

(b) Except as otherwise provided in Subsection (c) of this Section with regard to earlier rate increases based on cost of service, commencing January 1, 2021 and annually thereafter the City may increase the Water Rate then in effect under this Agreement, as follows:

(i) City may increase the Water Rate to an amount that is up to, but not more than, the lowest rate that Trinity River Authority charges, to the City, per thousand gallons for raw water the Trinity River Authority has made available to the City from storage at the time of initial diversion for the City's use and prior to transmission costs; and

(ii) to the extent that the City has not increased the Water Rate pursuant to Subsection (b)(i) above in any of the preceding three (3) years, City may increase the Water Rate then in effect by an amount up to 2%.

City agrees that it will, in good faith, use its best efforts to negotiate the lowest available rate for raw water the Trinity River Authority will make available to the City from storage at the time of initial diversion for the City's use and prior to transmission costs.

(c) Commencing January 1, 2017, and annually thereafter, City may increase the Water Rate to an amount that ensures that the Water Rate charged to the Districts pursuant to Subsection (a) or (b) of this Section is up to but not less than the cost of service to deliver the Contracted Amount of the Huntsville Discharges to the Districts as determined by a cost of service study. The cost of service study shall be at the City's expense and shall be limited to consideration of the reasonable

and necessary costs to administer this Agreement, exclusive of the study itself, and the reasonable and necessary costs of complying with the Water Right after it is issued. The Parties acknowledge that, except to the extent expressly stated otherwise in this Agreement, costs incurred by the City with regard to negotiation of an extension of the term of this Agreement, and with regard to the City's water systems and wastewater collection, treatment and discharge systems that would be expended in the absence of this Agreement, shall not be the basis for increases in the Water Rate pursuant to this Subsection (c).

(d) Any increase in the Water Rate shall not be effective until the beginning of the month next following at least sixty (60) days after the City's delivery of notice, to the Districts, specifying the amount of the rate increase. Such notice shall explain the basis for the increase and include supporting documentation.

(e) If at any time during the Agreement Term, notice is given pursuant to this Section 3.05 that the Water Rate will be increased to an amount that is more than 150% of the Initial Water Rate set out in Subsection (a) of this Section 3.05, the Districts may, prior to the Water Rate increase becoming effective, either reduce the Contracted Amount or terminate this Agreement by providing written notice to the City. A reduction in Contracted Amount pursuant to this Subsection (e) shall not affect the Districts' first right of refusal to purchase additional Huntsville Discharges pursuant to Section 2.02 (Right of First Refusal to Purchase Above Contracted Amount during Agreement Term) and Subsection (c) of Section 3.02 (Agreement Term) of this Agreement.

3.06. Costs Associated with Option Agreement. The City agrees that the Districts will recoup seventy-five percent (75%) of all of the costs, except legal consulting fees, paid as an Initial Option Payment and Subsequent Option Payments by the Districts pursuant to the Option Agreement, through a reduction in the payments due during the Reservation Charge Period and the Payment Period. The City agrees that the Districts will recoup one hundred (100%) of all of the legal consulting fees paid as part of any Subsequent Option Payments. The City will reduce the amounts invoiced to the Districts by thirty percent (30%) each month until the Districts realize the total recoupment amount.

3.07. Billing and Payment.

(a) Within seven (7) days after the last day of the preceding month, the City will mail an invoice to the Districts specifying the Amount Supplied, the monthly payment due, any recoupment amount applied, any interest or late payment charges, and any invoicing adjustments based on a correction of meters pursuant to Subsection (e) of Section 2.05 (Delivery and Use of Water) of this Agreement.

(b) The Districts shall pay to the City the amount due on the monthly invoice on or before thirty (30) days from the date of the invoice. Payments and any late charges shall be made in the form of a check made payable the City of Huntsville, Texas and shall be mailed or hand-delivered to the City of Huntsville, 1212 Avenue M, Huntsville, TX, 77340, or as provided by the City's invoice to the

Districts. Payments must be received at an address provided for in this Subsection not later than thirty (30) days from the date of the invoice in order to not be considered past due or late. In the event a District fails to make payment of an invoice within thirty (30) days of the invoice date, that District shall then pay a late payment charge of five percent (5%) of the amount of the invoice. For each calendar month or fraction thereof that the invoice remains unpaid, that District shall pay interest at a rate of one and one/half percent (1.5%) of the amount of the invoice. In the event a District attempts to pay the City as provided in this Section 3.07 and the instrument is returned or refused by the bank or similar institution as insufficient or non-negotiable for any reason, the District shall be assessed and must pay to the City, per each returned instrument, all administrative costs incurred by the City as a result of the returned or refused instrument. If the invoice has not been paid within thirty (30) days of the invoice date, the Districts further agree to pay all costs of collection and reasonable attorney's fees, regardless of whether a suit is filed.

3.08. Non-Payment. If City determines that Districts have not paid the full amount owed for any payment due under Section 3.07 (Payment), hereof, City shall give written notice to Districts stating the amount City has determined is due and unpaid. Upon delivery of the notice, the Districts shall have forty-five (45) days to cure (the "Cure Period") the applicable failure by paying the amounts dues and payable under Section 3.07 (Billing and Payment) of this Agreement. If the amount claimed in such notice to be due and unpaid exceeds the remaining balance of recoupment to the Districts pursuant to Section 3.06 (Costs Associated with Option Agreement) and Districts fail to pay within the Cure Period the amounts claimed in such notice to be due and unpaid, City after giving notice as provided herein may terminate this Agreement without recourse at City's sole option. Upon termination, the City shall provide notice of termination to the Districts. If Districts should dispute Districts' obligation to pay all or any part of the amount stated in any statement or notice, Districts may, in addition to all other rights that Districts may have under law, pay such amount under protest in which case such amount shall be deposited by City in an interest bearing account mutually acceptable to both City and Districts pending final resolution of such dispute. City may not terminate this Agreement for failure to pay the amount stated in any statement or notice if Districts pay such amount under protest and until there is a final resolution of such dispute.

3.09. Funds. All obligations accepted by the Parties hereto will be paid from current funds available to the paying party in accordance with Chapter 791 of the Texas Government Code.

ARTICLE 4

Termination

4.01. Termination of Agreement.

(a) City at its sole option, in accordance with the terms and conditions set forth in Section 3.08, "Non-Payment", may terminate this Agreement without recourse should Districts fail to comply with the terms and conditions of this Agreement

for the payment of moneys owed to City pursuant to Section 3.07 "Billing and Payment."

(b) The Agreement shall terminate on the date the Option Agreement expires or terminates if the Districts have not provided to the City a Notice of Exercise on or before the last day of the Option Period.

(c) Districts may terminate this Agreement at their sole option and discretion in accordance with Subsection (e) of Section 3.05 (Water Rate) of this Agreement.

ARTICLE 5

General Provisions

5.01. Notice. Each notice under this Agreement shall be transmitted by certified mail, return receipt requested, and shall be effective on the date actually received. All notices and statements to Districts shall be addressed to:

For Montgomery County Municipal Utility District No. 8:
Ross Radcliffe
Johnson, Radcliffe Petrov & Bobbitt PLLC
1001 McKinney, Suite 1000
Houston, Texas 77002
713.237.1221

For Montgomery County Municipal Utility District No. 9:
Clark Stockton Lord
Vinson & Elkins LLP
1001 Fannin Street, Suite 2500
Houston, Texas 77002
713.758.2350

For City of Huntsville:
City of Huntsville, Texas
c/o City Manager
1212 Avenue M
Huntsville, Texas 77340

Either party may change its address by giving written notice of such change to the other party.

5.02. Assignment of Agreement. Districts may not assign this Agreement without the consent of the City. Notwithstanding the foregoing, the Districts may use the Contracted Amount as part of a groundwater reduction plan joined by the Districts with or without other entities, and, after notice to the City, the Districts may assign their rights under this Agreement, in whole or in part, to a successor entity in conjunction with a groundwater reduction plan required by the rules of the Lone Star Groundwater Conservation District.

5.03. Compliance with Filing Requirements. City agrees to file a copy of this Agreement with the Executive Director of the TCEQ, PO Box 13087, Austin, TX 78711, it being fully recognized by the Districts hereunder that the effectiveness of this Agreement is dependent upon compliance with the TCEQ's substantive rules and procedural rules for water rights.

5.04. Hold Harmless.

(a) To the extent permitted by law, Districts will hold City harmless from any and all claims and demands whatsoever to which City may be subjected by reason of any injury to any person or damage to any property resulting from or in any way connected with any and all actions and activities (or failure to act) of Districts under this Agreement except to the extent caused by City's gross negligence or willful misconduct. The Districts shall operate and maintain their facilities used to divert and treat the Contracted Amount at Districts' sole risk and the Districts shall solely be responsible for the Contracted Amount diverted by the Districts' after diversion of such water by the Districts. Nothing in this Agreement shall be construed as authorizing Districts to install any equipment or improvements on property owned by third parties.

(b) To the extent permitted by law, City will hold Districts harmless from any and all claims or demands whatsoever to which Districts may be subjected by reason of any injury to any person or damage to any property resulting from or in any way connected with any and all actions and activities (or failure to act) of City under this Agreement, except to the extent caused by the Districts' gross negligence or willful misconduct. City shall operate and maintain all facilities associated with Huntsville Discharges at City's sole risk, and City shall be solely responsible for any Huntsville Discharges supplied to Districts up and until diversion of such water by Districts. Nothing in this Agreement shall be construed as authorizing City to install any equipment or improvements on property owned by third parties.

5.05. Force Majeure. The term "Force Majeure" as used herein, shall mean those situations or conditions which are beyond the control of City or Districts and which, after the exercise of due diligence to remedy such situation or condition, render City or Districts unable, wholly or in part, to carry out the covenants contained herein. Such force majeure includes but is not limited to acts of God, strikes, lockouts, acts of the public enemy, orders of any kind of the government of the United States or of the State of Texas or any civil or military authority, insurrections, riots, epidemics, landslides, lightning, earthquakes, fires, hurricanes, storms, floods, washouts, droughts, civil disturbances, acts of terrorism, explosions, breakage or accidents to facilities required to deliver water under this Agreement to the Districts, or any partial or entire failure of water supply insofar as each of the foregoing are beyond the reasonable control of the party in question. City shall not be held liable or responsible for any damage that may be caused by its inability, after the exercise of due diligence, to make the supply of water available to Districts due to any force majeure. City shall use reasonable and timely diligence to

repair facilities required to deliver water under this Agreement to the Districts in the event such facilities are damaged or made unserviceable from any force majeure.

5.06. No Third-Party Beneficiaries. The Parties enter into this Agreement solely for the benefit of themselves and agree that nothing herein shall be construed to confer any right, privilege or benefit on any person or entity other than the Parties.

5.07. No Rights or Title Acquired. Districts agree and acknowledge that they do not acquire by this Agreement any rights or title to the water that is the subject of this Agreement other than those rights explicitly set forth herein including as set forth herein in Subsection (f) of Section 2.05 (Delivery and Use of Water) of this Agreement.

5.08. Representations and Warranties. Each of the Parties represent and warrant to the other that this Agreement has been duly executed by an authorized officer and constitutes a valid and binding agreement, enforceable against it in accordance with its terms (except as such enforceability may be limited by bankruptcy laws or other similar laws relating to the enforcement of creditors' rights generally and by general equitable principles).

5.09. Actual Damages. No party shall be liable or have any responsibility to the other for any indirect, special, consequential, punitive or delay-related or performance-related damages including, without limitation, lost earnings or profits. Such limitation on liability shall apply to any claim or action, whether it is based on whole or in part on agreement, negligence, strict liability, tort, statute or any other theory of liability. The provisions of this Section 5.09 shall have no effect on the Parties' obligations under Article 3 (Agreement Administration) or Section 5.04 (Hold Harmless) of this Agreement.

5.10. Specific Performance. The remedies for failure to abide by the terms of this Agreement shall include, but not be limited to, specific performance.

5.11. Amendment. This Agreement may not be amended or modified except by an instrument in writing signed by the authorized representatives of the Parties.

5.12. Binding Effect. The terms of this Agreement shall be binding upon, and inure to the benefit of, the Parties and their permitted successors and assigns.

5.13. Complete Agreement and Incorporation of Exhibits. This Agreement, together with the Option Agreement and all Exhibits attached hereto constitute the entire agreement of the Parties relating to the subject matter of the agreement and supersedes all prior agreements, or understandings with respect to the subject matter hereof, both oral and written. All exhibits attached to this Agreement are incorporated herein by reference in their entirety and made a part hereof for all purposes.

5.14. Counterparts. This Agreement may be executed by the Parties in any number of separate counterparts, each of which when so executed and delivered shall be deemed an original, but all counterparts shall together constitute one and the same agreement. All signatures need not be on the same counterpart.

5.15. **Further Assurances.** The Parties, together and severally, agree to do all acts and things and to execute and deliver such further written instruments, as may be reasonably required from time to time, to carry out the terms and provisions of this Agreement.

5.16. **Governing Law and Venue.** This Agreement and the rights and duties of the Parties arising out of this Agreement shall be governed by, and construed in accordance with, the laws of the State of Texas, and venue for any action arising under this Option Agreement will be in Walker County or Montgomery County, Texas.

5.17. **Interpretation and Reliance.** No presumption will apply in favor of any party in the interpretation of this Agreement or in the resolution of any ambiguity of any provision thereof.

5.18. **Relationship of Parties.** This Agreement and the transactions contemplated herein are based upon the active participation of all Parties. Neither the execution nor delivery of this Agreement, nor the consummation of the transactions contemplated hereunder, shall create or constitute a partnership, joint venture, or any other form of business organization or arrangement between or among the Parties, except for the contractual arrangements specifically set forth in this Agreement. Except as is expressly agreed to in writing in this Agreement, no party (or any of its agents, officers or employees) shall be an agent or employee of the other party, nor shall a party (or any of its agents, officers or employees) have any power to assume or create any obligation on behalf of the other party. Nothing contained in this Agreement shall create or constitute a partnership, joint venture, or any other form of business organization or arrangement among City on the one hand and the Districts on the other hand, except for the contractual arrangements specifically set forth herein. Notwithstanding the foregoing, the Districts' liabilities and duties under this Agreement are joint and several, and City may enforce this Agreement against one or both Districts.

5.19. **Severability.** In the event that any provision of this Agreement is held to be unenforceable or invalid by any court of competent jurisdiction, the Parties shall negotiate an equitable adjustment to the provisions of this Agreement with the view to effecting, to the extent possible, the original purpose and intent of this Agreement, and the validity and enforceability of the remaining provisions shall not be affected thereby.

5.20. **Mediation.** City and Districts agree to negotiate in good faith in an effort to resolve any dispute relating to this Agreement that may arise between City and Districts. If the dispute cannot be resolved by negotiation, the City and Districts shall submit the dispute to mediation before resorting to litigation. If the need for mediation arises, City and Districts shall choose a mutually acceptable mediator and shall share the cost of mediation services equally. Mediation is a voluntary dispute resolution process in which the parties to the dispute meet with an impartial person, called a mediator, who would help to resolve the dispute informally and confidentially. Any mediator selected by the parties may not impose binding decisions. City and Districts must agree to any proposed settlement before the settlement is binding.

[Remainder of this page intentionally left blank.]

IN WITNESS WHEREOF, the Parties, who have had the opportunity to consult with their attorneys with respect hereto and who fully and completely understand the terms and provisions hereof, have executed this Water Supply Agreement on the dates indicated below.

MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 8

By: _____
Date of Execution: 9-9, 2010

MONTGOMERY COUNTY MUNICIPAL UTILITY DISTRICT NO. 9

By: _____
Date of Execution: 9-9, 2010

CITY OF HUNTSVILLE

By: _____
Date of Execution: Sept. 8, 2010

NOTICE OF EXERCISE

in connection with the

Water Supply Agreement By and Between City of Huntsville ("City") and Montgomery County Municipal Utility Districts Nos. 8 &9 ("Districts") Effective _____, 2010

By and on the date of delivery to the City of this Notice of Exercise, the Districts exercise the Option, granted in the Option to Purchase and Agreement to Pursue Water Supply, by and among the Districts and the City, in the **Contracted Amount of** _____ **MGD.**

As defined in the Water Supply Agreement referenced above ("Agreement") and for purposes of this Notice of Exercise, "Contracted Amount" means the maximum amount of Huntsville Discharges expressed in MGD that the City agrees to make available to the Districts every day during the Agreement Term at the Diversion Point and that the Districts will pay for pursuant to the Agreement.

Pursuant to the terms of the Agreement, this Notice of Exercise is deemed delivered on the earlier of the date actually delivered to the City or the date that the Districts place the Notice of Exercise in the United States Mail. Upon actual receipt, the City will acknowledge such receipt by signature of the Director of Utilities of the City or the City's other authorized representative and will return a signed copy of this Notice of Exercise to the Districts.

The terms used in this notice are intended to be as defined in the Agreement. To the extent of any conflict between this Notice of Exercise and the Agreement, the Agreement will prevail.

Date of Delivery: _____

_____
On behalf of Montgomery County
Municipal Utility District No. 8

_____
On behalf of Montgomery County
Municipal Utility District No. 9

Receipt on _____ [date] is acknowledged by _____ [name],

_____[capacity], on behalf of the City of Huntsville.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

WATER USE PERMIT

PERMIT NO. 12754		TYPE §§ 11.042 & 11.121	
Permittee:	City of Huntsville	Address:	1212 Avenue M Huntsville, TX 77340
Filed:	October 17, 2016	Granted:	August 10, 2017
Purpose:	Municipal, Industrial, and Agricultural	Counties:	Walker and Montgomery
Watercourses:	Unnamed Tributary of Persimmon Creek, Tributary of East Sandy Creek and Robinson Creek; Tributaries of the West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River	Watershed:	San Jacinto River Basin

WHEREAS, City of Huntsville (Applicant) seeks a Water Use Permit to authorize the use of the bed and banks of an unnamed tributary of Persimmon Creek, tributary of East Sandy Creek, tributary of the West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River, San Jacinto River Basin and Robinson Creek, tributary of the West Fork San Jacinto River (Lake Conroe), San Jacinto River Basin to convey up to 4,593 acre-feet per year of its historic and future groundwater and interbasin transfer surface water-based return flows authorized to be discharged by the City of Huntsville under Texas Pollutant Discharge Elimination System (TPDES) Permit Nos. WQ0010781004 and WQ0010781002, for subsequent diversion and use for municipal, industrial, and agricultural purposes in Montgomery County Municipal Utility District Nos. 8 and 9's service area in Montgomery County, San Jacinto River Basin; and

WHEREAS, Applicant indicates its groundwater and surface water-based return flows are discharged at two points being located at:

A. Robinson Creek Wastewater Treatment Plant authorized by TPDES Permit No. WQ0010781004 on Robinson Creek, San Jacinto River Basin at Latitude 30.645547°N, Longitude 95.595334°W, also bearing N24°E, 1,340 feet from the southwest corner of the W. McDonald Tract, Original Survey No. 471, Abstract No. 543, Walker County at a maximum discharge rate of 11.60 cfs (5,208 gpm); and

B. N.B. Davidson Wastewater Treatment Plant authorized by TPDES Permit No. WQ0010781002 on an unnamed tributary of Persimmon Creek, San Jacinto River Basin at Latitude 30.645275°N, Longitude, 95.553197°W, also bearing N65°E, 1,918 feet from the southwest corner of the San Antonio & Mexican Gulf Railroad Co. Tract, Original Survey No. 471, Abstract No. 552, Walker County at a maximum discharge rate of 3.96 cfs (1,778 gpm); and

WHEREAS, pursuant to a water supply contract, the Applicant further seeks authorization to make its groundwater and interbasin transfer surface water-based return flows available to Montgomery County Municipal Utility District Nos. 8 & 9 to divert from a point or points to be determined at or inland from the perimeter of Lake Conroe, San Jacinto River Basin, Montgomery County at a maximum diversion rate of 3.34 cfs (1,500 gpm); and

WHEREAS, Applicant, has provided, and the Executive Director has approved, an accounting plan (*Accounting Plan for Permit No. 12754);* and

WHEREAS, in and subject to the terms of the "Settlement Agreement Including Terms for Water Pass-Through, Water Commitment and Encroachment" entered by the Applicant with Montgomery County Municipal Utility District No. 8, Montgomery County Municipal Utility District No. 9, the City of Houston and the San Jacinto River Authority effective July 28, 2017 (the "Settlement Agreement"), the Applicant has agreed to provide contractually for the term of that Settlement Agreement, to the San Jacinto River Authority and the City of Houston as owners of Certificate of Adjudication No. 10-4963, a quantity of water that is twenty-one percent (21%) of the amount of water the Applicant discharges to supply Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9 with water pursuant to a water supply contract, as reflected in the accounting plan for the permit. Also in that Settlement Agreement, and in the "Encroachment Agreement" entered contemporaneously between the San Jacinto River Authority, City of Houston, and Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9, the San Jacinto River Authority and the City of Houston have given Montgomery County Municipal Utility District No. 8 and Montgomery County Municipal Utility District No. 9 access to property on Lake Conroe for diversion facilities at the points authorized in Paragraph 3 of this permit; and

WHEREAS, the Texas Commission on Environmental Quality finds that jurisdiction over the application is established; and

WHEREAS, the Executive Director recommends that special conditions be included in the permit; and

WHEREAS, the Commission has complied with the requirements of the Texas Water Code and Rules of the Texas Commission on Environmental Quality in issuing this permit; and

NOW, THEREFORE, this Water Use Permit No. 12754 is issued to City of Huntsville, subject to the following terms and conditions:

1. USE

A. Permittee is authorized to use the bed and banks of an unnamed tributary of Persimmon Creek, tributary of East Sandy Creek, tributary of the West Fork San Jacinto River (Lake Conroe), tributary of the San Jacinto River, San Jacinto River Basin and Robinson Creek, tributary of the West Fork San Jacinto River (Lake Conroe), San Jacinto River Basin to convey up to 4,593 acre-feet per year of its historic and future groundwater and interbasin transfer surface water-based return flows for subsequent diversion and use for municipal, industrial, and agricultural purposes in Montgomery County Municipal Utility District Nos. 8 and 9's service area in Montgomery County, San Jacinto River Basin.

2. DISCHARGE

Permittee is authorized to discharge its groundwater and surface water-based return flows at two points being located at:

A. Robinson Creek Wastewater Treatment Plant authorized by TPDES Permit No. WQ0010781004 on Robinson Creek, San Jacinto River Basin at Latitude 30.645547 °N, Longitude 95.595334°W, also bearing N24°E, 1,340 feet from the southwest corner of the W. McDonald Tract, Original Survey No. 471, Abstract No. 543, in Walker County at a maximum discharge rate of 11.60 cfs (5,208 gpm).

B. N.B. Davidson Wastewater Treatment Plant authorized by TPDES Permit No. WQ0010781002 on an unnamed tributary of Persimmon Creek, San Jacinto River Basin at Latitude 30.645275°N, Longitude, 95.553197°W, also bearing N65°E, 1,918 feet from the southwest corner of the San Antonio & Mexican Gulf Railroad Co. Tract, Original Survey No. 471, Abstract No. 552, Walker County at a maximum discharge rate of 3.96 cfs (1,778 gpm).

3. DIVERSION

Permittee is authorized to divert under this permit at a maximum combined diversion rate of of 3.34 cfs (1,500 gpm) from a point or points to be determined at or inland from the perimeter of Lake Conroe.

4. PRIORITY

Permittee's groundwater-based and interbasin transfer water-based return flows authorized to be conveyed via the bed and banks of a State watercourse in this permit do not have a priority date and are not subject to priority calls by downstream senior water rights.

5. CONSERVATION

Permittee shall implement water conservation plans that provide for the utilization of those practices, techniques, and technologies that reduce or maintain the consumption of water, prevent or reduce the loss or waste of water, maintain or improve the efficiency in the use of water, increase the recycling and reuse of water, or prevent the pollution of water, so that a water supply is made available for future or alternative uses. Such plans shall include a requirement that in every water supply contract entered

into, on or after the effective date of this permit, including any contract extension or renewal, that each successive wholesale customer develop and implement conservation measures. If the customer intends to resell the water, then the contract for resale of the water shall have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures.

6. SPECIAL CONDITIONS

A. Ninety days prior to the diversion of interbasin transfer surface water-based return flows for industrial use, Permittee or contract customer shall submit a water conservation plan to the Texas Commission on Environmental Quality that meets the requirements of 30 TAC §288.3.

B. Ninety days prior to the diversion of interbasin transfer surface water-based return flows for agricultural use, Permittee or contract customer shall submit a water conservation plan to the Texas Commission on Environmental Quality that meets the requirements of 30 TAC §288.4.

C. Diversions authorized by this permit are dependent upon potentially interruptible return flows or discharges and are conditioned on the availability of those discharges. The right to divert the discharged return flows is subject to revocation if all discharges become permanently unavailable for diversion and may be subject to reduction if the return flows are not available in quantities and qualities sufficient to fully satisfy the permit. Should the discharges become permanently unavailable for diversion, Permittee shall immediately cease diversion under this permit and either apply to amend the permit, or voluntarily forfeit the permit. If Permittee does not amend or forfeit the permit, the Commission may begin proceedings to cancel this permit.

D. Permittee shall only divert and use return flows pursuant to Paragraph 1. USE and Paragraph 3. DIVERSION in accordance with the most recently approved accounting plan (*Accounting Plan for Permit No. 12754).* Permittee shall maintain the plan in electronic format and make it available upon request. Any modifications to the accounting plan shall be approved by the Executive Director. Any modification to the accounting plan that changes the permit terms must be in the form of an amendment to the permit. Should Permittee fail to maintain the accounting plan or notify the Executive Director of any modifications to the plan, Permittee shall immediately cease diversion of discharged return flows, and either apply to amend the permit, or voluntarily forfeit the permit. If Permittee fails to amend the accounting pan or forfeit the permit, the Commission may begin proceedings to cancel the permit. Permittee shall immediately notify the Executive Director upon modification of the accounting plan and provide copies of the appropriate documents effectuating such changes.

E. Prior to diversion of return flows in excess of the amount currently authorized by TPDES Permit Nos. WQ0010781004 and WQ0010781002, described in Paragraph 2. DISCHARGE, Permittee shall apply for, and must be granted, the right to reuse those return flows. Permittee shall amend the accounting plan to include these future return flows prior to diverting said return flows.

F. Permittee shall install and maintain a measuring device which accounts for, within 5% accuracy, the quantity of water diverted from the points authorized above in Paragraph 3. DIVERSION and maintain measurement records.

G. Permittee shall allow representatives of the Texas Commission on Environmental Quality reasonable access to the property to inspect the measuring device and records.

H. The exercise of rights under Paragraph 3. DIVERSION regarding diversion from authorized points in Lake Conroe is conditioned upon the continued effectiveness of both: 1) the Settlement Agreement identified in the recitals of this permit and 2) the authorization to use property granted by the San Jacinto River Authority and the City of Houston in the Settlement Agreement and the Encroachment Agreement identified in the recitals of this permit.

This permit is issued subject to superior water rights in the San Jacinto River Basin.

Permittee agrees to be bound by the terms, conditions and provisions contained herein and such agreement is a condition precedent to the granting of this permit.

All other matters requested in the application which are not specifically granted by permit are denied.

This permit is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of State water resources exercised by the Commission.

For the Commission

DATE ISSUED: **August 10, 2017**

TPDES PERMIT NO. WQ0011371001
[For TCEQ office use only - EPA I.D. No. TX0022080]

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

This is a renewal that replaces TPDES Permit No. WQ0011371001 issued on January 12, 2018.

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

Montgomery County Municipal Utility District No. 8

whose mailing address is

2929 Allen Parkway, Suite 3450
Houston, Texas 77019

is authorized to treat and discharge wastes from the Montgomery County Municipal Utility District No. 8 Wastewater Treatment Facility, SIC Code 4952

located at 11611 Walden Road in Montgomery County, Texas 77356

directly to Lake Conroe in Segment No. 1012 of the San Jacinto River Basin

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

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

ISSUED DATE: April 4, 2023

For the Commission

INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through the completion of expansion to the 1.65 million gallons per day (MGD) facility, the permittee is authorized to discharge subject to the following effluent limitations:

   The annual average flow of effluent shall not exceed 1.25 million gallons per day (MGD), nor shall the average discharge during any two-hour period (2-hour peak) exceed 3,472 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg	7-day Avg	Daily Max	Single Grab	Report Daily Avg. & Daily Max.	
	mg/l (lbs/day)	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	7 (73)	12	22	32	Two/week	Composite
Total Suspended Solids	15 (156)	25	40	60	Two/week	Composite
Ammonia Nitrogen	2 (21)	5	10	15	Two/week	Composite
Total Phosphorus	1 (10)	2	4	6	Two/week	Composite
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	399	N/A	One/week	Grab

2. The effluent shall contain a total chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow) and shall be monitored daily by grab sample at each chlorine contact chamber. The permittee shall dechlorinate the chlorinated effluent to less than 0.1 mg/l total chlorine residual and shall monitor total chlorine residual daily by grab sample after the dechlorination process. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per week by grab sample.
4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.
6. The effluent shall contain a minimum dissolved oxygen of 6.0 mg/l and shall be monitored twice per week by grab sample.
7. The annual average flow and maximum 2-hour peak flow shall be reported monthly.

FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the completion of expansion to the 1.65 million gallons per day (MGD) facility and lasting through the date of expiration, the permittee is authorized to discharge subject to the following effluent limitations:

   The annual average flow of effluent shall not exceed 1.65 MGD, nor shall the average discharge during any two-hour period (2-hour peak) exceed 4,583 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg mg/l (lbs/day)	7-day Avg mg/l	Daily Max mg/l	Single Grab mg/l	Report Daily Avg. & Daily Max. Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	5 (67)	10	20	30	Two/week	Composite
Total Suspended Solids	15 (206)	25	40	60	Two/week	Composite
Ammonia Nitrogen	1 (14)	4	10	15	Two/week	Composite
Total Phosphorus	1 (14)	2	4	6	Two/week	Composite
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	399	N/A	One/week	Grab

2. The effluent shall contain a total chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow) and shall be monitored daily by grab sample at each chlorine contact chamber. The permittee shall dechlorinate the chlorinated effluent to less than 0.1 mg/l total chlorine residual and shall monitor total chlorine residual daily by grab sample after the dechlorination process. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.
3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per week by grab sample.
4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.
5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.
6. The effluent shall contain a minimum dissolved oxygen of 6.0 mg/l and shall be monitored twice per week by grab sample.
7. The annual average flow and maximum 2-hour peak flow shall be reported monthly.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

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

1. Flow Measurements

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

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

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

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

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

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

2. Concentration Measurements

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

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

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

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

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

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

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

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

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

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

3. Sample Type

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

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

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

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

6. The term "biosolids" is defined as sewage sludge that has been tested or processed to meet Class A, Class AB, or Class B pathogen standards in 30 TAC Chapter 312 for beneficial use.

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

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

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

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

2. Test Procedures

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

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

3. Records of Results

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

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

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;

ii. identity of individual who collected the sample or made the measurement.

iii. date and time of analysis;

iv. identity of the individual and laboratory who performed the analysis;

v. the technique or method of analysis; and

vi. the results of the analysis or measurement and quality assurance/quality control records.

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

4. Additional Monitoring by Permittee

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

5. Calibration of Instruments

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

6. Compliance Schedule Reports

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

7. Noncompliance Notification

   a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Compliance Monitoring Team of the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective December 21, 2025, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

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

      i. Unauthorized discharges as defined in Permit Condition 2(g).

      ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.

      iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

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

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

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

9. Changes in Discharges of Toxic Substances

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

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

   i. One hundred micrograms per liter (100 µg/L);

   ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

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

   i. Five hundred micrograms per liter (500 µg/L);

   ii. One milligram per liter (1 mg/L) for antimony;

   iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

10. Signatories to Reports

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

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

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

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

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

       i. The quality and quantity of effluent introduced into the POTW; and

       ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

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

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

      i. Violation of any terms or conditions of this permit;

      ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

      iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

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

2. Compliance

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

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

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

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

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

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

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

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

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

3. Inspections and Entry

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

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

4. Permit Amendment and/or Renewal

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

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

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

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

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

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

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

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

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA § 307(a) for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or

prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA § 307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

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

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

6. Relationship to Hazardous Waste Activities

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

7. Relationship to Water Rights

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

8. Property Rights

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

9. Permit Enforceability

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

10. Relationship to Permit Application

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

11. Notice of Bankruptcy

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

       i. the permittee;

       ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or

iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee;

ii. the permit number(s);

iii. the bankruptcy court in which the petition for bankruptcy was filed; and

iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

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

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

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

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

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

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

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

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

7. Documentation

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

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

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

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

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

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

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

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

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

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

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

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

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

    e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well,

container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

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

i. Volume of waste and date(s) generated from treatment process;
ii. Volume of waste disposed of on-site or shipped off-site;
iii. Date(s) of disposal;
iv. Identity of hauler or transporter;
v. Location of disposal site; and
vi. Method of final disposal.

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

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

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SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge or biosolids by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Biosolids. This provision does not authorize the permittee to land apply biosolids on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge or biosolids.

2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.

3. The land application of processed or unprocessed chemical toilet waste, grease trap waste, grit trap waste, milk solids, or similar non-hazardous municipal or industrial solid wastes, or any of the wastes listed in this provision combined with biosolids, WTP residuals or domestic septage is prohibited unless the grease trap waste is added at a fats, oil and grease (FOG) receiving facility as part of an anaerobic digestion process.

B. Testing Requirements

1. Sewage sludge or biosolids shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 12) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped, and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

2. Biosolids shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C. of this permit.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B biosolids pathogen requirements.

a. For sewage sludge to be classified as Class A biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge must be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information;

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion; or

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

   Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

   The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

   At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%; or

   Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information; or

   Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB biosolids may be classified a Class A biosolids if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B biosolids criteria.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition to the Alternatives 1 – 3, the following site restrictions must be met if Class B biosolids are land applied:

i. Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.

v. Domestic livestock shall not be allowed to graze on the land for 30 days after application of biosolids.

vi. Turf grown on land where biosolids are applied shall not be harvested for 1 year after application of the biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of biosolids.

viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of biosolids.

ix. Land application of biosolids shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 -

i. Biosolids shall be injected below the surface of the land.

ii. No significant amount of the biosolids shall be present on the land surface within one hour after the biosolids are injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the biosolids shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10-

i. Biosolids applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When biosolids that are incorporated into the soil is Class A or Class AB with respect to pathogens, the biosolids shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- annually
PCBs	- annually

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of biosolids (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk biosolids applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge or biosolids for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE OR BIOSOLIDS FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B biosolids pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk biosolids shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.

2. Bulk biosolids not meeting Class A requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk biosolids shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk Class A or AB biosolids sold or given away. The information sheet shall contain the following information:

   a. The name and address of the person who prepared the Class A or AB biosolids that are sold or given away in a bag or other container for application to the land.

   b. A statement that application of the biosolids to the land is prohibited except in accordance with the instruction on the label or information sheet.

   c. The annual whole sludge application rate for the biosolids application rate for the biosolids that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk biosolids are applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk biosolids are proposed to be applied. The notice shall include:

   a. The location, by street address, and specific latitude and longitude, of each land application site.

   b. The approximate time period bulk biosolids will be applied to the site.

   c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk biosolids.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the biosolids disposal practice.

E. Record Keeping Requirements

The documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a biosolids material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative for a

period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B biosolids, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk biosolids are applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk biosolids shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which biosolids are applied.

   c. The number of acres in each site on which bulk biosolids are applied.

   d. The date and time biosolids are applied to each site.

   e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

   f. The total amount of biosolids applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year the following information. The permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge or biosolids in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge or biosolids disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B biosolids, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge or biosolids transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge or biosolids treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk biosolids are applied.

    c. The date and time bulk biosolids are applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk biosolids applied to each site.

    e. The amount of biosolids (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge or biosolids disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge and supplies that sewage sludge or biosolids to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge or biosolids disposal practice.

D. Sewage sludge or biosolids shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

   Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 12) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

   The report shall contain test results, certification that unauthorized waste management has stopped, and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

E. Sewage sludge or biosolids shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record Keeping Requirements

   The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year the following information. The permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge or biosolids production in dry tons/year.

4. Amount of sludge or biosolids disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge or biosolids transported interstate in dry tons/year.

6. A certification that the sewage sludge or biosolids meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE OR BIOSOLIDS TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge or biosolids that is transported to another wastewater treatment facility or facility that further processes sludge or biosolids. These provisions are intended to allow transport of sludge or biosolids to facilities that have been authorized to accept sludge or biosolids. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge or biosolids, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge or biosolids may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge or biosolids transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge or biosolids.

2. For sludge or biosolids transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge or biosolids transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. the annual sludge or biosolids production;

3. the amount of sludge or biosolids transported;

4. the owner of each receiving facility;

5. the location of each receiving facility; and

6. the date(s) of disposal at each receiving facility.

OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and in particular 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category B facility must be operated by a chief operator or an operator holding a Class B license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift that does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.

3. Chronic toxic criteria apply at the edge of the mixing zone. The mixing zone is defined as a volume within a radius of 100 feet from the point of discharge.

4. The permittee shall maintain sufficient evidence of legal restrictions prohibiting residential structures within the part of the buffer zone not owned by the permittee according to 30 TAC § 309.13(e)(3). The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). (See Attachment A.)

5. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

6. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, 1/week may be reduced to 2/month in the Interim & Final phase. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

7. Prior to construction of the Final phase treatment facilities, the permittee shall submit to the TCEQ Wastewater Permitting Section (MC 148) a summary transmittal letter in accordance with the requirements in 30 TAC § 217.6(d). If requested by the Wastewater Permitting

Section, the permittee shall submit plans, specifications, and a final engineering design report which comply with 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems. The permittee shall clearly show how the treatment system will meet the effluent limitations required on Page 2a of this permit. A copy of the summary transmittal letter shall be available at the plant site for inspection by authorized representatives of the TCEQ.

Plans and specifications have been approved for the 1.25 MGD wastewater treatment facility, in accordance with 30 TAC § 217, Design Criteria for Domestic Wastewater Systems. A summary transmittal approval letter was issued (August 31, 2018) (Log No. 0618/025).

8. The permittee shall notify the TCEQ Regional Office (MC Region 12) and the Applications Review and Processing Team (MC 148) of the Water Quality Division, in writing at least forty-five days prior to the completion of the Final phase on Notification of Completion Form 20007.

CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

1. The following pollutants may not be introduced into the treatment facility:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, waste streams with a closed-cup flash point of less than 140° Fahrenheit (60° Celsius) using the test methods specified in 40 CFR § 261.21;

   b. Pollutants which will cause corrosive structural damage to the POTW, but in no case shall there be discharges with a pH lower than 5.0 standard units, unless the works are specifically designed to accommodate such discharges;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, resulting in Interference;

   d. Any pollutant, including oxygen-demanding pollutants (e.g., biochemical oxygen demand), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;

   e. Heat in amounts which will inhibit biological activity in the POTW, resulting in Interference, but in no case shall there be heat in such quantities that the temperature at the POTW treatment plant exceeds 104° Fahrenheit (40° Celsius) unless the Executive Director, upon request of the POTW, approves alternate temperature limits;

   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

   g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; and

   h. Any trucked or hauled pollutants except at discharge points designated by the POTW.

2. The permittee shall require any indirect discharger to the treatment works to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act, including any requirements established under 40 CFR Part 403 [*rev. Federal Register/ Vol. 70/ No. 198/ Friday, October 14, 2005/ Rules and Regulations, pages 60134-60798*].

3. The permittee shall provide adequate notification to the Executive Director, care of the Wastewater Permitting Section (MC 148) of the Water Quality Division, within 30 days subsequent to the permittee's knowledge of either of the following:

   a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if it were directly discharging those pollutants; and

   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

   Any notice shall include information on the quality and quantity of effluent to be introduced into the treatment works and any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

Revised July 2007

BIOMONITORING REQUIREMENTS

CHRONIC BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

   a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival, reproduction, or growth of the test organisms.

   b. Within 90 days of initial discharge of the 1.25 MGD facility, the permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this part of this permit and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," fourth edition (EPA-821-R-02-013) or its most recent update:

      1) Chronic static renewal survival and reproduction test using the water flea (*Ceriodaphnia dubia*) (Method 1002.0). This test should be terminated when 60% of the surviving adults in the control produce three broods or at the end of eight days, whichever occurs first. This test shall be conducted once per quarter.

      2) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*) (Method 1000.0). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted occurs per quarter.

      The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

   c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These effluent dilution concentrations are 6%, 8%, 11%, 15%, and 20% effluent. The critical dilution, defined as 15% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.

   d. This permit may be amended to require a WET limit, chemical-specific effluent limits, a best management practice, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

   e. Testing Frequency Reduction

      1) If none of the first four consecutive quarterly tests demonstrates

significant toxicity, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test species.

2) If one or more of the first four consecutive quarterly tests demonstrates significant toxicity, the permittee shall continue quarterly testing for that species until this permit is reissued. If a testing frequency reduction had been previously granted and a subsequent test demonstrates significant toxicity, the permittee will resume a quarterly testing frequency for that species until this permit is reissued.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fail to meet the following criteria:

1) a control mean survival of 80% or greater;

2) a control mean number of water flea neonates per surviving adult of 15 or greater;

3) a control mean dry weight of surviving fathead minnow larvae of 0.25 mg or greater;

4) a control coefficient of variation percent (CV%) of 40 or less between replicates for the young of surviving females in the water flea test; and the growth and survival endpoints in the fathead minnow test;

5) a critical dilution CV% of 40 or less for the young of surviving females in the water flea test; and the growth and survival endpoints for the fathead minnow test. However, if statistically significant lethal or nonlethal effects are exhibited at the critical dilution, a CV% greater than 40 shall not invalidate the test;

6) a percent minimum significant difference of 47 or less for water flea reproduction; and

7) a percent minimum significant difference of 30 or less for fathead minnow growth.

b. Statistical Interpretation

1) For the water flea survival test, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be the Fisher's exact test as described in the manual referenced in Part 1.b.

2) For the water flea reproduction test and the fathead minnow larval survival and growth tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent

dilution shall be in accordance with the manual referenced in Part 1.b.

3) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test-results are interpreted and reported correctly. The document entitled "Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)" (EPA 821-B-00-004) provides guidance on determining the validity of test results.

4) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the survival in the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 80% in the critical dilution and all dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements.

5) The NOEC is defined as the greatest effluent dilution at which no significant effect is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which a significant effect is demonstrated. A significant effect is defined as a statistically significant difference between the survival, reproduction, or growth of the test organism in a specified effluent dilution compared to the survival, reproduction, or growth of the test organism in the control.

6) The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 3.

7) Pursuant to the responsibility assigned to the permittee in Part 2.b.3), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The guidance manual referenced in Item 3 will be used when making a determination of test acceptability.

8) TCEQ staff will review test results for consistency with rules, procedures, and permit requirements.

c. Dilution Water

1) Dilution water used in the toxicity tests must be the receiving water collected as close to the point of discharge as possible but unaffected by the discharge.

2) Where the receiving water proves unsatisfactory as a result of pre-existing instream toxicity (i.e. fails to fulfill the test acceptance criteria of Part 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of Part 2.a;

b) the test indicating receiving water toxicity was carried out to completion (i.e., 7 days); and

c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3.

3) The synthetic dilution water shall consist of standard, moderately hard, reconstituted water. Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.

d. Samples and Composites

1) The permittee shall collect a minimum of three composite samples from Outfall 002. The second and third composite samples will be used for the renewal of the dilution concentrations for each toxicity test.

2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first composite sample. The holding time for any subsequent composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 002 ceases discharging during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions, and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.

5) The effluent samples shall not be dechlorinated after sample collection.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

a. The permittee shall prepare a full report of the results of all tests conducted in accordance with the manual referenced in Part 1.b. for every valid and invalid toxicity test initiated whether carried to completion or not.

b. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit.

1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12-month period.

2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6-month period.

3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th for biomonitoring conducted during the previous calendar quarter.

4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.

c. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TLP3B, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For the water flea, Parameter TOP3B, report the NOEC for survival.

3) For the water flea, Parameter TXP3B, report the LOEC for survival.

4) For the water flea, Parameter TWP3B, enter a "1" if the NOEC for reproduction is less than the critical dilution; otherwise, enter a "0."

5) For the water flea, Parameter TPP3B, report the NOEC for reproduction.

6) For the water flea, Parameter TYP3B, report the LOEC for reproduction.

7) For the fathead minnow, Parameter TLP6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

8) For the fathead minnow, Parameter TOP6C, report the NOEC for survival.

9) For the fathead minnow, Parameter TXP6C, report the LOEC for survival.

10) For the fathead minnow, Parameter TWP6C, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."

11) For the fathead minnow, Parameter TPP6C, report the NOEC for growth.

12) For the fathead minnow, Parameter TYP6C, report the LOEC for growth.

d. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

4. Persistent Toxicity

The requirements of this part apply only when a test demonstrates a significant effect at the critical dilution. Significant effect and significant lethality were defined in Part 2.b. Significant sublethality is defined as a statistically significant difference in growth/reproduction at the critical dilution when compared to the growth/reproduction of the test organism in the control.

a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates a significant effect (lethal or sublethal) at the critical dilution. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test.

b. If the retests are performed due to a demonstration of significant lethality, and one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5. The provisions of Part 4.a. are suspended upon completion of the two retests and submittal of the TRE action plan and schedule defined in Part 5.

If neither test demonstrates significant lethality and the permittee is testing under the reduced testing frequency provision of Part 1.c., the permittee shall return to a quarterly testing frequency for that species.

c. If the two retests are performed due to a demonstration of significant sublethality, and one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall again perform two retests as stipulated in Part 4.a.

d. If the two retests are performed due to a demonstration of significant sublethality, and neither test demonstrates significant lethality, the permittee shall continue testing at the quarterly frequency.

e. Regardless of whether retesting for lethal or sublethal effects, or a combination of the two, no more than one retest per month is required for a species.

5. Toxicity Reduction Evaluation

a. Within 45 days of the retest that demonstrates significant lethality, or within 45 days of being so instructed due to multiple toxic events, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be

limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, or within 90 days of being so instructed due to multiple toxic events, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall describe an approach for the reduction or elimination of lethality for both test species defined in Part 1.b. At a minimum, the TRE action plan shall include the following:

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA/600/6-91/005F) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE action plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects a specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;

3) Quality Assurance Plan - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE action plan should describe the project staff, project manager, consulting engineering services (where applicable),

consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.

d. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and substantiating documentation which identifies the pollutant(s) and source of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and

6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit

will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

g. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE. The report shall provide information pertaining to the specific control mechanism selected that will, when implemented, result in the reduction of effluent toxicity to no significant lethality at the critical dilution. The report shall also provide a specific corrective action schedule for implementing the selected control mechanism.

h. Based on the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, to require a compliance schedule for implementation of corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

i. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 1 (SHEET 1 OF 4)

BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

Dates and Times Composites Collected

Date Time Date Time

No. 1 FROM: _____ TO: _____

No. 2 FROM: _____ TO: _____

No. 3 FROM: _____ TO: _____

Test initiated: _____am/pm _____date

Dilution water used: _____ Receiving Water _____ Synthetic Dilution Water

NUMBER OF YOUNG PRODUCED PER ADULT AT END OF TEST

	Percent effluent (%)					
REP	0%	6%	8%	11%	15%	20%
A						
B						
C						
D						
E						
F						
G						
H						
I						
J						
Survival Mean						
Total Mean						
CV%*						
PMSD						

*Coefficient of Variation = standard deviation x 100/mean (calculation based on young of the surviving adults) Designate males (M), and dead females (D), along with number of neonates (x) released prior to death.

TABLE 1 (SHEET 2 OF 4)

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean number of young produced per adult significantly less than the number of young per adult in the control for the % effluent corresponding to significant nonlethal effects?

   CRITICAL DILUTION (15%): _____ YES _____ NO

PERCENT SURVIVAL

	Percent effluent					
Time of Reading	0%	6%	8%	11%	15%	20%
24h						
48h						
End of Test						

2. Fisher's Exact Test:

   Is the mean survival at test end significantly less than the control survival for the % effluent corresponding to lethality?

   CRITICAL DILUTION (15%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

   a.) NOEC survival = _____% effluent

   b.) LOEC survival = _____% effluent

   c.) NOEC reproduction = _____% effluent

   d.) LOEC reproduction = _____% effluent

TABLE 1 (SHEET 3 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL

Dates and Times Composites Collected

Date Time Date Time

No. 1 FROM: _____ TO: _____

No. 2 FROM: _____ TO: _____

No. 3 FROM: _____ TO: _____

Test initiated: _____am/pm _____date

Dilution water used: _____ Receiving Water _____ Synthetic Dilution Water

FATHEAD MINNOW GROWTH DATA

Effluent Concentration	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight	CV%*
	A	B	C	D	E		
0%							
6%							
8%							
11%							
15%							
20%							
PMSD							

* Coefficient of Variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean dry weight (growth) at 7 days significantly less than the control's dry weight (growth) for the % effluent corresponding to significant nonlethal effects?

CRITICAL DILUTION (15%): _____ YES _____ NO

TABLE 1 (SHEET 4 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW GROWTH AND SURVIVAL TEST

FATHEAD MINNOW SURVIVAL DATA

Effluent Concentration	Percent Survival in replicate chambers					Mean percent survival			CV%*
	A	B	C	D	E	24h	48h	7 day	
0%									
6%									
8%									
11%									
15%									
20%									

* Coefficient of Variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean survival at 7 days significantly less (p=0.05) than the control survival for the % effluent corresponding to lethality?

   CRITICAL DILUTION (15%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC/LOEC below:

   a.) NOEC survival = _____% effluent

   b.) LOEC survival = _____% effluent

   c.) NOEC growth = _____% effluent

   d.) LOEC growth = _____% effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 002 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

a. The permittee shall test the effluent for lethality in accordance with the provisions in this section. Such testing will determine compliance with Texas Surface Water Quality Standard 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.

b. Within 90 days of initial discharge of the 1.25 MGD facility, the toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," fifth edition (EPA-821-R-02-012) or its most recent update:

1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. The control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

d. This permit may be amended to require a WET limit, a best management practice, a chemical-specific limit, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

2. Required Toxicity Testing Conditions

a. Test Acceptance – The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.

b. Dilution Water - In accordance with Part 1.c., the control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

c. Samples and Composites

1) The permittee shall collect one composite sample from Outfall 002.

2) The permittee shall collect the composite sample such that the sample is representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the composite sample. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 002 ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report.

5) The effluent sample shall not be dechlorinated after sample collection.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the manual referenced in Part 1.b. for every valid and invalid toxicity test initiated.

b. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit.

1) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6-month period.

2) Quarterly biomonitoring test results are due on or before April 20th, July 20th, and October 20th, and January 20th for biomonitoring conducted during the previous calendar quarter.

c. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TIE3D, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

2) For the fathead minnow, Parameter TIE6C, enter a "0" if the mean

survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

d. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

2) For retest number 2, Parameter 22416, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

4. Persistent Mortality

The requirements of this part apply when a toxicity test demonstrates significant lethality, which is defined as a mean mortality of 50% or greater of organisms exposed to the 100% effluent concentration after 24 hours.

a. The permittee shall conduct 2 additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for 2 weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These effluent concentrations are 6%, 13%, 25%, 50% and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour.

b. If one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5.

5. Toxicity Reduction Evaluation

a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analyses to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall lead to the successful elimination of significant lethality for both test species defined in item 1.b. As a minimum, the TRE action plan shall include the following:

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity

characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE action plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;

3) Quality Assurance Plan - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE action plan should describe the project staff, manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.

d. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly TRE Activities Reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and substantiating documentation that identifies the pollutant

and source of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and

6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

g. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE. The report shall specify the control mechanism that will, when implemented, reduce effluent toxicity as specified in Part 5.h. The report shall also specify a corrective action schedule for implementing the selected control mechanism.

h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE.

The permittee may be exempted from complying with 30 TAC § 307.6(e)(2)(B) upon proving that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g., metals) form a salt compound. Following the exemption, this permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, require a compliance schedule for implementing corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

j. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN*						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

TABLE 2 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

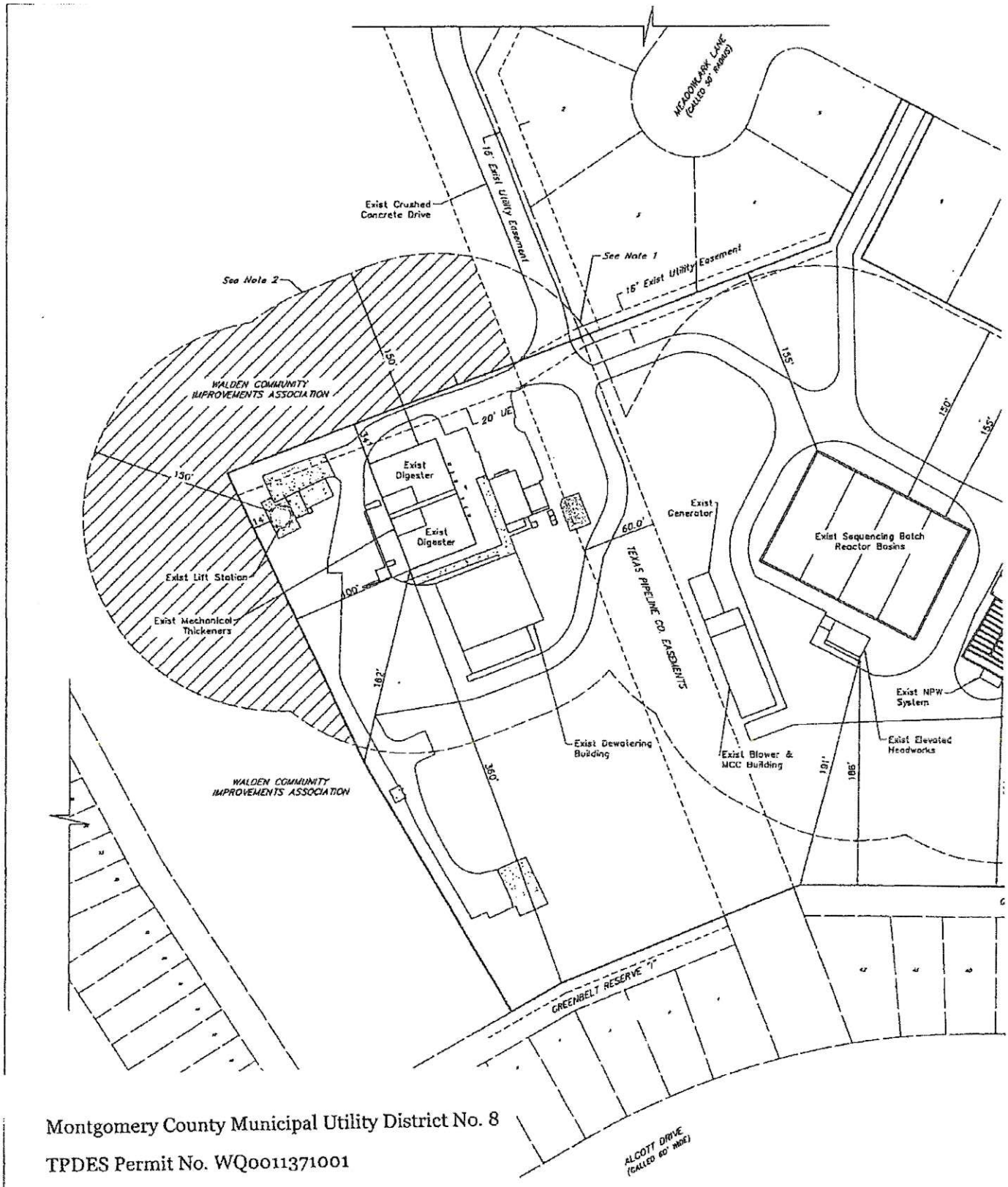
PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

ATTACHMENT A



Montgomery County Municipal Utility District No. 8

TPDES Permit No. WQ0011371001

ATTACHMENT "A"

TPDES PERMIT NO.
WQ0010781004
[For TCEQ office use only - EPA I.D. No. TX0116572]

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

This is a renewal that replaces TPDES Permit No. WQ0010781004 issued on August 7, 2012.

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

City of Huntsville

whose mailing address is

1212 Avenue M
Huntsville, Texas 77340

is authorized to treat and discharge wastes from the Robinson Creek Wastewater Treatment Facility, SIC Code 4952

located at 4420 Farm-to-Market Road 1374 in City of Huntsville, Walker County, Texas 77340

to Robinson Creek, thence to West Fork San Jacinto River, thence to Lake Conroe in Segment No. 1012 of the San Jacinto River Basin

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

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

ISSUED DATE:
August 28, 2019

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall Number 001

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

   The annual average flow of effluent shall not exceed 2.5 million gallons per day (MGD), nor shall the average discharge during any two-hour period (2-hour peak) exceed 5,208 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg	7-day Avg	Daily Max	Single Grab	Report Daily Avg. & Daily Max.	
	mg/l (lbs/day)	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (208)	15	25	35	Two/week	Composite
Total Suspended Solids	15 (313)	25	40	60	Two/week	Composite
Ammonia Nitrogen	3 (63)	6	10	15	Two/week	Composite
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	399	N/A	Daily	Grab

2. The permittee shall utilize an Ultraviolet Light (UV) system for disinfection purposes. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per week by grab sample.

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

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 5.0 mg/l and shall be monitored twice per week by grab sample.

7. The annual average flow and maximum 2-hour peak flow shall be reported monthly.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

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

1. Flow Measurements

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

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

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

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

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

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

2. Concentration Measurements

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

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

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

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

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

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

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

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

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

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

3. Sample Type

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

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

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

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

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

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

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

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

2. Test Procedures

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

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

3. Records of Results

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

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period

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

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;

ii. identity of individual who collected the sample or made the measurement.

iii. date and time of analysis;

iv. identity of the individual and laboratory who performed the analysis;

v. the technique or method of analysis; and

vi. the results of the analysis or measurement and quality assurance/quality control records.

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

4. Additional Monitoring by Permittee

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

5. Calibration of Instruments

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

6. Compliance Schedule Reports

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

7. Noncompliance Notification

a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Compliance Monitoring Team of the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective September 1, 2020, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

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

   i. Unauthorized discharges as defined in Permit Condition 2(g).

   ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.

   iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

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

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

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

9. Changes in Discharges of Toxic Substances

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

   a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D,

Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. One hundred micrograms per liter (100 µg/L);

ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or

iv. The level established by the TCEQ.

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

i. Five hundred micrograms per liter (500 µg/L);

ii. One milligram per liter (1 mg/L) for antimony;

iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or

iv. The level established by the TCEQ.

10. Signatories to Reports

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

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

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

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

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

i. The quality and quantity of effluent introduced into the POTW; and

ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

a. When the permittee becomes aware that it failed to submit any relevant facts in a permit

application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

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

i. Violation of any terms or conditions of this permit;

ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

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

2. Compliance

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

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

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

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

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

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

g. There shall be no unauthorized discharge of wastewater or any other waste. For the

purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

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

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

3. Inspections and Entry

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

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

4. Permit Amendment and/or Renewal

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

i. The alteration or addition to a permitted facility may meet one of the criteria for

determining whether a facility is a new source in accordance with 30 TAC § 305.534 (relating to New Sources and New Dischargers); or

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

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

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

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

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

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

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

5. Permit Transfer

a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of

facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

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

6. Relationship to Hazardous Waste Activities

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

7. Relationship to Water Rights

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

8. Property Rights

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

9. Permit Enforceability

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

10. Relationship to Permit Application

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

11. Notice of Bankruptcy

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

i. the permittee;

ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or

iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee and the permit number(s);

ii. the bankruptcy court in which the petition for bankruptcy was filed; and

iii the date of filing of the petition.

OPERATIONAL REQUIREMENTS

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

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

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

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

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

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

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

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

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for

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

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

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

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

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

   c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be

made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

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

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

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

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

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

    c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Corrective Action Section (MC 221) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

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

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

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

i. Volume of waste and date(s) generated from treatment process;
ii. Volume of waste disposed of on-site or shipped off-site;
iii. Date(s) of disposal;
iv. Identity of hauler or transporter;
v. Location of disposal site; and
vi. Method of final disposal.

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

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

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SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Sewage Sludge. This provision does not authorize the permittee to land apply sludge on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.

3. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

B. Testing Requirements

1. Sewage sludge shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 12) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

2. Sewage sludge shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C. of this permit.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B pathogen requirements.

a. For sewage sludge to be classified as Class A with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge must be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information;

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion; or

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%; or

Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information; or

Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB sewage sludge may be classified a Class A sewage sludge if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B criteria for

sewage sludge.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a

single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition to the Alternatives 1 – 3, the following site restrictions must be met if Class B sludge is land applied:

i. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.

v. Animals shall not be allowed to graze on the land for 30 days after application of sewage sludge.

vi. Turf grown on land where sewage sludge is applied shall not be harvested for 1 year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of sewage sludge.

viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

ix. Land application of sludge shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are

defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 -

i. Sewage sludge shall be injected below the surface of the land.

ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10-

i. Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When sewage sludge that is incorporated into the soil is Class A or Class AB with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- annually
PCBs	- annually

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of sewage sludge (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk sewage sludge applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (e.g., sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk sewage sludge shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.

2. Bulk sewage sludge not meeting Class A requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk sewage sludge shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk sewage sludge sold or given away. The information sheet shall contain the following information:

   a. The name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land.

   b. A statement that application of the sewage sludge to the land is prohibited except in accordance with the instruction on the label or information sheet.

   c. The annual whole sludge application rate for the sewage sludge application rate for the sewage sludge that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk sewage sludge is applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk sewage sludge is proposed to be applied. The notice shall include:

   a. The location, by street address, and specific latitude and longitude, of each land application site.

   b. The approximate time period bulk sewage sludge will be applied to the site.

   c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk sewage sludge.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

E. Record keeping Requirements

The sludge documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at

the facility site and/or shall be readily available for review by a TCEQ representative for a period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B sludge, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which sludge is applied.

   c. The number of acres in each site on which bulk sludge is applied.

   d. The date and time sludge is applied to each site.

e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

f. The total amount of sludge applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (e.g., sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B sludge, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk sewage sludge is applied.

    c. The date and time bulk sewage sludge is applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk sewage sludge applied to each site.

    e. The amount of sewage sludge (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge and supplies that sewage sludge to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

D. Sewage sludge shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

   Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 12) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

   The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

E. Sewage sludge shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record keeping Requirements

   The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year the following information. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (e.g., sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge production in dry tons/year.

4. Amount of sludge disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge transported interstate in dry tons/year.

6. A certification that the sewage sludge meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge that is transported to another wastewater treatment facility or facility that further processes sludge. These provisions are intended to allow transport of sludge to facilities that have been authorized to accept sludge. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge.

2. For sludge transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year. Effective September 1, 2020, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge treatment process or processes at the facility: preliminary operations (e.g., sludge grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.
2. the annual sludge production;
3. the amount of sludge transported;
4. the owner of each receiving facility;
5. the location of each receiving facility; and
6. the date(s) of disposal at each receiving facility.

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OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and, in particular, 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category B facility must be operated by a chief operator or an operator holding a Category B license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift that does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.

3. Chronic toxic criteria apply at the edge of the mixing zone. The mixing zone is defined as 300 feet downstream and 100 feet upstream from the point of discharge.

4. The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). In addition, by ownership of the required buffer zone area, the permittee shall comply with the requirements of 30 TAC § 309.13(e).

5. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

6. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, daily may be reduced to 5/week. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

1. The permittee shall operate an industrial pretreatment program in accordance with Sections 402(b)(8) and (b)(9) of the Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403) and the approved City of Huntsville POTW pretreatment program submitted by the permittee. The pretreatment program was approved on **September 30, 1982,** modified on **July 21, 1995,** and modified on **June 17, 2011.**

   The legal authority and the POTW's pretreatment program are not in compliance with the current 40 CFR Part 403 regulations *[rev. Federal Register/ Vol. 70/ No. 198/ Friday, October 14, 2005/ Rules and Regulations, pages 60134-60798]* and the 30 TAC Chapter 315, as amended. The permittee has submitted a modification to their pretreatment program containing some or all of the required [*i.e.* more stringent] Streamlining Rule provisions to the TCEQ on **June 4, 2012**. The submittal was declared administratively complete on **July 23, 2013**. The Executive Director is currently conducting the technical review this modification. If after review of the modification submission, the Executive Director determines that the submission does not comply with applicable requirements, including 40 CFR §§ 403.8 and 403.9, the Executive Director will notify the permittee. According to 40 CFR § 403.11(c), the notification will include suggested modifications to bring the modification submission into compliance with applicable requirements, including 40 CFR §§ 403.8(b) and (f), and 403.9(b). In such a case, revised information will be necessary for the Executive Director to make a determination on whether to approve or deny the permittee's modification submission.

   The POTW pretreatment program is hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:

   a. Industrial user (IU) information shall be kept current according to 40 CFR §§ 403.8(f)(2)(i) and (ii) and updated at a frequency set forth in the approved pretreatment program to reflect accurate characterization of all IUs;

   b. The frequency and nature of IU compliance monitoring activities by the permittee shall be consistent with the approved POTW pretreatment program and commensurate with the character, consistency, and volume of waste. The permittee is required to inspect and sample the effluent from each significant industrial user (SIU) at least once per year, except as specified in 40 CFR § 403.8 (f)(2)(v). This is in addition to any industrial self-monitoring activities;

   c. The permittee shall enforce and obtain remedies for IU noncompliance with applicable pretreatment standards and requirements and the approved POTW pretreatment program;

   d. The permittee shall control through permit, order, or similar means, the contribution to the POTW by each IU to ensure compliance with applicable pretreatment standards and requirements and the approved POTW pretreatment program. In the case of SIUs (identified as significant under 40 CFR § 403.3 (v)), this control shall be achieved through individual or general control mechanisms, in accordance with 40 CFR § 403.8(f)(1)(iii).

      Both individual and general control mechanisms must be enforceable and contain, at a minimum, the following conditions:

(1) Statement of duration (in no case more than five years);
(2) Statement of non-transferability without, at a minimum, prior notification to the POTW and provision of a copy of the existing control mechanism to the new owner or operator;
(3) Effluent limits, which may include enforceable best management practices (BMPs), based on applicable general pretreatment standards, categorical pretreatment standards, local limits, and State and local law;
(4) Self-monitoring, sampling, reporting, notification and record keeping requirements, identification of the pollutants to be monitored (including, if applicable, the process for seeking a waiver for a pollutant neither present nor expected to be present in the IU's discharge in accordance with 40 CFR § 403.12(e)(2), or a specific waived pollutant in the case of an individual control mechanism), sampling location, sampling frequency, and sample type, based on the applicable general pretreatment standards in 40 CFR Part 403, categorical pretreatment standards, local limits, and State and local law;
(5) Statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule. Such schedules may not extend the compliance date beyond federal deadlines; and;
(6) Requirements to control slug discharges, if determined by the POTW to be necessary.

e. In order to implement 40 CFR § 403.8(f)(1)(iii)(A)(2), a monitoring waiver for a pollutant neither present nor expected to be present in the IU's discharge is not effective in the general control mechanism until after the POTW has provided written notice to the SIU that such a waiver request has been granted in accordance with 40 CFR § 403.12(e)(2).

f. The permittee shall evaluate whether each SIU needs a plan or other action to control slug discharges, in accordance with 40 CFR § 403.8(f)(2)(vi). If the POTW decides that a slug control plan is needed, the plan shall contain at least the minimum elements required in 40 CFR § 403.8(f)(2)(vi);

g. The permittee shall provide adequate staff, equipment, and support capabilities to carry out all elements of the pretreatment program; and,

h. The approved program shall not be modified by the permittee without the prior approval of the Executive Director care of the Pretreatment Team (MC148) of the Water Quality Division, according to 40 CFR § 403.18.

2. The permittee is under a continuing duty to: establish and enforce specific local limits to implement the provisions of 40 CFR § 403.5, develop and enforce local limits as necessary, and modify the approved pretreatment program as necessary to comply with federal, state and local law, as amended. The permittee may develop BMPs to implement paragraphs 40 CFR §§ 403.5(c)(1) and (c)(2). Such BMPs shall be considered local limits and pretreatment standards.

The permittee is required to effectively enforce such limits and to modify their pretreatment program, including the Legal Authority, Enforcement Response Plan and/or Standard Operating Procedures, if required by the Executive Director to reflect

changing conditions at the POTW. Substantial modifications will be approved in accordance with 40 CFR §403.18, and modifications will become effective upon approval by the Executive Director in accordance with 40 CFR §403.18.

Upon approval by the Executive Director of the substantial modification to this approved POTW pretreatment program, the requirement to develop and enforce specific prohibitions and/or limits to implement the prohibitions and limits set forth in 40 CFR §§403.5 (a)(1), (b), (c)(1) and (3), and (d) is a condition of this permit. The specific prohibitions set out in 40 CFR § 403.5(b) shall be enforced by the permittee unless modified under this provision.

3. The permittee shall prepare annually a list of IUs which were in significant noncompliance (SNC) with applicable pretreatment requirements during the preceding twelve (12) months. For the purposes of this section of the permit, "CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS", SNC shall be determined based upon the more stringent of either criteria established at 40 CFR § 403.8(f)(2)(viii) *[rev. 10/14/05]* or criteria established in the approved POTW pretreatment program. This list is to be published annually during the month of **August** in a newspaper of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW.

In addition, each **August** the permittee shall submit an updated pretreatment program annual status report, in accordance with 40 CFR §403.12(i), to the TCEQ Pretreatment Team (MC148) of the Water Quality Division. The report shall contain the following information, as well as the information on the attached tables in this section. The report summary shall be submitted on the Pretreatment Performance Summary (PPS) form [TCEQ-20218].

a. An updated list of all regulated IUs as indicated in this section. For each listed IU, the following information shall be included:

(1) Standard Industrial Classification (SIC) or North American Industry Classification System (NAICS) code and categorical determination;

(2) If the pretreatment program has been modified and approved to incorporate reduced monitoring for any of the categorical IUs as provided by 40 CFR Part 403 *[rev. 10/14/05]*, then the list must also identify:
- categorical IUs subject to the conditions for reduced monitoring and reporting requirements under 40 CFR §§ 403.12(e)(1) and (3);
- those IUs that are non-significant categorical industrial users (NSCIUs) under 40 CFR § 403.3(v)(2); and
- those IUs that are middle tier categorical industrial users (MTCIUs) under 40 CFR § 403.12(e)(3).

(3) Control mechanism status.
- Indicate whether the IU has an effective individual or general control mechanism, and the date such document was last issued, reissued, or modified;
- Indicate which IUs were added to the system, or newly identified, during the pretreatment year reporting period;
- Include the type of general control mechanisms; and

- Report all NSCIU annual evaluations performed, as applicable.

(4) A summary of all compliance monitoring activities performed by the POTW during the pretreatment year reporting period. The following information shall be reported:
- Total number of inspections performed; and
- Total number of sampling events conducted.

(5) Status of IU compliance with effluent limitations, reporting, and narrative standard (which may include enforceable BMPs, narrative limits, and/or operational standards) requirements. Compliance status shall be defined as follows:
- Compliant (C) - no violations during the pretreatment year reporting period;
- Non-compliant (NC) - one or more violations during the pretreatment year reporting period but does not meet the criteria for SNC; and
- Significant Noncompliance (SNC) - in accordance with requirements described above in this section.

(6) For noncompliant IUs, indicate the nature of the violations, the type and number of actions taken (notice of violation, administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. If any IU was on a schedule to attain compliance with effluent limits or narrative standards, indicate the date the schedule was issued and the date compliance is to be attained.

b. A list of each IU whose authorization to discharge was terminated or revoked during the pretreatment year reporting period and the reason for termination.

c. A report on any interference, pass through, upset, or POTW permit violations known or suspected to be caused by IUs and response actions taken by the permittee

d. An original newspaper public notice, or copy of the newspaper publication with official affidavit, of the list of significantly noncompliant IUs, giving the name of the newspaper and the date the list was published.

e. The information required by this section including the information on the attached tables must be submitted. The permittee may submit the information in tabular form using the example table format provided. Please attach on a separate sheet those explanations to document various pretreatment activities, including IU permits that have expired, BMP violations, and required sampling events not conducted by the permittee as required.

f. A summary of changes to the POTW's pretreatment program that have not been previously reported to the Approval Authority.

Effective September 1, 2020, the permittee must submit the updated pretreatment program annual status report required by this section electronically using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. *[rev. Federal Register/ Vol. 80/ No.*

204/ Friday, October 22, 2015/ Rules and Regulations, pages 64064-64158].

4. The permittee shall provide adequate written notification to the Executive Director care of the Pretreatment Team (MC148) of the Water Quality Division, within 30 days of the permittee's knowledge of the following:

   a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if the indirect discharger was directly discharging those pollutants; and

   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

   Adequate notice shall include information on the quality and quantity of effluent to be introduced into the treatment works, and any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

Revised December 2018

TPDES Pretreatment Program Annual Report Form for Updated Industrial Users List

Reporting month/year: _____, _____ to _____, _____

TPDES Permit No.: _____ Permittee:_____ Treatment Plant: _____

PRETREATMENT PROGRAM STATUS REPORT UPDATED INDUSTRIAL USERS[1] LIST																	
Industrial User Name	SIC or NAICS Code	CIU[2]	CONTROL MECHANISM				New User[3] (Y or N)	Times Inspected by the CA	Times Sampled by the CA	COMPLIANCE STATUS During the Pretreatment Year Reporting Period[4] (C = Compliant, NC = Noncompliant, SNC= Significant Noncompliance)							
										REPORTS							
			Y/N or NR[5]	IND or GEN or NR	Last Action[6]	TBLLs or TBLLs only[7]				BMR	90-Day	Semi-Annual	Self-Monitoring[8]	NSCIU Certifications	Effluent Limits	Narrative Standards

1 Include all significant industrial users (SIUs), non-significant categorical industrial users (NSCIUs) as defined in 40 CFR §403.3(v)(2), and/or middle tier categorical industrial users (MTCIUs) as defined in 40 CFR § 403.12(e)(3). Please do not include non-significant noncategorical IUs that are covered under best management practices (BMPs) or general control mechanisms.

2 Categorical determination (include 40 CFR citation and NSCIU or MTCIU status, if applicable).

3 Indicate whether the IU is a new user. If the answer is No or N, then indicate the expiration date of the last issued IU permit.

4 The term SNC applies to a broader range of violations, such as daily maximum, long-term average, instantaneous limits, and narrative standards (which may include enforceable BMPs, narrative limits and/or operational standards). Any other violation, or group of violations, which the POTW determines will adversely affect the operation or implementation of the local Pretreatment Program now includes BMP violations (40 CFR § 403.8(f)(2)(viii)(H)).

5 Code NR= None required (NSCIUs only); IND = individual control mechanism; GEN = general control mechanism. Include as a footnote (or on a separate page) the name of the general control mechanism used for similar groups of IUs, identify the similar types of operations and types of wastes that are the same for each general control mechanism. Any BMPs through general control mechanisms that are applied to nonsignificant IUs need to be reported separately, *e.g.* the sector type and BMP description.

6 Permit or NSCIU evaluations as applicable.

7 According to 40 CFR § 403.12(i)(1), indicate whether the IU is subject to technically based local limits (TBLLs) that are more stringent than categorical pretreatment standards, *e.g.* where there is one end-of-pipe sampling point at a CIU, and you have determined that the TBLLs are more stringent than the categorical pretreatment standards for any pollutant at the end-of-pipe sampling point; **OR** the IU is subject only to local limits (TBLLs only), *e.g.* the IU is a non-categorical SIU subject only to TBLLs at the end-of-pipe sampling point.

8 For those IUs where a monitoring waiver has been granted, please add the code "W" (after either C, NC, or SNC codes) and indicate the pollutant(s) for which the waiver has been granted.

TPDES Pretreatment Program Annual Report Form for Industrial User Inventory Modifications

Reporting month/year: _____, _____ to _____, _____

TPDES Permit No: _____ Permittee: _____ Treatment Plant: _____

INDUSTRIAL USER INVENTORY MODIFICATIONS					
FACILITY NAME, ADDRESS AND CONTACT PERSON	ADD, CHANGE, DELETE (Including categorical reclassification to NSCIU or MTCIU)	IF DELETION: Reason For Deletion	IF ADDITION OR SIGNIFICANT CHANGE:		
			PROCESS DESCRIPTION	POLLUTANTS (Including any sampling waiver given for each pollutant not present)	FLOW RATE [9] (In gpd) R = Regulated U = Unregulated T = Total

9 For NSCIUs, total flow must be given, if regulated flow is not determined.

TPDES Pretreatment Program Annual Report Form for Enforcement Actions Taken

Reporting month/year: _____, _____ to _____, _____

TPDES Permit No: _____ Permittee: _____ Treatment Plant: _____

Overall SNC ___% SNC [10] based on: Effluent Violations_____%
Reporting Violations_____% Narrative Standard Violations___%

Noncompliant Industrial Users - Enforcement Actions Taken															
Industrial User Name	Nature of Violation [11]				Number of Actions Taken					Penalties Collected (Do not Include Surcharge)	Compliance Schedule			Current Status Returned to Compliance: (Y or N)	Comments
	Effluent Limits	Reports	NSCIU Certifications	Narrative Standards	NOV	A.O.	Civil	Criminal	Other		Y or N	Date Issued	Date Due		

10 # %
__ __ Pretreatment Standards [WENDB-PSNC] (Local Limits/Categorical Standards)
__ __ Reporting Requirements [WENDB-PSNC]
__ __ Narrative Standards

11 Please specify a separate number for each type of violation, *e.g.* report, notification, and/or NSCIU certification.

CHRONIC BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival, reproduction, or growth of the test organisms.

b. The permittee shall conduct the following toxicity tests using the test organisms, procedures and quality assurance requirements specified in this part of this permit and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms," fourth edition (EPA-821-R-02-013) or its most recent update:

1) Chronic static renewal survival and reproduction test using the water flea (*Ceriodaphnia dubia*) (Method 1002.0). This test should be terminated when 60% of the surviving adults in the control produce three broods or at the end of eight days, whichever occurs first. This test shall be conducted once per quarter.

2) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*) (Method 1000.0). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These effluent dilution concentrations are 31%, 41%, 55%, 73%, and 100% effluent. The critical dilution, defined as 97% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.

d. This permit may be amended to require a WET limit, a chemical-specific effluent limit, a best management practice, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

e. Testing Frequency Reduction

1) If none of the first four consecutive quarterly tests demonstrates significant toxicity, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test

species.

2) If one or more of the first four consecutive quarterly tests demonstrates significant toxicity, the permittee shall continue quarterly testing for that species until this permit is reissued. If a testing frequency reduction had been previously granted and a subsequent test demonstrates significant toxicity, the permittee shall resume a quarterly testing frequency for that species until this permit is reissued.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fail to meet the following criteria:

1) a control mean survival of 80% or greater;

2) a control mean number of water flea neonates per surviving adult of 15 or greater;

3) a control mean dry weight of surviving fathead minnow larvae of 0.25 mg or greater;

4) a control coefficient of variation percent (CV%) of 40 or less in between replicates for the young of surviving females in the water flea test; and the growth and survival endpoints in the fathead minnow test;

5) a critical dilution CV% of 40 or less for young of surviving females in the water flea test; and the growth and survival endpoints for the fathead minnow test, unless statistically significant toxicity is demonstrated at the critical dilution, in which case the test shall be considered valid;

6) a percent minimum significant difference of 47 or less for water flea reproduction; and

7) a PMSD of 30 or less for fathead minnow growth.

b. Statistical Interpretation

1) For the water flea survival and reproduction test, the statistical analyses used to determine the inhibition concentration of effluent that would cause a 25% reduction (IC25) in survival or mean young per female shall be as described in the methods manual referenced in Part 1.b.

2) For the fathead minnow larval survival and growth tests, the statistical analyses used to determine the IC25 in survival or growth shall be as described in the methods manual referenced in Part 1.b.

3) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test-results are interpreted and reported correctly. The document entitled "Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR

Part 136)" (EPA 821-B-00-004) provides guidance on determining the validity of test results.

4) Most point estimates are derived from a mathematical model that assumes a continuous dose-response relationship. For any test result that demonstrates a non-continuous (threshold) response, or a non-monotonic dose-response relationship, the IC25 should be determined based on the method guidance manual referenced in Item 3.

5) Pursuant to the responsibility assigned to the permittee in Part 2.b.3), test results that demonstrate a non-monotonic dose-response relationship may be submitted, prior to the due date, for technical review of test validity and acceptability. The method guidance manual referenced in Item 3 will be used as the basis, along with best professional judgement, for making a determination of test validity and acceptability.

c. Dilution Water

1) Dilution water used in the toxicity tests shall be the receiving water collected at a point upstream of the discharge as close as possible to the discharge point but unaffected by the discharge. Where the toxicity tests are conducted on effluent discharges to receiving waters that are classified as intermittent streams, or where the toxicity tests are conducted on effluent discharges where no receiving water is available due to zero flow conditions, the permittee shall:

a) substitute a synthetic dilution water that has a pH, hardness, and alkalinity similar to that of the closest downstream perennial water unaffected by the discharge; or

b) use the closest downstream perennial water unaffected by the discharge.

2) Where the receiving water proves unsatisfactory as a result of pre-existing instream toxicity (i.e. fails to fulfill the test acceptance criteria of Part 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of Part 2.a;

b) the test indicating receiving water toxicity was carried out to completion (i.e., 7 days);

c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3.

3) The synthetic dilution water shall consist of standard, moderately hard, reconstituted water. Upon approval, the permittee may substitute other

appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.

d. Samples and Composites

1) The permittee shall collect a minimum of three composite samples from Outfall 001. The second and third composite samples will be used for the renewal of the dilution concentrations for each toxicity test.

2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first composite sample. The holding time for any subsequent composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 001 ceases discharging during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions, and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.

5) The effluent samples shall not be dechlorinated after sample collection.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

a. The permittee shall prepare a full report of the results of all tests conducted in accordance with the manual referenced in Part 1.b. for every valid and invalid toxicity test initiated whether carried to completion or not.

b. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit.

1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12-month period.

2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6-month

period.

3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th for biomonitoring conducted during the previous calendar quarter.

4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.

c. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter T4P3B, enter a "1" if the IC25 for survival is less than the critical dilution; otherwise, enter a "0."

2) For the water flea, Parameter T6P3B, report the IC25 for survival.

3) For the water flea, Parameter T5P3B, enter a "1" if the IC25 for reproduction is less than the critical dilution; otherwise, enter a "0."

4) For the water flea, Parameter T7P3B, report the IC25 for reproduction.

5) For the fathead minnow, Parameter T4P6C, enter a "1" if the IC25 for survival is less than the critical dilution; otherwise, enter a "0."

6) For the fathead minnow, Parameter T6P6C, report the IC25 for survival.

7) For the fathead minnow, Parameter T5P6C, enter a "1" if the IC25 for growth is less than the critical dilution; otherwise, enter a "0."

8) For the fathead minnow, Parameter T7P6C, report the IC25 for growth.

d. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a "1" if the IC25 for survival is less than the critical dilution; otherwise, enter a "0."

2) For retest number 2, Parameter 22416, enter a "1" if the IC25 for survival is less than the critical dilution; otherwise, enter a "0."

4. Persistent Toxicity

The requirements of this Part apply only when a test demonstrates a significant effect at the critical dilution. A significant effect is defined as an IC25 of a specified endpoint (survival, growth, or reproduction) less than the critical dilution. Significant lethality is defined as a survival IC25 less than the critical dilution. Similarly, significant sublethality is defined as a growth or reproduction IC25 less than the critical dilution.

a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates a significant effect (lethal or sublethal) at the critical dilution. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of

routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test.

b. If the retests are performed due to a demonstration of significant lethality, and one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5. The provisions of Part 4.a. are suspended upon completion of the two retests and submittal of the TRE action plan and schedule defined in Part 5.

If neither test demonstrates significant lethality and the permittee is testing under the reduced testing frequency provision of Part 1.e., the permittee shall return to a quarterly testing frequency for that species.

c. If the two retests are performed due to a demonstration of significant sublethality, and one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall again perform two retests as stipulated in Part 4.a.

d. If the two retests are performed due to a demonstration of significant sublethality, and neither test demonstrates significant lethality, the permittee shall continue testing at the quarterly frequency.

e. Regardless of whether retesting for lethal or sublethal effects, or a combination of the two, no more than one retest per month is required for a species.

5. Toxicity Reduction Evaluation

a. Within 45 days of the retest that demonstrates significant lethality, or within 45 days of being so instructed due to multiple toxic events, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, or within 90 days of being so instructed due to multiple toxic events, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analyses to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall describe an approach for the reduction or elimination of lethality for both test species defined in Part 1.b. At a minimum, the TRE action plan shall include the following:

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document

entitled "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA/600/6-91/005F) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE action plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects a specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;

3) Quality Assurance Plan - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE action plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.

d. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and substantiating documentation which identifies the pollutant(s) and source of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and

6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

g. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE. The report shall provide information pertaining to the specific control mechanism selected that will, when implemented, result in the reduction of effluent toxicity to no significant lethality at the critical dilution. The report shall also provide a specific corrective action schedule for implementing the selected control mechanism.

h. Based on the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, require

a compliance schedule for implementation of corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

i. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 1 (SHEET 1 OF 4)

BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

Dates and Times Composites Collected

Date Time Date Time

No. 1 FROM: _____ TO: _____

No. 2 FROM: _____ TO: _____

No. 3 FROM: _____ TO: _____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

NUMBER OF YOUNG PRODUCED PER ADULT AT END OF TEST

REP	Percent effluent					
	0%	31%	41%	55%	73%	100%
A						
B						
C						
D						
E						
F						
G						
H						
I						
J						
Survival Mean						
Total Mean						
CV%*						

*Coefficient of Variation = standard deviation x 100/mean (calculation based on young of the surviving adults)
Designate males (M), and dead females (D), along with number of neonates (x) released prior to death.

TABLE 1 (SHEET 2 OF 4)

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

PERCENT SURVIVAL

	Percent effluent					
Time of Reading	0%	31%	41%	55%	73%	100%
24h						
48h						
End of Test						

1. Is the IC25 for reproduction less than the critical dilution (97%)? ____ YES _____ NO

2. Is the IC25 for survival less than the critical dilution (97%)? _____ YES _____ NO

3. Enter percent effluent corresponding to each IC25 below:

   IC25 survival = _____%

   IC25 reproduction = _____%

TABLE 1 (SHEET 3 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL

Dates and Times Composites Collected

Date Time Date Time

No. 1 FROM: _____ TO: _____

No. 2 FROM: _____ TO: _____

No. 3 FROM: _____ TO: _____

Test initiated: _____am/pm _____date

Dilution water used: _____ Receiving water _____ Synthetic dilution water

FATHEAD MINNOW GROWTH DATA

Effluent Concentration	Average Dry Weight in replicate chambers					Mean Dry Weight	CV%*
	A	B	C	D	E		
0%							
31%							
41%							
55%							
73%							
100%							

* Coefficient of Variation = standard deviation x 100/mean

TABLE 1 (SHEET 4 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW GROWTH AND SURVIVAL TEST

FATHEAD MINNOW SURVIVAL DATA

Effluent Concentration	Percent Survival in replicate chambers					Mean percent survival			CV%*
	A	B	C	D	E	24h	48h	7 day	
0%									
31%									
41%									
55%									
73%									
100%									

* Coefficient of Variation = standard deviation x 100/mean

1. Is the IC25 for growth less than the critical dilution (97%)? _____ YES _____ NO

2. Is the IC25 for survival less than the critical dilution (97%)? _____ YES _____ NO

3. Enter percent effluent corresponding to each IC25 below:

   IC25 survival = _____%

   IC25 growth = _____%

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

a. The permittee shall test the effluent for lethality in accordance with the provisions in this section. Such testing will determine compliance with Texas Surface Water Quality Standard 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.

b. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," fifth edition (EPA-821-R-02-012) or its most recent update:

1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. Except as discussed in item 2.b., the control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

d. This permit may be amended to require a WET limit, a Best Management Practice (BMP), Chemical-Specific (CS) limits, or other appropriate actions to address toxicity. The permittee may be required to conduct a Toxicity Reduction Evaluation after multiple toxic events.

e. As the dilution series specified in the Chronic Biomonitoring Requirements includes a 100% effluent concentration, the results from those tests may fulfill the requirements of this Section; any tests performed in the proper time interval may be substituted. Compliance will be evaluated as specified in item a. The 50% survival in 100% effluent for a 24-hour period standard applies to all tests utilizing a 100% effluent dilution, regardless of whether the results are submitted to comply with the minimum testing frequency defined in item b.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.

b. Dilution Water - In accordance with item 1.c., the control and dilution water shall normally consist of standard, synthetic, moderately hard, reconstituted water. If the permittee utilizes the results of a chronic test to satisfy the requirements in item 1.e., the permittee may use the receiving water or dilution water that meets the requirements of item 2.a as the control and dilution water.

c. Samples and Composites

1) The permittee shall collect one composite sample from Outfall 001.

2) The permittee shall collect the composite samples such that the sample is representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the composite sample. The samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 001 ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report.

5) The effluent sample shall not be dechlorinated after sample collection.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the manual referenced in Part 1.b. for every valid and invalid toxicity test initiated.

b. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit.

1) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6-month period.

2) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th for biomonitoring conducted

during the previous calendar quarter.

c. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TIE3D, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

2) For the fathead minnow, Parameter TIE6C, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

d. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

2) For retest number 2, Parameter 22416, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

4. Persistent Mortality

The requirements of this part apply when a toxicity test demonstrates significant lethality, which is defined as a mean mortality of 50% or greater of organisms exposed to the 100% effluent concentration for 24 hours.

a. The permittee shall conduct 2 additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for 2 weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These effluent concentrations are 6%, 13%, 25%, 50% and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour.

b. If one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5.

5. Toxicity Reduction Evaluation

a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE

is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall lead to the successful elimination of significant lethality for both test species defined in Part 1.b. At a minimum, the TRE action plan shall include the following:

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE action plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects a specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;

3) Quality Assurance Plan - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE action plan should describe the project staff, manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.

d. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly TRE activities reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail

information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and substantiating documentation that identifies the pollutant and source of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and

6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

g. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 18 months from the last test day of the retest that

demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE. The report shall specify the control mechanism that will, when implemented, reduce effluent toxicity as specified in item 5.h. The report will also specify a corrective action schedule for implementing the selected control mechanism.

h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE.

The permittee may be exempted from complying with 30 TAC § 307.6(e)(2)(B) upon proving that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g., metals) form a salt compound. Following the exemption, this permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, require a compliance schedule for implementation of corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

j. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

TABLE 2 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

TPDES PERMIT NO.
WQ0010781002
[For TCEQ office use only - EPA I.D. No. TX0022373]

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

This is a renewal that replaces TPDES Permit No. WQ0010781002 issued on April 11, 2016.

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

City of Huntsville

whose mailing address is

1212 Avenue M
Huntsville, Texas 77340

is authorized to treat and discharge wastes from the N.B. Davidson Wastewater Treatment Facility, SIC Code 4952

located approximately 1.4 miles southwest of the Elkins Lake Dam and 3.5 miles south of the intersection of Farm-to-Market Road 1374 and Interstate Highway 45 in Walker County, Texas 77340

to an unnamed tributary, thence to Persimmon Creek, thence to East Sandy Creek, thence to Lake Conroe in Segment No. 1012 of the San Jacinto River Basin

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

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

ISSUED DATE: February 17, 2022

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

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

   The annual average flow of effluent shall not exceed 1.6 million gallons per day (MGD), nor shall the average discharge during any two-hour period (2-hour peak) exceed 2,778 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Min. Self-Monitoring Requirements	
	Daily Avg	7-day Avg	Daily Max	Single Grab	Report Daily Avg. & Daily Max.	
	mg/l (lbs/day)	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (133)	15	25	35	Two/week	Composite
Total Suspended Solids	15 (200)	25	40	60	Two/week	Composite
Ammonia Nitrogen	2 (27)	5	10	15	Two/week	Composite
E. coli, colony-forming units or most probable number per 100 ml	126	N/A	399	N/A	One/week	Grab

2. The effluent shall contain a total chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow) and shall be monitored daily by grab sample. The permittee shall dechlorinate the chlorinated effluent to less than 0.1 mg/l total chlorine residual and shall monitor total chlorine residual daily by grab sample after the dechlorination process. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per week by grab sample.

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

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 4.0 mg/l and shall be monitored twice per week by grab sample.

7. The annual average flow and maximum 2-hour peak flow shall be reported monthly.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

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

1. Flow Measurements

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

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

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

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

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

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

2. Concentration Measurements

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

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

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

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

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

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

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

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

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

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

3. Sample Type

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

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

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

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

6. The term "biosolids" is defined as sewage sludge that has been tested or processed to meet Class A, Class AB, or Class B pathogen standards in 30 TAC Chapter 312 for beneficial use.

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

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

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

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

2. Test Procedures

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

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

3. Records of Results

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

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

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;

ii. identity of individual who collected the sample or made the measurement.

iii. date and time of analysis;

iv. identity of the individual and laboratory who performed the analysis;

v. the technique or method of analysis; and

vi. the results of the analysis or measurement and quality assurance/quality control records.

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

4. Additional Monitoring by Permittee

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

5. Calibration of Instruments

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

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Compliance

Monitoring Team of the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Compliance Monitoring Team of the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. For Publicly Owned Treatment Works (POTWs), effective December 21, 2025, the permittee must submit the written report for unauthorized discharges and unanticipated bypasses that exceed any effluent limit in the permit using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

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

      i. Unauthorized discharges as defined in Permit Condition 2(g).

      ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.

      iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

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

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

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

9. Changes in Discharges of Toxic Substances

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

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

   i. One hundred micrograms per liter (100 µg/L);

   ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

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

   i. Five hundred micrograms per liter (500 µg/L);

   ii. One milligram per liter (1 mg/L) for antimony;

   iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or

   iv. The level established by the TCEQ.

10. Signatories to Reports

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

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

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

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

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

       i. The quality and quantity of effluent introduced into the POTW; and

       ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

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

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

      i. Violation of any terms or conditions of this permit;

      ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

      iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

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

2. Compliance

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

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

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

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

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

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

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

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

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

3. Inspections and Entry

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

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

4. Permit Amendment and/or Renewal

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

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

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

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

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

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

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

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

f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA § 307(a) for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions

established under CWA § 307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

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

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

6. Relationship to Hazardous Waste Activities

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

7. Relationship to Water Rights

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

8. Property Rights

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

9. Permit Enforceability

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

10. Relationship to Permit Application

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

11. Notice of Bankruptcy

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

       i. the permittee;

       ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or

iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee;

ii. the permit number(s);

iii. the bankruptcy court in which the petition for bankruptcy was filed; and

iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

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

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

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

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

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

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

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

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

7. Documentation

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

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

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

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

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

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

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

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

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

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

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

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

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

    e. The term "industrial solid waste management unit" means a landfill, surface

impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

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

i. Volume of waste and date(s) generated from treatment process;
ii. Volume of waste disposed of on-site or shipped off-site;
iii. Date(s) of disposal;
iv. Identity of hauler or transporter;
v. Location of disposal site; and
vi. Method of final disposal.

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

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

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SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge or biosolids by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Biosolids. This provision does not authorize the permittee to land apply biosolids on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge or biosolids.

2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.

3. The land application of processed or unprocessed chemical toilet waste, grease trap waste, grit trap waste, milk solids, or similar non-hazardous municipal or industrial solid wastes, or any of the wastes listed in this provision combined with biosolids, WTP residuals or domestic septage is prohibited unless the grease trap waste is added at a fats, oil and grease (FOG) receiving facility as part of an anaerobic digestion process.

B. Testing Requirements

1. Sewage sludge or biosolids shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 12) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year. Effective December 21, 2025, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

2. Biosolids shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C. of this permit.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B biosolids pathogen requirements.

a. For sewage sludge to be classified as Class A biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge must be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information;

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion; or

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

   Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

   The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

   At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%; or

   Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information; or

   Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB biosolids may be classified a Class A biosolids if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B biosolids

criteria.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a

single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition to the Alternatives 1 – 3, the following site restrictions must be met if Class B biosolids are land applied:

i. Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.

v. Domestic livestock shall not be allowed to graze on the land for 30 days after application of biosolids.

vi. Turf grown on land where biosolids are applied shall not be harvested for 1 year after application of the biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of biosolids.

viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of biosolids.

ix. Land application of biosolids shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 -

i. Biosolids shall be injected below the surface of the land.

ii. No significant amount of the biosolids shall be present on the land surface within one hour after the biosolids are injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the biosolids shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10-

i. Biosolids applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When biosolids that are incorporated into the soil is Class A or Class AB with respect to pathogens, the biosolids shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- annually
PCBs	- annually

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of biosolids (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk biosolids applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge or biosolids for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE OR BIOSOLIDS FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B biosolids pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk biosolids shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.

2. Bulk biosolids not meeting Class A requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk biosolids shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk Class A or AB biosolids sold or given away. The information sheet shall contain the following information:

   a. The name and address of the person who prepared the Class A or AB biosolids that are sold or given away in a bag or other container for application to the land.

   b. A statement that application of the biosolids to the land is prohibited except in accordance with the instruction on the label or information sheet.

   c. The annual whole sludge application rate for the biosolids application rate for the biosolids that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk is applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk biosolids are proposed to be applied. The notice shall include:

   a. The location, by street address, and specific latitude and longitude, of each land application site.

   b. The approximate time period bulk biosolids will be applied to the site.

   c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk biosolids.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the biosolids disposal practice.

E. Record Keeping Requirements

The documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a biosolids material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative for a

period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B biosolids, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk biosolids are applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk biosolids shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which biosolids are applied.

   c. The number of acres in each site on which bulk biosolids are applied.

   d. The date and time biosolids are applied to each site.

   e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

   f. The total amount of biosolids applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year the following information. Effective December 21, 2025, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge or biosolids in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge or biosolids disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B biosolids, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge or biosolids transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge or biosolids treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk biosolids are applied.

    c. The date and time bulk biosolids are applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk biosolids applied to each site.

    e. The amount of biosolids (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge or biosolids disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge and supplies that sewage sludge or biosolids to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge or biosolids disposal practice.

D. Sewage sludge or biosolids shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

   Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 12) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

   The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 12) and the Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

E. Sewage sludge or biosolids shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record Keeping Requirements

   The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year the following information. Effective December 21, 2025, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge or biosolids production in dry tons/year.

4. Amount of sludge or biosolids disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge or biosolids transported interstate in dry tons/year.

6. A certification that the sewage sludge or biosolids meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE OR BIOSOLIDS TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge or biosolids that is transported to another wastewater treatment facility or facility that further processes sludge or biosolids. These provisions are intended to allow transport of sludge or biosolids to facilities that have been authorized to accept sludge or biosolids. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge or biosolids, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge or biosolids may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge or biosolids transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge or biosolids.

2. For sludge or biosolids transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge or biosolids transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Regional Office (MC Region 12) and Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year. Effective December 21, 2025, the permittee must submit this annual report using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver.

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. the annual sludge or biosolids production;

3. the amount of sludge or biosolids transported;

4. the owner of each receiving facility;

5. the location of each receiving facility; and

6. the date(s) of disposal at each receiving facility.

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OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and, in particular, 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category B facility must be operated by a chief operator or an operator holding a Class B license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift that does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.

3. There is no mixing zone established for this discharge to an intermittent stream. Acute toxic criteria apply at the point of discharge.

4. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, 1/week may be reduced to 2/month. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

1. The permittee shall operate an industrial pretreatment program in accordance with Sections 402(b)(8) and (9) of the Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403), and the approved **City of Huntsville's** publicly owned treatment works (POTW) pretreatment program submitted by the permittee. The pretreatment program was approved on **September 30, 1982,** and modified on **July 21, 1995; June 17, 2011; May 13, 2020** (nonsubstantial Streamlining Rule); and on **July 31, 2020** (copper TBLL only).

   The POTW pretreatment program is hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:

   a. Industrial user (IU) information shall be kept current according to 40 CFR §§403.8(f)(2)(i) and (ii) and updated at a frequency set forth in the approved pretreatment program to reflect the accurate characterization of all IUs.

   b. The frequency and nature of IU compliance monitoring activities by the permittee shall be consistent with the approved POTW pretreatment program and commensurate with the character, consistency, and volume of waste. The permittee is required to inspect and sample the effluent from each significant industrial user (SIU) at least once per year, except as specified in 40 CFR §403.8(f)(2)(v). This is in addition to any industrial self-monitoring activities.

   c. The permittee shall enforce and obtain remedies for IU noncompliance with applicable pretreatment standards and requirements and the approved POTW pretreatment program.

   d. The permittee shall control through permit, order, or similar means, the contribution to the POTW by each IU to ensure compliance with applicable pretreatment standards and requirements and the approved POTW pretreatment program. In the case of SIUs (identified as significant under 40 CFR §403.3(v)), this control shall be achieved through individual permits or general control mechanisms, in accordance with 40 CFR §403.8(f)(1)(iii).

      Both individual and general control mechanisms must be enforceable and contain, at a minimum, the following conditions:

      (1) Statement of duration (in no case more than five years);
      (2) Statement of non-transferability without, at a minimum, prior notification to the POTW and provision of a copy of the existing control mechanism to the new owner or operator;
      (3) Effluent limits, which may include enforceable best management practices (BMPs), based on applicable general pretreatment standards, categorical pretreatment standards, local limits, and State and local law;
      (4) Self-monitoring, sampling, reporting, notification and record keeping requirements, identification of the pollutants to be monitored (including, if applicable, the process for seeking a waiver for a pollutant neither present nor expected to be present in the IU's discharge in accordance with 40 CFR §403.12(e)(2), or a specific waived pollutant in the case of an individual control mechanism), sampling location, sampling frequency, and sample type, based on the applicable general pretreatment standards in 40 CFR Part 403, categorical pretreatment standards, local limits, and State and local law;

(5) Statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule. Such schedules may not extend the compliance date beyond federal deadlines; and

(6) Requirements to control slug discharges, if determined by the POTW to be necessary.

e. For those IUs who are covered by a general control mechanism, in order to implement 40 CFR §403.8(f)(1)(iii)(A)(2), a monitoring waiver for a pollutant neither present nor expected to be present in the IU's discharge is not effective in the general control mechanism until after the POTW has provided written notice to the SIU that such a waiver request has been granted in accordance with 40 CFR §403.12(e)(2).

f. The permittee shall evaluate whether each SIU needs a plan or other action to control slug discharges, in accordance with 40 CFR §403.8(f)(2)(vi). If the POTW decides that a slug control plan is needed, the plan shall contain at least the minimum elements required in 40 CFR §403.8(f)(2)(vi).

g. The permittee shall provide adequate staff, equipment, and support capabilities to carry out all elements of the pretreatment program.

h. The approved program shall not be modified by the permittee without the prior approval of the Executive Director, according to 40 CFR §403.18.

2. The permittee is under a continuing duty to establish and enforce specific local limits to implement the provisions of 40 CFR §403.5, develop and enforce local limits as necessary, and modify the approved pretreatment program as necessary to comply with federal, state, and local law, as amended. The permittee may develop BMPs to implement 40 CFR §403.5(c)(1) and (2). Such BMPs shall be considered local limits and pretreatment standards. The permittee is required to effectively enforce such limits and to modify its pretreatment program, including the Legal Authority, Enforcement Response Plan, and Standard Operating Procedures (including forms), if required by the Executive Director to reflect changing conditions at the POTW. Substantial modifications will be approved in accordance with 40 CFR §403.18, and modifications will become effective upon approval by the Executive Director in accordance with 40 CFR §403.18.

   The permittee shall submit to the TCEQ Pretreatment Team (MC 148) of the Water Quality Division, within **sixty (60) days** of the issued date of this permit, either:

   1) a written certification that a technical reassessment has been performed, and that the evaluation demonstrates that existing technically based local limits (TBLLs) attain the Texas Surface Water Quality Standards [30 TAC Chapter 307] in water in the state, and are adequate to prevent pass through of pollutants, inhibition of or interference with the treatment facility, worker health and safety problems, and sludge contamination [submit the Reassessment Form No. TCEQ-20221]; **or**

   2) a written notification that a technical redevelopment of the current TBLLs, draft legal authority which incorporates such revisions, and any additional modifications to the pretreatment program, as required by 40 CFR Part 403 *[rev. 10/14/05]*, and applicable state and local law, including an Enforcement Response Plan and Standard Operating Procedures (including forms), will be submitted within **twelve**

(12) months of the issued date of this permit. The POTW is required to evaluate any enforceable BMP loadings during the redevelopment of the current TBLLs. The technical redevelopment of the current TBLLs should be developed in accordance with EPA's *Local Limits Development Guidance*, July 2004, and EPA Region 6's Technically Based Local Limits Development Guidance, October 12, 1993. This submission shall be signed and certified by the permittee *[according to 40 CFR §122.41(k)]*.

3. The permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in the Texas Surface Water Quality Standards [30 TAC Chapter 307], and 40 CFR Part 122, Appendix D, Table II at least **once per twelve (12) months** and the toxic pollutants listed in 40 CFR Part 122, Appendix D, Table III at least **once per six months**. If, based upon information available to the permittee, there is reason to suspect the presence of any toxic or hazardous pollutant listed in 40 CFR Part 122, Appendix D, Table V, or any other pollutant, known or suspected to adversely affect treatment plant operation, receiving water quality, or solids disposal procedures, analysis for those pollutants shall be performed at least **once per six months** on both the influent and the effluent.

   The influent and effluent samples collected shall be composite samples consisting of at least 12 aliquots collected at approximately equal intervals over a representative 24-hour period and composited according to flow. Sampling and analytical procedures shall be in accordance with guidelines established in 40 CFR Part 136, as amended; as approved by the EPA through the application for alternate test procedures; or as suggested in Tables E-1 and E-2 of the *Procedures to Implement the Texas Surface Water Quality Standards* (RG-194), June 2010, as amended and adopted by the TCEQ. The effluent samples shall be analyzed to the minimum analytical level (MAL), if necessary, to determine compliance with the daily average water quality based effluent concentration from the TCEQ's Texas Toxicity Modeling Program (TEXTOX) and other applicable water quality discharge standards. Where composite samples are inappropriate due to sampling, holding time, or analytical constraints, at least four (4) grab samples shall be taken at equal intervals over a representative 24-hour period.

4. The permittee shall prepare annually a list of IUs, which during the preceding twelve (12) months were in significant noncompliance (SNC) with applicable pretreatment requirements. For the purposes of this section of the permit, "CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS," SNC shall be determined based upon the more stringent of either criteria established at 40 CFR §403.8(f)(2)(viii) *[rev. 10/14/05]* or criteria established in the approved POTW pretreatment program. This list is to be published annually during the month of **August** in a newspaper of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW.

   In addition, each **August** the permittee shall submit an updated pretreatment program annual status report, in accordance with 40 CFR §§403.12(i) [*rev. 10/22/15*] and (m), to the TCEQ Pretreatment Team (MC148) of the Water Quality Division. The report summary shall be submitted on the Pretreatment Performance Summary (PPS) form [TCEQ-20218]. The report shall contain the following information as well as the information on the tables in this section:

   a. An updated list of all regulated IUs as indicated in this section. For each listed IU, the following information shall be included:

(1) Standard Industrial Classification (SIC) or North American Industry Classification System (NAICS) code *and* categorical determination.

(2) If the pretreatment program has been modified and approved to incorporate reduced monitoring for any of the categorical IUs as provided by 40 CFR Part 403 [*rev. 10/14/05*], then the list must also identify:

- categorical IUs subject to the conditions for reduced monitoring and reporting requirements under 40 CFR § 403.12(e)(1) [*rev. 10/22/15*] and (3);
- those IUs that are non-significant categorical industrial users (NSCIUs) under 40 CFR §403.3(v)(2); and
- those IUs that are middle tier categorical industrial users (MTCIUs) under 40 CFR §403.12(e)(3).

(3) Control mechanism status.

- Indicate whether the IU has an effective individual or general control mechanism, and the date such control mechanism was last issued, reissued, or modified;
- Indicate which IUs were added to the system, or newly identified, during the pretreatment year reporting period;
- Include the type of general control mechanisms; and
- Report all NSCIU annual evaluations performed, as applicable.

(4) A summary of all compliance monitoring activities performed by the POTW during the pretreatment year reporting period. The following information shall be reported:

- Total number of inspections performed; and
- Total number of sampling events conducted.

(5) Status of IU compliance with effluent limitations, reporting, and narrative standard (which may include enforceable BMPs, narrative limits, and/or operational standards) requirements. Compliance status shall be defined as follows:

- Compliant (C) - no violations during the pretreatment year reporting period;
- Non-compliant (NC) - one or more violations during the pretreatment year reporting period but does not meet the criteria for SNC; and
- Significant Noncompliance (SNC) - in accordance with requirements described above in this section.

(6) For noncompliant IUs, indicate the nature of the violations, the type and number of actions taken (notice of violation, administrative order, criminal or civil suit, fines or penalties collected, etc.), and the current compliance status. If any IU was on a schedule to attain compliance with effluent limits or narrative standards, indicate the date the schedule was issued and the date compliance is to be attained.

b. A list of each IU whose authorization to discharge was terminated or revoked during the pretreatment year reporting period and the reason for termination.

c. A report on any interference, pass through, Act of God, or POTW permit violations known or suspected to be caused by IUs and response actions taken by the permittee.

d. The results of all influent and effluent analyses performed pursuant to Item 3 of this section.

e. An original newspaper public notice, or copy of the newspaper publication with official affidavit, of the list of IUs that meet the criteria of SNC, giving the name of the newspaper and date the list was published.

f. The daily average water quality based effluent concentrations (from the TCEQ's Texas Toxicity Modeling Program (TexTox)) necessary to attain the Texas Surface Water Quality Standards, 30 TAC Chapter 307, in water in the state.

g. The maximum allowable headworks loading (MAHL) in pounds per day (lb/day) of the approved TBLLs or for each pollutant of concern (POC) for which the permittee has calculated a MAHL. In addition, the influent loading as a percent of the MAHL, using the annual average flow of the wastewater treatment plant in million gallons per day (MGD) during the pretreatment year reporting period, for each pollutant that has an adopted TBLL or for each POC for which the permittee has calculated a MAHL. (*See Endnotes No. 2 at the end of this section for the influent loading as a percent of the MAHL equation.*)

h. The permittee may submit the updated pretreatment program annual status report information in tabular form using the example table format provided. Please attach, on a separate sheet, explanations to document the various pretreatment activities, including IU permits that have expired, BMP violations, and any sampling events that were not conducted by the permittee as required.

i. A summary of changes to the POTW's approved pretreatment program that have not been previously reported to the Approval Authority.

Effective December 21, 2023, the permittee must submit the updated pretreatment program annual status report required by this section electronically using the online electronic reporting system available through the TCEQ website unless the permittee requests and obtains an electronic reporting waiver. *[rev. Federal Register/ Vol. 80/ No. 204/ Friday, October 22, 2015/ Rules and Regulations, pages 64064-64158].*

5. The permittee shall provide adequate written notification to the Executive Director, care of the Wastewater Permitting Section (MC 148) of the Water Quality Division, within 30 days

of the permittee's knowledge of the following:

a. Any new introduction of pollutants into the treatment works from an indirect discharger that would be subject to Sections 301 and 306 of the Clean Water Act, if the indirect discharger was directly discharging those pollutants; and

b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

Adequate notice shall include information on the quality and quantity of effluent to be introduced into the treatment works and any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

Revised June 2020

TPDES Pretreatment Program Annual Report Form for Updated Industrial Users List

Reporting month/year: _____, _____ to _____, _____

TPDES Permit No.: _____ Permittee:_____ Treatment Plant: _____

PRETREATMENT PROGRAM STATUS REPORT UPDATED INDUSTRIAL USERS[1] LIST																	
Industrial User Name	SIC or NAICS Code	CIU[2]	CONTROL MECHANISM				New User[3] (Y or N)	Times Inspected by the CA	Times Sampled by the CA	COMPLIANCE STATUS During the Pretreatment Year Reporting Period[4] (C = Compliant, NC = Noncompliant, SNC= Significant Noncompliance)						
										REPORTS				NSCIU Certifications	Effluent Limits	Narrative Standards
			Y/N or NR[5]	IND or GEN or NR	Last Action[6]	TBLLs or TBLLs only[7]				BMR	90-Day	Semi-Annual	Self-Monitoring[8]			

1 Include all significant industrial users (SIUs), non-significant categorical industrial users (NSCIUs) as defined in 40 CFR §403.3(v)(2), and/or middle tier categorical industrial users (MTCIUs) as defined in 40 CFR §403.12(e)(3). Please do not include non-significant noncategorical IUs that are covered under best management practices (BMPs) or general control mechanisms.

2 Categorical determination (include 40 CFR citation and NSCIU or MTCIU status, if applicable).

3 Indicate whether the IU is a new user. If the answer is No or N, then indicate the expiration date of the last issued IU permit.

4 The term SNC applies to a broader range of violations, such as daily maximum, long-term average, instantaneous limits, and narrative standards (which may include enforceable BMPs, narrative limits and/or operational standards). Any other violation, or group of violations, which the POTW determines will adversely affect the operation or implementation of the local Pretreatment Program now includes BMP violations (40 CFR §403.8(f)(2)(viii)(H)).

5 Code NR= None required (NSCIUs only); IND = individual control mechanism; GEN = general control mechanism. Include as a footnote (or on a separate page) the name of the general control mechanism used for similar groups of IUs, identify the similar types of operations and types of wastes that are the same for each general control mechanism. Any BMPs through general control mechanisms that are applied to nonsignificant IUs need to be reported separately, *e.g.* the sector type and BMP description.

6 Permit or NSCIU evaluations as applicable.

7 According to 40 CFR §403.12(i)(1), indicate whether the IU is subject to technically based local limits (TBLLs) that are more stringent than categorical pretreatment standards, *e.g.* where there is one end-of-pipe sampling point at a CIU, and you have determined that the TBLLs are more stringent than the categorical pretreatment standards for any pollutant at the end-of-pipe sampling point; **OR** the IU is subject only to local limits (TBLLs only), *e.g.* the IU is a non-categorical SIU subject only to TBLLs at the end-of-pipe sampling point.

8 For those IUs where a monitoring waiver has been granted, please add the code "W" (after either C, NC, or SNC codes) and indicate the pollutant(s) for which the waiver has been granted.

TPDES Pretreatment Program Annual Report Form for Industrial User Inventory Modifications

Reporting month/year: _____, _____ to _____, _____

TPDES Permit No: _____ Permittee: _____ Treatment Plant: _____

INDUSTRIAL USER INVENTORY MODIFICATIONS					
FACILITY NAME, ADDRESS AND CONTACT PERSON	ADD, CHANGE, DELETE (Including categorical reclassification to NSCIU or MTCIU)	IF DELETION: Reason For Deletion	IF ADDITION OR SIGNIFICANT CHANGE:		
			PROCESS DESCRIPTION	POLLUTANTS (Including any sampling waiver given for each pollutant not present)	FLOW RATE [9] (In gpd) R = Regulated U = Unregulated T = Total

9 For NSCIUs, total flow must be given, if regulated flow is not determined.

TPDES Pretreatment Program Annual Report Form for Enforcement Actions Taken

Reporting month/year: _____, _____ to _____, _____

TPDES Permit No: _____Permittee:_____Treatment Plant: _____

Overall SNC ___% SNC [10] based on: Effluent Violations_____%
Reporting Violations_____% Narrative Standard Violations___%

Noncompliant Industrial Users - Enforcement Actions Taken															
Industrial User Name	Nature of Violation [11]				Number of Actions Taken					Penalties Collected (Do not Include Surcharge)	Compliance Schedule			Current Status Returned to Compliance: (Y or N)	Comments
	Effluent Limits	Reports	NSCIU Certifications	Narrative Standards	NOV	A.O.	Civil	Criminal	Other		Y or N	Date Issued	Date Due		

10 # %
__ __ Pretreatment Standards [WENDB-PSNC] (Local Limits/Categorical Standards)
__ __ Reporting Requirements [WENDB-PSNC]
__ __ Narrative Standards

11 Please specify a separate number for each type of violation, *e.g.* report, notification, and/or NSCIU certification.

TPDES Pretreatment Program Annual Report Form for Influent and Effluent Monitoring Results[1]

Reporting month/year: _____, _____ to _____, _____

TPDES Permit No.: _____ Permittee:_____Treatment Plant: _____

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS											
POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L) [3]	Effluent Measured in µg/L (Actual Concentration or < MAL) [4]			
		Date	Date	Date	Date			Date	Date	Date	Date
METALS, CYANIDE AND PHENOLS											
Antimony, Total											
Arsenic, Total											
Beryllium, Total											
Cadmium, Total											
Chromium, Total											
Chromium (Hex)											
Chromium (Tri)[5]											
Copper, Total											
Lead, Total											
Mercury, Total											
Nickel, Total											
Selenium, Total											
Silver, Total											
Thallium, Total											
Zinc, Total											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS												
POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L) [3]	Effluent Measured in µg/L (Actual Concentration or < MAL) [4]			
		Date	Date	Date	Date			Date	Date	Date	Date
Cyanide, Available [6]											
Cyanide, Total											
Phenols, Total											
VOLATILE COMPOUNDS											
Acrolein											
Acrylonitrile											
Benzene											
Bromoform							See TTHM				
Carbon Tetrachloride											
Chlorobenzene											
Chlorodibromomethane							See TTHM				
Chloroethane											
2-Chloroethylvinyl Ether											
Chloroform							See TTHM				
Dichlorobromomethane							See TTHM				
1,1-Dichloroethane											
1,2-Dichloroethane											
1,1-Dichloroethylene											
1,2-Dichloropropane											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS												
POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L) [3]	Effluent Measured in µg/L (Actual Concentration or < MAL) [4]			
		Date	Date	Date	Date			Date	Date	Date	Date
1,3-Dichloropropylene											
Ethyl benzene											
Methyl Bromide											
Methyl Chloride											
Methylene Chloride											
1,1,2,2-Tetra-chloroethane											
Tetrachloroethylene											
Toluene											
1,2-Trans-Dichloroethylene											
1,1,1-Trichloroethane											
1,1,2-Trichloroethane											
Trichloroethylene											
Vinyl Chloride											
ACID COMPOUNDS											
2-Chlorophenol											
2,4-Dichlorophenol											
2,4-Dimethylphenol											
4,6-Dinitro-o-Cresol											
2,4-Dinitrophenol											
2-Nitrophenol											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS												
POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L) [3]	Effluent Measured in µg/L (Actual Concentration or < MAL) [4]			
		Date	Date	Date	Date			Date	Date	Date	Date
4-Nitrophenol											
P-Chloro-m-Cresol											
Pentachlorophenol											
Phenol											
2,4,6-Trichlorophenol											
BASE/NEUTRAL COMPOUNDS											
Acenaphthene											
Acenaphthylene											
Anthracene											
Benzidine											
Benzo(a)Anthracene											
Benzo(a)Pyrene											
3,4-Benzofluoranthene											
Benzo(ghi)Perylene											
Benzo(k)Fluoranthene											
Bis(2-Chloroethoxy)Methane											
Bis(2-Chloroethyl)Ether											
Bis(2-Chloroisopropyl)Ether											
Bis(2-Ethylhexyl)Phthalate											
4-Bromophenyl Phenyl Ether											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS												
POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L) [3]	Effluent Measured in µg/L (Actual Concentration or < MAL) [4]			
		Date	Date	Date	Date			Date	Date	Date	Date
Butylbenzyl Phthalate											
2-Chloronaphthalene											
4-Chlorophenyl Phenyl Ether											
Chrysene											
Dibenzo(a,h)Anthracene											
1,2-Dichlorobenzene											
1,3-Dichlorobenzene											
1,4-Dichlorobenzene											
3,3-Dichlorobenzidine											
Diethyl Phthalate											
Dimethyl Phthalate											
Di-n-Butyl Phthalate											
2,4-Dinitrotoluene											
2,6-Dinitrotoluene											
Di-n-Octyl Phthalate											
1,2-Diphenyl Hydrazine											
Fluoranthene											
Fluorene											
Hexachlorobenzene											
Hexachlorobutadiene											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS												
POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L) [3]	Effluent Measured in µg/L (Actual Concentration or < MAL) [4]			
		Date	Date	Date	Date			Date	Date	Date	Date
Hexachloro- cyclopentadiene											
Hexachloroethane											
Indeno(1,2,3-cd)pyrene											
Isophorone											
Naphthalene											
Nitrobenzene											
N-Nitrosodimethylamine											
N-Nitrosodi-n-Propylamine											
N-Nitrosodiphenylamine											
Phenanthrene											
Pyrene											
1,2,4-Trichlorobenzene											
PESTICIDES											
Aldrin											
Alpha-hexachlorocyclohexane (BHC)											
beta-BHC											
gamma-BHC (Lindane)											
delta-BHC											
Chlordane											
4,4-DDT											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS												
POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L) [3]	Effluent Measured in µg/L (Actual Concentration or < MAL) [4]			
		Date	Date	Date	Date			Date	Date	Date	Date
4,4-DDE											
4,4-DDD											
Dieldrin											
alpha-Endosulfan											
beta-Endosulfan											
Endosulfan Sulfate											
Endrin											
Endrin Aldehyde											
Heptachlor											
Heptachlor Epoxide											
Polychlorinated biphenols (PCBs) *The sum of PCB concentrations not to exceed daily average value.*											
PCB-1242							See PCBs				
PCB-1254							See PCBs				
PCB-1221							See PCBs				
PCB-1232							See PCBs				
PCB-1248							See PCBs				
PCB-1260							See PCBs				
PCB-1016							See PCBs				

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS												
POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L) [3]	Effluent Measured in µg/L (Actual Concentration or < MAL) [4]			
		Date	Date	Date	Date			Date	Date	Date	Date
Toxaphene											
ADDITIONAL TOXIC POLLUTANTS REGULATED UNDER 30 TAC CHAPTER 307											
Aluminum											
Barium											
Bis(chloromethyl)ether [7]											
Carbaryl											
Chloropyrifos											
Cresols											
2,4-D											
Danitol [8]											
Demeton											
Diazinon											
Dicofol											
Dioxin/Furans [9]											
Diuron											
Epichlorohydrin [9]											
Ethylene glycol [9]											
Fluoride											
Guthion											
Hexachlorophene											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS												
POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L) [3]	Effluent Measured in µg/L (Actual Concentration or < MAL) [4]			
		Date	Date	Date	Date			Date	Date	Date	Date
4,4'-Isoproplidenediphenolediphenol (biphenol A) [9]											
Malathion											
Methoxychlor											
Methyl Ethyl Ketone											
Methyl tert-butyl-ether (MTBE) [9]											
Mirex											
Nitrate-Nitrogen											
N-Nitrosodiethylamine											
N-Nitroso-di-n-Butylamine											
Nonylphenol											
Parathion											
Pentachlorobenzene											
Pyridine											
1,2-Dibromoethane											
1,2,4,5-Tetrachlorobenzene											
2,4,5-TP (Silvex)											
Tributyltin [9]											
2,4,5-Trichlorophenol											
TTHM (Total Trihalomethanes)											

Endnotes:

1. It is advised that the permittee collect the influent and effluent samples considering flow detention time through each wastewater treatment plant (WWTP).

2. The MAHL of the approved TBLLs or for each pollutant of concern (POC) for which the permittee has calculated a MAHL. Only complete the column labeled "Average Influent % of the MAHL," as a percentage, for pollutants that have approved TBLLs or for each POC for which the permittee has calculated a MAHL (U.S. Environmental Protection Agency *Local Limits Development Guidance*, July 2004, EPA933-R-04-002A).

   The % of the MAHL is to be calculated using the following formulas:

   Equation A: $L_{INF} = (C_{POLL} \times Q_{WWTP} \times 8.34) / 1000$

   Equation B: $L_{\%} = (L_{INF} / MAHL) \times 100$

   Where:

L_{INF} =	Current Average (Avg) influent loading in lb/day
C_{POLL} =	Avg concentration in µg/L of all influent samples collected during the pretreatment year.
Q_{WWTP} =	Annual average flow of the WWTP in MGD, defined as the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months (or during the pretreatment year), and as described in the Definitions and Standard Permit Conditions section.
$L_{\%}$ =	% of the MAHL
MAHL =	Calculated MAHL in lb/day
8.34 =	Unit conversion factor

3. Daily average effluent limit (metal values are for total metals) as derived by the Texas Toxicity Modeling Program (TexTox). Effluent limits as calculated are designed to be protective of the Texas Surface Water Quality Standards. The permittee shall determine and indicate which effluent limit is the most stringent between the 30 TAC Chapter 319, Subchapter B (Hazardous Metals) limit, TexTox values, or any applicable limit in the Effluent Limitations and Monitoring Requirements Section of this TPDES permit. Shaded blocks need not be filled in unless the permittee has received a permit requirement/limit for the particular parameter.

4. Minimum analytical levels (MALs) and analytical methods as suggested in Tables E-1 and E-2 of the *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), as amended and adopted by the TCEQ. Pollutants that are not detectable above the MAL need to be reported as less than (<) the MAL numeric value.

5. Report result by subtracting Hexavalent Chromium from Total Chromium.

6. Either the method for Amenable to Chlorination or Weak-Acid Dissociable is authorized.

7. Hydrolyzes in water. Will not require permittee to analyze at this time.

8. EPA procedure not approved. Will not require permittee to analyze at this time.

9. Analyses are not required at this time for these pollutants unless there is reason to believe that these pollutants may be present.

BIOMONITORING REQUIREMENTS

48-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

   a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival of the test organisms.

   b. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this part of this permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," fifth edition (EPA-821-R-02-012) or its most recent update:

      1) Acute static renewal 48-hour definitive toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia)*. A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

      2) Acute static renewal 48-hour definitive toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

      The permittee must perform and submit a valid test for each test species during the required reporting period for that species. A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution. A repeat test shall include the control and all effluent dilutions and use the appropriate number of organisms and replicates, as specified above. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

   c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These effluent dilution concentrations are 32%, 42%, 56%, 75%, and 100% effluent. The critical dilution, defined as 100% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.

   d. This permit may be amended to require a WET limit, a chemical-specific limit, a best management practice, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

   e. Testing Frequency Reduction

      1) If none of the first four consecutive quarterly tests demonstrates

significant lethal effects, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per six months for the invertebrate test species and once per year for the vertebrate test species.

2) If one or more of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee shall continue quarterly testing for that species until this permit is reissued. If a testing frequency reduction had been previously granted and a subsequent test demonstrates significant lethal effects, the permittee shall resume a quarterly testing frequency for that species until this permit is reissued.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fails to meet any of the following criteria:

1) a control mean survival of 90% or greater; and

2) a coefficient of variation percent (CV%) of 40 or less for both the control and critical dilution. However, if significant lethality is demonstrated, a CV% greater than 40 shall not invalidate the test. The CV% requirement does not apply when significant lethality occurs.

b. Statistical Interpretation

1) For the water flea and fathead minnow tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the manual referenced in Part 1.b.

2) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test results are interpreted and reported correctly. The document entitled "Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)" (EPA 821-B-00-004) provides guidance on determining the validity of test results.

3) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the survival in the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 90% in the critical dilution and all dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements.

4) The NOEC is defined as the greatest effluent dilution at which no significant lethality is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which significant lethality is demonstrated. Significant lethality is defined as a statistically significant difference the survival of the test organism in a

specified effluent dilution when compared to the survival of the test organism in the control.

5) The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 2.

6) Pursuant to the responsibility assigned to the permittee in Part 2.b.2), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The guidance manual referenced in Item 2 will be used when making a determination of test acceptability.

7) TCEQ staff will review test results for consistency with rules, procedures, and permit requirements.

c. Dilution Water

1) Dilution water used in the toxicity tests must be the receiving water collected at a point upstream of the discharge point as close as possible to the discharge point but unaffected by the discharge. Where the toxicity tests are conducted on effluent discharges to receiving waters that are classified as intermittent streams, or where the toxicity tests are conducted on effluent discharges where no receiving water is available due to zero flow conditions, the permittee shall:

a) substitute a synthetic dilution water that has a pH, hardness, and alkalinity similar to that of the closest downstream perennial water unaffected by the discharge; or

b) use the closest downstream perennial water unaffected by the discharge.

2) Where the receiving water proves unsatisfactory as a result of preexisting instream toxicity (i.e. fails to fulfill the test acceptance criteria Part 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of Part 2.a;

b) the test indicating receiving water toxicity was carried out to completion; and

c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3.

3) The synthetic dilution water shall consist of standard, moderately hard, reconstituted water. Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.

d. Samples and Composites

1) The permittee shall collect a minimum of two composite samples from Outfall 001. The second composite sample will be used for the renewal of the dilution concentrations for each toxicity test.

2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first composite sample. The holding time for the subsequent composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 001 ceases discharging during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions, and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.

5) The effluent sample shall not be dechlorinated after sample collection.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

a. The permittee shall prepare a full report of the results of all tests conducted in accordance with the manual referenced in Part 1.b for every valid and invalid toxicity test initiated, whether carried to completion or not.

b. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit.

1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12-month period.

2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6-month period.

3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th for biomonitoring conducted during the previous calendar quarter.

4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.

c. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TEM3D, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For the water flea, Parameter TOM3D, report the NOEC for survival.

3) For the water flea, Parameter TXM3D, report the LOEC for survival.

4) For the fathead minnow, Parameter TEM6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

5) For the fathead minnow, Parameter TOM6C, report the NOEC for survival.

6) For the fathead minnow, Parameter TXM6C, report the LOEC for survival.

d. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

4. Persistent Toxicity

The requirements of this part apply only when a toxicity test demonstrates significant lethality. Significant lethality was defined in Part 2.b.

a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates significant lethality. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test.

b. If one or both of the two retests specified in Part 4.a. demonstrates significant

lethality, the permittee shall initiate the TRE requirements as specified in Part 5.

c. The provisions of Part 4.a. are suspended upon completion of the two retests and submittal of the TRE action plan and schedule defined in Part 5.

5. Toxicity Reduction Evaluation

a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analyses to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall describe an approach for the reduction or elimination of lethality for both test species defined in Part 1.b. At a minimum, the TRE action plan shall include the following:

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE action plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects a specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;

3) Quality Assurance Plan - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE action plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.

d. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical specific analyses for the identified and suspected pollutant performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and substantiating documentation which identifies the pollutant(s) and source of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and

6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply

as a result of corrective actions taken by the permittee. Corrective actions are defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

g. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification/TRE. The report shall provide information pertaining to the specific control mechanism selected that will, when implemented, result in the reduction of effluent toxicity to no significant lethality at the critical dilution. The report shall also provide a specific corrective action schedule for implementing the selected control mechanism.

h. Based on the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, require a compliance schedule for implementation of corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

i. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 1 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

Dates and Times Composites Collected

Date Time Date Time

No. 1 FROM: _____ TO: _____

No. 2 FROM: _____ TO: _____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	32%	42%	56%	75%	100%
24h	A						
	B						
	C						
	D						
	E						
48h	A						
	B						
	C						
	D						
	E						
Mean at test end							
CV%*							

*Coefficient of Variation = Standard Deviation x 100/mean

Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 48 hours significantly less than the control survival?

CRITICAL DILUTION (100%): _____ YES _____ NO

Enter percent effluent corresponding to the NOEC below:

1) NOEC survival = _____% effluent

2) LOEC survival = _____% effluent

TABLE 1 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

		Date	Time		Date	Time
Dates and Times Composites Collected	No. 1 FROM:	_____		TO:	_____	
	No. 2 FROM:	_____		TO:	_____	

Test initiated: _____am/pm _____date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	32%	42%	56%	75%	100%
24h	A						
	B						
	C						
	D						
	E						
48h	A						
	B						
	C						
	D						
	E						
Mean at test end							
CV%*							

* Coefficient of Variation = standard deviation x 100/mean

Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 48 hours significantly less than the control survival?

CRITICAL DILUTION (100%): _____ YES _____ NO

Enter percent effluent corresponding to the NOEC below:

1) NOEC survival = _____% effluent

2) LOEC survival = _____% effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity (WET) testing.

1. Scope, Frequency, and Methodology

a. The permittee shall test the effluent for lethality in accordance with the provisions in this section. Such testing will determine compliance with Texas Surface Water Quality Standard 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.

b. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests using the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," fifth edition (EPA-821-R-02-012) or its most recent update:

1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and each dilution.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. The control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

d. This permit may be amended to require a WET limit, a best management practice, a chemical-specific limit, or other appropriate actions to address toxicity. The permittee may be required to conduct a toxicity reduction evaluation (TRE) after multiple toxic events.

e. As the dilution series specified in the 48-Hour Acute Biomonitoring Requirements includes a 100% effluent concentration, the results from those tests may fulfill the requirements of this section; any tests performed in the proper time interval may be substituted. Compliance will be evaluated as specified in Part 1.a. The 50% survival in 100% effluent for a 24-hour period standard applies to all tests utilizing a 100% effluent dilution, regardless of whether the results are submitted to comply with the minimum testing frequency.

2. Required Toxicity Testing Conditions

a. Test Acceptance – The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.

b. Dilution Water - In accordance with Part 1.c., the control and dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

c. Samples and Composites

1) The permittee shall collect one composite sample from Outfall 001.

2) The permittee shall collect the composite sample such that the sample is representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance being discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the composite sample. The sample shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 001 ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report.

5) The effluent sample shall not be dechlorinated after sample collection.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in this section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division.

a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the manual referenced in Part 1.b. for every valid and invalid toxicity test initiated.

b. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit.

1) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6-month period.

2) Quarterly biomonitoring test results are due on or before April 20th, July 20th, and October 20th, and January 20th for biomonitoring conducted during the previous calendar quarter.

c. Enter the following codes for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TIE3D, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

2) For the fathead minnow, Parameter TIE6C, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

d. Enter the following codes for retests only:

1) For retest number 1, Parameter 22415, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

2) For retest number 2, Parameter 22416, enter a "0" if the mean survival at 24 hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter "1."

4. Persistent Mortality

The requirements of this part apply when a toxicity test demonstrates significant lethality, which is defined as a mean mortality of 50% or greater of organisms exposed to the 100% effluent concentration for 24 hours.

a. The permittee shall conduct 2 additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for 2 weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These effluent concentrations are 6%, 13%, 25%, 50%, and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour.

b. If one or both of the two retests specified in Part 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5.

5. Toxicity Reduction Evaluation

a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a general outline for initiating a TRE. The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE action plan and schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical

analyses to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE action plan shall lead to the successful elimination of significant lethality for both test species defined in Part 1.b. At a minimum, the TRE action plan shall include the following:

1) Specific Activities - The TRE action plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003) or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled "Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE action plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/identification/confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects a specific pollutant and source of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and suspected pollutant and source of effluent toxicity;

3) Quality Assurance Plan - The TRE action plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, and mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE Action Plan should describe the project staff, manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE action plan and schedule, the permittee shall implement the TRE.

d. The permittee shall submit quarterly TRE activities reports concerning the progress of the TRE. The quarterly TRE Activities Reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and suspected pollutant performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and substantiating documentation that identifies the pollutant and source of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data that identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and

6) any changes to the initial TRE plan and schedule that are believed necessary as a result of the TRE findings.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species. Testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality, i.e., there is a cessation of lethality, the permittee may end the TRE. A cessation of lethality is defined as no significant lethality for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. Corrective actions are defined as proactive efforts that eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and an appropriate control measure.

g. The permittee shall complete the TRE and submit a final report on the TRE activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive

Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE. The report shall specify the control mechanism that will, when implemented, reduce effluent toxicity as specified in Part 5.h. The report shall also specify a corrective action schedule for implementing the selected control mechanism.

h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 30 TAC § 307.6(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in its pursuit of the toxicity identification evaluation/TRE and must prove that circumstances beyond its control stalled the toxicity identification evaluation/TRE.

   The permittee may be exempted from complying with 30 TAC § 307.6(e)(2)(B) upon proving that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts. This exemption excludes instances where individually toxic components (e.g., metals) form a salt compound. Following the exemption, this permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, require a compliance schedule for implementing corrective actions, specify a WET limit, specify a best management practice, and specify a chemical-specific limit.

j. Copies of any and all required TRE plans and reports shall also be submitted to the U.S. EPA Region 6 office, 6WQ-PO.

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN*						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

TABLE 2 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

	Time	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

Water Conservation Plan

for

San Jacinto River Authority
Lake Conroe Division

Prepared by

San Jacinto River Authority

Adopted: April 25, 2024

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Section 1. Introduction

In 1996, severe drought conditions affected every region of the State. Water systems throughout the State were forced to cope with water shortages or system capacity problems. In response to the 1996 drought, the 75th Texas Legislature enacted Senate Bill 1, which directed the State to take a regional approach to water planning. One of the provisions of the legislation required the Texas Commission on Environmental Quality (TCEQ) to adopt rules requiring wholesale and retail public water suppliers to develop water conservation and drought contingency plans.[1]

Water conservation and drought contingency plans work together to help Texans manage short-term and long-term water shortages. The goal of a water conservation plan is to achieve lasting, long-term improvements in water use efficiencies using strategies to reduce the amount of water withdrawn from a particular source, and to ensure that the water withdrawn is used in an efficient manner. Drought contingency plans are short-term in nature, using temporary supply and demand management measures in response to temporary and potentially recurring water shortages and other emergencies.

The San Jacinto River Authority (SJRA), as a water right holder and wholesale water supplier, is required to submit Water Conservation and Drought Contingency Plans to the TCEQ and Texas Water Development Board (TWDB). SJRA was created by the Texas Legislature in 1937 to:

> *"Provide water for domestic, municipal, commercial, industrial and mining purposes within and without the watershed of [the San Jacinto River], including water supplies for cities, towns and industries, and in connection therewith to construct or otherwise acquire water transportation, treatment and distribution facilities and supplemental sources of water."*[2]

The SJRA service area includes all of Montgomery County and portions of Waller, Grimes, Walker, San Jacinto, Fort Bend, and Liberty Counties (Figure 1-1). The SJRA also serves customers and is authorized to operate in East Harris County through an agreement with the City of Houston.

SJRA is governed by a Board of Directors. The General Manager oversees approximately 170 employees and all facilities across five divisions: Lake Conroe, Highlands, Groundwater Reduction Plan (GRP), Woodlands, and Flood Management. The following is provided as the Water Conservation Plan (including utility description, service area description, and customer data) for the Lake Conroe Division (the Division). The Division's Drought Contingency Plan is provided under a separate cover.

[1] Senate Bill 1, 75th Legislature, Section 12.1272 of the Texas Water Code.
[2] House Bill No. 832, 45th Legislature, Regular Session, Austin, TX, 1937.

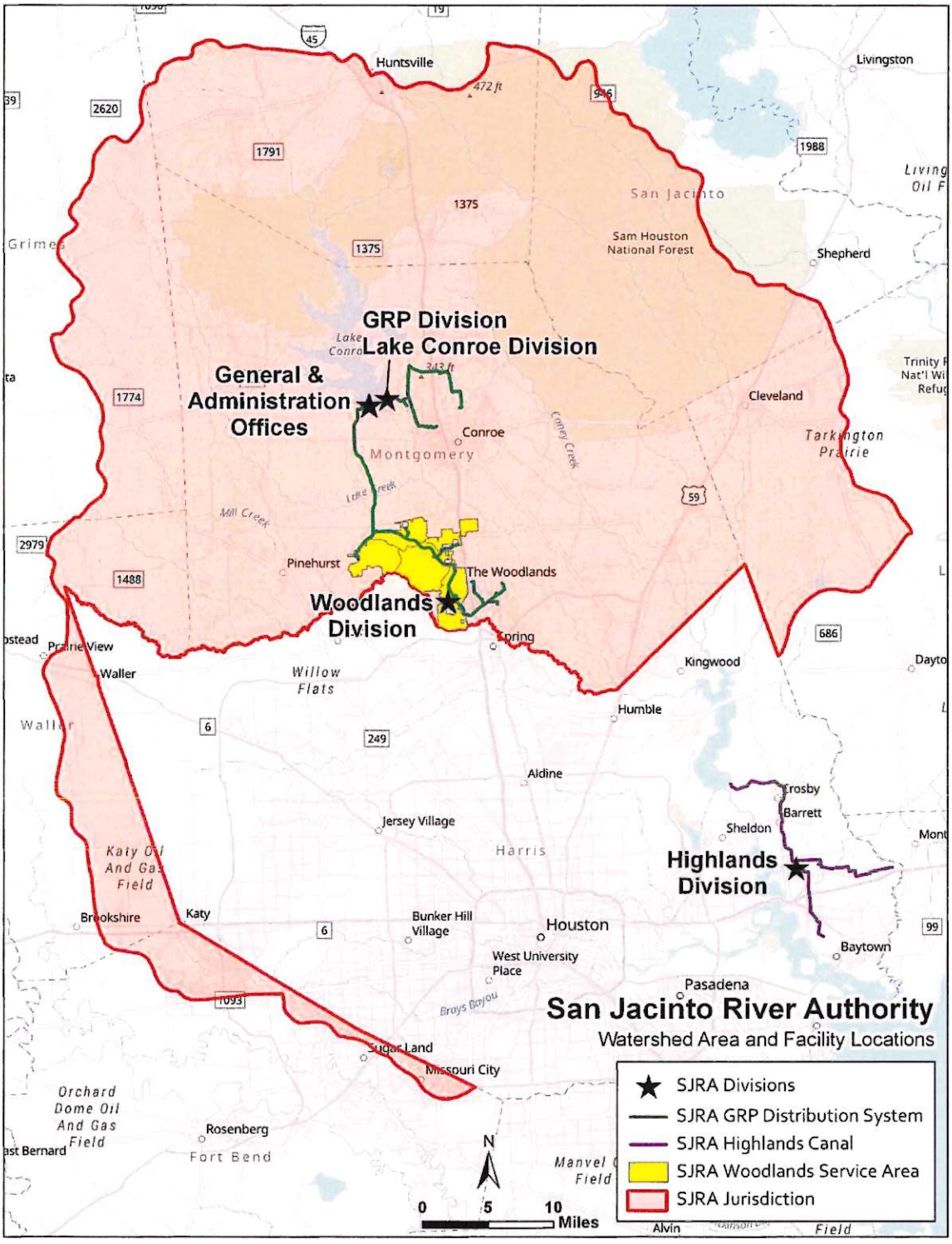

Figure 1-1. Watershed Area and Facility Locations

Section 2. Utility and Service Area Description

2.1 Utility Description

SJRA operates Lake Conroe, one of two major surface water supply reservoirs located in the San Jacinto River Basin. Completed in 1973, Lake Conroe is owned by SJRA and the City of Houston. SJRA owns one-third (33,333 ac-ft/year) and the City of Houston owns two-thirds (66,667 ac-ft/yr) of the total 100,000 ac-ft/yr of permitted water rights from the lake under Certificate of Adjudication (COA) 10-4963. Lake Houston is owned by the City of Houston and the water rights for yield from the reservoir are shared by the City of Houston and SJRA. SJRA also holds an option contract for the purchase of the Houston portion of water in Lake Conroe.

The Lake Conroe water right is used by SJRA to meet the needs of customers in close proximity to the Lake, including its own GRP Division. In addition to the Division's raw water customers in the immediate vicinity of Lake Conroe, the reservoir also serves as a source of water for the participating members of the GRP Division after treatment and transmission by the GRP Division. The GRP began delivering water to its customers in June 2015. SJRA's water right for Lake Conroe (33,333 ac-ft/yr) is permitted for multiple uses.

2.2 Service Area Description

The approximately 2,453 square mile area of SJRA's jurisdiction within the San Jacinto River Basin is bounded on the north and the east by the Trinity River Basin and the Trinity-San Jacinto Coastal Basin, on the west by the Brazos River Basin, and on the south by Harris County. A map of Lake Conroe, showing the location of the Division's customers, including golf courses/commercial irrigation customers, residential irrigators, a power generating facility (industrial), and SJRA's GRP Division surface water treatment plant (municipal), is provided below (Figure 2-1). Figure 2-1 also includes anticipated diversion locations (subject to change) for a new mining customer with whom SJRA is, as of March 2024, negotiating a raw water contract. These customers take their water directly from Lake Conroe. In 2023, there were approximately 23,633 ac-ft diverted by SJRA or its customers from Lake Conroe (Table 2-1). The Division does not own or operate wastewater infrastructure.

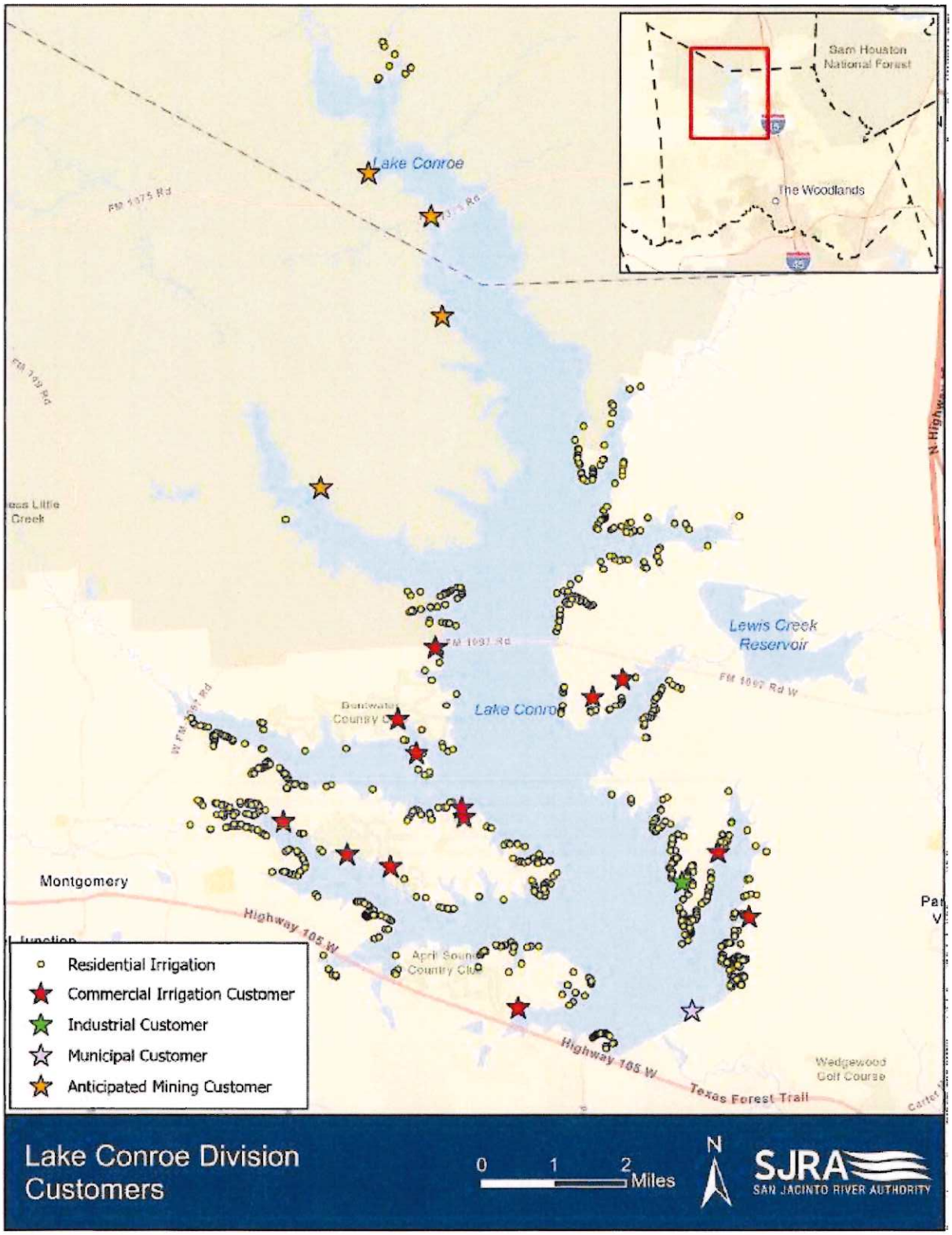

Figure 2-1. Lake Conroe Division Customers

Table 2-1. 2023 Surface Water Diversion

Municipal	15,730 ac-ft
Industrial	6,308 ac-ft
Irrigation	1,595 ac-ft
Total	23,633 ac-ft

The Division serves a power generating facility that uses surface water primarily for cooling (industrial) purposes. In 2023, there were approximately 6,308 ac-ft diverted from Lake Conroe to provide wholesale water to the power generating facility.

As of March 2024, SJRA is negotiating a contract with a mining customer to supply water for exploratory well drilling operations. When executed, this will be SJRA's only raw water mining customer.

The SJRA maintains a number of commercial irrigation contracts, which allow nearby golf courses, resorts, and lakeside communities to pump water directly from Lake Conroe for landscape irrigation purposes. In 2023, there was approximately 646 ac-ft diverted for commercial irrigation uses. There are also private individual property owners who pump raw water directly from Lake Conroe for irrigation of their lakeside property. The Division estimates usage for these customers by applying an approach developed by Texas A&M's Water Management Department which generates water budgets using a crop-specific coefficient for standard turf and incorporates irrigable area and environmental climate data. In 2023, the Division delivered an estimated 949 ac-ft of water for private irrigation use. The acreage irrigated by these commercial and private users varies, but is estimated at approximately 900 total acres.

Use of Lake Conroe as a municipal supply for the GRP Division began in June 2015. A majority of the GRP Participants continue to be served by groundwater, but some of the larger users also receive surface water. Therefore, a portion of the GRP Participants are served by a combination of treated surface water and treated groundwater, while other GRP Participants use groundwater exclusively. The GRP Participants' population currently served by SJRA from Lake Conroe as of 2023 was estimated as 334,926.

Additional Lake Conroe Division raw water customer information can be found in Appendix A, the Water Utility Profiles.

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Section 3. Water Conservation Plan

In the Texas Water Code, water conservation is defined as follows:

"(A) The development of water resources; and,

"(B) Those practices, techniques, and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in the use of water, or increase the recycling and reuse of water so that a water supply is made available for future or alternative uses."[3]

Based upon these concepts of water conservation, the Division's objective is to develop a water conservation plan that increases water use efficiency, thereby reducing water demands, without adversely affecting population and the economic growth potential of its customers.

3.1 Lake Conroe Division 5- and 10-year Water Conservation Target Goals

The Division does not have direct control over the demands that it serves, as the Division's customers take water directly from the lake into their own systems. SJRA is not involved in the day-to-day operations of its customers; however, it is working with customers to encourage water-use reduction. While the Division does also serve as a supplier to other SJRA divisions, those divisions in turn act solely as wholesale providers and thus also are not in direct control of customer demands. The water conservation measures described below include those under the direct control of, and being implemented by, SJRA, as well as goals supported and encouraged by the Division for implementation by its customers. The SJRA Lake Conroe Division aims to achieve a reduction in surface water demand, for municipal and irrigation customers, of 2.5% over a 5-year period and 5% over a 10-year period. For municipal customers, this goal will be measured based on per capita demand. For irrigation customers, the goal will be measured based on per acre demand. The Division also aims to achieve a reduction in surface water demand, for industrial and mining customers, of 1% over a 5-year period and 2% over a 10-year period. For industrial and mining customers, this goal will be measured based on total demand. Due to the nature of industrial and mining operations, demand reductions are less feasible for those customers. As growth continues to occur in the region, these customers' facilities and operations may expand, requiring additional water usage to maintain functionality. SJRA will apply the conservation methods described below, as applicable, to industrial and mining customers, and encourage those customers to conserve water where feasible in an effort to meet the water reduction goals set forth herein. Table 3-1 shows the average annual demand for each usage type for 2019 through 2023, as

[3] TWC, Section 17.001 (23) (A) and (B).

well as the 5 and 10-year targets for each usage type. The Lake Conroe Division does not manage or control any water transmission lines and all diversions are made directly from Lake Conroe, but the Division encourages its customers to use best management practices to keep water loss below 10%, annually.

Table 3-1. Lake Conroe Division 5- and 10-year Water Conservation Target Goals

Usage Type	Unit of Measure	2019-2023 Average	% Reduction Goals (2029 / 2034)	5-Year (2029) Goal	10-Year (2034) Goal
Industrial	AC-FT/YR	5,624	1% / 2%	5,568	5,512
Municipal	GPCD*	40	2.5% / 5%	39	38
Irrigation	AC-FT/AC/YR	1.24	2.5% / 5%	1.21	1.18
Mining	AC-FT/YR	387**	1% / 2%	383	379

* Gallons Per Capita Per Day

** No mining customers prior to 2024. 387 acre-feet annually anticipated in 2025-2034 (smaller amount in 2024 due to partial year of demand).

All goals stated herein for purposes of water savings over a five-and ten-year horizon were developed considering potential savings that could be realized for each category of water use by implementing some of the conservation strategies contained herein. These goals reflect challenges associated with different water use types.

3.2 Water Conservation Methods

The Division's water conservation plan includes the following water conservation methods. Each method is described in greater detail in the following subsections.

- Metering and Record Management;
- Leak Detection, Repair, and Minimization of Conveyance Losses;
- Recycling and Reuse;
- Rate Structure;
- Contractual Requirements for Customer Water Conservation Plans;
- Customer Conservation Plan Guidance;
- Customer Reporting Requirements;
- Public Information and Education;
- Encouraging Customer Conservation Practices; and
- Implementation, Enforcement, Coordination with Regional Water Planning Group (RWPG), and Updating of the Plan.

There are two major water supply reservoirs (Lake Conroe and Lake Houston) in the San Jacinto River system, however, they are operated by separate entities therefore the Lake Conroe Division does not have a reservoir system operations plan.

3.2.1 Metering and Record Management

The municipal, industrial, irrigation, and mining customers of the Division are responsible for metering as required by their water supply contracts. The long-term water supply contracts with each customer were developed at different times and therefore the specific language in each contract may vary. An example of the most recent contract language used by SJRA for raw water contracting is as follows. Language/requirements vary between different types of customers.

> *Buyer shall, at its expense, install and maintain the necessary measuring equipment, including venturi or other standard type water meters, totalizers and recording devices, with such metering equipment to be installed and maintained at the Points of Delivery, or at such other point as approved by the Authority, in such manner as will accurately meter the quantity of water delivered to Buyer hereunder.*
>
> *Meters shall be read monthly by the employees or agents of Buyer, and the date, time and the amount of water taken each month shall be reported to the Authority monthly on or before the fifth (5th) business day of the following calendar month. Unless and until mutually agreed upon and confirmed in writing by the parties, Buyer agrees to provide such report to the Authority by electronic mail, which report shall include current totalizer readings as of the beginning of each billing month (i.e., the first calendar day of each month).*
>
> *Subject to Buyer's reasonable security and safety requirements, the Authority shall have access to and the right to inspect at all reasonable times Buyer's measuring equipment, appliances and all pertinent records and data for the purpose of verifying the quantity of water delivered hereunder.*
>
> *The metering equipment installed and maintained by Buyer hereunder shall be checked by representatives of Buyer and the Authority jointly on an annual basis during the month of March, and more often at the reasonable request of either party (an "Inspection Date"), for the purpose of determining its accuracy. In the event a representative is not designated by either party for the purpose of making such test or calibration, or such representative fails to appear, then the test and calibration made by the other party shall be binding upon the*

party who fails to designate a representative or whose representative fails to appear. Any required test or calibration of the metering equipment shall be done by the employees or agents of Buyer; provided, however, that the Authority shall be given not less than five (5) business days' notice of such testing and calibration and shall be permitted to have one or more representatives present to observe such testing and calibration. If any such test shows a deviation of more than two percent (2%) from the manufacturer's tolerances, standards or specifications, such meter shall be promptly recalibrated, as nearly as practicable, to such manufacturer's tolerances, standards or specifications, and the volume of water delivered during one-half (1/2) of the period extending back to the immediately preceding Inspection Date shall be adjusted accordingly for the purposes of calculating the amount of water delivered.

The Authority may, at its option and expense, install and operate one or more check meters, but unless otherwise agreed in writing by the parties, or unless Buyer's measuring equipment is out of service or not registering accurately, measurement for purposes of this Contract shall be made by Buyer's measuring equipment. All such check meters shall be of standard make and shall be subject at all reasonable times to inspection and examination by an employee or agent of Buyer, but the reading, calibration and adjustment of such check meters shall be made only by the Authority. Should the Authority enter upon Buyer's premises for the purposes permitted above, the Authority shall exercise due care and diligence while on Buyer's premises, and Buyer's reasonable security and safety requirements shall be observed.

The data collected from the metering of customers allows SJRA to maintain a detailed record management system of water deliveries. As described in the contract language above, customers of the Division are responsible for installing and maintaining meters at their points of delivery (Lake Conroe diversion locations). Also as described in the contracts, access to these meters will be given to SJRA by each customer for inspection purposes. Meters must be maintained by each customer to the level of accuracy specified in the customer's wholesale water supply contract with the Division. The Division has recently begun reading the meters of the majority of commercial irrigation customers at Lake Conroe in order to ensure timely and accurate monthly readings.

3.2.2 Leak Detection and Repair, and Minimization of Conveyance Losses

Lake Conroe is maintained by SJRA, including routine inspections for leaks and dam integrity. Those components of the system used to take water from the Lake into each customer's system are owned

and maintained by the customers. Customers are responsible for inspections for leaks and, when necessary, repairs. The Division encourages municipal, industrial, irrigation, and mining customers to take measures to reduce water loss (below 10%) to prevent waste and facilitate achievement of the Water Conservation Plan demand reduction goals as specified above.

3.2.3 Recycling and Reuse

SJRA utilizes a number of reuse supplies across its divisions. SJRA will continue to consider and evaluate opportunities for reuse as they develop, including with the industrial, municipal, irrigation, and mining customers of the Division.

The regional planning process overseen by the Texas Water Development Board outlines projected needs and available supplies across a 50-year planning horizon. The 2021 Region H Regional Water Plan (RWP) indicated projected increases of need for new supplies in Montgomery County from approximately 7,000 acre-feet/year in 2020 to approximately 170,000 acre-feet/year in 2070. Conservation and direct reuse strategies in the RWP only address approximately 14% of the county's needs by 2070, leaving a gap requiring additional supply development. Much of this need is proposed in the RWP to be met by SJRA through water management strategies including, but not limited to, indirect reuse of regional return flows, transfer of water from Lake Livingston to SJRA, groundwater from the Catahoula Aquifer, and aquifer storage and recovery. Accordingly, a water rights application for indirect reuse can help meet Montgomery County demands, as well as other SJRA service area needs (see Highlands Division Water Conservation Plan.)

SJRA's ongoing water supply planning efforts include both technical analyses as well as water rights authorization requests that meet long-term reuse needs. In particular, SJRA has developed a Raw Water Supply Master Plan ("RWSMP") which evaluates existing SJRA water supplies, future projected water demands in SJRA's service areas, and additional SJRA water supply needs based on the difference between those existing supplies and future demands. This analysis covers a 50-year planning period, and ultimately results in the recommendation of water supply strategies to accommodate future needs in SJRA's service areas. Based on water demand trends in Montgomery County, additional supplies in excess of potential water conservation savings are needed.

One of the strategies recommended by the RWSMP to meet future demands in the Montgomery County Service Area is indirect reuse of municipal return flows. Other alternative strategies considered include the development of groundwater supply from the Catahoula Aquifer, transfers from Lake Livingston, purchase of water from other wholesale providers, direct reuse, and aquifer storage and recovery, among others. Strategies are ranked based on multiple weighted criteria, including costs, schedule, legal, environmental considerations, scalability, and others. Of the strategies available to serve Montgomery

County customers, indirect reuse of municipal return flows is consistently among the highest ranked strategies after considering how to maximize conservation efforts. SJRA has determined it necessary and reasonable to pursue permitting of municipal return flows for use in Montgomery County or downstream.

3.2.4 Rate Structure

SJRA utilizes a non-promotional rate structure for contracts with municipal, industrial, irrigation, and mining customers; these rates are periodically reviewed and adjusted as necessary. SJRA also encourages customers to establish rate structures promoting conservation for sales to their wholesale and retail customers.

3.2.5 Contractual Requirements for Customer Water Conservation Plans

SJRA will enforce the terms of contracts with wholesale water supply municipal, industrial, irrigation, and mining customers related to water conservation measures and Water Conservation Plan requirements. Additionally, SJRA will include in all water supply contracts entered into, renewed, or amended after the adoption of the Division's Water Conservation Plan a requirement that customers develop and implement water conservation plans as required by Title 30, Texas Administrative Code, Chapter 288 30 TAC §288). Per 30 TAC §288, any future contract, renewal, or amendment will also require that successive sales from SJRA customers to others include a contractual stipulation for water conservation requirements. At a minimum, customer conservation plans must comply with the requirements of 30 TAC §288.

The long-term water supply contracts with each customer were developed at different times and therefore the specific language in each contract may vary. An example of the most recent contract language used by SJRA for raw water contracting is as follows. Language/requirements may vary between different types of customers.:

> *Buyer shall not directly or indirectly resell or exchange any water purchased under this Contract, nor shall it transfer or assign this Contract, in whole or in part, without the express written consent of the Authority, which consent may be given or withheld in the sole discretion of the Authority, and any such attempted resale, exchange, transfer or assignment without such consent of the Authority shall be void. Upon consent by the Authority, any contract between Buyer and a third party for resell or exchange of water purchased under this Contract shall include a stipulation that said third party is subject to all requirements of Section 12.0 hereof related to Water Conservation and Drought Contingency Plans.*

Buyer shall develop and implement water conservation and drought contingency plans to conserve water resources and to promote practices that will reduce loss or waste of water, improve efficiency in the use of water, or increase the recycling and reuse of water. The Authority's obligations pursuant to this Contract shall be subject to the Buyer preparing and implementing a water conservation plan and drought contingency plan that meets all requirements set forth herein. Buyer's water conservation plan and drought contingency plan shall be at least equal to or more stringent than that adopted by the Authority, and Buyer shall comply with all requirements of the TCEQ, Texas Water Development Board, and any other federal, state or local regulatory agency with jurisdiction. Buyer shall cooperate with and assist the Authority in its efforts to develop and implement plans, programs, and rules to develop water resources and to promote practices, techniques, and technologies that will reduce the consumption of water, reduce the loss or waste of water, improve the efficiency in use of water, or increase the recycling and reuse of water. Upon execution of this Agreement, Buyer shall submit water conservation and drought contingency plans and Buyer shall forward its water conservation plan and drought contingency plan to the Authority for its review and approval within one hundred eighty (180) calendar days following the date the Authority adopts any revision to its existing water conservation and drought contingency plans.

Subject to Buyer's reasonable security and safety requirements, the Authority shall have access to enter the Buyer's facilities in order to inspect and verify that appropriate leak detection measures and all other obligations subject to this Contract are in place.

Upon written request from the Authority, Buyer shall report progress made in implementation of its water conservation and drought contingency plans on an annual basis on or before March 1st of each year during the term of this Contract. Buyer shall amend its water conservation and drought contingency plans to reflect revisions to the Authority's plans, programs, and rules within one hundred eighty (180) calendar days after notice from the Authority of the adoption of such revisions.

SJRA may periodically update this language, as well as the Water Conservation and Drought Contingency Plans for the Division to meet legal requirements or address changing conditions; Subsequent to such revisions, customers of the Division are requested to update their water conservation and drought contingency plans as applicable.

3.2.6 Customer Conservation Plan Guidance;

SJRA will provide to municipal, industrial, irrigation, and mining customers upon request, model water conservation plans as developed by TCEQ, meeting the contractual requirements described in Section 3.2.5 above for each customer type. Additionally, SJRA will at customer request review draft customer water conservation and drought contingency plans for consistency with contractual requirements and the Division's Water Conservation and Drought Contingency Plans. Customers can contact SJRA for information regarding the Division's Plans and contractual requirements.

3.2.7 Customer Reporting Requirements

In 2011, the 82nd Texas Legislature passed Senate Bill (SB) 181, which addressed the need for consistency in water use reporting by municipalities, water utilities, and others. Subsequently, TWDB and TCEQ developed detailed guidance and procedures for calculating and reporting water use, water loss, and other factors.

While SJRA is not directly impacted by these requirements as a wholesale provider, its divisions provide contractual water supply to a number of entities which are impacted by SB181. The broad range of water uses served by SJRA and the requirements of multiple State reporting programs creates a need for consistent customer reporting. As such, SJRA will require customer water usage reports, including any values for per-capita water demand, to follow the procedures established by TWDB and TCEQ.[4] Further, SJRA may request that customers annually submit to SJRA a copy of all conservation plan reporting forms, if required by TCEQ, that are submitted to TCEQ.

3.2.8 Public Information and Education

SJRA provides and periodically updates information regarding conservation and efficient water use on the Authority website at http://www.sjra.net/ and/or social media sites. SJRA also has the option to utilize a plethora of water conservation resources that the TWDB, American Water Works Association, and American Public Works Association originally created as components of their own public education campaigns. Individual pamphlets and educational messages provided from these or other entities can be selected for specialized water conservation needs as they arise.

SJRA will provide, as needed and/or requested, water conservation literature to the municipal, industrial, irrigation, and mining customers of the Division. The Division is committed to promoting improvements in industrial, municipal, irrigation, and mining processes to achieve conservation with its customers.

[4] TWDB et al. 2012. Guidance and Methodology for Reporting on Water Conservation and Water Use

SJRA, across all divisions, will make information available through its public information and education program for plumbers and customers to use when purchasing and installing plumbing fixtures, water-using appliances, and watering equipment. Information regarding retrofit devices, such as low-flow shower heads or toilet dams that reduce water use by replacing or modifying existing fixtures or appliances, will also be provided.

Other public information approaches which SJRA has utilized in the past and may implement in the future include public tours of various facilities across all divisions, participation in local environmental events, classroom water conservation educational programs, and joint operation of a mobile teaching lab.

3.2.9 Encouraging Customer Conservation Practices

SJRA and the Division encourage their municipal, industrial, irrigation, and mining customers to consider implementing rules, measures, and emerging technologies that promote water conservation and efficient use. Recommended measures include, but are not limited to, the following:

- Prohibitions on wasting water;
- Time-of-day watering restrictions;
- Water conservation pricing structures;
- Landscape irrigation conservation, including integrating rainfall/freeze sensors into irrigation systems;
- Water reuse
- Rainwater harvesting
- Public education programs

Additional information on conservation practices for a wide range of water uses can be found at the TWDB website (http://www.twdb.texas.gov/).

3.2.10 Implementation, Enforcement, Coordination with RWPG, and Updating of the Plan

The Water Resources and Flood Management Division Manager and/or designees will act as the administrator(s) of the Water Conservation Plan for the Lake Conroe Division. The administrator(s) will oversee the execution and implementation of all elements of the program and monitor the progress of the plan. Additionally, the administrator(s) will be responsible for submission of an annual report to the TCEQ and TWDB on the progress of, and any changes to, the water conservation plan. SJRA is responsible for maintaining adequate records for Plan compliance with TCEQ and TWDB.

SJRA will enforce the terms of contracts with wholesale water supply municipal, industrial, irrigation, and mining customers related to water conservation measures and Water Conservation Plan requirements.

The Division is located within the Region H Regional Water Planning Area. In accordance with TCEQ rules, the Division provides a copy of its water conservation plan to the Region H Regional Water Planning Group (RWPG). A copy of the transmittal letter is included in Appendix B.

Every five years, SJRA will examine the Division's Water Conservation Plan and revise as necessary. The Water Conservation Plan for the Division has been adopted by a resolution of the Board of Directors of SJRA. A copy of the resolution is included in Appendix B.

Appendix A

Water Utility Profiles

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San Jacinto River Authority – Lake Conroe Division

TCEQ Form 20162: Profile and Water Conservation Plan Requirements for Wholesale Public Water Supplies

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Texas Commission on Environmental Quality
Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4600, FAX (512) 239-2214

Utility Profile and Water Conservation Plan Requirements for Wholesale Public Water Suppliers

This form is provided to assist wholesale public water suppliers in water conservation plan development. If you need assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4600.

Water users can find best management practices (BMPs) at the Texas Water Development Board's website http://www.twdb.texas.gov/conservation/BMPs/index.asp. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name:	San Jacinto River Authority - Lake Conroe Division	
Address:	P.O. Box 329 Conroe, Texas 77305	
Telephone Number:	(936) 588-3111	Fax: N/A
Water Right No.(s):	COA 10-4963	
Regional Water Planning Group:	Region H	
Person responsible for implementing conservation program:	Matt Barrett, P.E.	Phone: (936) 588-7177
Form Completed By:	Matt Barrett, P.E.	
Title:	Water Resources and Flood Management Division Manager	
Signature:	Matt B	Date: 4 / 9 / 2024

A water conservation plan for wholesale public water suppliers must include the following requirements (as detailed in 30 TAC Section 288.5). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

Utility Profile

I. WHOLESALE SERVICE AREA POPULATION AND CUSTOMER DATA

A. Population and Service Area Data:

1. Service area size (in square miles):

   (Please attach a copy of service-area map)

   Approximately 1,077 square miles (Montgomery County). See Attachment A.

2. Current population of service area:

   669,853 (Montgomery County; SJRA Lake Conroe Municipal customers population ~334,926)
669,853 (Montgomery County; SJRA GRP Participants are about 50%)

3. Current population served for:

   a. Water - 669,853

   b. Wastewater - N/A

4. Population served for previous five years:

Year	*Population*
2019	607,583
2020	626,351
2021	648,886
2022	653,383
2023	669,853

5. Projected population for service area in the following decades:

Year	*Population*
2020	626,351
2030	811,252
2040	1,019,278
2050	1,267,916
2060	1,576,135

6. List source or method for the calculation of current and projected population size.

   Region H 2021 Regional Water Plan, Volume 2, "Region H Water User Group (WUG) Population".

B. Customer Data

List (or attach) the names of all wholesale customers, amount of annual contract, and amount of annual use for each customer for the previous year:

Wholesale Customer	*Contracted Amount (Acre-feet)**	*Previous Year Amount of Water Delivered (acre-feet)*
April Harbour Condominiums	4	5

Bella Vita Homeowners Association, Inc.	2	4
The Benthaven Island Association, Inc.	4	0 (rounded)
Bentwater Yacht & Country Club, LTD.(Grand Pines)	184	65
Bentwater Yacht & Country Club, LTD. (Weiskopf)	169	241
Entergy Texas, Inc.	7841	6308
The French Quarter on Lake Conroe Homeowners Association	2	0 (rounded)
SJRA GRP Division	N/A**	15,730
Lakeside Resort JV, LLC	163	169
Montgomery County MUD No. 100	250***	0
Point Aquarius Property Owners Association	10	1
Walden on Lake Conroe Community Improvement Association, Inc.	6	4
Walden on Lake Conroe (Golf and Country Club)	184	151
Walden's Townhouse Association	3	2
West Palm Villas Homeowner's Association	5	4
B&R Water Well Drilling, LLC	0 (rounded)	0
Ballard Water Well Company, LLC.	0 (rounded)	0 (rounded)
Residential Irrigation	N/A****	949

* Contract amounts rounded to nearest acre-foot.
** As an internal customer, GRP Division does not have a contract with the SJRA. Budgeted demand amount was 14,562 Acre-feet, and GRP reserved all remaining available SJRA water rights in Lake Conroe.
***Montgomery County MUD No. 100 canceled its contract as of July 1, 2023.
**** SJRA does not set contract amounts for residential irrigation, but rather charges a flat fee.

II. WATER USE DATA FOR SERVICE AREA

A. Water Delivery

Indicate if the water provided under wholesale contracts is treated or raw water and the annual amounts for the previous five years (in acre feet):

Year	*Treated Water*	*Raw Water*
2023	0	23,633
2022	0	23,508
2021	0	18,568
2020	0	18,636
2019	0	18,913
Totals	0	103,258

B. *Water Accounting Data*

1. Total amount of water diverted at the point of diversion(s) for the previous five years (in acre-feet) for all water uses:

Year	*2023*	*2022*	*2021*	*2020*	*2019*
Month					
January	678	1519	1019	862	1329
February	723	1277	1929	682	890
March	1530	932	1046	836	988
April	1038	1948	1470	1113	1193
May	1162	1751	1111	1372	1530
June	2553	3016	1199	1751	1973
July	3641	3675	1557	2000	1842
August	4442	1910	2729	2841	2378
September	2896	2550	2430	1706	2190
October	1791	2687	1555	2681	2120
November	1852	1146	1380	1604	1608
December	1328	1098	1141	1187	870
Totals	23,633	23,508	18,568	18,636	18,913

2. Wholesale population served and total amount of water diverted for **municipal use** for the previous five years (in acre-feet):

Year	Total Population Served	Total Annual Water Diverted for Municipal Use
2023	334,926	15,730
2022	326,691	13,922
2021	318,261	13,811
2020	293,449	14,304
2019	270,037	11,760

C. *Projected Water Demands*

If applicable, project and attach water supply demands for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirements from such growth.

The SJRA GRP Division Surface Water Treatment Facility (SWTF) was constructed with a maximum production capacity of 30 MGD. The GRP was established to assist in reducing the groundwater reliance in Montgomery County, TX in coordination with Lone Star Groundwater Districts' (LSGCD) Groundwater Management Plan. In 2020, LSGCD removed the requirement for groundwater reduction, thus limiting the need to increase the production capacity of the SJRA SWTF. For this reason, SJRA's GRP will maintain the currently constructed 30 MGD SWTF for the foreseeable future.

III. WATER SUPPLY SYSTEM DATA

A. *Projected Water Demands*

List all current water supply sources and the amounts authorized (in acre feet) with each.

Water Type	Source	Amount Authorized
Surface Water	Lake Conroe (COA 10-4963)	33,333
Groundwater	N/A	0
Other	N/A	0

B. *Treatment and Distribution System (if providing treated water)* – ***(NOT APPLICABLE)***

1. Design daily capacity of system (MGD):

2. Storage capacity (MGD):

   a. Elevated

b. Ground

3. Please attach a description of the water system. Include the number of treatment plants, wells, and storage tanks

IV. WASTEWATER SYSTEM DATA – *(NOT APPLICABLE)*

A. Wastewater System Data (if applicable) -

1. Design capacity of wastewater treatment plant(s) (MGD):

2. Briefly describe the wastewater system(s) of the area serviced by the wholesale public water supplier. Describe how treated wastewater is disposed. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and the receiving stream if wastewater is discharged.

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: %

2. Monthly volume treated for previous five years (in 1,000 gallons):

Year					
Month					
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Totals					

Water Conservation Plan

In addition to the description of the wholesaler's service area (profile from above), a water conservation plan for a wholesale public water supplier must include, at a minimum, additional information as required by Title 30, Texas Administrative Code, Chapter 288.5. Note: If the water conservation plan does not provide information for each requirement an explanation must be included as to why the requirement is not applicable.

A. *Specific, Quantified 5 & 10-Year Targets*

The water conservation plan must include specific, quantified 5-year and 10-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day for the wholesaler's service area, maximum acceptable water loss, and the basis for the development of these goals. Note that the goals established by a wholesale water supplier under this subparagraph are not enforceable. These goals must be updated during the 5-year review and submittal.

B. *Measuring and Accounting for Diversions*

The water conservation plan must include a description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply.

C. *Record Management Program*

The water conservation plan must include a monitoring and record management program for determining water deliveries, sales, and losses.

D. *Metering/Leak-Detection and Repair Program*

The water conservation plan must include a program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system.

E. *Contract Requirements for Successive Customer Conservation*

The water conservation plan must include a requirement in every water supply contract entered into or renewed after official adoption of the water conservation plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of Title 30 TAC Chapter 288. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.

F. *Reservoir Systems Operations Plan*

The water conservation plan must include a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plan shall include optimization of water supplies as one of the significant goals of the plan.

G. *Enforcement Procedure and Official Adoption*

The water conservation plan must include a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan.

H. Coordination with the Regional Water Planning Group(s)

The water conservation plan must include documentation of coordination with the regional water planning groups for the service area of the wholesale water supplier in order to ensure consistency with the appropriate approved regional water plans.

Example statement to be included within the water conservation plan:

The service area of the _____ (name of water supplier) is located within the _____ (name of regional water planning area or areas) and _____ (name of water supplier) has provided a copy of this water conservation plan to the _____ (name of regional water planning group or groups).

I. Plan Review and Update

A wholesale water supplier shall review and update its water conservation plan, as appropriate based on an assessment of previous 5-year and 10-year targets and any other new or updated information. A wholesale water supplier shall review and update the next revision of its water conservation plan no later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

V. ADDITIONAL CONSERVATION STRATEGIES

Any combination of the following strategies shall be selected by the water wholesaler, in addition to the minimum requirements of 30 TAC §288.5(1), if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

1. Conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

2. A program to assist agricultural customers in the development of conservation, pollution prevention and abatement plans;

3. A program for reuse and/or recycling of wastewater and/or graywater;

4. Any other water conservation practice, method, or technique which the wholesaler shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

VI. WATER CONSERVATION PLANS SUBMITTED WITH A WATER RIGHT APPLICATION FOR NEW OR ADDITIONAL STATE WATER

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

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San Jacinto River Authority – Lake Conroe Division

Attachments to TCEQ Form
20162: Profile and Water Conservation Plan
Requirements for Wholesale Public Water Supplies

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Attachment A

SJRA Service Area

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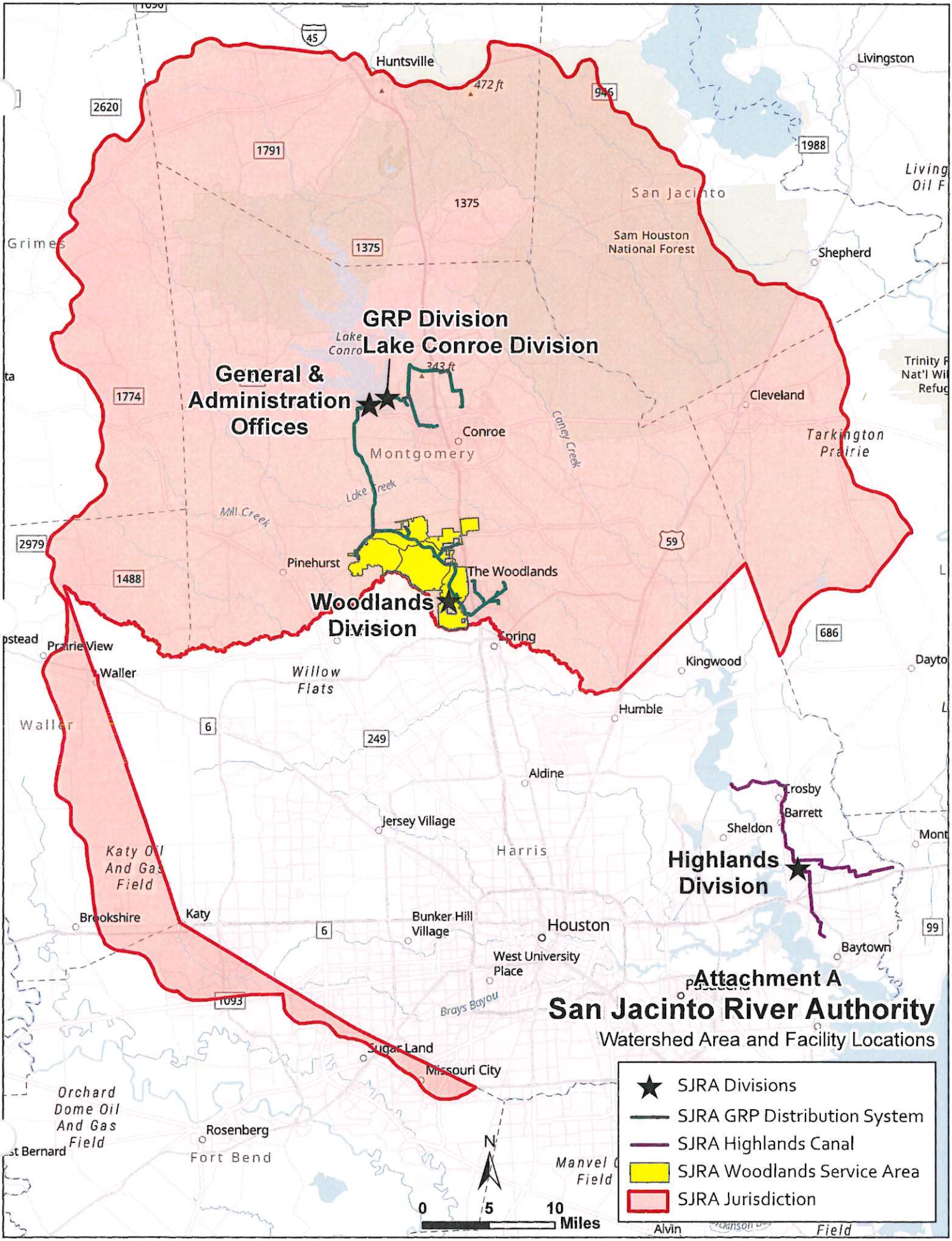
GRP Division
Lake Conroe Division
General & Administration Offices
Woodlands Division
Highlands Division
Huntsville
Livingston
Shepherd
Cleveland
Conroe
Montgomery
Pinehurst
The Woodlands
Spring
Kingwood
Humble
Aldine
Jersey Village
Harris
Houston
West University Place
Bunker Hill Village
Sheldon
Crosby
Barrett
Baytown
Katy
Brookshire
Waller
Prairie View
Willow Flats
Sugar Land
Missouri City
Rosenberg
Fort Bend
Grimes
San Jacinto
Sam Houston National Forest
Tarkington Prairie
Lake Conroe
Lake Creek
Mill Creek
Caney Creek
Brays Bayou
Katy Oil And Gas Field
Orchard Dome Oil And Gas Field
Manvel Field
Alvin
472 ft
343 ft
2620
1791
1375
946
1988
1774
2979
1488
59
686
6
249
99
1093
N
0
5
10
Miles
Attachment A
San Jacinto River Authority
Watershed Area and Facility Locations
SJRA Divisions
SJRA GRP Distribution System
SJRA Highlands Canal
SJRA Woodlands Service Area
SJRA Jurisdiction

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Attachment B

Lake Conroe Division Customers

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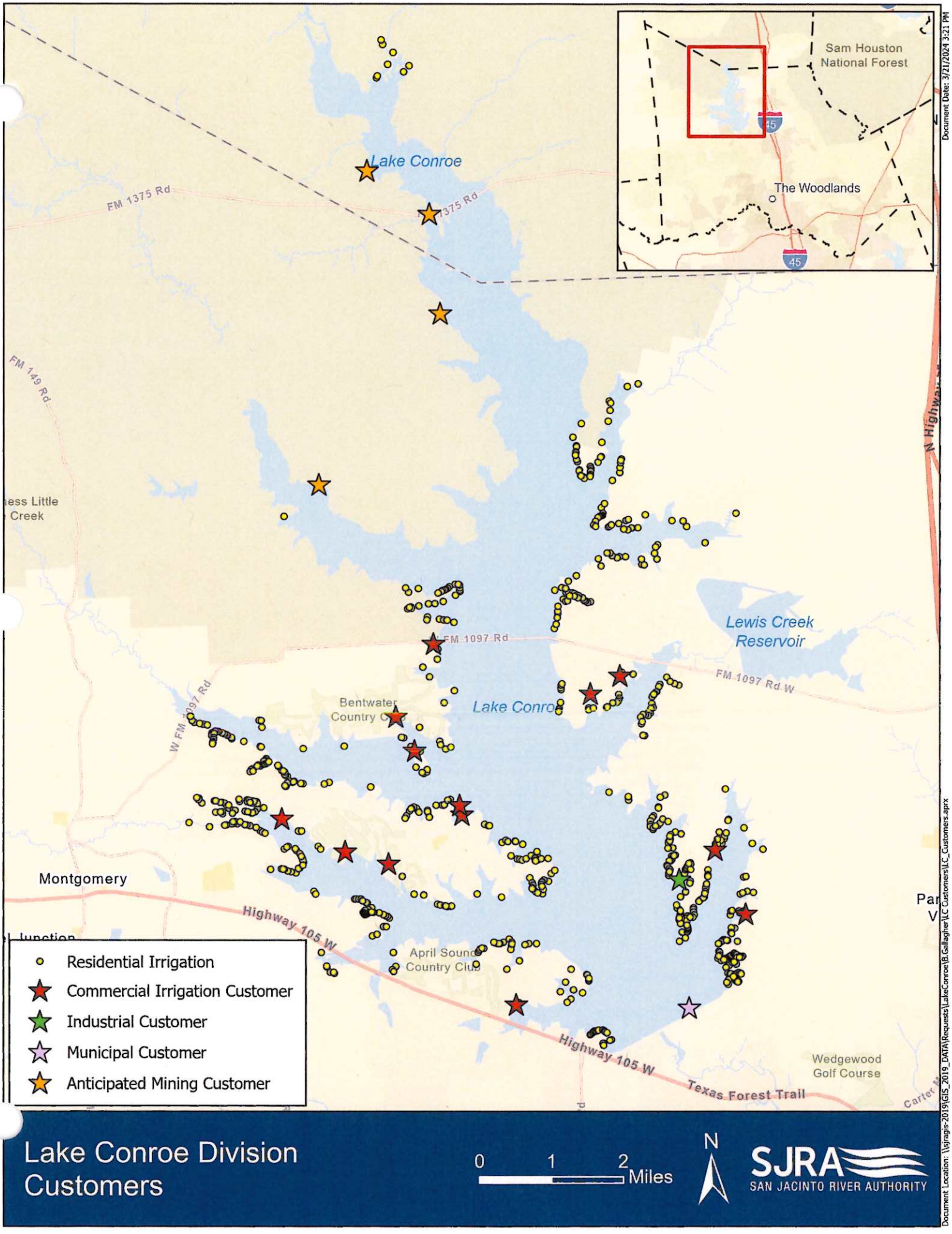
Sam Houston National Forest
45
The Woodlands
45
Lake Conroe
FM 1375 Rd
FM 149 Rd
Lewis Creek Reservoir
FM 1097 Rd
FM 1097 Rd W
W FM 1097 Rd
Bentwater Country Club
Lake Conroe
Montgomery
Highway 105 W
April Sound Country Club
Highway 105 W
Texas Forest Trail
Wedgewood Golf Course
Residential Irrigation
Commercial Irrigation Customer
Industrial Customer
Municipal Customer
Anticipated Mining Customer
Lake Conroe Division Customers
0 1 2 Miles
N
SJRA
SAN JACINTO RIVER AUTHORITY
Document Date: 3/21/2024 3:21 PM
Document Location: \\sjrags-2019\GIS_2019_DATA\Requests\LakeConroe\B.Gallagher\LC Customers\LC_Customers.aprx

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San Jacinto River Authority – Lake Conroe Division

TCEQ Form 20839: Industrial Water Conservation Plan

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WATER CONSERVATION PLANS FOR INDUSTRIAL/MINING USES – SAN JACINTO RIVER AUTHORITY LAKE CONROE DIVISION

These Industrial/Mining Use Water Conservation Plans address the requirements of Rule 288.3 of the Texas Administrative Code ("TAC") that a water conservation plan that addresses industrial and mining uses must provide the following information:

(1) A description of the use of the water in the production process, including how the water is diverted and transported from the source(s) of supply, how the water is utilized in the production process, and the estimated quantity of water consumed in the production process and therefore unavailable for reuse, discharge, or other means of disposal;

(2) Specific, quantified five-year and ten-year targets for water savings and the basis for the development of such goals. The goals established by industrial or mining water users under this paragraph are not enforceable;

(3) A description of the device(s) and/or method(s) within an accuracy of plus or minus 5.0% to be used in order to measure and account for the amount of water diverted from the source of supply;

(4) Leak-detection, repair, and accounting for water loss in the water distribution system;

(5) Application of state-of-the-art equipment and/or process modifications to improve water use efficiency; and

(6) Any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

A. Description of Water Use

The San Jacinto River Authority's ("SJRA's") Lake Conroe Division (the "Division") has authorization under COA 10-4963, as amended, to divert and use water for industrial and mining purposes and to do so within the existing diversion rates authorized for Lake Conroe. In addition, SJRA has a pending water right application for reuse of discharged effluent that requests industrial/mining among other uses. Such uses include (for both existing and future operations), but are not necessarily limited to, electric power plant generation, hydraulic fracturing, and exploratory drilling. The Division has not historically diverted water for mining use prior to 2024 but anticipates doing so from 2024-2034, and potentially beyond, to satisfy a new prospective mining customer's need. The total industrial/mining demand of Lake Conroe customers is not anticipated to exceed 10,000 acre-feet per year for the foreseeable future, and all water is anticipated to be consumed in the production process and thus unavailable for SJRA reuse, discharge, or other means of disposal. Water will be diverted from Lake Conroe and metered at customer-owned meters.

B. Conservation Goals

The water conservation goal for the Division's industrial/mining customers is to reach quantifiable conservation targets and expand reuse options. The Division does not have direct control over the demand it serves but works with its industrial and mining customers

to reach these targets. The Division aims to achieve a reduction in water demand of 1% over a 5-year period, and 2% over a 10-year period for industrial and mining uses based on total demand. Though not a quantified goal, SJRA also desires to increase reuse water use where feasible for industrial/mining customers. In an attempt to meet these targets, the Division has developed the following recommendations for best management practices for its industrial/mining customers in order to keep water loss below 10% annually:

1. Maintaining an efficient delivery system that controls and limits conveyance losses.
2. Minimizing process losses.
3. Utilizing innovative technologies.
4. Continuing implementation of public information and education strategies.

C. Practices and Devices to Measure Diversions

Devices, such as meters, and methods will be installed and instituted to ensure that all diversions of water are measured and accurately accounted for. All diversions must be performed, monitored, and recorded in a manner that is consistent with each customer's raw water contract. These customer contracts require regular meter inspections/calibrations, and any test showing a deviation of more than 2% from manufacturer's tolerances, standards, or specifications requires recalibration.

D. Leak Detection, Repair and Water Loss Accounting.

The Division's water used for industrial and mining operation is taken directly from Lake Conroe and the Division does not own or operate any related water delivery infrastructure, which is the responsibility of each customer. The Division's customers are required, pursuant to existing water supply contracts, to develop and implement water conservation and drought contingency plans to conserve water resources and to promote practices that will reduce loss or waste of water, improve efficiency in the use of water, or increase the recycling and reuse of water. The customer water conservation and drought contingency plans shall be at least as stringent or more stringent than that adopted by the Authority, and the customers shall comply with all requirements of the TCEQ, Texas Water Development Board, and any other federal, state or local regulatory agency with jurisdiction. The Division encourages its customers to use best management practices to keep water loss below 10% annually.

E. Means to Improve Water Use Efficiency

Any additional water conservation practices, methods, and techniques that are feasible and appropriate to achieve the stated goals of the water conservation plan will be encouraged by SJRA. This includes, but is not limited to, the application of state-of-the-art equipment and-or process modifications to improve water use efficiency.

Texas Commission on Environmental Quality
Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4600, FAX (512) 239-2214

Industrial Water Conservation Plan

This form is provided to assist entities in developing a water conservation plan for industrial water use. If you need assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4600.

Additional resources such as best management practices (BMPs) are available on the Texas Water Development Board's website http://www.twdb.texas.gov/conservation/BMPs/index.asp. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name:	San Jacinto River Authority – Lake Conroe Division
Address:	P.O. Box 329 Conroe, Texas 77305
Telephone Number:	(936) 588-3111 Fax: N/A
Form Completed By:	Matt Barrett, P.E.
Title:	Water Resources and Flood Management Division Manager
Signature:	Date: 4 / 9 / 2024

A water conservation plan for industrial use must include the following requirements (as detailed in 30 TAC Section 288.3). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

I. BACKGROUND DATA

A. Water Use

1. Annual diversion appropriated or requested (in acre-feet):

   7,841 (contracted); 33,333 Acre-feet available to SJRA for industrial, municipal, irrigation, and mining uses under COA 10-4963.

2. Maximum diversion rate (cfs):

   700 CFS is maximum diversion rate for all uses under COA 10-4963. It is estimated that the actual maximum diversion rate for 2023 was well below the permitted amount for all uses combined.

B. Water Sources

1. Please indicate the maximum or average annual amounts of water currently used and anticipated to be used (in acre-feet) for industrial purposes:

Source	*Water Right No.(s)*	*Current Use*	*Anticipated Use*
Surface Water	COA 10-4963	6,308	7,841 (contracted)
Groundwater	0	0	0
Purchased	0	0	0
Total	0	6,308	7,841

2. How was the surface water data and/or groundwater data provided in B(1) obtained?

   Master meter ; Customer meter X; Estimated ; Other

3. Was purchased water raw or treated? Raw Water

   If both, % raw ; % treated ; and Supplier(s)

C. Industrial Information

1. Major product(s) or service(s) produced by applicant:

   Electric Power Generation Plant

2. North American Industry Classification System (NAICS):

   22111

II. WATER USE AND CONSERVATION PRACTICES

A. Water Use in Industrial Processes

Production Use	*% Groundwater*	*% Surface Water*	*% Saline Water*	*% Treated Water*	**Water Use (in acre-ft)*
Cooling, condensing, & refrigeration		100			
Processing, washing, transport					
Boiler feed					

Incorporated into product					
Other					

Facility Use	*% Groundwater*	*% Surface Water*	*% Saline Water*	*% Treated Water*	**Water Use (in acre-ft)*
Cooling tower(s)		100			
Pond(s)		100			
Once through		100			
Sanitary & drinking water	100				
Irrigation & dust control					

* SJRA does not currently possess data regarding water use for specific industrial processes. Information in the above table reflects the information available to SJRA at this time.

1. Was fresh water recirculated at this facility? ☒ Yes ☐ No

2. Provide a detailed description of how the water will be utilized in the industrial process.

   Industrial power generator. Stores water in permanent reservoir for use in power generation process and all captured water is returned to reservoir. Water level in reservoir is maintained with surface water purchased from SJRA. It is apparent that a significant amount of water is recirculated through this process each day.

3. Estimate the quantity of water consumed in production processes and is therefore unavailable for reuse, discharge, or other means of disposal.

   See quantities in section I.B.1 above. No water is returned to Lake Conroe.

4. Monthly water consumption for previous year (in acre-feet).

Month	*Diversion Amount*	*% of Water*	*Monthly*

		Returned (If Any)	*Consumption*
January	0 (rounded)		0 (rounded)
February	0 (rounded)		0 (rounded)
March	545		545
April	84		84
May	0 (rounded)		0 (rounded)
June	832		832
July	1,225		1,225
August	1,590		1,590
September	801		801
October	97		97
November	695		695
December	438		438
Totals	6,308		6,308

5. Projected monthly water consumption for next year (in acre-feet).*

Month	*Diversion Amount*	*% of Water Returned (If Any)*	*Monthly Consumption*
January	280		280
February	210		210
March	293		293
April	449		449
May	193		193
June	969		969
July	1,373		1,373
August	1,246		1,246
September	878		878
October	570		570
November	439		439
December	354		354
Totals	7,254		7,254

** Projected monthly water consumption is average monthly water consumption for last 2 years.*

B. *Specific and Quantified Conservation Goal*

Water conservation goals for the industrial sector are generally established either for (1) the amount of water recycled, (2) the amount of water reused, or (3) the amount of water not lost or consumed, and therefore is available for return flow.

1. Water conservation goal (water use efficiency measure)

   Type of goal(s):

   % reused water

   % of water not consumed and therefore returned

   X Other (specify) *Reduction in total surface water use where feasible*

2. Provide specific, quantified 5-year and 10-year targets for water savings and the basis for development of such goals for this water use/facility.

   The Division aims to achieve a reduction in surface water demand, for industrial and mining customers, of 1% over a 5-year period and 2% over a 10-year period. For industrial and mining customers, this goal will be measured based on total demand. Due to the nature of industrial and mining operations, demand reductions are less feasible for those customers. As growth continues to occur in the region, these customers' facilities and operations may expand, requiring additional water usage to maintain functionality. SJRA will apply the conservation methods described in the Lake Conroe Division Water Conservation Plan, as applicable, to industrial and mining customers, and encourage those customers to conserve water where feasible in an effort to meet the water reduction goals set forth therein.

   Quantified 5-year and 10-year targets for water savings:

   a. 5-year goal: Reduction of 56 ac-ft per year

   b. 10-year goal: Reduction of 112 ac-ft per year

3. Describe the device(s) and/or method(s) used to measure and account for the amount of water diverted from the supply source, and verify the accuracy is within plus or minus 5%.

   SJRA's Lake Conroe industrial customer contract requires the customer to install and maintain measuring equipment to track water usage from Lake Conroe. The contract requires inspection of the equipment on a bi-annual basis. The customer is responsible for meter calibration, and any test showing a deviation of more than 2% from manufacturer's tolerances, standards, or specifications requires recalibration. SJRA maintains records of customer monthly usage.

4. Provide a description of the leak-detection and repair, and water-loss accounting measures used.

   Customer takes water directly from Lake Conroe and is responsible for any leak detection, repair, etc.

5. Describe the application of state-of-the-art equipment and/or process modifications used to improve water use efficiency.

SJRA is not familiar with customer's specific equipment, however customer recently constructed a new power generating plant with improved water use efficiency.

6. Describe any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal or goals of the water conservation plan:

   See Lake Conroe Division Water Conservation Plan.

III. Water Conservation Plans submitted with a Water Right Application for New or Additional State Water

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan;

2. evaluates conservation as an alternative to the proposed appropriation; and

3. evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

Additionally, it shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.

San Jacinto River Authority – Lake Conroe Division

TCEQ Form 20840: Mining Water Conservation Plan

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Texas Commission on Environmental Quality
Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4600, FAX (512) 239-2214

Mining Water Conservation Plan

This form is provided to assist entities in developing a water conservation plan for mining water use. If you need assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4600.

Additional resources such as best management practices (BMPs) are available on the Texas Water Development Board's website http://www.twdb.texas.gov/conservation/BMPs/index.asp. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name:	San Jacinto River Authority - Lake Conroe Division
Address:	P.O. Box 329 Conroe, Texas 77305
Telephone Number:	(936) 588-3111 Fax: N/A
Form Completed By:	Matt Barrett, P.E.
Title:	Water Resources and Flood Management Division Manager
Signature:	Date: 4 / 9 / 2024

A water conservation plan for mining use must include the following requirements (as detailed in 30 TAC Section 288.3). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

I. BACKGROUND DATA

A. *Water Use*

1. Annual diversion appropriated or requested (in acre-feet):

   33,333 Acre-feet available to SJRA for industrial, municipal, irrigation, and mining uses under COA 10-4963. SJRA Lake Conroe Division had no mining customers in 2023.

2. Maximum diversion rate (cfs):

   700 CFS is maximum diversion rate for all uses under COA 10-4963. It is estimated that the actual maximum diversion rate for 2023 was well below the permitted amount for all uses combined.

B. *Water Sources*

1. Please indicate the maximum or average annual amounts of water currently used and anticipated to be used (in acre- feet) for mining purposes:

Source	*Water Right No.(s)*	*Current Use*	*Anticipated Use*
Surface Water	COA 10- 4963	0	284 (2024), 387 per year (2025-2034)
Groundwater	N/A	0	0
Purchased	N/A	0	0
Total	N/A	0	284 (2024), 387 per year (2025-2034)

2. How was the surface water data and/or groundwater data provided in B(1) obtained?

   Master meter ; Customer meter ; Estimated ; Other: *No mining customers in 2023. Future uses based on draft new customer contract (as of March 2024).*

3. Was purchased water raw or treated? *NOT APPLICABLE. Future usage will be raw water.*

   If both, % raw ; % treated ; and Supplier(s)

C. Mining Information

1. Major product(s) or service(s) produced by applicant:

   No mining customers in 2023. Oil/gas exploration drilling anticipated in 2024- 2034 and potentially beyond.

2. North American Industry Classification System (NAICS):

   2111 Oil and Gas Extraction

II. WATER USE AND CONSERVATION PRACTICES

A. Water Use in Mining Processes

Mining Use	*% Groundwater*	*% Surface Water*	*% Saline Water*	*% Treated Water*	*Water Use (in acre- ft)*
Hydraulic Fracturing		100			N/A*
Drilling	100				N/A*
Washing Sand/gravel					N/A

Dust Control					N/A
Oil Field Repressuring					N/A
Other					N/A

* *No mining customers in 2023. Anticipated 2024- 2034 SJRA supply to mining customer will be 100% surface water (though some groundwater- based reuse could potentially also be utilized). Prospective customer anticipates utilizing 100% or nearly 100% SJRA surface water for its hydraulic fracturing needs and 100% or nearly 100% private groundwater for its drilling needs, but this is subject to change.*

Facility Use	*% Groundwater*	*% Surface Water*	*% Saline Water*	*% Treated Water*	*Water Use (in acre- ft)*
Pond(s)					N/A
Sanitary & drinking water					N/A
Irrigation & dust control					N/A
Other					N/A

1. Was fresh water recirculated at this facility? N/A ☐ Yes ☒ No

2. Provide a detailed description of how the water will be utilized in the mining process.

   No mining customers in 2023. For 2024- 2034 it is anticipated that water will be utilized by a customer to develop wells for the purpose of oil and gas exploration. Water will be utilized for drilling and completions operations. It will primarily be used to hydraulically stimulate the wells.

3. Estimate the quantity of water consumed in production and mining processes and is therefore unavailable for reuse, discharge, or other means of disposal.

   No mining customers in 2023. For 2024- 2034 it is anticipated that water will be utilized by a customer to develop wells for the purpose of oil and gas exploration. All water delivered will be consumed on wells drilled and completed by the prospective mining customer. A portion of the water could be available for reuse, but otherwise will be disposed of at an approved disposal site.

4. Monthly water consumption for previous year (in acre- feet). *No mining customers in 2023.*

Month	*Diversion Amount*	*% of Water Returned (If Any)*	*Monthly Consumption*
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Totals	0	0	0

5. Projected monthly water consumption for next year (in acre- feet).

Month	*Diversion Amount**	*% of Water Returned (If Any)*	*Monthly Consumption**
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	47	0	47
June	47	0	47
July	47	0	47
August	0	0	0
September	0	0	0
October	47	0	47
November	47	0	47
December	47	0	47
Totals	284	0	284

* *Values rounded to the nearest acre- foot.*

B. *Specific and Quantified Conservation Goal*

Water conservation goals for the mining sector are generally established either for (1) the amount of water recycled, (2) the amount of water reused, or (3) the amount of water not lost or consumed, and therefore is available for return flow.

1. Water conservation goal (water use efficiency measure)

   Type of goal(s):

   % reused water

   % of water not consumed and therefore returned

   X Other (specify) *Reduction in total surface water use where feasible*

2. Provide specific, quantified 5- year and 10- year targets for water savings and the basis for development of such goals for this water use/facility.

   The Division aims to achieve a reduction in surface water demand, for industrial and mining customers, of 1% over a 5- year period and 2% over a 10- year period. For industrial and mining customers, this goal will be measured based on total demand. Due to the nature of industrial and mining operations, demand reductions are less feasible for those customers. As growth continues to occur in the region, these customers facilities and operations may expand, requiring additional water usage to maintain functionality. SJRA will apply the conservation methods described in the Lake Conroe Division Water Conservation Plan, as applicable, to industrial and mining customers, and encourage those customers to conserve water where feasible in an effort to meet the water reduction goals set forth therein.

   Quantified 5- year and 10- year targets for water savings:

   a. 5- year goal: Reduction of 4 ac- ft per year

   b. 10- year goal: Reduction of 8 ac- ft per year

3. Describe the device(s) and/or method(s) used to measure and account for the amount of water diverted from the supply source, and verify the accuracy is within plus or minus 5%.

   Draft (as of March 2024) mining customer contract requires the customer to install and maintain measuring equipment to track water usage from Lake Conroe. The contract requires inspection of the equipment on an annual basis. The customer will be responsible for meter calibration, and any test showing a deviation of more than 2% from manufacturer s tolerances, standards, or specifications will require recalibration.

4. Provide a description of the leak- detection and repair, and water- loss accounting measures used.

   Electronic pressure measurements and inlet/outlet material balance will be used by the prospective customer to detect leaks.

5. Describe the application of state- of- the- art equipment and/or process modifications used to improve water use efficiency.

Equipment used on site by the prospective customer will be the latest technology for hydraulic fracturing and treatment, including redundant systems to prevent inefficient use if something fails. Additionally, the customer will be using recent chemical technology to reduce the water required to effectively treat the wells.

6. Describe any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal or goals of the water conservation plan:

   See Lake Conroe Division Water Conservation Plan.

III. Water Conservation Plans submitted with a Water Right Application for New or Additional State Water

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support the applicant s proposed use of water with consideration of the water conservation goals of the water conservation plan;

2. evaluates conservation as an alternative to the proposed appropriation; and

3. evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

Additionally, it shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.

San Jacinto River Authority – Lake Conroe Division

TCEQ Form 10244: System Inventory and Water Conservation Plan for Agricultural Water Suppliers Providing Water to More than One User

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Texas Commission on Environmental Quality
Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4600, FAX (512) 239-2214

System Inventory and Water Conservation Plan for Agricultural Water Suppliers Providing Water to More Than One User

This form is provided to assist entities in developing a water conservation plan for agricultural water suppliers providing water to more than one user. If you need assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4600.

Additional resources such as best management practices (BMPs) are available on the Texas Water Development Board's website http://www.twdb.texas.gov/conservation/BMPs/index.asp. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name:	San Jacinto River Authority – Lake Conroe Division
Address:	P.O Box 329 Conroe, Texas 77305
Telephone Number:	(936) 588-3111 Fax: N/A
Form Completed By:	Matt Barrett, P.E.
Title:	Water Resources and Flood Management Division Manager
Signature:	Matt Barrett Date: 4 / 9 / 2024

A water conservation plan for agriculture use (for a system providing agricultural water to more than one user) must include the following requirements (as detailed in 30 TAC Section 288.4). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

I. BACKGROUND DATA

A. Structural Facilities (Supplier's water storage, conveyance, and delivery structures)

1. Description of service area:

   Irrigation use for golf courses/commercial properties and residential properties around the perimeter of Lake Conroe.

2. Total miles of main canals and pipelines:

   N/A

3. Total miles of lateral canals and pipelines:

   N/A

4. Description of canal construction:

   a. Miles of unlined canals - N/A

   b. Miles of lined canals - N/A

   c. Miles of enclosed pipelines - N/A

   d. Other

5. Description of canal conditions and recent or planned improvements:

   N/A

6. Reservoir capacity, if applicable:

   417,605 acre-feet

7. Description of pumps and pumping stations:

   The Lake Conroe Division does not operate any pumps or pumping stations to serve its customers. Customers operate and maintain their own pumps and related equipment.

8. Description of meters and/or measuring devices:

   Metering equipment is installed and maintained by each non-residential customer, as required by contract, at or near the point of delivery from Lake Conroe. For residential irrigation SJRA estimates usage using a method developed by the Texas A&M University Water Management Department which generates a water budget using a crop specific coefficient for standard turf and incorporates irrigable area and environmental climate data.

9. Description of customer gates and measuring devices:

   See item 8 above.

10. Description of any other structural facilities not covered above:

    N/A

B. Management Practices

1. Total water available to district (in acre-feet/year): 33,333

   a. Maximum water rights allocation to district: 33,333 Acre-feet/year

   b. Water right number(s): COA 10-4963

   c. Other water contracted to be delivered by district: The SJRA GRP Division has 66,667 acre-feet/year contracted reservation with the City of Houston.

2. Average annual water diverted by district (in acre-feet/year): 21,903

3. Average annual water delivered to customers (in acre-feet/year): 21,903

4. Delivery efficiency (percentage): ~100

5. Historical diversion and deliveries for the previous three years (in acre-feet/year):

Year	*Total Water Diverted Annually**	*Irrigation Water Delivered Annually*	*Municipal Water Delivered Annually*	*Total Water Delivered Annually**	*Estimated Delivery Efficiency (%)*
2023	23,633	1,595	15,730	23,633	100
2022	23,508	1,386	13,922	23,508	100
2021	18,568	840	13,811	18,568	100
Average	21,903	1,274	14,488	21,903	100

* Totals include industrial diversion/delivery in addition to irrigation and municipal.

6. Description of practices and/or devices used to account for water deliveries:

   See item 8 under section A above.

7. Water pricing policy:

   SJRA has a system wide raw water rate ($0.5800/1,000 gals in 2024). The rate for short-term raw water contracts is 4 times the standard rate. The rate for reservation of raw water is 25% of the standard rate. Customers whose usage exceeds their contract demand quantity are charged at 2 times the standard rate for the overage amount.

8. Operating rules and policies which encourage water conservation (if a separate document, include it as an attachment to the Water Conservation Plan):

   SJRA Lake Conroe raw water contracts require customers to develop a water conservation plan at least as stringent as the Lake Conroe Division Water Conservation Plan.

9. Provide specific, quantified 5-year and 10-year targets for water savings or system efficiency below, including maximum allowable losses for the storage and distribution system. Water savings may be represented in acre-feet or in water use efficiency.

   The SJRA Lake Conroe Division aims to achieve a reduction in surface water demand, for irrigation and municipal customers, of 2.5% over a 5-year period, and 5% over a 10-year period. For municipal customers, this goal will be measured based on per capita demand. For irrigation customers, the goal will be measured based on per acre demand.

   Quantified 5-year and 10-year targets for water savings and water loss:

   5-year goal:

   Water savings in acre-feet 0.03 ac-ft/acre per year (approximately 10,000 gallons per acre).

   or water use efficiency %

Water loss

10-year goal:

Water savings in acre-feet 0.06 ac-ft/acre per year (approximately 20,000 gallons per acre).
or water use efficiency %
Water loss

10. Describe the practice(s) and/or device(s) which will be utilized to measure and account for the amount of water diverted from the source(s) of supply:

    Commercial irrigation customer contracts require the customers to install and maintain measuring equipment to track water usage from Lake Conroe. The contracts require inspection of the equipment on an annual basis. The customers are responsible for meter calibration, and any test showing a deviation of more than 2% from manufacturer's tolerances, standards, or specifications requires recalibration. SJRA now reads the majority of these meters to help ensure accuracy and timely reporting, while some commercial irrigation customers self-report their meter readings. SJRA maintains records of customer monthly usage.

    For residential irrigation SJRA estimates usage using a method developed by the Texas A&M University Water Management Department which generates a water budget using a crop specific coefficient for standard turf and incorporates irrigable area and environmental climate data.

11. Describe the monitoring and record management program for water deliveries, sales, and losses:

    See answer to item 10 above.

12. Describe any programs that will be used for water loss control, leak detection, and repair:

    Lake Conroe Division customers divert directly from Lake Conroe. SJRA requires customers to install their meters within close proximity to the lake to minimize chances for leaks upstream of meters. The Division encourages municipal, industrial, irrigation, and mining customers to take measures to reduce water loss (below 10%) to prevent waste and facilitate achievement of the Water Conservation Plan demand reduction goals.

13. Describe any program for customer assistance in the development of on-farm water conservation and pollution prevention plans and/or measures:

    Not Applicable (No farming customers).

14. Describe any other water conservation practice, method, or technique which the supplier shows to be appropriate for achieving conservation (if applicable):

    None identified in addition to the above. See Lake Conroe Division Water Conservation Plan.

C. *User profile*

1. Total number of acres or square miles in service area:

   Approximately 1,077 square miles (Montgomery County)

2. Average number of acres irrigated annually: Approximately 900

3. Projected number of acres to be irrigated in 10 years: Approximately 900

4. Number of active customers taking delivery of water by the system: 805 (12 commercial irrigation customers, remaining are residential irrigation customers).

5. Total irrigation water delivered annually (in acre-feet): 1,595

6. Types of crops grown by customers:

   N/A

7. Types of irrigation systems used by customers:

   Landscape irrigation systems (pumps, sprinklers, etc.)

8. Types of drainage systems used by customers:

   Gravity/sheet flow/natural runoff

9. Any additional relevant information on irrigation customers:

   None

10. List of municipal customers and number of acre-feet allocated annually:

    1, SJRA GRP Division - 14,488 Acre-feet usage (average 2021-2023); 14,562 Acre-feet allocated (non-leap year; additional reserved).

11. List of industrial and other large customers and number of acre-feet allocated annually:

    1, Entergy Texas - 7,254 Acre-feet usage (average 2022-2023); 7,841 Acre-feet allocated (non-leap year)

D. Additional Requirements

In addition to the above information, please attach the following as required by Title 30, Texas Administrative Code, §288.4(3).

1. A requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in 30 TAC Chapter 288. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of 30 TAC Chapter 288.

2. Evidence of official adoption of the water conservation plan and goals, by ordinance, rule, resolution, or tariff, indicating that the plan reflects official policy of the supplier.

3. Documentation of coordination with the Regional Water Planning Group(s) in order to ensure consistency with the appropriate approved regional water plan(s).

II. Water Conservation Plans submitted with a Water Right Application for New or Additional State Water

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan;

2. evaluates conservation as an alternative to the proposed appropriation; and

3. evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

Additionally, it shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.

Appendix B

Resolutions Passed by SJRA
Transmittal Letter to Region H RWPG

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RESOLUTION NO. 2024-R-13

RESOLUTION ADOPTING REVISED WATER CONSERVATION PLANS AND DROUGHT CONTINGENCY PLANS; AUTHORIZING THE IMPLEMENTATION OF SUCH REVISED PLANS; REPEALING AND RESCINDING ALL PRIOR PLANS; AND CONTAINING OTHER PROVISIONS RELATING TO THE SUBJECT

WHEREAS, the San Jacinto River Authority (the "Authority") has water rights issued by the Texas Commission on Environmental Quality and its predecessor agencies (collectively, the "TCEQ") to divert water from the San Jacinto River and Trinity River basins; and

WHEREAS, the Authority, by and through its Highlands Division, owns and operates water supply and distribution systems and facilities, including the Lake Houston Pump Station, East Canal Transfer Pump Station, South Canal Transfer Pump Station, Highlands Reservoir, and the Highlands Canal System, in order to sell and deliver water out of such rights to certain customers generally located in eastern Harris County; and

WHEREAS, the Authority also owns an interest in Lake Conroe Dam and Reservoir, located in Montgomery and Walker Counties ("Lake Conroe") upstream on the San Jacinto River from the Lake Houston Reservoir, and holds certain contract rights and water rights issued by the TCEQ to divert or release and use water from Lake Conroe; and

WHEREAS, the Authority, by and through its Lake Conroe Division, operates Lake Conroe and sells water out of such rights to customers located in Montgomery County, and

WHEREAS, the Authority, by and through its Woodlands Division, owns and operates an extensive water supply and distribution system and facilities for providing regional, wholesale services to customers in the area of The Woodlands; and

WHEREAS, the Authority, by and through its Groundwater Reduction Plan Division (the "GRP Division"), owns and operates a surface water treatment facility and transmission system that withdraws water from Lake Conroe for treatment, distribution and sale to its Woodlands Division and certain other customers; and

WHEREAS, in connection with the management of such facilities, systems and operations, the Authority has previously adopted various Water Conservation Plans and Drought Contingency Plans (collectively, the "Plans") in accordance with the requirements of Chapter 11, Texas Water Code, as amended, and the rules of the TCEQ under Chapter 288 of Title 30, Texas Administrative Code, as amended; and

WHEREAS, the Board of Directors of the Authority has determined that it is in the public interest to revise and replace the Plans; Now, Therefore,

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SAN JACINTO RIVER AUTHORITY, THAT:

Section 1: The Plans, as previously adopted and amended by the Authority, are hereby repealed and rescinded in their entirety.

Section 2: The Board of Directors of the Authority hereby approves and adopts the revised water conservation and drought contingency plans, each dated as of the date hereof, titled as follows: *Water Conservation Plan for San Jacinto River Authority Highlands Division*; *Drought Contingency Plan for San Jacinto River Authority Highlands Division*; *Water Conservation Plan for San Jacinto River Authority Lake Conroe Division*; *Drought Contingency Plan for San Jacinto River Authority Lake Conroe Division*; *Water Conservation Plan for San Jacinto River Authority Woodlands Division*; *Drought Contingency Plan for San Jacinto River Authority Woodlands Division*; *Water Conservation Plan for San Jacinto River Authority GRP Division*; and *Drought Contingency Plan for San Jacinto River Authority GRP Division* (collectively, the "Revised Plans").

Section 3: The Revised Plans, together with any amendments thereto which may be made from time to time, shall be maintained on file in the official records of the Authority and filed, as appropriate, with the TCEQ, the Texas Water Development Board and any other agencies with jurisdiction.

Section 4: It shall be the policy of the Authority that the programs and procedures set forth in the Revised Plans be implemented immediately.

Section 5: The General Manager of the Authority is hereby designated as the official responsible for implementation of the Revised Plans in accordance with the guidelines set forth in the Revised Plans.

Section 6: It shall be the policy of the Authority to support and assist its wholesale and retail customers in (1) designating their pre-assigned officials as having the responsibility and authority to implement the Revised Plans, (2) allowing for enforcement of the Revised Plans, and (3) providing civil penalties for noncompliance with the Revised Plans.

Section 7: It shall be the policy of the Authority that the *Water Conservation Plan for San Jacinto River Authority GRP Division* and the *Drought Contingency Plan for San Jacinto River Authority GRP Division* establish minimum requirements which shall be adopted, respectively, in a water conservation plan and a drought contingency by each participant in the Authority's Groundwater Reduction Plan. The General Manager of the Authority and the GRP Administrator are hereby authorized and directed to take such actions as are deemed necessary and appropriate to ensure that the participants in the Authority's Groundwater Reduction Plan (the "Participants") adopt water conservation plans and drought contingency plans that are reasonably determined to meet or exceed such minimum requirements. Further, it shall be the policy of the Authority to support and assist the Participants in (1) adopting such water conservation plans and drought contingency plans, and (2) implementing and enforcing such water conservation plans and drought contingency plans.

Section 8: This Resolution shall be and remain in full force and effect from and after the date of its passage and approval.

PASSED AND APPROVED this 25th day of April, 2024.

President, Board of Directors

Secretary, Board of Directors

(SEAL)



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SJRA
SAN JACINTO RIVER AUTHORITY

April 25, 2024

Mark Evans, Chair
Region H Water Planning Group
c/o San Jacinto River Authority
P.O. Box 329
Conroe, Texas 77305

Re: Water Conservation and Drought Contingency Plans

Dear Mr. Evans:

Please find enclosed one (1) copy of the revised Water Conservation and Drought Contingency Plans for the San Jacinto River Authority's Lake Conroe, GRP, Woodlands, and Highlands Divisions. San Jacinto River Authority's Board of Directors adopted the enclosed plans on April 25, 2024. These revisions have been completed to meet the regulatory requirement to update and submit the Plans to TCEQ and TWDB by May 1, 2024. Electronic versions of the Plans are available on San Jacinto River Authority's website at http://www.sjra.net/about/wc-dcp/.

If you have any questions, please do not hesitate to contact me at (936) 588-3111 or [redacted]

Sincerely,

Matt Barrett, P.E.
Water Resources and Flood Management Division Manager
San Jacinto River Authority

Cc: Aubrey A. Spear, P.E.
Ed Shackelford, P.E.
Chris Meeks
Richard Tramm
Bret Raley

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Appendix C

Lake Conroe Division TCEQ Form 20645 - Water Conservation Implementation Report Form and Summary of Updates/Revisions to Water Conservation Plan

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Texas Commission on Environmental Quality

Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4600, FAX (512) 239-2214

WATER CONSERVATION IMPLEMENTATION REPORT FORM AND SUMMARY OF UPDATES/REVISIONS TO WATER CONSERVATION PLAN

(Texas Water Code §11.1271(b) and Title 30 Texas Administrative Code §288.30(1) to (4))

Please note, this form replaces the following forms: TCEQ-20645 (Non-Public Water Suppliers) and TCEQ-20646 (Public Water Suppliers)

This Form is applicable to the following entities:

1. **Water Right Holders of 1,000 acre-feet or more for municipal, industrial, and other non-irrigation uses.**
2. **Water Right Holders of 10,000 acre-feet or more for irrigation uses.**

The above noted entities are required by rule to submit updates to their water conservation plan(s) and water conservation implementation report(s) every five years beginning May 1, 2009. See 30 Texas Administrative Code (TAC) §288.30(1) to (4). Entities must also submit any revisions to their water conservation plan within 90 days of adoption when the plans are revised in between the five-year submittal deadlines. This form may be used for the five-year submittal or when revisions are made to the water conservation plans in the interim periods between five-year submittals. Please complete the form as directed below.

1. Water Right Holder Name: San Jacinto River Authority
2. Water Right Permit or Certificate Nos. 4963-A

3. Please Indicate by placing an 'X' next to all that Apply to your Entity:

Water Right Holder of 1,000 acre-feet or more for non-irrigation uses

- X Municipal Water Use by Public Water Supplier — Pursuant to SJRA GRP Division (municipal drinking water provider)
- X Wholesale Public Water Supplier
- X Industrial Use
- X Mining Use
- _____ Agriculture Non-Irrigation

Water Right Holder of 10,000 acre-feet or more for irrigation uses

- X Individually-Operated Irrigation System
- _____ Agricultural Water Suppliers Providing Water to More Than One User

Water Conservation Implementation Reports/Annual Reports

4. Water Conservation Annual Reports for the previous five years were submitted to the Texas Water Development Board (TWDB) for each of the uses indicated above as required by 30 TAC §288.30(10)(C)? Yes X No _____

TCEQ no longer requires submittal of the information contained in the detailed implementation report previously required in Forms TCEQ-20645 (Non-Public Water Suppliers) and TCEQ-20646 (Public Water Suppliers). However, the Entity must be up-to-date on its Annual Report Submittals to the TWDB.

Water Conservation Plans

5. For the five-year submittal (or for revisions between the five-year submittals), attach your updated or revised Water Conservation Plan for each of the uses indicated in Section 3, above. Every updated or revised water conservation plan submitted must contain each of the minimum requirements found in the TCEQ rules and must be duly adopted by the entity submitting the water conservation plan. Please include evidence that each water conservation plan submitted has been adopted.

   - Rules on minimum requirements for Water Conservation Plans can be found in 30 TAC Chapter 288. http://texreg.sos.state.tx.us/public/readtac%24ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=288
   - Forms which include the minimum requirements and other useful information are also available to assist you. Visit the TCEQ webpage for Water Conservation Plans and Reports. https://www.tceq.texas.gov/permitting/water_rights/wr_technical-resources/conserve.html

*Call **512-239-4600** or email to **wcp@tceq.texas.gov** for assistance with the requirements for your water conservation plan(s) and report(s).*

6. For each Water Conservation Plan submitted, list dates and descriptions of the conservation measures implemented, and the actual amount of water saved.

The SJRA Lake Conroe Division (the Division) does not have direct control over the demands that it serves, as the Division's customers take water directly from the lake into their own systems. The Division is not involved in the day-to-day operations of its customers. While the Division does also serve as a supplier to other SJRA divisions, those divisions, in turn, ultimately act solely as wholesale providers and thus also are not in direct control of customer demands. SJRA provides public education on water conservation and contractually requires customers of the Division to adopt water conservation plans which meet or exceed the requirements of the Division's water conservation plan. SJRA also provides the Texas Water Development Board with annual reports showing conservation measures implemented along with commensurate savings.

7. For each Water Conservation Plan submitted, state whether the five and ten-year targets for water savings and water loss were met in your *previous* water conservation plan.

   Yes X* No _____

   If the targets were not met, please provide an explanation as to why any of the targets were not met, including any progress on that particular target.

*The 5-year and 10-year goals set in the Division's 2019 WCP were met based on 2023 water usage.

8. For each five-year submittal, does each water conservation plan submitted contain *updated* five and ten-year targets for water savings and water loss?
Yes X No

If yes, please identify where in the water conservation plan the updated targets are located (page, section).

Section 3.1 of the updated Lake Conroe Division WCP ("Lake Conroe Division 5- and 10-year Water Conservation Target Goals").

Targets were updated as part of this 5-year update.

9. In the box below (or in an attachment titled "Summary of Updates or Revisions to Water Conservation Plans), please identify any other revisions/updates made to each water conservation plan that is being updated or revised. Please specify the water conservation plan being updated and the location within the plan of the newly adopted updates or revisions.

The entire Lake Conroe Division WCP was reviewed and updated where appropriate, including attachments/forms. Industrial and mining were previously covered by one form (TCEQ Form 10213), but now are on two different forms (TCEQ Forms 20839 and 20840). We also added a cover letter ahead of the industrial and mining forms (regarding those two use types) that was not previously included.

10. *Form Completed by (Point of Contact):* Matt Barrett
(If different than name listed above, owner and contact may be different individual(s)/entities)

Contact Person Title/Position: Matt Barrett, Water Resources and Flood Management Division Manager

Contact Address: 1577 Dam Site Road, Conroe, Texas 77304

Contact Phone Number: 936-588-7177 Contact Email Address: [redacted]

Signature: Matt R Date: 3/28/2024

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Appendix D

Supplement to San Jacinto River Authority Lake Conroe and Highlands Division Water Conservation Plans To Address TAC § 288.7

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Supplement to San Jacinto River Authority Lake Conroe and Highlands Division Water Conservation Plans To Address TAC § 288.7

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Water Conservation Plans Submitted with a Water Right Application for New or Additional State Water

This supplement to the San Jacinto River Authority's ("SJRA's") Water Conservation Plans ("WCPs") addresses the requirement of Rule 288.7 of the Texas Administrative Code ("TAC") that a water conservation plan submitted with an application for a new or additional appropriation of water must include data and information which:

1. Supports the applicant's proposed use of water with consideration of the water conservation goals of the WCP;
2. Evaluates conservation as an alternative to the proposed appropriation; and
3. Evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

I. Applicant's Proposed Use of Water (30 TAC § 288.7(a)(1)).

A. Lake Conroe

The SJRA Lake Conroe Division provides wholesale raw water to industrial, municipal, and irrigation customers in SJRA's Montgomery County service area. As of March 2024, SJRA is negotiating a raw water contract with a mining customer at Lake Conroe. When executed, this will be SJRA's only raw water mining customer. Montgomery County is one of the fastest growing counties in the United States. The 2021 Region H Regional Water Plan estimates the Montgomery County population to grow from 627,917 in 2020, to 1,946,063 in 2070. In order to ensure adequate water supply to meet future demands in Montgomery County, SJRA has evaluated, promoted and pursued water conservation measures. This section describes SJRA's conservation activities related to its Lake Conroe Division.

The SJRA Lake Conroe Division Water Conservation Plan (the "LC WCP") includes a variety of conservation measures that are actively implemented. These measures go above and beyond the minimum requirements for conservation plans for a wholesale provider. In accordance with 30 TAC § 288.5, the minimum requirements are:

(a) A description of the wholesaler's service area, including population and customer data, water use data, water supply system data, and wastewater data;

(b) Specific, quantified five-year and ten-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day for the wholesaler's service area, maximum acceptable water loss, and the basis for the development of these goals. The goals established by wholesale water suppliers under this subparagraph are not enforceable;

(c) A description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply;

(d) A monitoring and record management program for determining water deliveries, sales, and losses;

(e) A program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system;

(f) A requirement in every water supply contract entered into or renewed after official adoption of the water conservation plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of this chapter. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of this chapter;

(g) A reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plans shall include optimization of water supplies as one of the significant goals of the plans;

(h) A means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating consistency with the appropriate approved regional water plans.

The SJRA LC WCP meets all applicable minimum requirements and specifies other conservation activities that are undertaken to achieve water conservation and efficiency. These other measures include:

- SJRA customers are required to comply with the LC WCP and SJRA makes available model water conservation plans as developed by TCEQ. SJRA also offers to, at customer request, review draft customer water conservation plans for consistency with water supply contractual requirements and the LC WCP (furthermore such customers' water conservation plans must be at least as stringent as the LC WCP).

- Annual water usage reporting and tracking of customer water use.

- Reuse and recycling of wastewater – SJRA is currently pursuing TCEQ authorization to reuse wastewater in the San Jacinto River Basin.

- Public information and education, including use of regular website/social media postings regarding watering and conservation of resources.

- SJRA encourages various conservation practices including:

    - Prohibitions on wasting water;

    - Time-of-day watering restrictions;

    - Water conservation pricing structures;

    - Landscape irrigation conservation, including integrating rainfall/freeze sensors into irrigation systems;

- Water reuse;
- Rainwater harvesting;
- And public education programs. (LC WCP at 3.2.9).

- Rate structure – the majority of SJRA customers pay a higher rate for water taken in excess of their contractual demand quantities.
  - SJRA encourages the Division's customers to establish rate structures promoting conservation for sales to their wholesale and retail customers (LC WCP at 3.2.4).

- SJRA encourages the Division's customers to take measures to reduce water loss (below 10%) to prevent waste and facilitate achievement of the Water Conservation Plan demand reduction goals (LC WCP at 3.2.2).

- Leak detection and repair on SJRA owned infrastructure, including the Lake Conroe dam. (LC WCP at 3.2.2).

B. Highlands

The SJRA Highlands Division provides wholesale raw water to industrial, municipal, and irrigation customers in SJRA's Highlands service area in east Harris County, as well as to two reuse customers in Montgomery County. Highlands Division customer demand is primarily industrial, making it difficult to implement water conservation measures. However, SJRA has evaluated, promoted, and pursued water conservation measures as part of its water supply portfolio to help meet Highlands Division demands. This section describes SJRA's conservation activities related to its Highlands Division, and the resulting water savings.

The SJRA Highlands Division Water Conservation Plan (the "HD WCP") includes a variety of conservation measures that are actively implemented. These measures go above and beyond the minimum requirements for conservation plans for a wholesale provider. In accordance with 30 TAC § 288.5, the minimum requirements are:

> (a) A description of the wholesaler's service area, including population and customer data, water use data, water supply system data, and wastewater data;
>
> (b) Specific, quantified five-year and ten-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day for the wholesaler's service area, maximum acceptable water loss, and the basis for the development of these goals. The goals established by wholesale water suppliers under this subparagraph are not enforceable;
>
> (c) A description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply;
>
> (d) A monitoring and record management program for determining water deliveries, sales, and losses;

(e) A program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system;

(f) A requirement in every water supply contract entered into or renewed after official adoption of the water conservation plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of this chapter. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with applicable provisions of this chapter;

(g) A reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plans shall include optimization of water supplies as one of the significant goals of the plans;

(h) A means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating consistency with the appropriate approved regional water plans.

The SJRA HD WCP meets all applicable minimum requirements and specifies other conservation activities that are undertaken to achieve water conservation and efficiency. These other measures include:

- SJRA customers are required to comply with the HD WCP and SJRA makes available model water conservation plans as developed by TCEQ. SJRA also offers to, at customer request, review draft customer water conservation plans for consistency with water supply contractual requirements and the HD WCP (furthermore such customers' water conservation plans must be at least as stringent as the HD WCP).

- Annual water usage reporting and tracking of customer water use.

- Reuse and recycling of wastewater – SJRA is currently pursuing TCEQ authorization to reuse wastewater in the San Jacinto River Basin.

- Public information and education, including use of regular website/social media postings regarding watering and conservation of resources.

- SJRA encourages various conservation practices including:

    - Prohibitions on wasting water;

    - Time-of-day watering restrictions;

    - Water conservation pricing structures;

    - Landscape irrigation conservation, including integrating rainfall/freeze sensors into irrigation systems;

- Water reuse;
- Rainwater harvesting;
- And public education programs. (HD WCP at 3.2.9).

- Rate structure – the majority of SJRA customers pay a higher rate for water taken in excess of their contractual demand quantities
  - SJRA encourages the Division's customers to establish rate structures promoting conservation for sales to their wholesale and retail customers (HD WCP at 3.2.4).

- SJRA encourages the Division's customers to take measures to reduce water loss (below 10%) to prevent waste and facilitate achievement of the Water Conservation Plan demand reduction goals (HD WCP at 3.2.2).

- Leak detection and repair, and minimization of conveyance losses on its Highlands Canal System infrastructure. (HD WCP at 3.2.2).
  - SJRA is committed to conservation through monitoring and improvement of its delivery system. SJRA, specifically, continues to make efforts to minimize losses through its canal system through various practices. SJRA has undertaken a number of measures in implementing system improvements, including routine inspections and evaluations of the Highlands Canal System, hydraulic modeling and flow measurement, and establishment and implementation of a 10-Year Project Plan. SJRA utilizes computerized maintenance management system (CMMS) software to assist in the management, scheduling, and recording of identified maintenance activities. Supervisory control and data acquisition (SCADA) infrastructure has been added to the Highlands Canal System to monitor canal flows, levels, and numerous controls and data at the raw water pump stations.

II. Conservation as an Alternative to the Requested Appropriation (30 TAC § 288.7(a)(2)).

The 2021 Region H Regional Water Plan ("RWP") and the 2022 State Water Plan ("SWP") include recommended conservation and water loss reduction strategies for customers of SJRA and other water users in Harris and Montgomery Counties. After application of the recommended demand reduction strategies (i.e., by implementing the conservation strategies), the RWP and SWP still indicate a need for additional supply in Harris and Montgomery Counties to meet future water needs. It is clear based upon the data detailed below, that conservation alone cannot meet projected water needs.

As a wholesale provider, SJRA does not have direct control over the demand it serves and the various SJRA divisions are not involved in the day-to-day operations of their customers. Even so, SJRA is taking proactive steps to enhance conservation, and by doing so, reduce demand in the future.

SJRA's Lake Conroe Division only provides surface water, but its customers' demands may be met by a combination of surface and groundwater sources. The SJRA Lake

Conroe Division aims to achieve a reduction in surface water demand, for municipal and irrigation customers, of 2.5% over a 5-year period (by 2029) and 5% over a 10-year period (by 2034). For municipal customers, this goal will be measured based on per capita demand. For irrigation customers, the goal will be measured based on per acre demand. The Division also aims to achieve a reduction in surface water demand, for industrial and mining customers, of 1% over a 5-year period (by 2029) and 2% over a 10-year period (by 2034). For industrial and mining customers, this goal will be measured based on total demand. Due to the nature of industrial and mining operations, demand reductions are less feasible for those customers. As growth continues to occur in the region, these customers' facilities and operations may expand, requiring additional water usage to maintain functionality. SJRA will apply the conservation methods described in the LC WCP, as applicable, to industrial and mining customers, and encourage those customers to conserve water where feasible in an effort to meet the water reduction goals set forth therein. Table 1 below shows the average annual demand for each usage type for 2019 through 2023, as well as the 5 and 10-year targets for each usage type. (LC WCP at 3.1).

Table 1. Lake Conroe Division 5- and 10-year Water Conservation Target Goals

Usage Type	Unit of Measure	2019-2023 Average	% Reduction Goals (2029 / 2034)	5-Year (2029) Goal	10-Year (2034) Goal
Industrial	AC-FT/YR	5,624	1% / 2%	5,568	5,512
Municipal	GPCD*	40	2.5% / 5%	39	38
Irrigation	AC-FT/AC/YR	1.24	2.5% / 5%	1.21	1.18
Mining	AC-FT/YR	387**	1% / 2%	383	379

* Gallons Per Capita Per Day

** No mining customers prior to 2024. 387 acre-feet annually anticipated in 2025-2034 (smaller amount in 2024 due to partial year of demand).

SJRA's Highlands Division only provides surface water, but its customers' demands may be met by a combination of surface and groundwater sources. The SJRA Highlands Division aims to achieve a reduction in surface water demand, for municipal and irrigation customers, of 2.5% over a 5-year period (by 2029) and 5% over a 10-year period (by 2034). For municipal customers, this goal will be measured based on per capita demand. For irrigation customers, the goal will be measured based on per acre demand. The Division also aims to achieve a reduction in surface water demand, for industrial and mining customers, of 1% over a 5-year period (by 2029) and 2% over a 10-year period (by 2034). For industrial and mining customers, this goal will be measured based on total demand. Due to the nature of industrial and mining operations, demand reductions are less feasible for those customers. As growth continues to occur in the region, these customers' facilities and operations may expand, requiring additional water usage to maintain functionality. SJRA will apply the conservation methods described in the HD WCP, as applicable, to industrial and mining customers, and encourage those customers to conserve water where feasible in an effort to meet the water reduction goals set forth therein. Table 2 below shows the average annual

demand for each usage type for 2019 through 2023, as well as the 5 and 10-year targets for each usage type. (HD WCP at 3.1).

Table 2. Highlands Division 5- and 10-year Water Conservation Target Goals

Usage Type	Unit of Measure	2019-2023 Average	% Reduction Goals (2029 / 2034)	5-Year (2029) Goal	10-Year (2034) Goal
Industrial	AC-FT/YR	79,160	1% / 2%	78,368	77,577
Municipal	GPCD*	117	2.5% / 5%	114	111
Irrigation	AC-FT/AC/YR	0.4	2.5% / 5%	0.39	0.38
Mining**	AC-FT/YR	0	1% / 2%	N/A	N/A

* Gallons Per Capita Per Day

Additionally, both the Highlands and Lake Conroe Divisions will continue to encourage customers to use best management practices to keep water loss below 10% annually.

SJRA also utilizes a number of reuse supplies across its divisions. Currently, the Highlands Division meets a portion of its needs through indirect reuse of effluent flows from the Woodlands, Texas via SJRA's Woodlands Division wastewater treatment plants. Both the Lake Conroe and Highlands Divisions will continue to consider and evaluate opportunities for reuse as they develop.

Conservation and reuse are integral parts of SJRA's plan to meet projected water demands, however, in light of SJRA's projected total demand for water by 2070, conservation alone cannot provide enough water to address all demands. The 2021 Region H RWP indicated projected increases of need for new supplies in Montgomery County up to 170,000 acre-feet in 2070. Conservation and direct reuse strategies can only address approximately 25,000 acre-feet per year of this increase (LC WCP at 3.2.3). Thus, conservation is simply one part of the portfolio of strategies being pursued by SJRA. SJRA's Raw Water Supply Master Plan considers numerous alternatives for additional water supply in the Highlands and Montgomery County service areas. Strategies are ranked based on multiple weighted criteria, including costs, schedule, legal, environmental considerations, and others. Indirect reuse is a highly ranked strategy to meet these supply needs. Thus, SJRA has determined it necessary and reasonable to pursue permitting of municipal return flows for use across its service areas.

III. Analysis of Other Feasible Alternatives (30 TAC § 288.7(a)(3)).

A. Consideration of Water Supply Alternatives by SJRA

SJRA considers multiple potential project alternatives to meet water needs in Montgomery and Harris Counties. SJRA evaluates potential strategies based on multiple factors including but not necessarily limited to:

- Cost;
- Legal obstacles, based on permitting and contracting requirements to implement the project;
- Expected environmental impacts;
- Risk of project yield being reduced by regulatory or environmental constraints;
- Schedule to develop the strategy;
- Diversification of SJRA's existing water supply portfolio; and
- Scalability, i.e., the ability of a project to be implemented by smaller stakeholders in partnership with SJRA.

Water supply planning is a dynamic and continuous process. SJRA has evaluated several strategies in addition to those recommended in the 2022 SWP, which are included in the strategy descriptions below. Some preferred strategies discussed below may be recommended for inclusion in the 2026 Region H RWP and 2027 SWP. The strategies described in Table 3 are discussed in more detail below.

Table 3. Water Supply Alternatives Evaluated by SJRA

Strategy Name	Recommended as SJRA Strategy in RWP and SWP	Waste Prevention	Recycling and Reuse	Water Transfer and Marketing	Regionalization	Optimum Management
Advanced Municipal Conservation	Yes*	Yes				Yes
Aquifer Storage & Recovery	Yes					Yes
Bedias Reservoir				Yes	Yes	
Catahoula Aquifer Supplies	Yes					
Direct Reuse, Non-Potable	Yes*		Yes			
East Texas Water Transfer				Yes	Yes	
Lake Columbia Transfer				Yes	Yes	
Lake Creek Reservoir					Yes	
Lake Creek Scalping					Yes	
Lake Livingston Transfer	Yes			Yes	Yes	
Purchase Additional Canal Capacity from Trinity Basin				Yes		Yes
Purchase Groundwater				Yes	Yes	
Purchase Surface Water				Yes		
Regional Return Flows	Yes		Yes		Yes	
Seawater Desalination					Yes	

**Recommended in the 2021 RWP and 2022 SWP as a strategy to be implemented directly by some SJRA customers and other water users in the SJRA service area but not necessarily directly implemented by SJRA.*

B. Water Supply Alternatives Evaluated by SJRA and Recommended in the 2021 Region H RWP and 2022 SWP

Advanced Municipal Conservation

Description: Implementation of measures to reduce per-capita demand of water users in Montgomery County.

Performance against evaluation criteria: Conservation has fairly low costs to implement, short lead times, minimal environmental impacts, and is scalable (can be implemented at multiple levels). However, the near-term and long-term efficacy of conservation programs is uncertain as SJRA is not able to directly implement necessary measures. This strategy would be up to individual stakeholders to implement at a local level.

Aquifer Storage and Recovery (ASR)

Description: Use of underground storage to increase the firm yield of interruptible water supplies.

Performance against evaluation criteria: For the ASR alternative, environmental issues, permitting requirements, and timeline are all considered moderate compared to other potential projects. However, the option includes a relatively high planning-level cost per acre-foot and risk of yield loss via unrecoverable injected water which are concerns that make ASR a less preferred alternative.

Catahoula Aquifer Supplies

Description: Development of alternative groundwater supplies from a somewhat brackish groundwater formation.

Performance against evaluation criteria: This strategy has a lower unit cost than Regional Return Flows but has a higher unit cost than ASR. However, the long-term reliability of the yield of this supply is uncertain. Overall, development of Catahoula Aquifer Supplies is a favorable option to meet needs in Montgomery County, but this strategy alone is not sufficient to meet projected shortages in supply.

Direct Reuse (Non-Potable)

Description: Use of treated wastewater effluent by stakeholders in Montgomery County to meet non-potable demands such as golf course irrigation. This strategy would be implemented at the end user level and not by SJRA.

Performance against evaluation criteria: Non-potable direct reuse performs well against most evaluation criteria, although cost per acre-foot is relatively high. This strategy would be up to individual stakeholders to implement at a local level. Direct reuse for non-potable municipal irrigation uses was recommended in the 2021 Region H RWP for implementation by utilities within the County-Other, Montgomery Water User Group.

Lake Livingston Transfer

Description: Transfer of water supplies in the Trinity River Basin to either the Montgomery County or Highlands Service Areas.

Performance against evaluation criteria: For use in the Highlands service area, supplies from Lake Livingston could be transferred through existing transmission infrastructure, making this a relatively low-cost option for the Highlands. However, transmission costs to serve needs in Montgomery County are expected to be high. Permitting requirements for use in the Highlands service area are moderate, with an exempt IBT required for use within the Trinity-San Jacinto Coastal Basin. Additional permitting would be required to make the supply available to users in the San Jacinto River Basin. Overall, the Lake Livingston Transfer is a favorable supply option for the Highlands service area but not for Montgomery County.

Regional Return Flows

Description: Development of a water use permit for indirect reuse of surface water and groundwater-based return flows of treated wastewater in the San Jacinto River Basin.

Performance against evaluation criteria: This strategy is the lowest cost alternative, as it provides raw water supply though permitting that would rely upon other infrastructure to perfect it as a source of supply. While not scalable, as it requires SJRA to complete permitting, this project performs moderately well in all other criteria. Due to low cost, short implementation timeline, and limited environmental impact, this is a preferred alternative by SJRA.

C. Other Water Supply Alternatives Evaluated by SJRA

Bedias Reservoir

Description: Development of a new reservoir on Bedias Creek in the Trinity River Basin.

Performance against evaluation criteria: Bedias Reservoir is not a recommended strategy due to a long development schedule, substantial environmental and legal obstacles, and moderately high risk to yield reliability.

East Texas Water Transfer

Description: Transfer of raw water through canal or pipeline conveyance from the Neches or Sabine River Basins under long-term contracts for use.

Performance against evaluation criteria: The East Texas Water Transfer is expected to face substantial legal and environmental hurdles. However, the potential to use existing transmission infrastructure makes this a viable option for supply to the Highlands service area, though not as preferred as Regional Return Flows. Costs of transmission make this a less favorable option to serve Montgomery County.

Purchase Surface Water

Description: Purchase of additional surface water under long-term contracts from various rights holders in the Trinity River Basin.

Performance against evaluation criteria: Purchase of already-permitted surface water for use in the permitted basin would pose minimal permitting requirements. However, the cost of water purchase could be high. Overall, the purchase of surface water is a favorable alternative for supply for the Highlands service area but is not necessarily preferred over Regional Return Flows. Potential supplies identified for purchase are located far from Montgomery County, making this a less-preferred option for meeting needs in Montgomery County due to the high combined cost of water purchase and transmission.

Seawater Desalination

Description: Treatment to remove solids from Galveston Bay water, plus transmission to the Highlands and/or Montgomery County Service Area.

Performance against evaluation criteria: This alternative presents significant challenges to implement by SJRA. In particular, seawater desalination has a high unit cost. This strategy is also a large-scale project that would be difficult to implement at the stakeholder level. Transmission requirements to serve needs in Montgomery County could also pose environmental hurdles.

D. Water Supply Projects for SJRA Recommended in the 2021 RWP and 2022 SWP

The SWP recommended multiple water management strategies and associated projects, including indirect reuse of Regional Return Flows, through which SJRA can meet supply shortages. Strategies that are recommended for implementation by SJRA and the Region H Water Planning Group are part of a suite of strategies to meet water needs in Harris and Montgomery Counties. As such, other recommended strategies are not alternatives to the proposed authorization for use of return flows, but rather complement this proposed supply. Each of these strategies is scheduled for implementation based on the projected water needs and the time to implement the strategy, including considerations for planning and permitting.

Three strategies for SJRA in the 2021 Region H RWP and 2022 SWP require development of additional surface water:

- New/Expanded Contract with the Trinity River Authority ("TRA"), which requires the Lake Livingston to SJRA Transfer project to convey purchased water from TRA
- SJRA GRP – Participant Surface Water, which also requires the Lake Livingston to SJRA Transfer project
- SJRA Aquifer Storage and Recovery, which requires development of additional surface water supplies from Lake Conroe and Lake Creek

Two strategies for SJRA in the 2021 Region H RWP and 2022 SWP involve development of additional groundwater supplies:

- SJRA Catahoula Aquifer Supplies
- SJRA GRP – Groundwater Offset

Finally, three reuse strategies were recommended for SJRA in the 2021 Region H RWP and 2022 SWP:

- SJRA Reuse Supplies for Manufacturing, which meets a portion of projected needs with supply from an existing indirect reuse permit
- New/Expanded Contract with SJRA – Regional Return Flows
- SJRA Reuse Supplies for Manufacturing – Regional Return Flows

The proposed appropriation of surface water and groundwater-based return flows of treated wastewater represents the source recommended for the two SJRA strategies labelled "Regional Return Flows."

E. Summary of Alternatives Evaluation and Recommendation of Regional Return Flows

The reuse supply from "Regional Return Flows," which represents the source for which SJRA is seeking a new authorization, is a preferred strategy by SJRA. Water users in the SJRA service area are projected to have substantial need remaining after implementation of demand reduction strategies, and this source is a lower cost option than the development of additional surface water supplies, which require substantial infrastructure for intake and conveyance.

Drought Contingency Plan

for

San Jacinto River Authority
Lake Conroe Division

Prepared by

San Jacinto River Authority

Adopted: April 25, 2024

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Section 1. Introduction

In 1996, severe drought conditions affected every region of the State. Water systems throughout the State were forced to cope with water shortages or system capacity problems. In response to the 1996 drought, the 75th Texas Legislature enacted Senate Bill 1, which directed the State to take a regional approach to water planning. One of the provisions of the legislation required the Texas Commission on Environmental Quality (TCEQ) to adopt rules requiring wholesale and retail public water suppliers to develop water conservation and drought contingency plans.[1]

Water conservation and drought contingency plans work together to help Texans manage short-term and long-term water shortages. The goal of a water conservation plan is to achieve lasting, long-term improvements in water use efficiencies using strategies to reduce the amount of water withdrawn from a particular source, and to ensure that the water withdrawn is used in an efficient manner. Drought contingency plans are short-term in nature, using temporary supply and demand management measures in response to temporary and potentially recurring water shortages and other emergencies.

The San Jacinto River Authority (SJRA), as a water right holder and wholesale water supplier, is required to submit a Water Conservation and Drought Contingency Plan to the TCEQ and Texas Water Development Board (TWDB). SJRA was created by the Texas Legislature in 1937 to:

> *"Provide water for domestic, municipal, commercial, industrial and mining purposes within and without the watershed of [the San Jacinto River], including water supplies for cities, towns and industries, and in connection therewith to construct or otherwise acquire water transportation, treatment and distribution facilities and supplemental sources of water."*[2]

The SJRA service area includes all of Montgomery County and portions of Waller, Grimes, Walker, San Jacinto, and Liberty Counties (Figure 1-1). The SJRA also serves customers in the Houston area and is authorized to operate in east Harris County through an agreement with the City of Houston.

SJRA is governed by a Board of Directors. The General Manager oversees approximately 170 employees and all facilities across five divisions: Lake Conroe, Highlands, Groundwater Reduction Plan (GRP), Woodlands, and Flood Management. The following is provided as the Drought Contingency Plan (including utility description, service area description, and drought measures) for the Lake Conroe Division (the Division). The Division's Water Conservation Plan is provided under separate cover.

[1] Senate Bill 1, 75th Legislature, Section 12.1272 of the Texas Water Code.
[2] House Bill No. 832, 45th Legislature, Regular Session, Austin, TX, 1937.

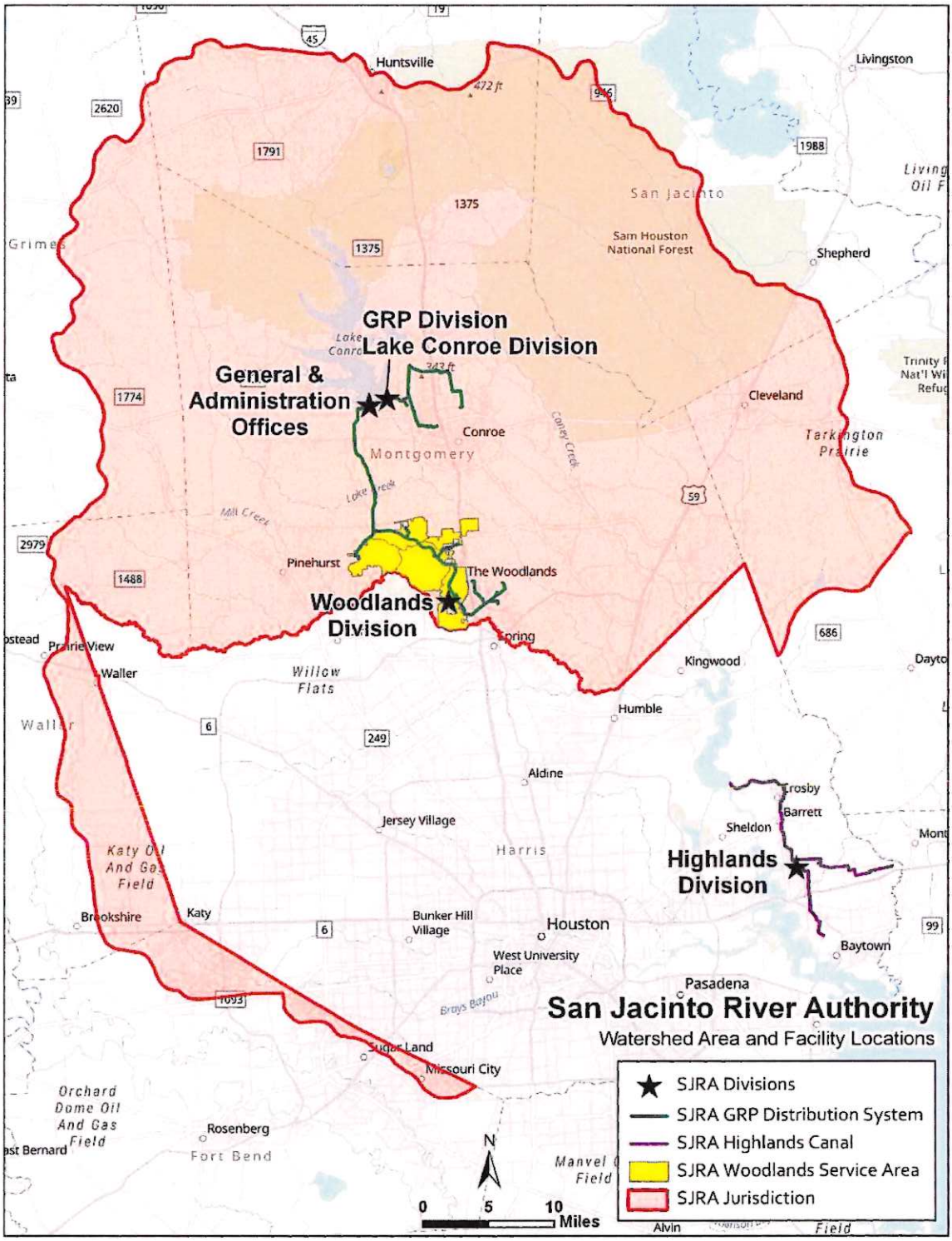

Figure 1-1. Watershed Area and Facility Locations

Section 2. Utility and Service Area Description

2.1 Utility Description

SJRA operates Lake Conroe, one of two major surface water supply reservoirs located in the San Jacinto River Basin. Completed in 1973, Lake Conroe is owned by SJRA and the City of Houston. SJRA owns one-third (33,333 ac-ft/year) and the City of Houston owns two-thirds (66,667 ac-ft/yr) of the total 100,000 ac-ft/yr of permitted water rights from the lake under Certificate of Adjudication (COA) 10-4963. Lake Houston is owned by the City of Houston and the water rights for yield from the reservoir are shared by the City of Houston and SJRA. SJRA also holds an option contract for the purchase of the Houston portion of water in Lake Conroe.

The Lake Conroe water right is used by SJRA to meet the needs of customers in close proximity to the Lake, including its own GRP Division. In addition to the Division's raw water customers in the immediate vicinity of Lake Conroe, the reservoir also serves as a source of water for the participating members of the GRP Division after treatment and transmission by the GRP Division. The GRP began delivering water to its customers in June 2015. The SJRA's water right for Lake Conroe (33,333 ac-ft/yr) is permitted for multiple uses.

2.2 Service Area Description

The approximately 2,453 square mile area of SJRA's jurisdiction within the San Jacinto River Basin is bounded on the north and the east by the Trinity River Basin and the Trinity-San Jacinto Coastal Basin, on the west by the Brazos River Basin, and on the south by Harris County. A map of Lake Conroe, showing the location of the Division's customers, including golf courses/commercial irrigation customers, residential irrigators, a power generating facility (industrial), and SJRA's GRP Division surface water treatment plant (municipal), is provided below (Figure 2-1). Figure 2-1 also includes anticipated diversion locations (subject to change) for a new mining customer with whom SJRA is, as of March 2024, negotiating a raw water contract. These customers take their water directly from Lake Conroe. In 2023, there were approximately 23,633 ac-ft diverted by SJRA or its customers from Lake Conroe (Table 2-1). The Division does not own or operate wastewater infrastructure.

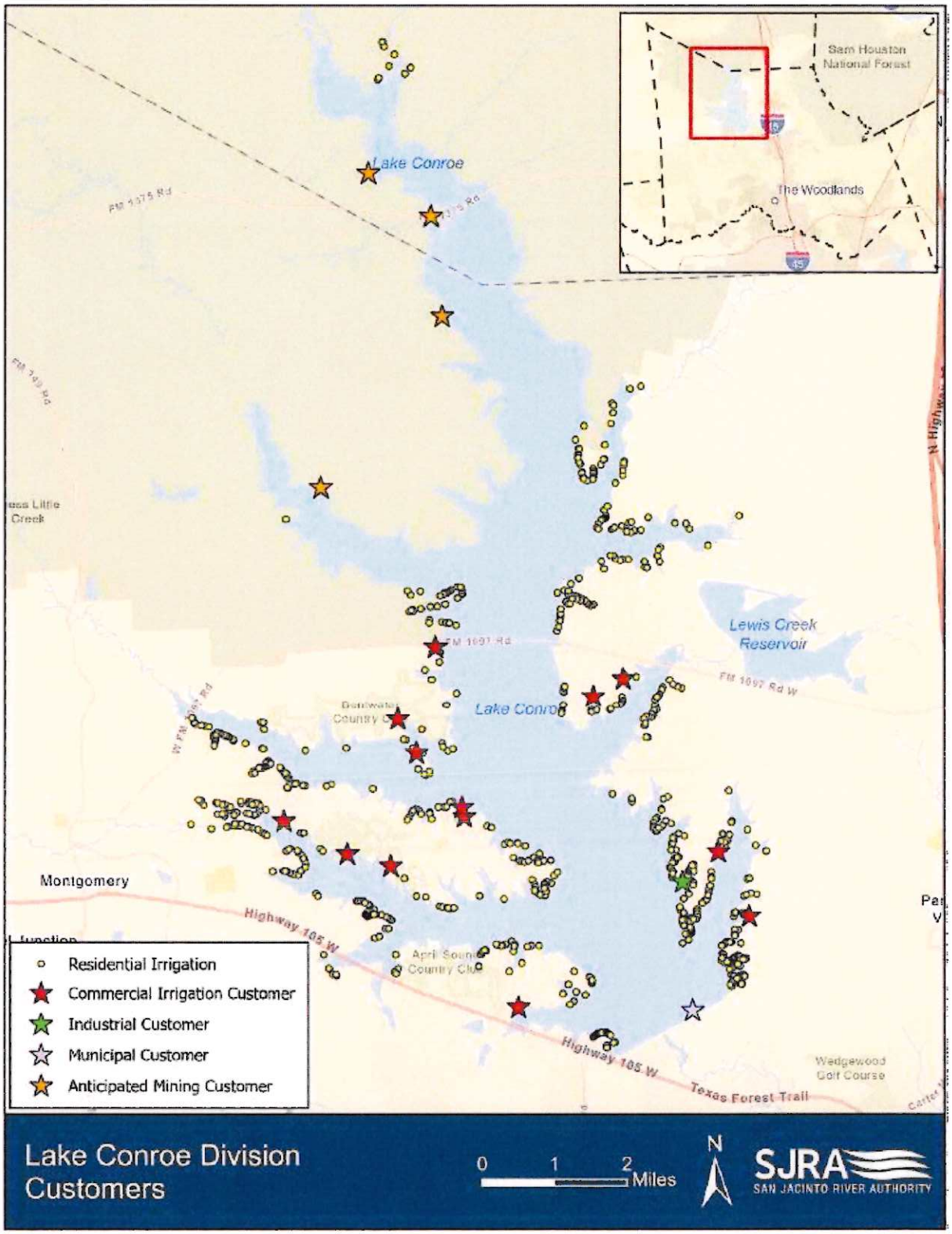

Figure 2-1. Lake Conroe Division Customers

Table 2-1. 2023 Surface Water Diversion

Municipal	15,730 ac-ft
Industrial	6,308 ac-ft
Irrigation	1,595 ac-ft
Total	23,633 ac-ft

The Division serves a power generating facility that uses surface water primarily for cooling (industrial) purposes. In 2023, there were approximately 6,308 ac-ft diverted from Lake Conroe to provide wholesale water to the power generating facility.

As of March 2024, SJRA is negotiating a contract with a mining customer to supply water for exploratory well drilling operations. When executed, this will be SJRA's only raw water mining customer.

The SJRA maintains a number of commercial irrigation contracts, which allow nearby golf courses, resorts, and lakeside communities to pump water directly from Lake Conroe for landscape irrigation purposes. In 2023, there was approximately 646 ac-ft diverted for commercial irrigation uses. There are also private individual property owners who pump raw water directly from Lake Conroe for irrigation of their lakeside property. The Division estimates usage for these customers by applying an approach developed by Texas A&M's Water Management Department which generates water budgets using a crop-specific coefficient for standard turf and incorporates irrigable area and environmental climate data. In 2023, the Division delivered an estimated 949 ac-ft of water for private irrigation use. The acreage irrigated by these commercial and private users varies, but is estimated at approximately 900 total acres.

Use of Lake Conroe as a municipal supply for the GRP Division began in June 2015. A majority of the GRP Participants continue to be served by groundwater, but some of the larger users also receive surface water. Therefore, part of the GRP Participants are served by a combination of treated surface water and treated groundwater, while other GRP Participants use groundwater exclusively. The GRP Participants' population currently served by SJRA from Lake Conroe as of 2023 was estimated as 334,926.

A full description of the Lake Conroe Division's raw water customer information can be found under separate cover in the Lake Conroe Division's Water Conservation Plan.

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Section 3. Drought Contingency Plan

Drought, or a number of other uncontrollable circumstances, can disrupt the normal availability of water supply. Even though an area may have an adequate water supply, the supply can become contaminated, or a disaster can disrupt or destroy the supply. During drought periods, consumer demand is often significantly higher than normal. The failure or inadequacy of a raw water delivery system can also present a utility with an emergency demand management situation.

It is important to distinguish between drought contingency planning and water conservation planning. As detailed in the Division's Water Conservation Plan, water conservation involves implementing permanent water use efficiencies or reuse practices. Drought contingency planning establishes temporary methods or techniques to be used only if drought and/or emergency conditions persist. The SJRA has developed a drought contingency plan with regard to the wholesale supply of water from Lake Conroe to its customers.

3.1 Drought Contingency Plan – Lake Conroe Division

SJRA provides raw surface water from Lake Conroe to its raw water customers in the vicinity of the lake and to its GRP Division. In order to conserve the available water supply and/or protect the integrity of water supply facilities during water supply shortages or other supply emergency conditions that can have adverse effects on its customers, SJRA has developed the following drought contingency plan elements.

3.2 Trigger Conditions – Initiation and Termination

As discussed in Section 2 of this drought contingency plan, the Lake Conroe water right is used by SJRA to meet the needs of customers in close proximity to the Lake, including its own GRP Division.

The General Manager of the SJRA or a designated representative will monitor water supply and/or demand conditions on a monthly basis or more frequently as conditions warrant and will determine when conditions warrant initiation or termination of each drought stage. Because SJRA utilizes supplies from Lake Conroe, initiation of drought stages for the Division is based on the water surface elevation in Lake Conroe[3]. The trigger points listed below have been selected through a hydrologic modeling process to work conjunctively with the measures identified in Section 3.4 to extend the availability of critical water supplies while simultaneously achieving the highest practicable level of efficiency in water use from a social and economic standpoint across customer classes. If deemed appropriate by the General Manager or a designated representative, termination of a drought stage is followed by initiation of a lower drought stage. An Emergency Water Supply Condition may be initiated or terminated without subsequent enactment of other

[3] Vertical datum NGVD 1929

stages. The various drought contingency stages may be initiated or terminated at the discretion of the General Manager or a designated representative. Otherwise, initiation and termination of the stages shall be as follows:

Stage 1: Voluntary Reduction

Initiation:

- Lake Conroe is below an elevation of 198 feet; or
- Termination of a more severe drought condition, if deemed appropriate by the General Manager or a designated representative; or
- Monitoring of water demands/weather forecasts indicate earlier initiation is necessary.

Termination:

- Lake Conroe is above an elevation of 198 feet for seven consecutive days; or
- Termination of Stage 1 due to indications from monitoring of water demands/weather forecasts.

Stage 2: Moderate Conditions

Initiation:

- Lake Conroe is below an elevation of 196 feet; or
- Termination of a more severe drought condition, if deemed appropriate by the General Manager or a designated representative; or
- Monitoring of water demands/weather forecasts indicate earlier initiation is necessary.

Termination:

- Lake Conroe is above an elevation of 196 feet for seven consecutive days; or
- Termination of Stage 2 due to indications from monitoring of water demands/weather forecasts.

Stage 3: Advanced Conditions

Initiation:

- Lake Conroe is below an elevation of 193 feet; or
- Termination of a more severe drought condition, if deemed appropriate by the General Manager or a designated representative; or
- Monitoring of water demands/weather forecasts indicate earlier initiation is necessary.

Termination:

- Lake Conroe is above an elevation of 193 feet for seven consecutive days; or

- Termination of Stage 3 due to indications from monitoring of water demands/weather forecasts.

Stage 4: Severe Conditions

Initiation:

- Lake Conroe is below an elevation of 190 feet; or
- Monitoring of water demands/weather forecasts indicate earlier initiation is necessary.

Termination:

- Lake Conroe is above an elevation of 190 feet for seven consecutive days; or
- Termination of Stage 4 due to indications from monitoring of water demands/weather forecasts.

Emergency Water Supply Condition

Initiation:

- Anticipation of a drought condition beyond historical level of severity; or
- System failure in the Lake Conroe system; or
- Contamination of the water supply has occurred; or
- Enactment of Emergency Water Supply Condition initiation due to other factors at the discretion of the General Manager or a designated representative.

Termination:

- Restoration of the Lake Conroe system to operational status; or
- Containment or elimination of water supply contamination
- Termination of Emergency Water Supply Condition due to due to other factors at the discretion of the General Manager or a designated representative.

Each stage may also be initiated or terminated at the discretion of the General Manager or a designated representative.

3.3 Notification of Initiation and Termination

The General Manager or a designated representative will notify its wholesale customer representatives in writing by electronic mail when a trigger condition has been met. When the trigger conditions that initiated the drought measures have subsided, the General Manager or a designated representative will inform the wholesale customer representatives in writing by electronic mail. Additionally, TCEQ will be notified within five business days of initiation or termination of drought stages

beyond Stage 1. Notification of drought stage initiation or termination will also be posted on the SJRA website.

3.4 Utilization of Alternative Water Sources

SJRA's ongoing water supply planning efforts include both technical analyses as well as water rights authorization requests that meet long-term reuse needs. In particular, SJRA has developed a Raw Water Supply Master Plan ("RWSMP") which evaluates existing SJRA water supplies, future projected water demands in SJRA's service areas, and additional SJRA water supply needs based on the difference between those existing supplies and future demands. This analysis covers a 50-year planning period, and ultimately results in the recommendation of water supply strategies to accommodate future needs in SJRA's service areas. Based on water demand trends in Montgomery County, additional supplies in excess of potential water conservation savings are needed.

One of the strategies recommended by the RWSMP to meet future demands in the Montgomery County Service Area is indirect reuse of municipal return flows. Other alternative strategies considered include the development of groundwater supply from the Catahoula Aquifer, transfers from Lake Livingston, purchase of water from other wholesale providers, direct reuse, and aquifer storage and recovery, among others. Strategies are ranked based on multiple weighted criteria, including costs, schedule, legal, environmental considerations, scalability, and others. Of the strategies available to serve Montgomery County customers, indirect reuse of municipal return flows is consistently among the highest ranked strategies after considering how to maximize conservation efforts. SJRA has determined it necessary and reasonable to pursue permitting of municipal return flows for use in Montgomery County or downstream.

3.5 Drought Response Stages

The General Manager or a designated representative will monitor water supply and/or demand conditions and, in accordance with the triggering criteria set forth in Section 3.2, will determine that a water shortage exists or when an emergency condition exists. The reductions listed below have been selected through a hydrologic modeling process to work conjunctively with the trigger points identified in Section 3.2 to extend the availability of critical water supplies while simultaneously achieving the highest practicable level of efficiency in water use from a social and economic standpoint across customer classes. The following actions will be taken when a drought stage or Emergency Water Supply Condition is initiated:

Stage 1: Voluntary Reduction

Target: Achieve a voluntary 5% reduction in use.

- Contact municipal wholesale, industrial, mining, and commercial landscape irrigation raw water customers of Lake Conroe to discuss situation.
- Request that municipal wholesale, industrial, mining, and commercial landscape irrigation raw water customers of Lake Conroe initiate voluntary measures to reduce water use.
- Request that private irrigation raw water customers of Lake Conroe voluntarily reduce water use.

Stage 2: Moderate Conditions

Target: Achieve a 5 % reduction in non-industrial use (October through March)
Achieve a 10% reduction in non-industrial use (April through September)

- Contact municipal wholesale, industrial, mining, and commercial landscape irrigation raw water customers of Lake Conroe to discuss situation.
- Notify private irrigation raw water customers of Lake Conroe that no further private irrigation contracts will be issued until Stage 2 is terminated.
- Require municipal wholesale and commercial irrigation raw water customers of Lake Conroe to initiate mandatory measures to reduce monthly water use by a seasonal 5% or 10%.

Stage 3: Advanced Conditions

Target: Achieve a 10 % reduction in non-industrial use (October through March)
Achieve a 20% reduction in non-industrial use (April through September)
Achieve a 1% reduction in industrial use

- Contact municipal wholesale, industrial, mining, and commercial landscape irrigation raw water customers of Lake Conroe to discuss situation and continue to do so on a weekly basis until termination.
- Notify commercial irrigation raw water customers of Lake Conroe that no further commercial irrigation contracts will be issued until Stage 3 is terminated.
- Require municipal wholesale and commercial irrigation raw water customers of Lake Conroe to initiate mandatory measures to reduce monthly water use by a seasonal 10% or 20%.
- Require industrial raw water customers of Lake Conroe to initiate mandatory measures to reduce monthly water use by 1%.

Stage 4: Severe Conditions

Target: Achieve a 15 % reduction in non-industrial use (October through March)

Achieve a 30% reduction in non-industrial use (April through September)

Achieve a 5% reduction in industrial use

- Contact municipal wholesale, industrial, mining, and commercial landscape irrigation raw water customers of Lake Conroe to discuss situation and continue to do so on a weekly basis until termination.
- Require municipal wholesale and commercial irrigation raw water customers of Lake Conroe to initiate mandatory measures to reduce monthly water use by a seasonal 15% or 30%.
- Require industrial and mining raw water customers of Lake Conroe to initiate mandatory measures to reduce monthly water use by 5%.

Emergency Water Supply Condition

Target: Subject to scope and nature of emergency

- If appropriate, notify city, county, and/or state emergency response officials for assistance.
- Assess the severity of the problem and identify actions needed and time required to solve the problem.
- Notify TCEQ within five days of initiation or termination of emergency conditions.
- Inform raw water customers of Lake Conroe and discuss possible actions, including but not limited to initiation of actions available under Stages 1 through 4.
- If deemed necessary by the General Manager or a designated representative, impose mandatory water rationing per Texas Water Code (TWC) §11.039 to reduce water demand to a level determined by the General Manager or a designated representative and notify TCEQ.
- Undertake necessary actions, such as repair or cleanup, to resolve issue.

3.6 Pro Rata Water Allocation

If deemed necessary by the General Manager or a designated representative due to a drought or Emergency Water Supply Condition, SJRA will initiate allocation of water supplies on a pro rata basis in accordance with TWC §11.039 and the force majeure clause and other relevant terms of the contract in place with each raw water customer. TWC §11.039 directs that if a shortage occurs due to drought, accident, or other cause in a water supply covered by a TWDB-approved Water Conservation Plan, the entity controlling

the supply shall divide the water to be distributed pro rata among all customers.

3.7 Compliance Metrics

The target of Stages 1 through 4 (and in some circumstances an Emergency Water Supply Condition) is to reduce water use by certain percentages. Because water demands for SJRA customers change over time and may be impacted by weather conditions or application of drought response measures, a standard approach to defining a customer's demand must be applied in the absence of an agreed-upon contractual definition. Notably, SJRA has entered into water supply contracts with customers that divert water from Lake Conroe for commercial irrigation purposes (each a "Commercial Irrigator") and these contracts incorporate a monthly water demand schedule by exhibit. For the purposes of this drought contingency plan, the demand for each SJRA customer (other than a Commercial Irrigator) shall be determined as that customer's water use for the preceding two years, averaged for each month. These demand values will be provided to each SJRA customer (other than a Commercial Irrigator) at the beginning of each year. With respect to a Commercial Irrigator, the monthly water demand shall be as set forth in the Commercial Irrigator's water supply contract with SJRA. Customer requests for variances to the provided demand values will be considered at an administrative level through an appeal process as described in Section 3.8.

3.8 Public Involvement

Public involvement measures associated with this drought contingency plan shall include the following:

- Making proposed documents available to the public prior to adoption, upon request.
- Posting of notice of an SJRA Board of Directors meeting to include consideration of the plan for adoption.
- Consideration and adoption of the plan by the SJRA Board of Directors at a meeting to be open to the public.
- Upon adoption of the plan, the completed drought contingency plan with relevant documentation reflecting adoption will be posted on the SJRA website.

3.9 Procedures for Granting Variances

The General Manager or a designated representative may grant a temporary variance to mandatory measures to reduce water use, to calculated customer demand as discussed in Section 3.6, or to pro rata water allocation policies if one or more of the following conditions are met:

- Failure to grant such variance would cause an emergency condition adversely affecting the public health, welfare, or safety.

- Compliance with this plan cannot be technically accomplished during the duration of the water supply shortage or other conditions for which the plan is in effect.
- Alternative methods can be implemented which will achieve the same level of reduction in water use.

The decision to grant or deny such a variance is at the discretion of the General Manager or a designated representative. Persons or entities requesting an exemption from the provisions of this plan shall file a written petition for variance with the General Manager or a designated representative within five business days after the mandatory measures to reduce water use or the pro rata allocation has been invoked. Once received, the General Manager or a designated representative will have five business days to respond, in writing, to a petition for variance.

3.10 Implementation and Enforcement

The General Manager or a designated representative will be responsible for implementation and enforcement of the drought contingency plan. During any period when pro rata allocation of available water supplies is in effect, the General Manager or a designated representative has the authority to discontinue service to any customer who fails to comply with the conditions of the allocation, declaring the customer in breach of contract. Prior to discontinuance of service, the General Manager or a designated representative will issue a warning to the wholesale customer, and work with the customer to ensure that they are complying with the restrictions. In the event the customer fails to voluntarily comply, a court injunction will be obtained for violation of the Texas Water Code and for breach of contract.

Once notified of initiation of a drought stage with mandatory demand reduction, SJRA's Lake Conroe raw water customers are required to reduce their water use in accordance with the appropriate stage as described above. In order to promote compliance with the drought contingency plan, the General Manager or a designated representative may enact a special temporary drought contingency rate structure with certain non-promotional rates for each drought stage. Customers failing to comply with mandatory demand reductions may also be subject to disincentive fees and be required to reimburse SJRA for any costs, fines, or penalties incurred by SJRA as a result of the customer's noncompliance. Enforcement actions, including penalties, will not be put into place until 30 calendar days after a drought stage is initiated.

3.11 Coordination with Regional Water Planning Group

SJRA is located within the Region H Regional Water Planning Area. In accordance with TCEQ rules, SJRA has provided a copy of the Lake Conroe Division drought contingency plan to the Region H Regional Water Planning Group. A copy of the transmittal letter is included in Appendix A.

3.12 Updating of the Plan

Every five years, SJRA will examine the Division operations to determine if trigger conditions need to be re-established. Updates may also be considered earlier than every five years in the case of any changes to operations that would warrant a re-examination of the trigger conditions. Any updates will result in a revised drought contingency plan.

The drought contingency plan for the Division has been adopted by a resolution of the Board of Directors of SJRA. A copy of the resolution is included in Appendix A.

Appendix A
Resolutions Passed by SJRA
Transmittal Letter to Region H RWPG

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RESOLUTION NO. 2024-R-13

RESOLUTION ADOPTING REVISED WATER CONSERVATION PLANS AND DROUGHT CONTINGENCY PLANS; AUTHORIZING THE IMPLEMENTATION OF SUCH REVISED PLANS; REPEALING AND RESCINDING ALL PRIOR PLANS; AND CONTAINING OTHER PROVISIONS RELATING TO THE SUBJECT

WHEREAS, the San Jacinto River Authority (the "Authority") has water rights issued by the Texas Commission on Environmental Quality and its predecessor agencies (collectively, the "TCEQ") to divert water from the San Jacinto River and Trinity River basins; and

WHEREAS, the Authority, by and through its Highlands Division, owns and operates water supply and distribution systems and facilities, including the Lake Houston Pump Station, East Canal Transfer Pump Station, South Canal Transfer Pump Station, Highlands Reservoir, and the Highlands Canal System, in order to sell and deliver water out of such rights to certain customers generally located in eastern Harris County; and

WHEREAS, the Authority also owns an interest in Lake Conroe Dam and Reservoir, located in Montgomery and Walker Counties ("Lake Conroe") upstream on the San Jacinto River from the Lake Houston Reservoir, and holds certain contract rights and water rights issued by the TCEQ to divert or release and use water from Lake Conroe; and

WHEREAS, the Authority, by and through its Lake Conroe Division, operates Lake Conroe and sells water out of such rights to customers located in Montgomery County, and

WHEREAS, the Authority, by and through its Woodlands Division, owns and operates an extensive water supply and distribution system and facilities for providing regional, wholesale services to customers in the area of The Woodlands; and

WHEREAS, the Authority, by and through its Groundwater Reduction Plan Division (the "GRP Division"), owns and operates a surface water treatment facility and transmission system that withdraws water from Lake Conroe for treatment, distribution and sale to its Woodlands Division and certain other customers; and

WHEREAS, in connection with the management of such facilities, systems and operations, the Authority has previously adopted various Water Conservation Plans and Drought Contingency Plans (collectively, the "Plans") in accordance with the requirements of Chapter 11, Texas Water Code, as amended, and the rules of the TCEQ under Chapter 288 of Title 30, Texas Administrative Code, as amended; and

WHEREAS, the Board of Directors of the Authority has determined that it is in the public interest to revise and replace the Plans; Now, Therefore,

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SAN JACINTO RIVER AUTHORITY, THAT:

Section 1: The Plans, as previously adopted and amended by the Authority, are hereby repealed and rescinded in their entirety.

Section 2: The Board of Directors of the Authority hereby approves and adopts the revised water conservation and drought contingency plans, each dated as of the date hereof, titled as follows: *Water Conservation Plan for San Jacinto River Authority Highlands Division*; *Drought Contingency Plan for San Jacinto River Authority Highlands Division*; *Water Conservation Plan for San Jacinto River Authority Lake Conroe Division*; *Drought Contingency Plan for San Jacinto River Authority Lake Conroe Division*; *Water Conservation Plan for San Jacinto River Authority Woodlands Division*; *Drought Contingency Plan for San Jacinto River Authority Woodlands Division*; *Water Conservation Plan for San Jacinto River Authority GRP Division*; and *Drought Contingency Plan for San Jacinto River Authority GRP Division* (collectively, the "Revised Plans").

Section 3: The Revised Plans, together with any amendments thereto which may be made from time to time, shall be maintained on file in the official records of the Authority and filed, as appropriate, with the TCEQ, the Texas Water Development Board and any other agencies with jurisdiction.

Section 4: It shall be the policy of the Authority that the programs and procedures set forth in the Revised Plans be implemented immediately.

Section 5: The General Manager of the Authority is hereby designated as the official responsible for implementation of the Revised Plans in accordance with the guidelines set forth in the Revised Plans.

Section 6: It shall be the policy of the Authority to support and assist its wholesale and retail customers in (1) designating their pre-assigned officials as having the responsibility and authority to implement the Revised Plans, (2) allowing for enforcement of the Revised Plans, and (3) providing civil penalties for noncompliance with the Revised Plans.

Section 7: It shall be the policy of the Authority that the *Water Conservation Plan for San Jacinto River Authority GRP Division* and the *Drought Contingency Plan for San Jacinto River Authority GRP Division* establish minimum requirements which shall be adopted, respectively, in a water conservation plan and a drought contingency by each participant in the Authority's Groundwater Reduction Plan. The General Manager of the Authority and the GRP Administrator are hereby authorized and directed to take such actions as are deemed necessary and appropriate to ensure that the participants in the Authority's Groundwater Reduction Plan (the "Participants") adopt water conservation plans and drought contingency plans that are reasonably determined to meet or exceed such minimum requirements. Further, it shall be the policy of the Authority to support and assist the Participants in (1) adopting such water conservation plans and drought contingency plans, and (2) implementing and enforcing such water conservation plans and drought contingency plans.

Section 8: This Resolution shall be and remain in full force and effect from and after the date of its passage and approval.

PASSED AND APPROVED this 25th day of April, 2024.

Bonnie Anderson
President, Board of Directors

Secretary, Board of Directors

(SEAL)



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SJRA
SAN JACINTO RIVER AUTHORITY

April 25, 2024

Mark Evans, Chair
Region H Water Planning Group
c/o San Jacinto River Authority
P.O. Box 329
Conroe, Texas 77305

Re: Water Conservation and Drought Contingency Plans

Dear Mr. Evans:

Please find enclosed one (1) copy of the revised Water Conservation and Drought Contingency Plans for the San Jacinto River Authority's Lake Conroe, GRP, Woodlands, and Highlands Divisions. San Jacinto River Authority's Board of Directors adopted the enclosed plans on April 25, 2024. These revisions have been completed to meet the regulatory requirement to update and submit the Plans to TCEQ and TWDB by May 1, 2024. Electronic versions of the Plans are available on San Jacinto River Authority's website at http://www.sjra.net/about/wc-dcp/.

If you have any questions, please do not hesitate to contact me at (936) 588-3111 or [redacted]

Sincerely,

Matt Barrett, P.E.
Water Resources and Flood Management Division Manager
San Jacinto River Authority

Cc: Aubrey A. Spear, P.E.
Ed Shackelford, P.E.
Chris Meeks
Richard Tramm
Bret Raley

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HOUSTON
PUBLIC WORKS

WATER CONSERVATION PLAN

Effective Jul 1, 2019 – Jun 30, 2024

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INTRODUCTION

The Texas Water Development Board and the Texas Commission on Environmental Quality require utilities that provide treated water service to 3,300 or more connections to adopt a water conservation plan that meets the minimum requirements set forth in Title 30, Chapter 288 of the Texas Administrative Code, and to adopt an updated water conservation plan every five years. The 2019 City of Houston Water Conservation Plan (Plan) is the required five-year update to the 2014 City of Houston Water Conservation Plan and describes the City of Houston (Houston) water system and customer base, explains Houston's current conservation goals and targets, and discusses current and future programs to meet those goals and targets.

Houston provides water and wastewater service to its customers through the Houston Water service line of Houston Public Works. Houston Water strives to protect public health and the environment and provide superior customer service. Houston Water's goal is to provide all customers with drinking water that meets the State of Texas "superior" rating at pressures required to meet their daily needs. Houston is a large regional water supplier that provides both retail and wholesale service. Houston operates three water supply reservoirs, three water purification plants, 92 groundwater pumping stations, 142 ground water wells and over 7,000 linear miles of distribution pipeline across a four-county area consisting of more than 600 square miles, making Houston's water system one of the most complex water systems in the nation.

As of 2019, Houston provides treated water to approximately 2.4 million retail and wholesale customers and serves a total population of approximately 4.7 million. By 2070, this number is expected to reach 6.2 million.[1] To ensure that Houston can continue to provide treated water to this rapidly-growing region, customers must use water efficiently and conserve water when possible. The Texas Water Development Board emphasizes that water conservation is increasingly recognized as an integral part of water resource

[1] http://www2.twdb.texas.gov/ReportServerExt/Pages/ReportViewer.aspx?%2fProjections%2f2022+Reports%2fpop_County&rs:Command=Render

planning and management and plays an important role in meeting current and future water supply, utility infrastructure, and environmental needs.[2]

The State Water Plan, which details how Texas will address our state's growing water needs, calls for serious statewide conservation efforts to meet a quarter of Texas' future water needs.[3] Region H, the fast growing, mainly urbanized region in which Houston is located, has specific conservation goals articulated in the region's plan. The 2016 Region H Water Conservation Plan calls for 9.6% of future additional supplies to be met through municipal conservation and 15.7% to be met through irrigation (agricultural) conservation.[4] In an effort to meet these aggressive goals, Houston has implemented, and will continue to develop, a wide range of water conservation programs to educate and engage customers about the importance of water and what they can do to protect and preserve this essential resource.

[2]http://www.twdb.texas.gov/conservation/doc/StatewideWaterConservationQuantificationProject.pdf
[3]http://www.twdb.texas.gov/waterplanning/swp/2017/doc/SWP17-Water-for-Texas.pdf
[4]http://regionhwater.org/Reg_H_2016_RWP_20151116.pdf

REQUIRED WATER CONSERVATION PLAN CONTENT

A. Water System, Wastewater System, and Customer Use Characteristics

The water conservation plan must include evaluation of the water and wastewater system and customer use characteristics to identify water conservation opportunities and potential targets and goals. Completion of the Water Conservation Utility Profile, TWDB – 1965 as part of the evaluation is required and should be submitted with the Plan. The utility profile should include water sales and use for the following classifications: residential (both for single-family and multi-family), commercial, institutional, industrial, agricultural, and wholesale; as appropriate.

1. Houston Drinking Water System

Houston is a regional water supplier. Houston operates three water supply reservoirs, three water purification plants, 142 groundwater wells, 49 groundwater plants, 8 re-pressurization plants, and over 7,000 linear miles of distribution pipeline across a four-county area consisting of more than 600 square miles, making Houston's water system one of the most complex water systems in the nation. Eighty-five percent of Houston's municipal water supply is derived from Houston's three water purification plants, which have a combined production capacity of up to 640 MGD. These plants are the Northeast Water Purification Plant (rated at 80 MGD), which is located at Lake Houston and serves the northern region of Houston's service area; the East Water Purification Plant (rated at 360 MGD), which is located east of I-610 and west of Greens Bayou and serves the central region of Houston's service area; and the Southeast Water Purification Plant (rated at 200 MGD), which is located north of Clear Lake and serves the southeastern region of Houston's service area. These plants meter all water produced and pressurize water at between 80 and 90 psi. The remaining 15% of Houston's municipal water supply is provided by 142 groundwater wells, which have a combined production capacity of up to 200 MGD. Three of the wells are permitted by the Lone Star Groundwater Conservation

District, two of the wells are permitted by the Fort Bend Subsidence District, and the remaining 137 wells are permitted by the Harris-Galveston Subsidence District.

In 2018, Houston produced a total of 169.5 billion gallons of treated water, averaging 464 MGD daily. Total usage, by both retail and wholesale customers, was 143 billion gallons, averaging 392 MGD daily. A small portion of the total water produced, 439 million gallons, was used by Houston's water system for routine maintenance activities, such as line flushing. Non-revenue water totaled 17% of the overall production.

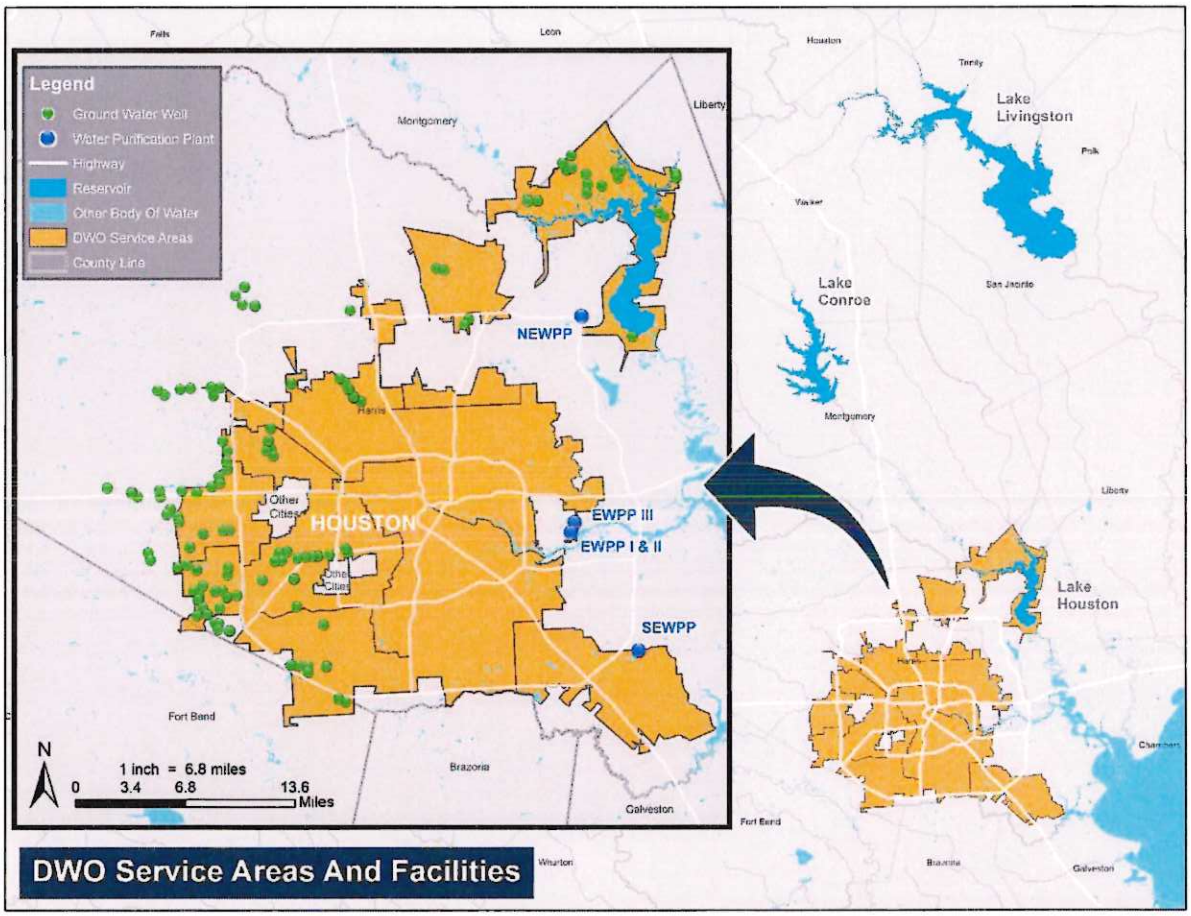

Figure 1. Map of Houston Water System Key Features.

2. Houston Wastewater System

Houston provides wastewater collection and treatment services to customers located inside Houston's service area. Houston also provides wastewater treatment services to municipal utility districts under contracts referred to as "wastewater subscriber agreements." Houston operates 39 wastewater treatment plants with a total permitted capacity of 564 MGD, 384 lift stations, and over 6,000 linear miles of collection pipeline. In 2018, Houston treated an average of 250 MGD of wastewater daily, which means there is capacity available to treat additional wastewater – and produce additional water for reuse.

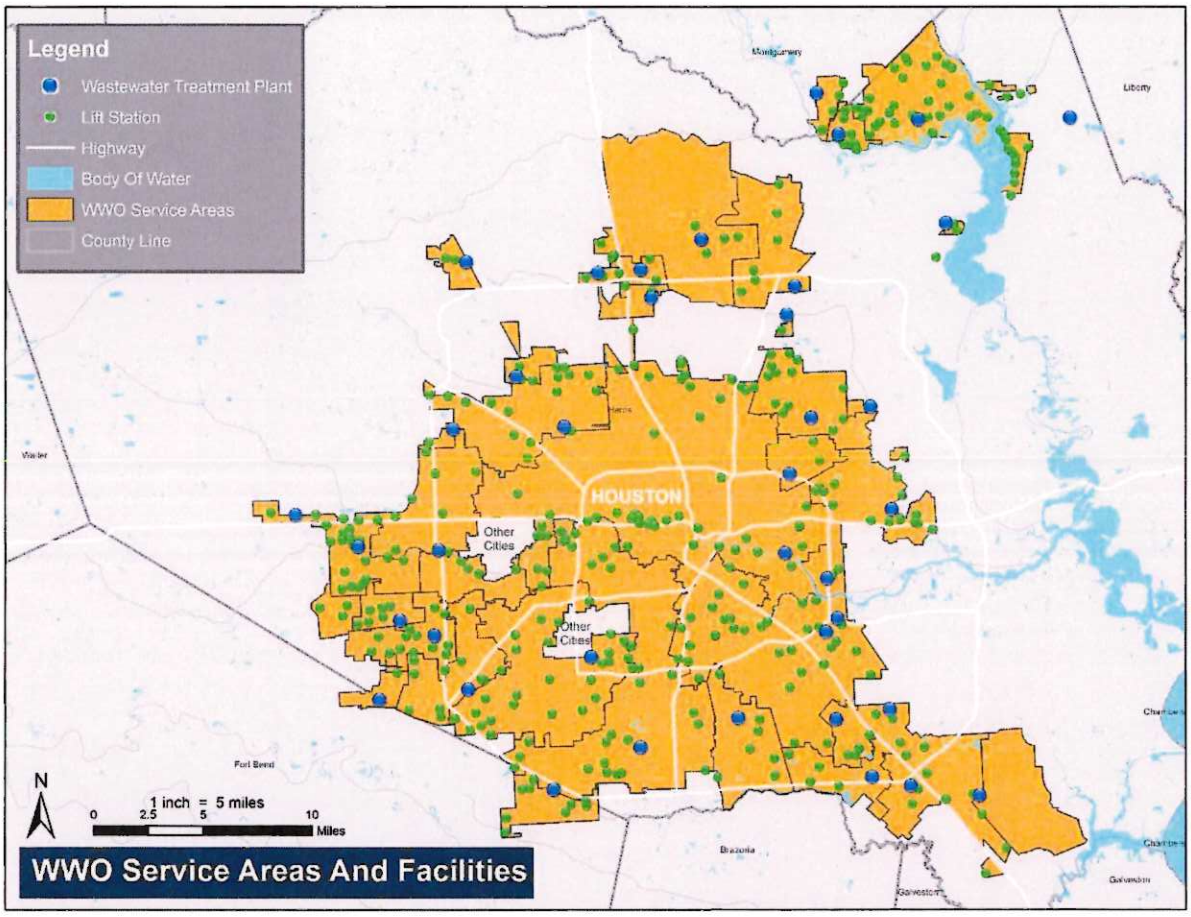

Figure 2. Map of Houston Wastewater System Key Features.

3. Houston Water Customer Use Characteristics

a. Wholesale Customers

Houston provides untreated, treated, and reclaimed water to wholesale customers by contract. As of 2019, Houston has 274 wholesale contracts, 68 of which are with cities, municipal utility districts, and regional water authorities for treated water service. In 2018, these treated water contract customers used a total of 53.7 billion gallons, averaging 147 MDG.

b. Retail Customers

As of 2019, Houston provides treated water to almost 480,000 retail customers within its municipal boundaries. In 2018, these customers used a total of 89.3 billion gallons, averaging 245 MGD. Retail usage is roughly divided in three equal parts between Single Family, Multi Family, and Industrial-Commercial-Institutional (ICI) customer classes.

Customer Class	Number of Connections	Total Annual Usage (in billion gallons)	Average MGD
Single Family	415,228	26.0	71.2
Multi Family	15,759	29.3	80.2
ICI	47,701	34.0	93.1
TOTAL	**478,688**	**89.3**	**244.5**

Table 1. Houston Retail Customer Usage by Customer Class, 2018

The remaining retail usage consists of irrigation meter accounts, use by City of Houston facilities, and other small-volume uses (emergency water, construction water, and unmetered esplanade irrigation).

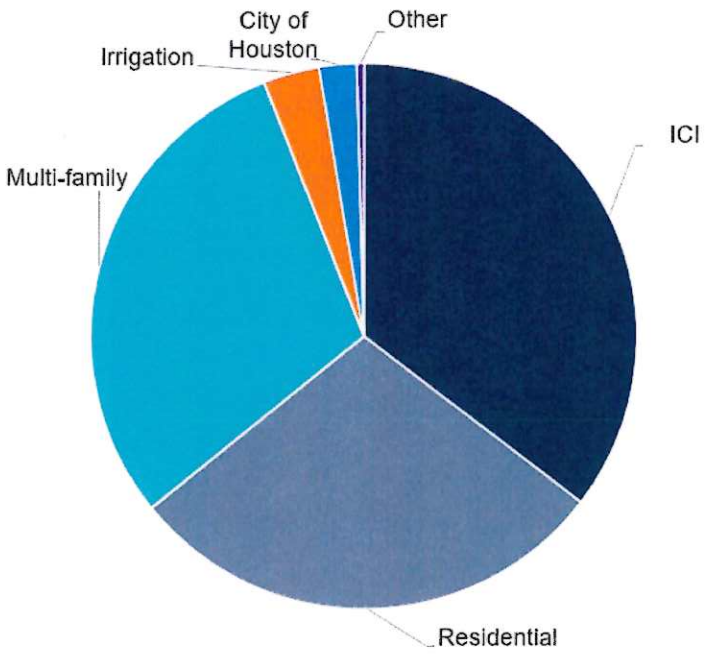

Figure 3. Houston Retail Customer Demand Shares, 2018

In 2018, the total gallons per capita per day (GPCD) among all retail classes was 136, with a five-year average (2014 – 2018) of 129. This GPCD is based on pumpage volumes and incudes all water that leaves Houston's water purification plants, including water loss. Evaluated separately, in 2018 the residential GPCD was 66, with a five-year average (2014 – 2018) of 62. The previous five-year average (2009 – 2013) was 68. This continues the downward trend seen over the last decade during which the residential GPCD has significantly decreased, reducing the total GPCD. Houston considers its five-year historic average of 129 to be healthy, as it falls well below the 140 total GPCD mark recommended by the 2004 Water Conservation Task Force Report[5] and is very close to the 125 total GPCD mark adopted by the Texas Living Waters Project in the 2016 Texas Water Conservation Scorecard.[6]

[5] http://www.twdb.texas.gov/conservation/resources/doc/WCITF_Leg_Report.pdf
[6] http://www.texaswaterconservationscorecard.org/

B. Five-Year and Ten-Year Water Savings Targets

The water conservation plan must include five-year and ten-year targets that are specific and quantified for water savings and include goals for water loss programs in gallons per capita per day, and goals for municipal use and residential use, in gallons per capita per day. A base use figure should be included to be able to calculate your savings. Consider state and regional targets and goals, local climate, and demographics. Consider the anticipated savings that can be achieved by utilizing appropriate best management practices and other conservation techniques.

Houston's 2014 Water Conservation Plan stated a total GPCD baseline of 144, with the goal of reducing this number by 1.6% every five years, thereby establishing a total GPCD five-year target of 141.7 by 2019, and a ten-year target of 139.4 by 2024.

As of 2019, Houston's total GPCD (and new baseline) is 129, based on the five-year historical average. This exceeds both the five and ten-year targets and is lower than expected. While water efficient fixtures and increasing conservation and water awareness among Houston's customers can be credited for some of this reduction, Houston also experienced higher than average rainfalls during this same time. From 2014 to 2018, Houston averaged over 62 inches of rain – well above the 30-year annual average of 50 inches. During this same period, Houston's residential GPCD averaged 62. Although local climate may have played a role in this rapid reduction of Houston's total GPCD, Houston also experienced a net population growth of 95,109 people during the same time. Because of this, Houston will continue implementing a water reduction target of 1.6% every five years, which is also consistent with the water use reduction target adopted by the Region H Water Planning Group.

To reduce its total and residential GPCDs further, Houston must reduce its water loss. Based on the last five years' average, Houston's water loss is approximately 19%. Houston plans to reduce water loss by 1% every year with the long-term target of 10% or less of water loss. This goal is reasonable given Houston's water loss trends in the last

decade, and the target is consistent with the water loss target adopted by the Region H Water Planning Group in the 2016 Region H Water Conservation Plan.[7]

	Historic 5-year average	2019 Baseline	5-Year Reduction Goal	10-Year Reduction Goal
Total GPCD	129	129	127	125
Residential GPCD	62	62	61	60
Water Loss GPCD	24	24	23	22
Water Loss Percentage	19	19	18	17

Table 3. Five-Year and Ten-Year Targets for GPCD and Water Loss Reduction

C. Implementation Plan

The water conservation plan must include a schedule for implementing the plan to achieve the utility's targets and goals.

Houston will continue, expand, and implement the following programs to achieve a 1.6% reduction in total GPCD and residential GPCD over the next five years.

1. Water Main Replacement Program

Aging water mains are a common problem and can lead to regulatory compliance issues, customer service issues, and water loss. Houston continues to invest in a comprehensive water main replacement program to address these issues. Work ranges from emergency repair or replacement of failing infrastructure to scheduled repair or replacement of aging infrastructure. The program relies on a water system needs assessment that considers each asset's design service life, by asset type, and the remaining service life of the asset since its installation, replacement, or last rehabilitation date. For treated water

[7] http://regionhwater.org/Reg_H_2016_RWP_20151116.pdf

distribution, pipe material is an important factor in determining service life. For example, based on Houston's experience with line breaks, small diameter asbestos-cement waterlines that were installed in the 1970s have a 40-year service life, whereas PVC waterlines have a 50-year service life.

Houston's water main replacement program is divided into two categories for purposes of capital improvement project programming: the water transmission system, and the water distribution system.

The water transmission system includes large diameter pipelines (16 inches and larger) and valves that move high volumes of treated water throughout Houston's service area, and large diameter pipelines that move untreated surface water to the three water purification plants. Houston's water transmission system has approximately 4.55 million linear feet of large diameter pipelines ranging from 16 inches to 120 inches in diameter. The water transmission system also includes seven major repump stations that re-pressurize the transmission system, and 156 storage tanks that provide water volume to meet average and peak day demands. Projects undertaken by Houston in the transmission system portion of the water main replacement program include the rehabilitation and replacement of large diameter water lines, valves, pumps, and storage tanks. Over the next five years, Houston plans to spend approximately $890,000,000 on capital improvement projects for the water transmission system.

The water distribution system includes the small diameter pipelines (less than 16 inches) that deliver treated water to homes and businesses. The water distribution system also includes customer meters and the fire hydrants for fire protection. Houston's water distribution system has approximately 32.6 million linear feet (6,170 miles) of small diameter pipeline, approximately 460,000 water meters, and over 61,000 fire hydrants. Projects undertaken by Houston in the distribution system portion of the water main replacement program include repair and replacement of small diameter lines to help improve water quality fire and protection within neighborhoods. Over the next five years, Houston plans to spend approximately $107,000,000 on capital improvement projects for

the water distribution system (referred to as the "Neighborhood Main Replacement Program").

More information on Houston's capital improvement program is available on Houston's website at: http://www.houstontx.gov/cip/.

2. Water Loss Program

Houston has implemented and continues to develop cost-effective strategies for reducing water loss. These include the following:

- Reducing water loss by using the Advanced Metering Infrastructure (AMI) network to detect leaks.

- Reducing water usage by City of Houston facilities other non-revenue users.

- Reducing water theft (*e.g.*, disconnecting bypasses and direct connects).

- Expediting shutoff of water meters where there is no account owner.

In 2016, Houston engaged the consulting firm of Black & Veatch to conduct a water loss audit and develop a revenue enhancement strategy. Black & Veatch conducted a desktop water audit that analyzed water distribution system data for 2015 using the AWWA M36 standard methodology and conducted a field review that included staff interviews. Black & Veatch concluded that, in 2015, Houston lost approximately 111 gallons per connection per day, with approximately 87 gallons in real losses (due to infrastructure issues, such as leakage), and 24 gallons in apparent losses (due to metering and billing issues). These levels are within the range of losses reported and published by peer utilities.

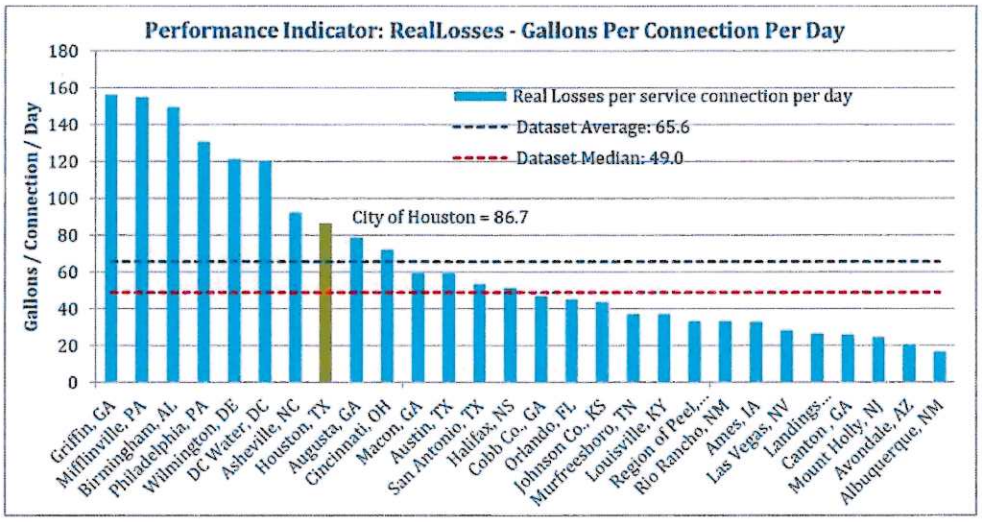

Figure 4. Real Losses: Houston and North American Benchmark Data (AWWA)

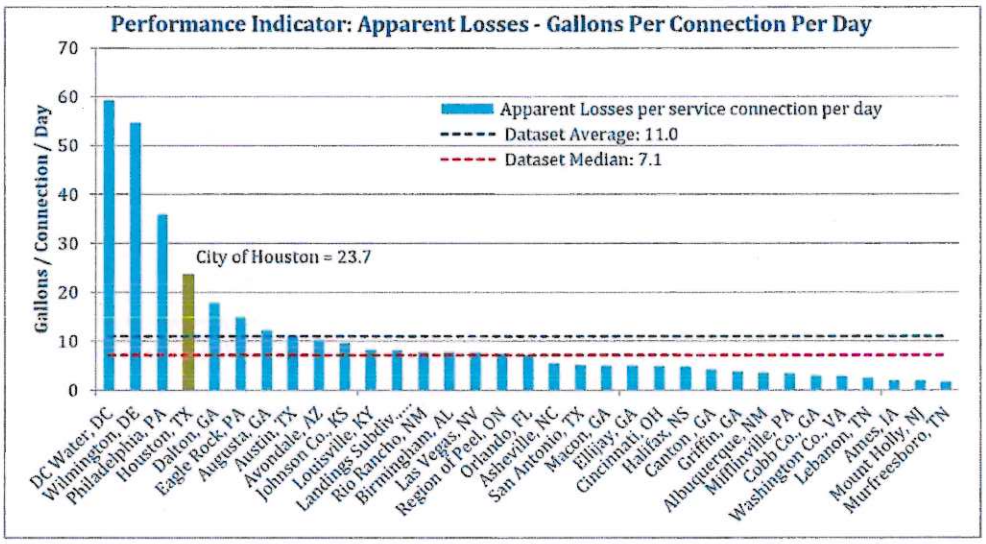

Figure 5. Apparent Losses: Houston and North American Benchmark Data (AWWA)

With the assistance of Black & Veatch, Houston identified ways to reduce non-revenue water through more accurate metering practices, improved record-keeping standards, and improved infrastructure. Houston has added dedicated staff to assist with data management and analysis, is undertaking an asset management project at key sites, and is investigating leak detection systems to be more proactive. Houston is also seeking to upgrade the existing AMI network, discussed below.

3. Consumption Awareness Program

Houston measures water consumption through an automated system that transmits water usage data via radio waves, also referred to as the AMI network. An attachment on the water meter sends a wireless signal that is picked up by one of the collecting devices located throughout the city, most often on utility poles. This information is transmitted to a central computer where the data can be accessed by Houston staff to generate alerts and create bills.

Using the AMI network, Houston developed the Consumption Awareness Program to provide customers with real-time usage information across multiple communication platforms. The Consumption Awareness Program allows customers to access their water consumption daily and to set alarms for high water usage and leak alerts. Customers can use the Consumption Awareness Program to identify uses and leaks that may result in water waste and bill increases, and to address those issues in real-time.

As of 2019, Houston has completed the first phase of Consumption Awareness Program implementation, which included the following activities:

- Converting 45% of retail customers to the AMI network as of February 2019.

- Creating a web portal for single family residential customers to access real-time water usage.

- Sending out more than 10,000 alerts since April 2018.

- Registering with the program a total of 14,254 accounts, 13,552 of which are single family residential.

Houston is now undertaking the second phase of implementation, which will include the following activities:

- Developing a web portal for multi-family and non-residential retail customers.

- Developing and implementing an information dissemination campaign to increase retail customer participation to 80%.

- Developing a more informative and user-friendly web portal for single family residential customers.

The second phase of the Consumption Awareness Program is currently tied to the strategic replacement of Houston's more than 20-year old Automatic Meter Reading (AMR) system with an AMI network (See AMI Network section below).

More information on the Consumption Awareness Program is attached at Appendix B and on Houston's website at: https://www.houstonwaterbills.houstontx.gov.

4. AMI Network

Ideally, Houston would read all retail customer meters by use of the AMI network. This would allow for more frequent readings (every 15 minutes) to assist Houston staff and customers with identifying usage trends in real time as compared to other meter reading methods (*e.g.*, every month for billing purposes). Unfortunately, the AMI network capacity has been declining over the last five years, primarily due to aging infrastructure and lack of resources. As of 2019, the AMI network reads between 45 – 50% of all retail meters throughout the city.

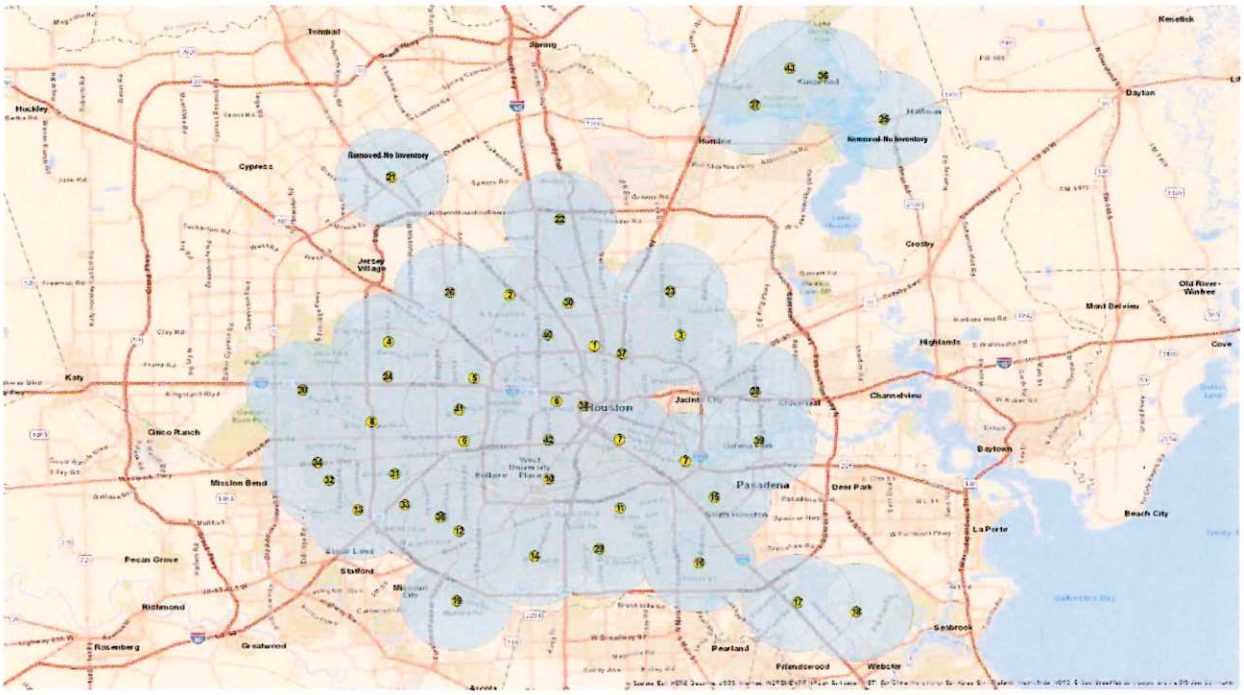

Figure 6. Current AMI Network Coverage 2019

Of the meters that cannot be read by use of the AMI network, roughly 90% are read by vehicle-mounted automated meter reading equipment and 10% are read manually.

Houston is currently planning to replace more than 95% of the existing automated meter reading system. As of today, the budget for replacement of the system is estimated at $50 million. The implementation of the AMI meter replacement project will phase in over 10-years and is tentatively scheduled to begin in late 2020. The replacement project will also include funding for establishing interconnectivity with Houston's current web portal, thereby facilitating utilization by all customers (residential multifamily, non-residential, etc.).

The AMI infrastructure will also provide the City and its customers with enhanced ability to monitor near real time water usage, forecast water consumption, and identify leaks earlier. Marketing of the conservation tools will be strategically aligned to coincide with

implementation of the AMI system. The marketing will be performed through direct mail, online advertisements, and social media posts from the City of Houston.

5. Mainline Leak Detection Program

Houston plans to enhance its mainline leak detection program using the AMI network. Future applications are under development with manufacturers. Functionalities will include pressure sensing, hydrant flow monitoring, and water quality sensing, among others. The key to long-term viability of this plan is interoperable end-point functionality and open architecture protocols.

6. Water Wise Building Standards

In 2011, Houston revised its plumbing and building codes. These revisions contributed to a gradual reduction in Houston's residential GPCD from a five-year average (2009 – 2013) of 68 to a five-year average (2014 – 2018) of 62, despite a net population increase of 95,109 people during this same period. Houston also added a section on low impact development to Houston's Infrastructure Design Manual. Low impact development can reduce the amount of treated water used for irrigation by utilizing stored rainwater and slowing runoff through use of green storm water infrastructure improvements. Houston will continue to rigorously enforce its plumbing and building codes and encourage the use of low impact development practices.

A copy of Houston's plumbing and building codes is available on Houston's website at: https://www.houstonpermittingcenter.org/building-code-enforcement.html.

A copy of Houston's Infrastructure Design Manual is available on Houston's website at: https://edocs.publicworks.houstontx.gov/documents/design_manuals/idm.pdf.

In 2004, Houston adopted Resolution No. 2004-15 establishing the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) Green Building Rating System™ as a standard for new or replacement city-owned facilities and for major

renovation of city-owned buildings and facilities with over 10,000 square feet of occupied space. LEED™ provides a complete framework for assessing building performance and meeting sustainability goals. Based on well-founded scientific standards, LEED™ emphasizes state of the art strategies for various energy and environmental aspects of a building, including water savings.

An example of past, present and future LEED™ projects for city owned facilities can be found at https://www.houstontx.gov/generalservices/leed.html.

More information about the LEED™ standard is available on Houston's website at: https://www.houstontx.gov/generalservices/leed.html.

7. Houston PACE Program

Houston's Property Assessed Clean Energy (PACE) program is a proven financial tool that incentivizes Houston's commercial, industrial, and multifamily property owners to upgrade facility infrastructure with little or no capital outlay. The PACE program enables owners to lower their operating costs and use the savings to pay for eligible water conservation, energy efficiency, resiliency, and distributed generation projects. Owners gain access to private, affordable, long-term (typically 10-20 years) financing that is not available through traditional funding avenues.

The State of Texas authorized municipal and county PACE programs in 2013. Houston City Council adopted an ordinance establishing Houston's PACE program on November 4, 2015. To learn more about Houston's PACE program and cases to date, please visit https://www.texaspaceauthority.org/houston-pace/.

D. Method for Tracking Plan Implementation and Effectiveness

The water conservation plan must include a method for tracking the implementation and effectiveness of the plan. The method should track annual water use and provide

information sufficient to evaluate the implementation of conservation measures. The plan should measure progress annually and evaluate the progress towards meeting the goals.

1. Water Conservation Annual Report, Water Loss Audit Annual Report, Utility Benchmarking Tool

Historically, Houston has tracked the implementation and effectiveness of this Plan through the Water Conservation Annual Report and the Water Loss Audit Report, which are submitted to the Texas Water Development Board every year. In 2019, Houston began using the American Water Works Association Utility Benchmarking Tool as an additional tracking method. The Utility Benchmarking Tool tracks utility performance data and calculates performance indicators in areas such as organizational development, business operations, customer service, and water and wastewater operations. Per the American Water Works Association, these indicators are designed to help utilities improve their operational and managerial effectiveness. Benchmarking utility performance indicators will allow Houston to track its performance and compare its results to peers to identify areas for improvement.

2. Water Conservation Division

In 2019, Houston established a Water Conservation Division with Houston Water. This new division is directed by a Water Conservation Manager, who is responsible for implementing this Plan and developing programming that produces measurable outputs to help Houston reach its GPCD and water loss five-year and ten-year targets. In addition, the Water Conservation Manager is responsible for implementing Houston's Drought Contingency Plan, managing Houston Water's education and outreach team, working with drinking water operations staff to improve Houston's Water Loss Program, and coordinating efficiency efforts with other Houston city departments, such as the Houston Sustainability Office.

3. Dashboard Software Platform

Houston is negotiating a contract to pilot conservation software developed by a third-party vendor. This software platform will allow Houston and its wholesale customers to visualize and quantify the impacts of specific conservation and efficiency programming on retail and wholesale customer consumption behavior. With this information, Houston and its wholesale customers can make informed decisions regarding what programming to invest in, and more easily communicate the value of these programs to their ratepayers and elected officials. This comprehensive approach to conservation is critical to a large regional water supplier like Houston, which will be evaluating the software platform for the following benefits:

- Creation of a single data and communication hub for information on conservation activities throughout the retail and wholesale system.

- Regional reduction of peak-day, peak-season, and long-term demand on Houston's water system using highly advanced conservation analytics.

- Avoidance of transmission, treatment, distribution, and wastewater costs due to coordinated conservation programming across the retail and wholesale system.

- Deferment of plant expansion costs due to coordinated conservation programing across the retail and wholesale system.

Houston plans to license this software platform for up to three years beginning in 2019.

E. Master Meter

The water conservation plan must include a master meter to measure and account for the amount of water diverted from the source of supply.

Houston relies on several sources of water for its water supply: two surface water reservoirs in the San Jacinto River basin, Lake Houston and Lake Conroe; one surface water reservoir in the Trinity River basin, Lake Livingston; 142 groundwater wells; and wastewater effluent reuse. All water leaving Lake Houston and flowing into Houston's Northeast Water Purification Plant is measured and accounted for through an inflow meter. Houston's water stored in Lake Conroe is measured and accounted for by the San Jacinto River Authority, which manages Lake Conroe for the benefit of Houston pursuant to an operating agreement. Likewise, Houston's water stored in Lake Livingston is measured and accounted for by the Trinity River Authority, which manages Lake Livingston for the benefit of Houston pursuant to an operating agreement. All groundwater wells operated by Houston are metered. Any treated wastewater effluent sold to contract customers for reuse is metered at the customer's point of delivery.

F. Universal Metering and Meter Testing

The water conservation plan must include a program of universal metering of both customer and public uses of water, for meter testing, repair and for periodic replacement.

Section 47-4 of the City of Houston Code of Ordinances requires all water furnished and delivered through the Houston water distribution system to be metered. Meters must be maintained at an accuracy rate of 98-102% in accordance with the American Water Works Association benchmark.

In 2000, Houston began replacing small meters (5/8-inch to 2-inch meters) throughout the water distribution system. Houston monitors the accuracy and performance of small meters by analyzing data gathered through meter testing (performance-driven and through an annual sampling program) and reviewing consumption at various flow ranges to understand whether accuracy is affected by volume of water consumed within each range. Based on this information, small meters are mapped for replacement.

For large meters (3-inch meters and larger), Houston has a preventive maintenance program that schedules meter testing and calibration based on meter type and the volume of water that passes through the meter. Large meters are replaced as needed based on maintenance costs and manufacturer standards.

G. Measures to Determine and Control Water Loss

The water conservation plan must include measures to determine and control water loss (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections, abandoned services, etc.).

Houston uses a system of data analytics (run daily and monthly) coupled with field inspections to identify and control water loss and potential theft or water waste. In addition, Houston provides citizens with a direct telephone line to report perceived water theft or waste and enforces its ordinances prohibiting water theft and waste as necessary.

H. Water Loss Program

The water conservation plan must include a continuous program of leak detection, repair, and water loss accounting for the transmission, delivery, and distribution system in order to control water loss.

Houston has developed a data network based on meter readings that delivers a more robust Supervisory Control and Data Acquisition ("SCADA") view of the entire water distribution system. This data network was piloted in Houston's wastewater system to monitor for sanitary sewer overflows and has since been used to detect water main leaks in Houston's water system. Additional applications of the data network are being developed, including pressure sensing, hydrant flow monitoring, and water quality sensing. The key to the success of this data network is interoperable end-point

functionality and open architecture protocols. Houston is working with the American Water Works Association Research Foundation to develop industry specifications involving these data networks to ensure these features.

In addition, Houston is assisting with efforts to standardize water loss reporting to ensure that what is reported as water loss is consistent across municipal and wholesale providers throughout the State of Texas. Houston is reviewing how water is accounted for in uses such as community fire response, dead end line flushing, new line flushing, and general city uses, and has an active transient program that monitors uses by contractors.

I. Education and Information Programs

The water conservation plan must include a program of continuing education and information regarding water conservation. This should include providing water conservation information directly to each residential, industrial, and commercial customer at least annually, and providing water conservation literature to new customer when they apply for service.

1. Consumption Awareness Program

For customers to reduce their water use long term, they first need to understand how they use water. Houston developed the Consumption Awareness Program to provide customers with access to real-time usage information across multiple communication platforms. The Consumption Awareness Program helps customers see how they're using water, identify ways to save water (and money), and find leaks and stop water waste faster.

The Consumption Awareness Program communicates with customers through the Internet, email, text, and phone. Customers can access account billing information (such as current balance, due date, last payment received, and projected next bill) as well as usage information (such as current usage, meter read date, what they paid for their usage,

and neighborhood average usage). Hourly and daily usage data is available for 60 days, and monthly usage data is available for up to 18 months. In addition, customers can set alerts, including leak alerts, and choose how to be alerted: by email, text, or phone call.

More information on the Consumption Awareness Program and a description of the dashboard is attached at Appendix B.

2. Water Education and Outreach Team

Houston maintains a dedicated staff for water education and outreach programs within the Water Conservation Division of Houston Water. This education and outreach team is responsible for staffing the WaterWorks Education Center, presenting the annual WaterWorks Festival, and providing Project WET educator training and school and community outreach programs that support Houston's conservation goals.

3. WaterWorks Education Center

Opened in 2010, the WaterWorks Education Center hosts numerous school field trips and tours. Located near the shores of Lake Houston at the City of Houston's Northeast Water Purification Plant, the WaterWorks Education Center is a one-of-a-kind water destination whose mission is to promote water education, conservation and stewardship. The City of Houston's WaterWorks Education Center welcomes all educational groups to explore the wonders of water during a field trip designed to immerse them with a sense of wonderment and discovery about one of earth's most precious resources. The Center offers visitors an innovative environment for creative learning with interactive exhibits, demonstrations and tour. Visitors are not only able to tour the Education Center but also learn from experts, and education activities and take home flyers, activity books and general information regarding water conservation and education. The WaterWorks Education Center has had over 31,000 visitors from 2014 to 2018 and over 55,000 visitors since its inception.

Early Childhood	Elementary School	Middle School	High School	Higher Education	Adults	Total
2,302	19,600	1,399	1,688	365	5,689	**31,043**

Table 6. WaterWorks Education Center Attendance from 2014 to 2018.

More information is available on Houston's website at: https://www.publicworks.houstontx.gov/waterworks.

4. Annual WaterWorks Festival

For 25 years, Houston has hosted this annual event to showcase Houston's water conservation message. The event is geared toward school-aged children and young adults and has more than 50 sponsors and exhibitors reflecting a variety of careers in the public and private water and wastewater sectors. The event educates the community regarding Houston's high-quality drinking water, drinking water supply and wastewater treatment systems, water conservation and efficiency initiatives. Over the last five years, 9,247 elementary students and 1,217 adults attended this event.

5. Project WET

The WaterWorks Education Center is a host institution for Project WET (Water Education for Teachers), a curriculum taught in 8-hour workshops to help educators teach all grade levels on diverse water-related topics with objective, experiential, science-based water education. Project WET is a world leader in developing interdisciplinary, hands-on activities that integrate knowledge of water resources and issues into K-12 classrooms using simulations and critical thinking skills at the core of Next Generation Science Standards.

As a host institution, the WaterWorks Education Center has certified over 300 educators on Project WET.

6. School and Community Outreach Program

Houston Water's education and outreach team gives presentations to Houston area students throughout the school year. The team is available to present to all grade levels, in individual classrooms or assemblies, and tailors its message to include age appropriate activities and content. Educators can request a topic and activity from a wide variety of content from the Project WET curriculum. Students can participate in hands-on activities that support the *Texas Essential Knowledge and Skills* standards. On average, the education and outreach team gives presentations at more than 25 schools and school-related events each year.

7. Community Rain Barrel Sale

For several years now, Houston has offered a biannual rain barrel sale with rain barrels at a discounted rate. The goal of this program is to provide area residents (especially gardeners) with efficient tools to collect rainwater throughout the year, particularly during heavy rainfall events, so that they can conserve water (and money) during drier times. More than 2,000 rain barrels have been sold to date through the Green Building Resource Center (GBRC). Houston Water and GBRC are planning to join efforts to further expand and promote this event to make it more successful every year. For more information please visit http://greenhoustontx.gov/compostbinssale.html.

8. Native Plants Propagation Program

The Houston Parks and Recreation Department's (HPARD) Natural Resources Management Program began its native plant propagation program in May 2016 to produce locally-collected native grasses and wildflowers for installation into Houston's prairie restoration sites. Seeds are hand-collected from remnant and restored prairies around the Houston area and propagated by staff and volunteers in Houston's greenhouse. After one to two years of growing, the plants are installed in one of HPARD's five prairie restoration sites throughout the city during community volunteer events. The

program currently produces over 10,000 one-gallon pots per year of over 90 different species that are available for use in habitat restoration projects.

9. Native Plants Annual Sale

Since 2019, HPARD has partnered with the Houston Arboretum and Houston Audubon to offer an annual Spring native plant sale. Most plants available at nurseries are not native to the Houston area. The annual plant sale gives citizens the opportunity to purchase native plants that are adapted to the region's climate, which means they can tolerate Houston's weather extremes that can range from prolonged periods of heavy rainfall to dry spells. In addition, many of these plants attract birds, butterflies, bees, and other pollinators. The sale includes native grasses, shrubs, trees, and flowers (including milkweed). For more information visit https://houstonarboretum.org/events/.

10. Gulf Coast Water Conservation Symposium

Houston is an active participant in the annual Gulf Coast Water Conservation Symposium, a one-day regional event that presents information to water utilities and customers about water conservation legislation, planning, education, smart conservation investment, implementation strategies, and industry best practices. Houston Water employees serve on the Symposium's Steering Committee, help plan the Symposium, and help raise awareness of the event.

In 2019, the Symposium was titled "Water Efficient Future: Planning, Tools & Best Practices" and focused on new and improved tools currently available to water utilities to meet their water conservation goals. The Symposium also featured case studies that highlighted planning, redevelopment, and water conservation implementation efforts from cities large to small.

J. Water Rate Structure

The water conservation plan must include a water rate structure which is not "promotional," i.e., a rate structure which is cost-based and which does not encourage the excessive use of water. Include a copy of the rate structure.

Houston's water rate structure is cost-based and is not promotional. Water rates are based on an inclining block structure, and wastewater rates are based on total water use. Houston's objectives in rate structure design are that rates be based on the costs to serve, provide adequate and stable revenues, be equitable across customer classes and volume users, and be easy to implement and administer. Houston performs a cost-of-service study every ten years, and a study is underway in 2019.

A copy of Houston's current rates is attached at Appendix C. Current rates for 2019 and beyond are published on Houston's website at https://cohweb.houstontx.gov/FIN_FeeSchedule/default.aspx.

K. Implementation and Enforcement

The water conservation plan must include a means of implementation and enforcement, evidenced by adoption of the plan: (1) a copy of the ordinance, resolution, or tariff indicating official adoption of the water conservation plan by the utility; and (2) a description of the authority by which the utility will implement and enforce the conservation plan.

A copy of the Houston City Council ordinance adopting this Plan is attached at Appendix D.

Houston implements and enforces the regulatory aspects of this Plan through existing codes and ordinances. These include:

- Building and Plumbing Codes: www.houstonpermittingcenter.org/code-enforcement

- Chapter 47 – Water and Sewers, of the City of Houston Code of Ordinances: http://www.houstontx.gov/codes/index.html

- LEED Certification of City of Houston owned facilities (Resolution No. 2004-15): http://www.usgbc.org/Docs/Archive/General/Docs1981.pdf

L. Contract Customer Requirements

If the utility will utilize a project financed by the TWDB to furnish water or wastewater services to another supplying entity that in turn will furnish the water or wastewater services to the ultimate consumer, the requirements for the water conservation plan also pertain to these supplier entities. To comply with this requirement the utility shall: (1) submit its own water conservation plan; (2) submit the other entity's (or entities') water conservation plan; (3) require, by contract, that the other entity (or entities) adopt a water conservation plan that conforms to the TWDB's requirement and submit it to the TWDB. If the requirement is to be included in an existing water or wastewater service contract, it may be included, at the earliest of the renewal or substantial amendment of the contract, or by other appropriate measures.

All water supply contracts entered into after this Plan was first adopted require the customer (and its customers, if the entity is a wholesale provider) to adopt and implement a water conservation plan meeting the requirements of state law and that is at least as stringent as this Plan.

M. Region H Notification

The water conservation plan must include documentation that the regional water planning group for the service area of the utility has been notified of the utility's water conservation plan.

A copy of Houston's letter notifying Region H of Houston's 2019 Water Conservation Plan is attached at Appendix E.

N. Drought Contingency Plan

The water conservation plan must include a copy of the utility's drought conservation plan that meets the requirements of the TWDB's Water Conservation Plan Guidance Checklist, Form TWDB-1968 (Rev. 1/08/2013).

A copy of Houston's 2019 Drought Contingency Plan is attached at Appendix F.

O. Adoption

The water conservation plan must be formally adopted by the governing body of the entity. For a municipal water system, adoption would be by the city council as an ordinance, or a resolution by the utility's board of directors.

A copy of the Houston City Council ordinance adopting this Plan is attached at Appendix D.

P. Reporting Requirement

The water conservation plan must identify who will be responsible for preparing the annual report on the utility profile form TWDB-1965. Loan/grant recipients must maintain an approved water conservation program in effect until all financial obligations to the state have been discharged and shall report annually to the executive administrator of the TWDB on the progress in implementing each of the minimum requirements in its water conservation plan and the status of any of its customers' water conservation plan required by contract. The content and format for the annual reporting is included in the forms: Water Conservation Plan Annual Report; TWDB-1966 for retail water suppliers; TWDB-1967 for non-water suppliers; and TWDB-1969 for wholesale water suppliers.

Houston Water, through its Water Conservation Manager, will be responsible for preparing the Water Conservation Plan Annual Report, TWDB-1966 for retail water suppliers and TWDB 1969 for wholesale water supplies.

Appendix A

Water Utility Profile

A copy of the 2019 Utility Profile and Water Conservation Requirements for Municipal Water Use by Retail and Wholesale Public Water Suppliers, required by Texas Commission on Environmental Quality, is enclosed.

563Texas Commission on Environmental Quality
Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4691, FAX (512) 239-2214

Utility Profile and Water Conservation Plan Requirements for Wholesale Public Water Suppliers

This form is provided to assist wholesale public water suppliers in water conservation plan development. If you need assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Water users can find best management practices (BMPs) at the Texas Water Development Board's website http://www.twdb.texas.gov/conservation/BMPs/index.asp. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

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Telephone Number:	(832) 395-2198 Fax: (832) 395-2704
Water Right No.(s):	4261, 4277, 4963, 4965, 5807, 5808, 5827, 2925, 5762, 5826
Regional Water Planning Group:	Region H Water Planning Group
Water Conservation Division Manager:	Paula Paciorek Phone: (832) 395-2198
Form Completed By:	Christopher Varela; Mitchell Ramon, P.E.
Title:	Management Analyst IV; Water Planning Engineer
Signature:	Date: 06/7/2019

A water conservation plan for wholesale public water suppliers must include the following requirements (as detailed in 30 TAC Section 288.5). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

Utility Profile

I. WHOLESALE SERVICE AREA POPULATION AND CUSTOMER DATA

A. *Population and Service Area Data:*

1. Service area size (in square miles):

   (Please attach a copy of service-area map)

   1,536

2. Current population of service area:

   2,529,487

3. Current population served for:

   a. Water 2,529,487

   b. Wastewater 115,270

4. Population served for previous five years:

Year	*Population*
2014	2,316,478
2015	2,359,080
2016	2,401,681
2017	2,444,283
2018	2,486,885

5. Projected population for service area in the following decades:

Year	*Population*
2020	2,572,088
2030	2,742,677
2040	2,875,206
2050	2,993,806
2060	3,101,898

6. List source or method for the calculation of current and projected population size.

   - Historical and future population by TWDB State Water Planning Data
   - Future water demand projections developed by TWDB, HGSD and City of Houston Water Planning
   - Service area of 635 square miles includes retail service area
   - Historical and projected populations are based on TWDB Region H planning data

B. *Customer Data*

List (or attach) the names of all wholesale customers, amount of annual contract, and amount of annual use for each customer for the previous year: **See attachment**

Wholesale Customer	*Contracted Amount (Acre-feet)*	*Previous Year Amount of Water Delivered (acre-feet)*
	See attachment	

II. WATER USE DATA FOR SERVICE AREA

A. *Water Delivery*

Indicate if the water provided under wholesale contracts is treated or raw water and the annual amounts for the previous five years (in acre feet):

Year	*Treated Water*	*Raw Water*
2014	167,606	237,666
2015	167,218	249,975
2016	177,033	245,272
2017	164,333	239,421
2018	167,014	249,259
Totals	843,204	1,221,592

B. *Water Accounting Data*

1. Total amount of water diverted at the point of diversion(s) for the previous five years (in acre-feet) for all water uses:

Year	2014	2015	2016	2017	2018
Month					
January	31,207	31,532	32,029	33,120	33,254
February	27,387	29,497	31,515	29,987	29,823
March	31,263	31,093	34,750	33,592	33,405
April	33,634	35,738	33,724	34,782	34,304
May	35,576	33,011	35,862	37,678	39,030
June	35,483	34,476	34,908	24,270	38,836
July	38,485	40,007	40,469	38,752	40,388

August	38,887	42,476	38,603	34,510	40,156
September	34,563	38,050	36,523	34,508	33,425
October	34,520	38,110	37,011	36,293	32,521
November	32,676	30,731	34,235	33,881	30,711
December	31,593	32,471	32,675	32,382	30,419
Totals	405,275	417,192	422,301	403,754	416,273

2. Wholesale population served and total amount of water diverted for **municipal use** for the previous five years (in acre-feet):

Year	*Total Population Served*	*Total Annual Water Diverted for Municipal Use*
2014	2,316,478	167,606.23
2015	2,359,080	167,217.83
2016	2,401,681	177,033.06
2017	2,444,283	164,333.17
2018	2,486,885	167,014.10

C. Projected Water Demands

If applicable, project and attach water supply demands for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirements from such growth.

III. WATER SUPPLY SYSTEM DATA

A. Projected Water Demands

List all current water supply sources and the amounts authorized (in acre feet) with each.

Water Type	*Source*	*Amount Authorized*
Surface Water	Lake Livingston, Southern Canal, Lake Houston, Lake Conroe, San Jacinto River, multiple bayous	1,657,029
Groundwater	Evangeline Aquifer and Chicot Aquifer	167,467
Other		

B. Treatment and Distribution System (if providing treated water)

1. Design daily capacity of system (MGD):

   905

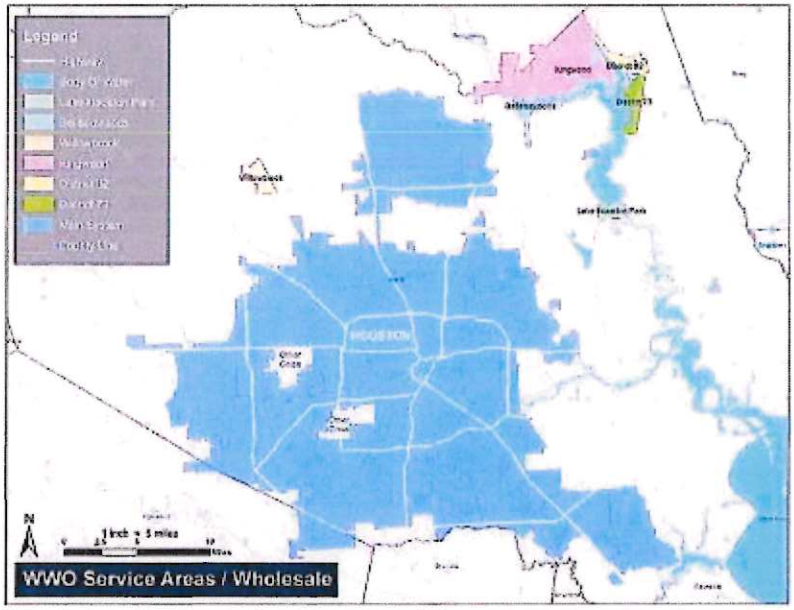
2. Storage capacity (MGD):

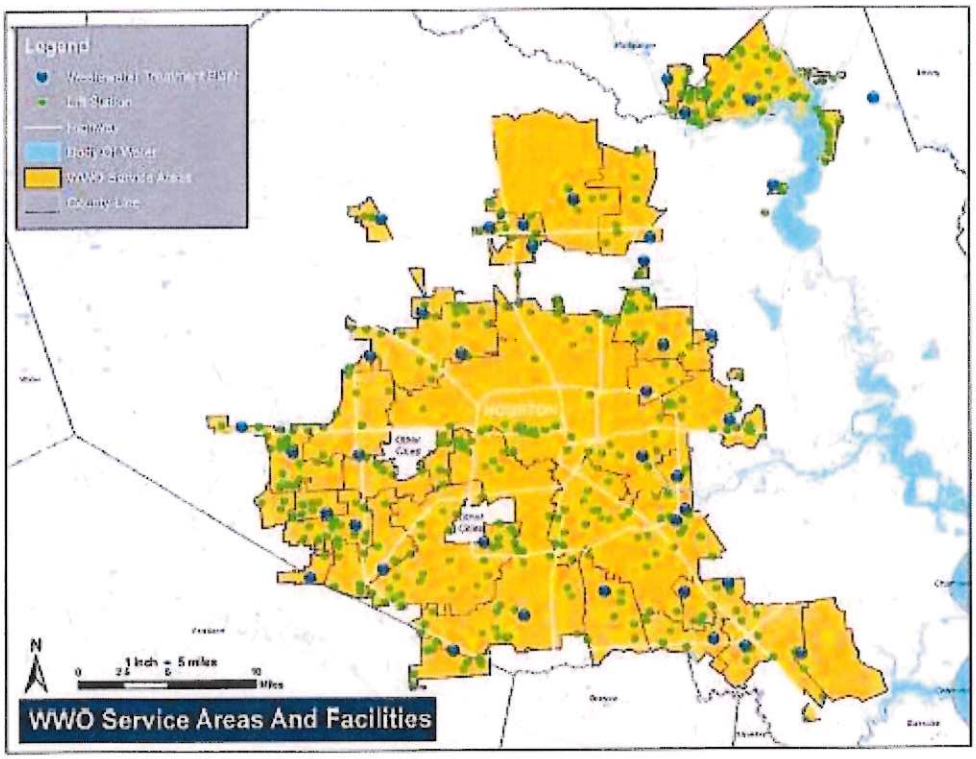
   a. Elevated 19.8

   b. Ground 192.9

3. Please attach a description of the water system. Include the number of treatment plants, wells, and storage tanks

Number of Facilities	Surface Water Treatment Plants	Groundwater Treatment Plants	Groundwater Wells	Ground Storage Tanks	Elevated Storage Tanks	Hydro Storage Tanks
TX1010013 - Main System	3	41	103	69	18	6
TX1011902 - WILLOW CHASE	-	4	5	7	1	5
TX1010348 - UD 5 - KINGWOOD	-	6	16	11	5	2
TX1011585 - DISTRICT 73	-	2	2	3	1	2
TX1011593 - DISTRICT 82 - Plantation Hills	-	1	2	2	-	1
TX1011594 - BELLEAU WOODS	-	2	1	2	-	2
TX1011587 - LAKE HOUSTON PARKS	-	1	1	-	-	2
Total	3	57	130	94	25	20





In areas with City of Houston wastewater service, wastewater is treated in one of 39 wastewater treatment plants using activated sludge processes. Treated effluent is disinfected with chlorination or UV light prior to being discharged to a water body - typically a bayou or ditch. The following facilities are owned and operated by the City of Houston (*operated by Inframark).

69th Street WQ0010495090 Houston Ship Channel/Buffalo Bayou Tidal in 1007

Almeda Sims WQ0010495003 Sims Bayou Above Tidal in 1007

Beltway WQ0010495111 HCFCD ditch D124-00-00 in 1007

*Cedar Bayou WQ0010495112 HCFCD ditch Q136-00-00 in 0902

Chocolate Bayou WQ0010495009 Sims Bayou Above Tidal in 1007

Clinton Park WQ0010495010 Houston Ship Channel/Buffalo Bayou Tidal in 1007

Easthaven WQ0010495065 Berry Creek in 1007

*Forest Cove WQ0010495149 unnamed ditch, thence to HCFCD ditch G-103-45-00 in 1002

FWSD 23 WQ0010495016 Halls Bayou in 1006

Greenridge WQ0010495110 unnamed drainage ditch, thence to HCFCD ditch C147-00-00 in 1007

Homestead WQ0010495023 Hunting Bayou in 1007

Imperial Valley WQ0010495101 HCFCD ditch P144-01-00 in 1016

Intercontinental Airport WQ0010495078 HCFCD ditch P140-00-00 in 1016

Keegans Bayou WQ0010495119 Keegans Bayou in 1017

*Kingwood Central WQ0010495146 unnamed ditch, thence to Ben's Branch in 1002

*Kingwood West WQ0010495142 unnamed ditch, thence to Evans Gully in 1004

Metro Central WQ0010495152 HCFCD ditch, thence to Horsepen Bayou in 1113

MUD 203 WQ0010495133 Greens Bayou Above Tidal in 1016

Northbelt WQ0010495122 HCFCD ditch P133-00-00 in 1016

Northeast WQ0010495077 Greens Bayou Tidal in 1006

Northgate WQ0010495100 Greens Bayou Above Tidal in 1016

Northwest WQ0010495076 Cole Creek in 1017

Park Ten WQ0010495135 HCFCD W487-0C-NW-01 in 1014

Sagemont WQ0010495075 Turkey Creek in 1102

Sims North WQ0010495002/TX0062201 Sims Bayou in 1007

Sims South WQ0010495002/TX0105058 Sims Bayou in 1007

Southeast WQ0010495079 HCFCD ditch A120-00-00 in 1102

Southwest WQ0010495037 Brays Bayou Above Tidal in 1007

Tidwell Timbers WQ0010495148 Greens Bayou Above Tidal in 1016

Turkey Creek WQ0010495109 Buffalo Bayou Above Tidal in 1014

Upper Brays WQ0010495116 Brays Bayou in 1007

WCID 47 WQ0010495050 Berry Bayou in 1007

WCID 76 WQ0010495150 Greens Bayou Above Tidal in 1016

WCID 111 WQ0010495095 Keegans Bayou in 1007

West District WQ0010495030 Buffalo Bayou Above Tidal in 1014

*West Lake Houston WQ0014650001 South Fork Harmon Bayou in 1002

Westway WQ0010495139 Brickhouse Gully in 1017

White Oak WQ0010495099 Whiteoak Bayou Above Tidal in 1017

Willowbrook WQ0010495126 HCFCD ditch P150-00-00

B. *Wastewater Data for Service Area (if applicable)*

1. Percent of water service area served by wastewater system: 5 %
2. Monthly volume treated for previous five years (in 1,000 gallons):

Year	2018	2017	2016	2015	2014
Month					
January	7787510	9130120	7594049	8130587	5717516
February	8587740	7351400	6298742	5729080	6047860
March	7688310	8556310	7808680	8870061	7199564
April	7076790	6454200	8734200	8909160	6081570
May	7185676	6897500	9233629	10853503	8237196
June	7376010	7583700	9779635	8806440	6663240
July	7965698	6850070	7299474	7247304	6946232
August	6818047	10351210	10018890	7127520	6888758
September	8874510	7747500	8112000	6918240	7614720
October	8696895	7048160	6663450	8221039	6723404
November	7678470	6581700	6264600	7599585	6512130
December	9298140	7484640	7110160	7825899	7830972
Totals	95033796	92036510	94917509	96238418	82463162

Water Conservation Plan

In addition to the description of the wholesaler's service area (profile from above), a water conservation plan for a wholesale public water supplier must include, at a minimum, additional information as required by Title 30, Texas Administrative Code, Chapter 288.5. Note: If the water conservation plan does not provide information for each requirement an explanation must be included as to why the requirement is not applicable.

A. *Specific, Quantified 5 & 10-Year Targets*

The water conservation plan must include specific, quantified 5-year and 10-year targets for water savings including, where appropriate, target goals for municipal use in gallons per capita per day for the wholesaler's service area, maximum acceptable water loss, and the basis for the development of these goals. Note that the goals established by a wholesale water supplier under this subparagraph are not enforceable. These goals must be updated during the 5-year review and submittal.

B. *Measuring and Accounting for Diversions*

The water conservation plan must include a description as to which practice(s) and/or device(s) will be utilized to measure and account for the amount of water diverted from the source(s) of supply.

C. *Record Management Program*

The water conservation plan must include a monitoring and record management program for determining water deliveries, sales, and losses.

D. *Metering/Leak-Detection and Repair Program*

The water conservation plan must include a program of metering and leak detection and repair for the wholesaler's water storage, delivery, and distribution system.

E. *Contract Requirements for Successive Customer Conservation*

The water conservation plan must include a requirement in every water supply contract entered into or renewed after official adoption of the water conservation plan, and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements of Title 30 TAC Chapter 288. If the customer intends to resell the water, then the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.

F. *Reservoir Systems Operations Plan*

The water conservation plan must include a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin. The reservoir systems operations plan shall include optimization of water supplies as one of the significant goals of the plan.

G. *Enforcement Procedure and Official Adoption*

The water conservation plan must include a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan.

H. Coordination with the Regional Water Planning Group(s)

The water conservation plan must include documentation of coordination with the regional water planning groups for the service area of the wholesale water supplier in order to ensure consistency with the appropriate approved regional water plans.

Example statement to be included within the water conservation plan:

The service area of the _____ (name of water supplier) is located within the _____ (name of regional water planning area or areas) and _____ (name of water supplier) has provided a copy of this water conservation plan to the _____ (name of regional water planning group or groups).

I. Plan Review and Update

A wholesale water supplier shall review and update its water conservation plan, as appropriate based on an assessment of previous 5-year and 10-year targets and any other new or updated information. A wholesale water supplier shall review and update the next revision of its water conservation plan no later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

V. ADDITIONAL CONSERVATION STRATEGIES

Any combination of the following strategies shall be selected by the water wholesaler, in addition to the minimum requirements of 30 TAC §288.5(1), if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

1. Conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

2. A program to assist agricultural customers in the development of conservation, pollution prevention and abatement plans;

3. A program for reuse and/or recycling of wastewater and/or graywater;

4. Any other water conservation practice, method, or technique which the wholesaler shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

VI. WATER CONSERVATION PLANS SUBMITTED WITH A WATER RIGHT APPLICATION FOR NEW OR ADDITIONAL STATE WATER

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan;

2. evaluates conservation as an alternative to the proposed appropriation; and

3. evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

Additionally, it shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.

Type Name	Company Name	Contract Maximum	Contract Maximum Type	2018 Consumption
PDS - Anheuser Busch	Anheuser-Busch	78.19	MGM	1,020,004,000
PDS - GRP Taking City Water	City of Spring Valley	N/A		76,166,000
PDS - GRP Taking City Water	HCMUD 148	7	MGM	104,945,000
PDS - GRP Taking City Water	HCMUD 182	0.85	MGM	9,923,000
PDS - GRP Taking City Water	HCMUD 278	8		118,823,000
PDS - GRP Taking City Water	HCMUD 344 (Summerwood)	10		119,476,000
PDS - GRP Taking City Water	HCMUD 49	8.305		115,369,000
PDS - GRP Taking City Water	Pine Village Public Utility Dist	2.5		44,294,000
PDS - Non-Potable Water	Air Liquide America Corp.	23	MGD	6,521,079,000
PDS - Non-Potable Water	Air Products and Chemicals Inc	0.6	MGD	50,465,000
PDS - Non-Potable Water	American Acryl, L.P.	2	MGD	228,293,000
PDS - Non-Potable Water	Arco Chemical - CH 11	0.088	MGD	32,280,000
PDS - Non-Potable Water	Baker Petrolite Corp.	0.345	MGD	128,430,000
PDS - Non-Potable Water	Battleground Oil Specialty Terminal Company (BOSTCO)	0.009	MGD	28,635,000
PDS - Non-Potable Water	Battleground Water Company (INEOS)	27	MGD	6,210,275,000
PDS - Non-Potable Water	Bayer Material Science(Baychem - Mobay)	4	MGD	1,858,823,000
PDS - Non-Potable Water	Baytown Area Water Authority	20	MGD	5,230,382,000
PDS - Non-Potable Water	Bealine Service Co.	N/A		921,000
PDS - Non-Potable Water	Braskem American, Inc. (Aristech)	2	MGD	269,088,000
PDS - Non-Potable Water	Calpine Contruction Finance Co.	6	MGD	1,703,087,000
PDS - Non-Potable Water	Carpenter Chemical	0.0033	MGD	2,339,000
PDS - Non-Potable Water	Chem-Sep	0.003	MGD	1,231,000
PDS - Non-Potable Water	Chevron Phillips Chemical Co,	22.2	MGD	5,160,029,000
PDS - Non-Potable Water	City of Deer Park	7	MGD	1,556,202,000

PDS - Non-Potable Water	Clean Harbors Environmental	3.6	MGD	568,150,000
PDS - Non-Potable Water	D.B. Western - Texas - December 2010	0.72	MGD	141,548,000
PDS - Non-Potable Water	Deer Park Energy Center	8.5	MGD	2,068,844,000
PDS - Non-Potable Water	Dianal America			-
PDS - Non-Potable Water	Dixie Chemical	0.017	MGD	220,000
PDS - Non-Potable Water	Enterprise Prod. Operating (former Diamond Shamrock)	6.736	MGD	6,615,000
PDS - Non-Potable Water	Enterprise Products	7.9	MGD	1,169,027,000
PDS - Non-Potable Water	Enterprise Products - Valero Refining -Texas, LP (EOTT)	1.88	MGD	236,285,000
PDS - Non-Potable Water	Equilon Enterprises, LLC (Oiltanking)	1.6	MGD	6,355,000
PDS - Non-Potable Water	Equistar Chemicals (formerly Zeneca) CH 11	2.75	MGD	754,681,000
PDS - Non-Potable Water	Equistar Chemicals LP - CH 11 (Lyondell Chemical)	0.105	MGD	2,527,493,000
PDS - Non-Potable Water	Equistar Chemicals LP - CH 11 (Lyondell Chemical)	31.8	MGD	2,527,493,000
PDS - Non-Potable Water	Equistar Chemicals LP -CH 11 (1)	13	MGD	754,681,000
PDS - Non-Potable Water	Exxon Chemical Americas	4	MGD	1,256,452,000
PDS - Non-Potable Water	Exxon Pipeline	0.03	MGD	451,000
PDS - Non-Potable Water	Flint Hills Resources	4.3	MGD	1,177,495,000
PDS - Non-Potable Water	FMC Corporation	1	MGD	277,263,000
PDS - Non-Potable Water	G E O Specialty Chemicals (Hampshire)	0.373	MGD	84,579,000
PDS - Non-Potable Water	Gulf Coast Fractionators	2.022	MGD	672,370,000
PDS - Non-Potable Water	Gulf Coast Limestone	N/A		3,377,000
PDS - Non-Potable Water	Gulf Coast Waste Disposal Authority	0.24	MGD	44,375,000
PDS - Non-Potable Water	Haldor Topsoe	0.025	MGD	15,045,000
PDS - Non-Potable Water	Haltermann, LTD, Johann	0.25	MGD	88,320,000
PDS - Non-Potable Water	Harris County, Texas	0.1	MGD	260,000
PDS - Non-Potable Water	Hoescht Celanese	15.1	MGD	3,267,958,000
PDS - Non-Potable Water	Houston Fuel Oil Company	0.09	MGD	28,075,000

PDS - Non-Potable Water	Houston Refining, LP (Lyondell -Citgo) CH 11	20.9	MGD	5,092,004,000
PDS - Non-Potable Water	Industrial Terminals, L.P.	0.07	MGD	4,843,000
PDS - Non-Potable Water	IP INVESTMENTS, LLC	0.025	MGD	5,757,000
PDS - Non-Potable Water	Jindal United States Corp.	1.71	MGD	20,049,000
PDS - Non-Potable Water	Kaneka	N/A		5,000
PDS - Non-Potable Water	Kinder Morgan Liquid Terminal	0.26	MGD	4,797,000
PDS - Non-Potable Water	Lone Star NGL Mont Belvieu LP - L Dreyfuss (TX Eastern)(Conoco)	8.64	MGD	1,218,303,000
PDS - Non-Potable Water	Lone Star NGL Mont Belvieu LP - Louis Dreyfuss (TX Eastern)	0.358	MGD	21,822,000
PDS - Non-Potable Water	Lubrizol Corporation	1.46	MGD	576,283,000
PDS - Non-Potable Water	McKenzie Tank Lines	N/A		7,000
PDS - Non-Potable Water	Noltex, L.L.C.	0.72	MGD	2,053,000
PDS - Non-Potable Water	NRG Texas LP (Texas Genco, Inc)	1	MGD	133,920,000
PDS - Non-Potable Water	Occidental Chemical	12.6	MGD	2,788,717,000
PDS - Non-Potable Water	Odfjell Terminals (Houston) (Baytank)	0.2	MGD	40,000
PDS - Non-Potable Water	Oiltanking Houston Inc.	0.01	MGD	60,000
PDS - Non-Potable Water	ONEOK Hydrocarbon L.P.	10	MGD	490,419,000
PDS - Non-Potable Water	Industries (Eisai)	0.288	MGD	1,264,000
PDS - Non-Potable Water	Pasadena Refining System, Inc	26.91	MGD	2,517,000
PDS - Non-Potable Water	Pasadena Refining System, Inc (Crown)	5.2	MGD	1,165,397,000
PDS - Non-Potable Water	Petrounited	0.015	MGD	27,783,000
PDS - Non-Potable Water	Pol-Tex International	0.05	MGD	6,902,000
PDS - Non-Potable Water	Poly-One Corporation	0.055	MGD	22,592,000
PDS - Non-Potable Water	Port of Houston Authority	0.033	MGD	30,683,000
PDS - Non-Potable Water	Praxair, Inc.	0.64	MGD	198,085,000
PDS - Non-Potable Water	Reagans USA, Inc. (Calgon)	0.04	MGD	20,000
PDS - Non-Potable Water	Rentech Nitrogen Pasadena, formerly Agrifos Fertilizer LP	2.2	MGD	675,020,000
PDS - Non-Potable Water	Rohm & Haas	0.304	MGD	93,168,000
PDS - Non-Potable Water	Shell Oil	32.5	MGD	6,846,092,000
PDS - Non-Potable Water	SSI Chusei USA	0.08	MGD	59,822,000

PDS - Non-Potable Water	Stolthaven Houston, Inc.	0.01	MGD	3,140,000
PDS - Non-Potable Water	Styrolution America LLC (name changed)	4.4	MGD	1,048,418,000
PDS - Non-Potable Water	Targa Midstream Services LP (Dynergy)	6	MGD	603,520,000
PDS - Non-Potable Water	Texas Brine Company	2	MGD	734,131,000
PDS - Non-Potable Water	Texas Molecular LLC	0.33	MGD	15,497,000
PDS - Non-Potable Water	Total Petrochemicals USA (FINA)	2	MGD	676,566,000
PDS - Non-Potable Water	TPC Group, LLC (formerly Texas Petrochemical)	10.6	MGD	2,333,572,000
PDS - Non-Potable Water	Trimac - DSI Transports, Inc. / Trimac	0.05	MGD	4,097,000
PDS - Non-Potable Water	Valero Refining Company-Texas	5.6	MGD	1,368,130,000
PDS - Non-Potable Water	Vulcan Construction Materials	0.0411	MGD	6,600,000
PDS - Non-Potable Water	W. Canning, Inc			36,000
PDS - Non-Potable Water	Zeon Chemical	0.025	MGD	245,000
PDS - Treated Water	Baybrook MUD 1	80	MGD	91,853,000
PDS - Treated Water	Central Harris County Regional Water Authority	2.12	MGD	600,767,000
PDS - Treated Water	Chimney Hill MUD	13.86	MGM	156,155,000
PDS - Treated Water	City of Bellaire	42	MGM	638,435,000
PDS - Treated Water	City of Bunker Hill Village	14.75	MGM	226,527,000
PDS - Treated Water	City of Friendswood	80	MGD	1,877,479,000
PDS - Treated Water	City of Galena Park	25.9	MGM	280,220,000
PDS - Treated Water	City of Hilshire Vlg.	3.138	MGM	45,723,000
PDS - Treated Water	City of Humble	0.7	MGD	332,648,000
PDS - Treated Water	City of Jacinto City	25	MGM	262,140,000
PDS - Treated Water	City of Jersey Village	22.5	MGM	458,787,000
PDS - Treated Water	City of Pasadena - East Plant	180	MGM	5,959,222,000
PDS - Treated Water	City of Pearland	40	MGM	1,012,282,000
PDS - Treated Water	City of South Houston	80	MGD	564,648,000
PDS - Treated Water	City of Southside Place	7.2	MGM	72,368,000
PDS - Treated Water	City of Webster	5	MGD	570,392,000
PDS - Treated Water	City of West University	32.75	MGM	465,374,000
PDS - Treated Water	Clear Brook City MUD	60.4	MGM	645,742,000
PDS - Treated Water	Clear Lake City	348.7	MGM	3,383,024,000

PDS - Treated Water	Emerald Forest Utility District -NHCRWA	0.3	MGM	14,056,000
PDS - Treated Water	Greenwood Utility District	24	MGM	331,590,000
PDS - Treated Water	Gulf Coast Water Authority (Galveston)	499.1	MGM	5,249,555,000
PDS - Treated Water	HCMUD 148 (NEW CUSTOMER)	7	MGM	104,945,000
PDS - Treated Water	HCMUD 158	15	MGM	185,004,000
PDS - Treated Water	HCMUD 220	1.45	MGM	11,683,000
PDS - Treated Water	HCMUD 23 (Consortium)	4.538	MGM	66,592,000
PDS - Treated Water	HCMUD 261 & Winfern Forest UD	8.038	MGM	94,615,000
PDS - Treated Water	HCMUD 372	10	MGM	189,938,000
PDS - Treated Water	HCMUD 402	1	MGM	81,671,000
PDS - Treated Water	HCMUD 406	1.2	MGM	127,948,000
PDS - Treated Water	HCMUD 420	3.6	MGM	40,009,000
PDS - Treated Water	HCMUD 421	2.625	MGM	87,857,000
PDS - Treated Water	HCMUD 461	0.399	MGM	8,346,000
PDS - Treated Water	HCMUD 5	10	MGM	52,250,000
PDS - Treated Water	HCMUD 55	1.3	MGD	459,090,000
PDS - Treated Water	HCMUD 6 (Consortium 5)	5.646	MGM	67,619,000
PDS - Treated Water	HCMUD 8	11.25	MGM	143,790,000
PDS - Treated Water	HCMUD 96	12	MGM	198,569,000
PDS - Treated Water	HCWCID 89	13.029	MGM	231,845,000
PDS - Treated Water	HCWCID 96 (Treated Water)	18.347	MGM	344,648,000
PDS - Treated Water	HCWCID - Fondren Road	7.47	MGM	91,345,000
PDS - Treated Water	La Porte Water Authority	130.1	MGM	1,483,335,000
PDS - Treated Water	Memorial Villages Water Authority	60	MGM	891,837,000
PDS - Treated Water	Montgomery County MUD 98	2	MGM	71,630,000
PDS - Treated Water	North Channel Water Auth	206	MGM	2,533,848,000
PDS - Treated Water	North Fort Bend County Water Authority	19.5	MGD	5,120,883,000
PDS - Treated Water	North Harris County Regional Water Authority	0.3	MGM	8,874,345,000
PDS - Treated Water	Regional Water Adv. Comm.	23	MGM	241,241,000

PDS - Treated Water	Rolling Fork Public Utility District	5.264	MGM	47,335,000
PDS - Treated Water	Sunbelt Fresh Water Supply District	8.166	MGM	135,632,000
PDS - Treated Water	Sunbelt Fresh Water Supply District -Northline	8.5	MGM	28,773,000
PDS - Treated Water	Sunbelt Fresh Water Supply District -Oakwilde	16.166	MGM	44,301,000
PDS - Treated Water	West Harris County Regional Water Authority	18.25	MGD	7,398,995,000
PDS - Treated Water	WHCMUD 16	0.21	MGM	2,179,000

Texas Commission on Environmental Quality
Water Availability Division
MC-160, P.O. Box 13087 Austin, Texas 78711-3087
Telephone (512) 239-4691, FAX (512) 239-2214

Utility Profile and Water Conservation Plan Requirements for Municipal Water Use by Retail Public Water Suppliers

This form is provided to assist retail public water suppliers in water conservation plan development. If you need assistance in completing this form or in developing your plan, please contact the Conservation staff of the Resource Protection Team in the Water Availability Division at (512) 239-4691.

Water users can find best management practices (BMPs) at the Texas Water Development Board's website http://www.twdb.texas.gov/conservation/BMPs/index.asp. The practices are broken out into sectors such as Agriculture, Commercial and Institutional, Industrial, Municipal and Wholesale. BMPs are voluntary measures that water users use to develop the required components of Title 30, Texas Administrative Code, Chapter 288. BMPs can also be implemented in addition to the rule requirements to achieve water conservation goals.

Contact Information

Name of Water Supplier:	City of Houston
Address:	611 Walker St, Houston, TX 77002
Telephone Number:	(832) 395-2198 Fax: (832) 395-2704
Water Right No.(s):	4261, 4277, 4963, 4965, 5807, 5808, 5827, 2925, 5762, 5826
Regional Water Planning Group:	Region H Water Planning Group
Water Conservation Division Manager:	Paula Paciorek Phone: (832) 395-2198
Form Completed by:	Trace Neighbors; Mitchell Ramon, P.E.
Title:	Customer Representative; Water Planning Engineer
Signature:	Date:06/10/2019

A water conservation plan for municipal use by retail public water suppliers must include the following requirements (as detailed in 30 TAC Section 288.2). If the plan does not provide information for each requirement, you must include in the plan an explanation of why the requirement is not applicable.

Utility Profile

I. POPULATION AND CUSTOMER DATA

A. *Population and Service Area Data*

1. Attach a copy of your service-area map and, if applicable, a copy of your Certificate of Convenience and Necessity (CCN).

   CCIN #: 9914

2. Service area size (in square miles): 635

   (Please attach a copy of service-area map): Attached

3. Current population of service area: 2,328,419 **(Source: City of Houston's Planning and Development, available at** https://www.houstontx.gov/planning/Demographics/)

4. Current population served for: **(City of Houston's Planning and Development, available at** https://www.houstontx.gov/planning/Demographics/)

   a. Water 2,328,419

   b. Wastewater 2,328,419

5. Population served for previous five years: **(Source: City of Houston Planning and Development https://www.houstontx.gov/planning/Demographics/)**

Year	*Population*
2014	2,233,310
2015	2,284,887
2016	2,319,603
2017	2,319,603
2018	2,328,419

6. Projected population for service area in the following decades: **(Source: Texas Water Development Board)**

Year	*Population*
2020	2,276,784
2030	2,485,827
2040	2,686,721
2050	2,886,800
2060	3,090,486

7. List source or method for the calculation of current and projected population size.

   1) **Historical and projected population by City of Houston's Planning and Development**

   2) **Future water demand projections developed by TWDB, HGSD and City of Houston Water Planning**

   3) **Service Area of 635 sq. mi includes retail service area.**

B. Customer Data

Senate Bill 181 requires that uniform consistent methodologies for calculating water use and conservation be developed and available to retail water providers and certain other water use sectors as a guide for preparation of water use reports, water conservation plans, and reports on water conservation efforts. A water system must provide the most detailed level of customer and water use data available to it, however, any new billing system purchased must be capable of reporting data for each of the sectors listed below. More guidance can be found at: http://www.twdb.texas.gov/conservation/doc/SB181Guidance.pdf

1. Quantified 5-year and 10-year goals for water savings:

	Historic 5-year Average	*Baseline*	*5-year goal for year*	*10-year goal for year*
Total GPCD	129	129	127	125
Residential GPCD	62	62	61	60
Water Loss GPCD	24	24	23	22
Water Loss Percentage	19	19	18	17

Notes:
Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365
Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365
Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

2. Current number of active connections. Check whether multi-family service is counted as ☒ Residential or ☐ Commercial?

Treated Water Users	*Metered*	*Non-Metered*	*Totals*
Residential	430,987	-	430,987
Single-Family	415,228	-	415,228
Multi-Family	15,759	-	15,759
Commercial	47,701	-	47,701
Industrial/Mining	187	-	187
Institutional	-	-	-
Agriculture	-	-	-
Other/Wholesale	-	-	-

3. List the number of new connections per year for most recent three years.

*Note: An error in the billing system in 2016 caused some discrepancies in the categorization of commercial, institutional and industrial accounts. Institutional accounts were omitted in this report due to data inconsistency.

** Houston Water currently has 274 wholesale contract agreements. This number of contracts have remained the same since 2014.

Year	2016* (from 2015 to 2016)	2017 (from 2016 to 2017)	2018 (from 2017 to 2018)
Treated Water Users			
Residential	36,087	-8,530	4,347
Single-Family	33,097	-8,312	4,162
Multi-Family	2,990	-218	185
Commercial	-42,784	2,921	664
Industrial/Mining	-42	172	15
Institutional	0	0	0
Agriculture	0	0	0
Other/Wholesale**	0	0	0

4. List of annual water use for the five highest volume customers (last 5 years' average):

Customer	*Use (1,000 gal/year)*	*Treated or Raw Water*
City of Houston Wastewater - 1890 Kress St	681,920	Treated
Confidential - 1	453,310	Treated
Confidential - 2	325,386	Treated
University of Houston	275,734	Treated
United States Gypsum Co.	214,939	Treated

II. WATER USE DATA FOR SERVICE AREA

A. *Water Accounting Data*

1. List the amount of water use for the previous five years (in 1,000 gallons).

Indicate whether this is ☐ diverted or ☒ treated water.

Year	2014	2015	2016*	2017	2018
Month					
January	6,384,248	6,152,514	6,154,061	6,787,637	7,181,762
February	6,405,740	6,176,083	6,406,536	7,137,690	6,858,263
March	5,864,544	5,836,838	5,777,958	6,065,019	6,403,776
April	5,695,772	5,580,955	6,197,963	6,088,985	6,768,964
May	6,176,084	6,205,972	6,830,401	6,975,357	6,927,428
June	6,957,966	6,067,018	5,623,181	7,033,853	6,723,555
July	7,050,874	6,414,634	6,835,696	7,728,853	9,713,421
August	7,403,373	7,479,539	6,821,868	7,728,454	7,839,242
September	7,475,643	8,273,679	7,315,045	7,800,676	8,086,622
October	7,435,885	8,049,942	8,386,883	7,066,378	8,697,410
November	7,019,672	7,336,608	7,872,134	9,960,272	6,760,347
December	6,708,126	6,551,241	7,033,253	7,583,578	7,361,018
Totals	**80,577,963**	**80,124,978**	**81,254,979**	**87,956,752**	**89,321,808**

2. Describe how the above figures were determined (e.g. from a master meter located at the point of a diversion from the source or located at a point where raw water enters the treatment plant, or from water sales).

   Water use data for service area obtained from water sales.

   *Note: A change in the billing system in 2016 caused some discrepancies in the data.

3. Amount of water (in 1,000 gallons) delivered/sold as recorded by the following account types for the past five years.

*Treated water only.

Year	2014	2015	2016	2017	2018
Account Types					
Residential	49,669,922	49,632,952	50,578,985	52,398,140	55,749,599
Single-Family	24,257,032	24,077,579	25,043,534	25,504,557	25,981,331
Multi-Family	25,412,890	25,555,373	25,535,451	26,893,583	29,768,268
Commercial	30,676,271	30,477,345	31,292,662	28,815,864	33,325,846
Industrial	648,414	633,486	636,655	616,445	644,828
Institutional	-	-	-	-	-
Agriculture	-	-	-	-	-
Other/Wholesale^	54,660,821	54,642,127	57,806,391	57,688,560	53,725,548

4. List the previous records for water loss for the past five years (the difference between water diverted or treated and water delivered or sold).

Year	*Amount (gallons)*	*Percent %*
2014	21,504,587,897	20.00
2015	21,573,036,492	20.00
2016	18,992,885,144	18.34
2017	20,542,352,727	18.80
2018	19,567,399,391	16.87

B. Projected Water Demands

1. If applicable, attach or cite projected water supply demands from the applicable Regional Water Planning Group for the next ten years using information such as population trends, historical water use, and economic growth in the service area over the next ten years and any additional water supply requirements from such growth.

Retail Projected Demand											
Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Population	2,230,387	2,248,414	2,266,441	2,284,467	2,302,494	2,320,520	2,338,547	2,356,574	2,374,600	2,392,627	2,410,653
Demand (in 1,000 gallons)	126,808,300	128,275,600	129,783,050	130,925,500	132,071,600	133,250,550	134,495,200	135,750,800	137,002,750	138,254,700	139,510,300
Demand (MGD)	347	351	356	359	362	365	368	372	375	379	382

Source: Projected retail population and demand determined by TWDB, HGAC and City of Houston Water Planning.

III. WATER SUPPLY SYSTEM DATA

A. *Water Supply Sources*

1. List all current water supply sources and the amounts authorized (in acre feet) with each.

Water Type	*Source*	*Amount Authorized*
Surface Water	Lake Livingston, Southern Canal, Lake Houston, Lake Conroe, San Jacinto River, Multiple Bayous	1,657,029
Groundwater	Evangeline Aquifer and Chicot Aquifer	167,467
Other	-	-

B. *Treatment and Distribution System (if providing treated water)*

1. Design daily capacity of system (MGD): 905 **(Source: Drinking Water Operations 2018 Inventory)**

2. Storage capacity (MGD): **(Source: Drinking Water Operations 2018 Inventory (elev. & hydro))**

   a. Elevated 19.8

   b. Ground 192.9

3. If surface water, do you recycle filter backwash to the head of the plant?

   ☒ Yes ☐ No If yes, approximate amount (MGD): 12.26

IV. WASTEWATER SYSTEM DATA

A. *Wastewater System Data (if applicable)*

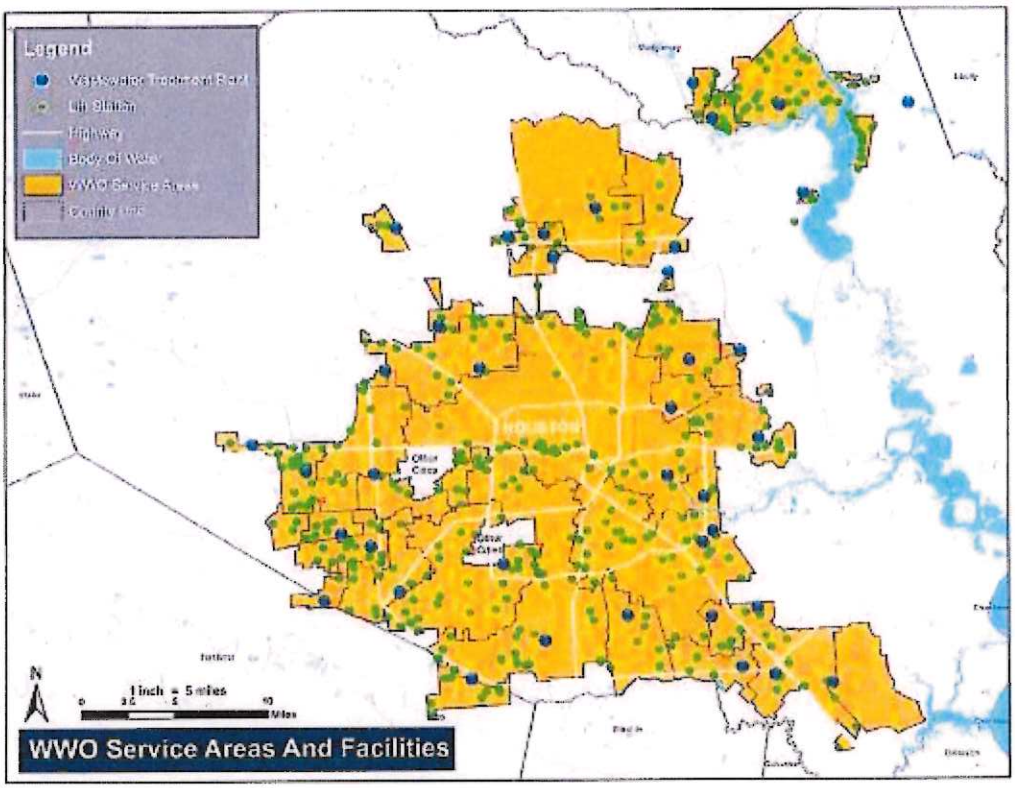
1. Design capacity of wastewater treatment plant(s) (MGD): 563.713

2. Treated effluent is used for ☒ on-site irrigation, ☐ off-site irrigation, for ☒ plant wash-down, and/or for ☐ chlorination/dechlorination.

   If yes, approximate amount (in gallons per month): 1,764,210,000

3. Briefly describe the wastewater system(s) of the area serviced by the water utility. Describe how treated wastewater is disposed. Where applicable, identify treatment plant(s) with the TCEQ name and number, the operator, owner, and the receiving stream if wastewater is discharged.

Wastewater Operations Service Area and Facilities Map



In areas with City of Houston wastewater service, wastewater is treated in one of 39 wastewater treatment plants using activated sludge processes. Treated effluent is disinfected with chlorination or UV light prior to being discharged to a water body - typically a bayou or ditch. The following facilities are owned and operated by the City of Houston (*operated by Inframark).

69th Street WQ0010495090 Houston Ship Channel/Buffalo Bayou Tidal in 1007

Almeda Sims WQ0010495003 Sims Bayou Above Tidal in 1007

Beltway WQ0010495111 HCFCD ditch D124-00-00 in 1007

*Cedar Bayou WQ0010495112 HCFCD ditch Q136-00-00 in 0902

Chocolate Bayou WQ0010495009 Sims Bayou Above Tidal in 1007

Clinton Park WQ0010495010 Houston Ship Channel/Buffalo Bayou Tidal in 1007

Easthaven WQ0010495065 Berry Creek in 1007

*Forest Cove WQ0010495149 unnamed ditch, thence to HCFCD ditch G-103-45-00 in 1002

FWSD 23 WQ0010495016 Halls Bayou in 1006

Greenridge WQ0010495110 unnamed drainage ditch, thence to HCFCD ditch C147-00-00 in 1007

Homestead WQ0010495023 Hunting Bayou in 1007

Imperial Valley WQ0010495101 HCFCD ditch P144-01-00 in 1016

Intercontinental Airport WQ0010495078 HCFCD ditch P140-00-00 in 1016

Keegans Bayou WQ0010495119 Keegans Bayou in 1017

*Kingwood Central WQ0010495146 unnamed ditch, thence to Ben's Branch in 1002

*Kingwood West WQ0010495142 unnamed ditch, thence to Evans Gully in 1004

Metro Central WQ0010495152 HCFCD ditch, thence to Horsepen Bayou in 1113

MUD 203 WQ0010495133 Greens Bayou Above Tidal in 1016

Northbelt WQ0010495122 HCFCD ditch P133-00-00 in 1016

Northeast WQ0010495077 Greens Bayou Tidal in 1006

Northgate WQ0010495100 Greens Bayou Above Tidal in 1016

Northwest WQ0010495076 Cole Creek in 1017

Park Ten WQ0010495135 HCFCD W487-0C-NW-01 in 1014

Sagemont WQ0010495075 Turkey Creek in 1102

Sims North WQ0010495002/TX0062201 Sims Bayou in 1007

Sims South WQ0010495002/TX0105058 Sims Bayou in 1007

Southeast WQ0010495079 HCFCD ditch A120-00-00 in 1102

Southwest WQ0010495037 Brays Bayou Above Tidal in 1007

Tidwell Timbers WQ0010495148 Greens Bayou Above Tidal in 1016

Turkey Creek WQ0010495109 Buffalo Bayou Above Tidal in 1014

Upper Brays WQ0010495116 Brays Bayou in 1007

WCID 47 WQ0010495050 Berry Bayou in 1007

WCID 76 WQ0010495150 Greens Bayou Above Tidal in 1016

WCID 111 WQ0010495095 Keegans Bayou in 1007

West District WQ0010495030 Buffalo Bayou Above Tidal in 1014

*West Lake Houston WQ0014650001 South Fork Harmon Bayou in 1002

Westway WQ0010495139 Brickhouse Gully in 1017

White Oak WQ0010495099 Whiteoak Bayou Above Tidal in 1017

B. Wastewater Data for Service Area (if applicable)

1. Percent of water service area served by wastewater system: 100%

2. Monthly volume treated for previous five years (in 1,000 gallons):

Year	2014	2015	2016	2017	2018
Month					
January	5,717,516	8,130,587	7,594,049	9,130,120	7,787,510
February	6,047,860	5,729,080	6,298,742	7,351,400	8,587,740
March	7,199,564	8,870,061	7,808,680	8,556,310	7,688,310
April	6,081,570	8,909,160	8,734,200	6,454,200	7,076,790
May	8,237,196	10,853,503	9,233,629	6,897,500	7,185,676
June	6,663,240	8,806,440	9,779,635	7,583,700	7,376,010
July	6,946,232	7,247,304	7,299,474	6,850,070	7,965,698
August	6,888,758	7,127,520	10,018,890	10,351,210	6,818,047
September	7,614,720	6,918,240	8,112,000	7,747,500	8,874,510
October	6,723,404	8,221,039	6,663,450	7,048,160	8,696,895
November	6,512,130	7,599,585	6,264,600	6,581,700	7,678,470
December	7,830,972	7,825,899	7,110,160	7,484,640	9,298,140
Totals	**82,463,162**	**96,238,418**	**94,917,509**	**92,036,510**	**95,033,796**

Water Conservation Plan

In addition to the utility profile, please attach the following as required by Title 30, Texas Administrative Code, §288.2. Note: If the water conservation plan does not provide information for each requirement, an explanation must be included as to why the requirement is not applicable.

A. *Record Management System*

The water conservation plan must include a record management system which allows for the classification of water sales and uses in to the most detailed level of water use data currently available to it, including if possible, the following sectors: residential (single and multi-family), commercial.

B. *Specific, Quantified 5 & 10-Year Targets*

The water conservation plan must include specific, quantified five-year and ten-year targets for water savings to include goals for water loss programs and goals for municipal use in gallons per capita per day. Note that the goals established by a public water supplier under this subparagraph are not enforceable. These goals must be updated during the five-year review and submittal.

C. *Measuring and Accounting for Diversions*

The water conservation plan must include a statement about the water suppliers metering device(s), within an accuracy of plus or minus 5.0% in order to measure and account for the amount of water diverted from the source of supply.

D. *Universal Metering*

The water conservation plan must include and a program for universal metering of both customer and public uses of water, for meter testing and repair, and for periodic meter replacement.

E. *Measures to Determine and Control Water Loss*

The water conservation plan must include measures to determine and control water loss (for example, periodic visual inspections along distribution lines; annual or monthly audit of the water system to determine illegal connections; abandoned services; etc.).

F. *Continuing Public Education & Information*

The water conservation plan must include a description of the program of continuing public education and information regarding water conservation by the water supplier.

G. *Non-Promotional Water Rate Structure*

The water supplier must have a water rate structure which is not "promotional," i.e., a rate structure which is cost-based and which does not encourage the excessive use of water. This rate structure must be listed in the water conservation plan.

H. *Reservoir Systems Operations Plan*

The water conservation plan must include a reservoir systems operations plan, if applicable, providing for the coordinated operation of reservoirs owned by the applicant within a common watershed or river basin in order to optimize available water supplies.

I. Enforcement Procedure and Plan Adoption

The water conservation plan must include a means for implementation and enforcement, which shall be evidenced by a copy of the ordinance, rule, resolution, or tariff, indicating official adoption of the water conservation plan by the water supplier; and a description of the authority by which the water supplier will implement and enforce the conservation plan.

J. Coordination with the Regional Water Planning Group(s)

The water conservation plan must include documentation of coordination with the regional water planning groups for the service area of the public water supplier in order to ensure consistency with the appropriate approved regional water plans.

K. Plan Review and Update

A public water supplier for municipal use shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The public water supplier for municipal use shall review and update the next revision of its water conservation plan not later than May 1, 2009, and every five years after that date to coincide with the regional water planning group. The revised plan must also include an implementation report.

VI. ADDITIONAL REQUIREMENTS FOR LARGE SUPPLIERS

Required of suppliers serving population of 5,000 or more or a projected population of 5,000 or more within the next ten years:

A. Leak Detection and Repair

The plan must include a description of the program of leak detection, repair, and water loss accounting for the water transmission, delivery, and distribution system in order to control unaccounted for uses of water.

B. Contract Requirements

A requirement in every wholesale water supply contract entered into or renewed after official adoption of the plan (by either ordinance, resolution, or tariff), and including any contract extension, that each successive wholesale customer develop and implement a water conservation plan or water conservation measures using the applicable elements in this chapter. If the customer intends to resell the water, the contract between the initial supplier and customer must provide that the contract for the resale of the water must have water conservation requirements so that each successive customer in the resale of the water will be required to implement water conservation measures in accordance with the provisions of this chapter.

VII. ADDITIONAL CONSERVATION STRATEGIES

Any combination of the following strategies shall be selected by the water supplier, in addition to the minimum requirements of 30 TAC §288.2(1), if they are necessary in order to achieve the stated water conservation goals of the plan. The commission may require by commission order that any of the following strategies be implemented by the water supplier if the commission determines that the strategies are necessary in order for the conservation plan to be achieved:

1. Conservation-oriented water rates and water rate structures such as uniform or increasing block rate schedules, and/or seasonal rates, but not flat rate or decreasing block rates;

2. Adoption of ordinances, plumbing codes, and/or rules requiring water conserving plumbing fixtures to be installed in new structures and existing structures undergoing substantial modification or addition;

3. A program for the replacement or retrofit of water-conserving plumbing fixtures in existing structures;

4. A program for reuse and/or recycling of wastewater and/or graywater;

5. A program for pressure control and/or reduction in the distribution system and/or for customer connections;

6. A program and/or ordinance(s) for landscape water management;

7. A method for monitoring the effectiveness and efficiency of the water conservation plan; and

8. Any other water conservation practice, method, or technique which the water supplier shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

VIII. WATER CONSERVATION PLANS SUBMITTED WITH A WATER RIGHT APPLICATION FOR NEW OR ADDITIONAL STATE WATER

Water Conservation Plans submitted with a water right application for New or Additional State Water must include data and information which:

1. support the applicant's proposed use of water with consideration of the water conservation goals of the water conservation plan;

2. evaluates conservation as an alternative to the proposed appropriation; and

3. evaluates any other feasible alternative to new water development including, but not limited to, waste prevention, recycling and reuse, water transfer and marketing, regionalization, and optimum water management practices and procedures.

Additionally, it shall be the burden of proof of the applicant to demonstrate that no feasible alternative to the proposed appropriation exists and that the requested amount of appropriation is necessary and reasonable for the proposed use.

Appendix B

Consumption Awareness Program Dashboard Features

Features of Usage Calculator:

- USAGE SUMMARY - provides you with a dashboard of information about your water usage including reading status, actual usage, project usage for next bill, and usage comparison information.

- MONTHLY USAGE HISTORY - provides you with a chart and table of monthly usage and billed history for up to the past 18 months. This information is useful for reviewing your usage and charge trends across seasons as well as from month to month.

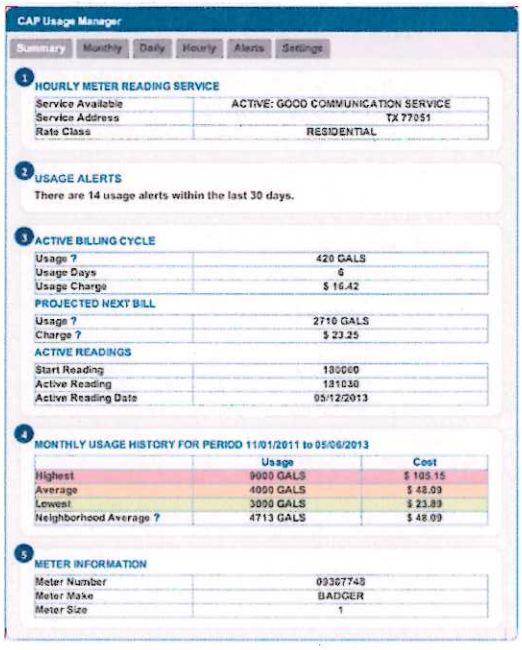
- DAILY USAGE HISTORY - provides you with up to 90 days of daily usage history useful for comparing usage by day of week or from week to week. The daily usage is also a good tool for quickly identifying when unexpected high usage began.

- HOURLY USAGE HISTORY - provides you with hourly usage for any selected day up to the past 90 days. This tool is helpful for associating usage to specific events in your home or business (i.e., irrigation use, bathroom use, appliance use, etc.).

- USAGE ALERT HISTORY - provides you with a history of usage alert notifications sent for your account.

- USAGE ALERT SETTINGS - provides you with options for custom daily, monthly, and leak threshold alert settings that can be delivered to your mobile phone as a text or app notification, email, or phone call.

USAGE SUMMARY



1. **HOURLY METER READING SERVICE** provides you with the current status of the hourly meter reading service, the service address of the account, and the rate class assigned to the account.
   See **Hourly Reading Communication** Status for more information on your status, possible reasons, and possible corrective actions.
2. **USAGE ALERTS** provides you with a summary count of the number of usage alert notifications that have been triggered for the account in the past 30 days.
3. **ACTIVE BILLING CYCLE USAGE** reports your actual water usage since your last billed reading (i.e., current billing cycle or usage for your next bill). The information includes the usage in gallons, the days of usage, and the approximate charge for this usage.

   Note that the usage includes unbilled usage from the previous cycle and actual usage for the usage days as of the last meter reading. You can view the last meter reading date and time by logging on to your account.

   PROJECTED NEXT BILL estimates what your bill could be if the current pattern of usage continues. The projection is based on actual usage plus an estimated daily usage over the remaining days in the billing month.

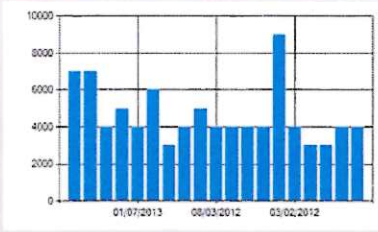
   If you have an unexpected high projection, you can take action to avoid this charge if you are early in the cycle. If not, you can still take action to avoid these charges on your future bills.
4. **USAGE HISTORY FOR PERIOD** provides you with a basis for comparing your usage to your past usage history to determine if it is normal or unusually high. Your average usage over the past 18-months shows you what's normal, the highest usage could reflect a month when you had a leak, and the lowest usage could reflect a month when you were away from home.
   Neighborhood Average provides you with a basis for comparing your usage to homes in your surrounding area. The average is based on active single family residential customers with meter sizes of 1-inch or smaller. The number of homes included in the average is reported below the comparison table.
5. **METER INFORMATION** provides you with useful information that can help when investigating possible meter reading issues.

MONTHLY USAGE HISTORY

CAP Usage Manager

Summary | Monthly | Daily | Hourly | Alerts | Settings

Monthly Consumption



Reading Date	Reading	Consumption (gallons)	Charges
05/06/2013	180000	7000	$ 84.64
04/04/2013	173000	7000	$ 78.00
03/06/2013	166000	4000	$ 47.68
02/06/2013	162000	5000	$ 56.27
01/07/2013	157000	4000	$ 47.68
12/06/2012	153000	6000	$ 66.97
11/05/2012	147000	3000	$ 25.47
10/04/2012	144000	4000	$ 47.68
09/05/2012	140000	5000	$ 56.27
08/03/2012	135000	4000	$ 47.68
07/05/2012	131000	4000	$ 47.68
06/05/2012	127000	4000	$ 47.72
05/03/2012	123000	4000	$ 52.32
04/03/2012	119000	9000	$ 92.19
03/02/2012	110000	4000	$ 44.09
02/03/2012	106000	3000	$ 23.68
01/05/2012	103000	3000	$ 23.68
12/03/2011	100000	4000	$ 44.09
11/01/2011	96000	4000	$ 44.09

1. **MONTHLY USAGE HISTOGRAM CHART** provides you with graphical representation of the distribution usage by month.

2. **READING DATE** provides you with meter reading date that was used for the corresponding billing period.
You can click the column heading title to sort the table. Click twice to reverse the order.

3. **READING** provides you with the meter reading (in thousands of gallons) recorded on the specified reading date. Your usage is charged in thousands of gallons and any usage in excess of a factor of one thousand will be charged in the next billing cycle.

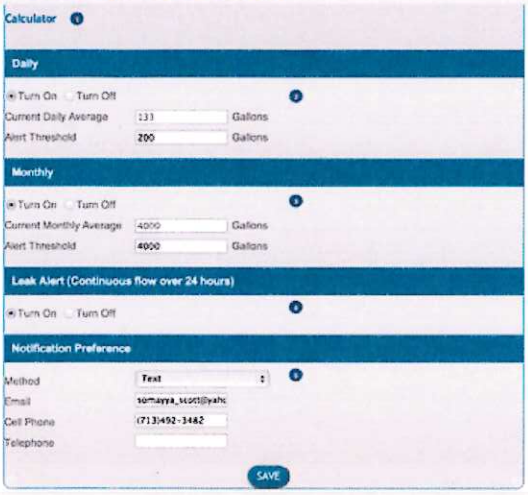
   You can click the column heading title to sort the table. Click twice to reverse the order.

4. **CONSUMPTION** provides you the billed usage for the corresponding billing month.

   You can click the column heading title to sort the table. Click twice to reverse the order.

5. **CHARGES** provides you with the amount that was actually billed for corresponding billing month.
You can click the column heading title to sort the table. Click twice to reverse the order.

USAGE ALERT SETTINGS



CALCULATOR provides you with a tool that can be used to determine what your daily and monthly water usage should be based on key factors impacting your household such as: the total number of people in your household, bathroom usage, number of loads typically washed or the frequency for yard watering, etc.

This tool will effectively estimate the expected daily, monthly and annual water consumption for your household and compare it to the average of similar households across the City of Houston.

DAILY USAGE THRESHOLD SETTING provides you with tool that monitors your daily water usage.

The Daily Alert feature includes the average daily consumption based on a rolling 12-month period. You can set the alert threshold by entering the consumption amount that you believe is unusually high for a given day. Review your daily consumption history to help determine an effective high consumption threshold.

1. Click the 'Turn On' option to turn on the notification.
2. Review the daily average for the past 12 months.
3. Select a usage alert threshold based on your desired notification needs.
    - Set the threshold at twice your average if you want to be notified of unusually high usage or...
    - Set the threshold to 10 if you have a vacant property where you want to be notified of any use.

MONTHLY USAGE THRESHOLD SETTING provides you with a tool that can be used to notify you when your projected month charge exceeds your monthly budget threshold.

The Monthly Alert feature includes the average monthly consumption based on a rolling 12-month period. You can set the alert threshold by entering the consumption amount that you believe is unusually high for a given month. Review your daily consumption history to help determine an effective high consumption threshold.

LEAK ALERT SETTING provides you with a tool that detects a continuous flow of water through your meter for 1 to 7 days (depending on meter type). This scenario typically indicates a leak for residential single family accounts but may not be an effective indicator for multi-family or commercial accounts.

Notification Preference allows you to choose a preferred method of notification (i.e., text, mobile app, email, or phone).

Appendix C

2018 WATER & SEWER RATES

A copy of the 2018 water and wastewater rates is enclosed. Current rates will be posted on Houston's website at: www.houstonwater.org

2018 WATER & SEWER RATES Effective date April 1, 2018

The basic service charge for both water and sewer is affected by the water meter size. For all classes that include sewer, the water consumption is used to determine the appropriate sewer consumption charge.

Single-Family Residential – TU 01, 02, & 03:

The basic charge for each meter size is listed below. For simplicity, this table adds volume and base charges together for 1,000 to 6,000 gallons. From 7,000 to 12,000 gallons the rate is $5.32 per 1,000 gallons, regardless of meter size. Starting at 13,000 gallons, the rate is $8.76 per 1,000 gallons.

Water Rates				
	5/8 or ¾" meters	1 inch meter	1.5 inch meter	2 or 3 inch meter
Basic charge, per meter size	$ 5.39	$ 6.67	$ 10.11	$11.91
The numbers below this line include both Base and Volume charges				
1,000 gallons	$5.54	$6.82	$10.26	$12.05
2,000 gallons	$12.62	$13.90	$17.34	$19.13
3,000 gallons	$13.04	$14.32	$17.76	$19.56
4,000 gallons	$24.67	$25.95	$29.39	$31.18
5,000 gallons	$29.57	$30.85	$34.29	$36.08
6,000 gallons	$34.46	$35.74	$39.18	$40.98
7,000 to 12,000 gallons	The total charge for 6,000 gallons + $5.32 per 1,000 gallons			
Over 12,000 gallons	The total charge for 12,000 gallons + $8.76 per 1,000 gallons			

Sewer Rates					
	5/8 or ¾" meters	1 inch meter	1.5 inch meter	2 inch meter	3 inch meter
Basic charge, per meter size	$11.45	$12.04	$13.94	$14.53	$26.02
The numbers below this line include both Base and Volume charges					
1,000 gallons	$11.64	$12.23	$14.13	$14.72	$26.21
2,000 gallons	$12.02	$12.61	$14.51	$15.10	$26.59
3,000 gallons	$12.32	$12.91	$14.81	$15.40	$26.89
4,000 gallons	$28.25	$28.84	$30.74	$31.33	$42.82
5,000 gallons	$34.01	$34.60	$36.50	$37.09	$48.58
6,000 gallons	$42.39	$42.98	$44.88	$45.47	$56.96
Over 6,000 gallons	The total charge for 6,000 gallons + $8.38 per 1,000 gallons				

EXAMPLES OF RESIDENTIAL BILLINGS:

		Water Charges	Sewer Charges
1,000 gallons, 5/8" meter	**$ 5.54 Water**		
	$ 11.64 Sewer		
Total/Month	**$ 17.18**		
7,000 gallons, 5/8" meter	**$ 39.78 Water**	$34.46 for 6,000 gallons plus 1,000 gallons at $5.32 = $39.78	$42.39 for 6,000 gallons plus 1,000 gallons at $8.38 = $50.77
	$ 50.77 Sewer		
Total/Month	**$ 90.55**		
14,000 gallons, 5/8" meter	**$ 83.90 Water**	$34.46 for 6,000 gallons plus 6,000 gallons at $5.32 plus 2,000 gallons at $8.76 = $83.90	$42.39 for 6,000 gallons plus 8,000 gallons at $8.38 = $109.43
	$109.43 Sewer		
Total/Month	**$193.33**		

Multi-Family –TU 14-19:

- 14 (duplex – 2 units)
- 15 (tri-plex – 3 units)
- 16 (quad-plex – 4 units)
- 17 (master-metered townhomes – any number of units)
- 18 (apartments — 5+ units)
- 19 (trailer parks)

Consumption is no longer included with the basic charge. The volume charges are applied to all usage.

Rate	Meter size (inches)	Basic Water Charge	Basic Sewer Charge
Basic Charge (0 consumption)	5/8	$5.60	$9.85
	¾	$5.77	$9.85
	1	$6.94	$10.34
	1.5	$10.51	$12.00
	2	$12.37	$12.49
	3	$32.74	$22.38
	4	$44.62	$25.35
	6	$76.47	$36.22
	8	$199.68	$87.97
	10	$199.68	$106.92
Volume Charge	All	+ $4.31 per 1,000 gallons	+ $6.26 per 1,000 gallons

Commercial – TU 21-60:

Consumption is no longer included with the basic charge. The volume charges are applied to all usage.

Rate	Meter Size (Inches)	Basic Water Charge	Basic Sewer Charge
Basic Charge (0 consumption)	5/8	$ 5.60	$9.85
	3/4	$ 5.77	$9.85
	1	$ 6.94	$10.34
	1.5	$ 10.51	$12.00
	2	$ 12.37	$12.49
	3	$ 32.74	$22.38
	4	$ 44.62	$25.35
	6	$ 76.47	$36.22
	8	$ 199.68	$87.97
	10	$ 199.68	$106.92
Volume Charge	All	+ $4.42 per 1,000 gallons	+ $6.26 per 1,000 gallons

Industrial, No Surcharge – (WSC 6) TU 21-60, 61, 62:

Industrial rates include a monthly basic charge and volume charges for both water and sewer. No consumption is included with the basic charge for water or sewer. Some customers are billed for sewer only, based on readings from non-City of Houston water meters.

Rate	Meter Size (Inches)	Water Charge	Basic Sewer Charge
Basic Charge (0 consumption)	5/8	$ 5.60	$16.65
	3/4	$ 5.77	$16.65
	1	$ 6.94	$16.65
	1.5	$ 10.51	$16.65
	2	$ 12.37	$16.65
	3	$ 32.74	$22.18
	4	$ 44.62	$25.35
	6	$ 76.47	$36.22
	8	$ 199.68	$87.97
	10+	$ 199.68	$106.92
Volume Charge	All	+ $4.42 per 1,000 gallons	Up to 2,000 gallons at $3.85 per 1,000 gallons
			All over 2,000 gallons at $6.85 per 1,000 gallons.

Transient Meters – TU 71:

These accounts have rental fees, base charges and consumption charges.

Rate	Basic Water Charge		
	1"	2"	3"
Basic Charge/Rental Fee (0 consumption)	$18.68	$24.91	$31.13
Volume Charges	+$4.96 per 1,000 gallons		

Please refer questions to Krystal Jones at 832-395-6285, or fax to 713-371-1122.

Lawn/Outdoor Meters – TU 72:

No consumption is included with the basic charge. Volume charges are applied to all usage, but there are two rate tiers. The "defined quantity" marks the point where the tier changes, which is different for each meter size. Volumes up to the defined quantity are charged at the lower rate tier; volumes in excess of the defined quantity are charged at the higher rate tier.

Rate	Meter Size (Inches)	Basic Water Charge	Defined Quantity (First Tier of Volume Charges)
Basic Rate, per meter size, (plus first tier of volume charges)	5/8	$ 27.87	None – all consumption at 2nd tier
	3/4	$ 27.87	None – all consumption at 2nd tier
	1	$ 31.24	None – all consumption at 2nd tier
	1.5	$ 82.94	Up to 10,000: + $3.24 per 1,000 gallons
	2	$ 128.20	Up to 16,000: + $3.24 per 1,000 gallons
	3	$ 278.31	Up to 35,000: + $3.24 per 1,000 gallons
	4	$ 471.17	Up to 60,000: + $3.24 per 1,000 gallons
	6	$ 970.28	Up to 125,000: + $3.24 per 1,000 gallons
	8	$ 1403.13	Up to 180,000: + $3.24 per 1,000 gallons
	10	$ 1403.13	Up to 180,000: + $3.24 per 1,000 gallons
Volume Charges Second Tier (All meter sizes)	All consumption over defined quantity: + $7.46 per 1,000 gallons		

EXAMPLES OF LAWN BILLING:

5/8" Meter w/2,000 gallons		1" Meter w/12,000 gallons		3" meter w 60,000 gallons		6" meter w 60,000 gallons	
Basic:	$27.87	Basic:	$31.24	Basic:	$278.31	Basic:	$970.28
2nd tier: 2*7.26	$14.52	2nd tier: 12*7.46	$89.52	1st tier: 35*3.24	$113.40	1st tier: 60*3.24	$194.40
				2nd tier: 25*7.46	$186.50		
TOTAL:	$42.39	TOTAL:	$120.76	TOTAL:	$578.21	TOTAL:	$1164.68

Other Classes:

Industrial w/Surcharge – (WSC 9) TU 21-60, 61, 62, 63:

Industrial rates include a monthly basic charge and volume charges for both water and sewer. Some customers are billed for sewer only, based on readings from non-City of Houston water meters. These customers take their water from non-City of Houston sources and may choose to install a water meter of the type and standard approved by the department for the purpose of measuring the amount of water taken into such facilities. The water consumption indicated by such meter shall be the basis of determining the sewer charge. Rates are the same as if the water is from City of Houston source.

No consumption is included with the basic charge for water or sewer. While the basic charge for water and sewer is determined by meter size, the volume charge for sewer may vary based on the results of effluent testing.

Rate	Meter Size (Inches)	Water Charge	Basic Sewer Charge
Basic Charge (0 consumption)	5/8	$ 5.60	$16.65
	3/4	$ 5.77	$16.65
	1	$ 6.94	$16.65
	1.5	$ 10.51	$16.65
	2	$ 12.37	$16.65
	3	$ 32.74	$22.18
	4	$ 44.62	$25.35
	6	$ 76.47	$36.22
	8	$ 199.68	$87.97
	10+	$ 199.68	$106.92
Volume Charge	All	+ $4.61 per 1,000 gallons	See below

Additional surcharges for industrial sewer accounts are determined by application of a special formula to the results of effluent tests:

$$R = X + (BOD * 8.337 * Y/1000) + (SS * 8.337 * Z/1000)$$

Or R= Rate / TG as 47-122(b)(2)(b), whichever is greater

Where:

X = $4.61 per 1000 gallons, R= 8.337, Y= $0.7932 / lb., Z = $0.3131 / lb.

BOD = Five-day, 20 degrees Centigrade biochemical oxygen demand content of the waste delivered, in mg/l.

SS = Suspended solids content of the waste delivered, in mg/l.

Any questions on how the surcharges are calculated, or regarding prohibited discharges, should be referred to the Wastewater Operations Branch by calling (832) 395-5779 or by emailing [redacted]

Resale — TU 73:

These customers purchase water from the City of Houston for resale.

Rate	Meter Size (Inches)	Basic Water Charge
Basic Charge, per meter size (0 consumption)	5/8	$21.14
	3/4	$21.14
	1	$24.51
	1.5	$60.48
	2	$92.23
	3	$199.65
	4	$336.33
	6	$689.36
	8 and above	$998.62
Volume Charge (All meter sizes, all consumption)	$5.30 per 1,000 gallons	

Emergency Backup Service — TU 74:

The Contact Center at 713-371-1400 can answer routine questions about these accounts. To notify UCS of EBS use, fax the report to 832-395-5255.

Rate	Meter Size (Inches)	Basic Water Charge
Basic Charge, per meter size (0 consumption)	5/8,3/4	$ 8.03
	1	$ 11.42
	1.5	$ 16.85
	2	$ 22.43
	3	$ 46.98
	4	$ 74.57
	6	$ 144.05
	8	$ 213.39
	10+	$ 220.89
Volume Charge (All meter sizes, all consumption)	$8.20 per 1,000 gallons	

Un-Metered Fire Line Charge – TU 21-60, 75:

Un-metered fire lines are charged a flat fee every month, under the provisions of City of Houston Ordinance §47-64. These lines must be equipped with backflow prevention assemblies.

Corresponding size of the diameter of service line	Monthly Charge for Basic Service
5/8 inch	$14.66
3/4 inch	$14.66
1.0 inch	$14.66
1.5 inch	$58.39
2.0 inch	$86.11
3.0 inch	$86.11
4.0 inch	$86.11
6.0 inch	$95.92
8.0 inch	$163.73
10.0 inch	$220.88

Metered Fire Line Charge Only – TU 21-60:

These customers have their fire service isolated from the remainder of the water supply, and served through an independent meter. Normally they will have zero consumption, but a consumption charge applies if consumption occurs.

Rate	Meter Size (Inches)	Basic Water Charge
Basic Charge, per meter size (0 consumption)	5/8	$5.60
	¾	$5.77
	1	$6.94
	1.5	$10.51
	2	$12.37
	3	$32.74
	4	$44.62
	6	$76.47
	8 and above	$199.68
Volume Charge (All meter sizes, all consumption)	$4.42 per 1,000 gallons	

Un-Metered Sewer Only Customer — TU 81-82:

Special rates apply to sewer customers without City of Houston water or effluent meters. These are monthly rates, but will continue to be billed on a bi-monthly basis.

Class	Monthly Fee
Single Family Residential	$28.25
Duplex	$59.92
Multi-family (3+ units)	$35.04 per single family unit
Commercial	$66.13 per unit (defined in §47-1002)
Industrial	$66.10 per unit (defined in §47-1002)

Contract, Untreated and Reclaimed Water (TU 91):

Treated Water (TU 91) – contracted

	R1=	$3.064	/ TG	R2=	$3.739	/TG	N=	$0.760	/ TG	N=	$0.760	/TG
with airgap water: p * R1 + (p-m) * N1 without airgap = p* R2 + (p - m) * N2 (p: total water delivery in the month, M: minimum monthly water quantity in contract)												

Untreated Water (TU 91) – no contract

Consumption (/TG)	Per /TG
0 - 10,000	$1.7544
11,000-20,000	$1.5764
21,000-50,000	$1.4867
51,000-150,000	$1.3970
151,000 & up	$1.3521

Reclaimed/ Untreated Water (TU 91) – contracted

Surcharge (S)	Quantity Charge (/TG)
R= $0.7013 /TG	$0.7013

If (P – M) > 10% M, S = P * R * 5% (M; Max. Qty in contract)

If you have further questions on these accounts, contact Monique Pichon in Contract Water at (832) 395-6304 or Maria Carrillo 832-395-6220.

Contract Sewer:

These rates vary, based on whether the contracting district has participated in capital outlays.

If you have further questions on these accounts, contact Monique Pichon in Contract Water at (832) 395-3604 or Maria Carrillo 832-395-6220.

Agricultural and Rice Farmers (TU 91):

Agricultural - General

Quantity Charge (/MG)	**$143.11**

Agricultural - Rice

First Watering (/MG or /Acre)	**$143.11**
Additional Watering (/MG or /Acre)	**$26.03**

If you have further questions on these accounts, contact Monique Pichon in Contract Water at (832) 395-3604 or Maria Carrillo 832-395-6220.

Groundwater Reduction Plan (GRP) Participants:

GRP: R*P*Q where

- R is the base rate for contract treated water customer receiving water through airgap
- P is the percentage reduction for groundwater production required for GRP participant
- Q is the quantity of groundwater produced by the GRP participant during the month.

	R1=	$3.064	/ TG	**R2=**	$3.739	/TG	**N=**	$0.760	/ TG	**N=**	$0.760	/TG
with airgap water: p * R1 + (p-m) * N1 without airgap = p* R2 + (p - m) * N2 (p: total water delivery in the month, M: minimum monthly water quantity in contract)												

If you have further questions on these accounts, contact Veronica Osegueda at (832) 395-3080.

For additional reference, see chart on next page.

Fee Schedule

Name	Description	Statutory Authority	Amount	As Of
Water Rates	Untreated Water Sales No Contract Standard Rate for volume from 1,000 to 10,000 gallons, per 1,000 gallons	47-84(d)(1)	$1.7544	4/1/2018
Water Rates	Untreated Water Sales No Contract Standard Rate for volume from over 10,000 to 20,000 gallons, per 1,000 gallons (in addition to Volume Charge for the first increment of 10,000 gallons)	47-84(d)(2)	$1.5764	4/1/2018
Water Rates	Untreated Water Sales No Contract Standard Rate for volume from over 21,000 to 50,000 gallons, per 1,000 gallons (in addition to Volume Charges for the first increment of 10,000 gallons and for the second increment of 10,000gallons)	47-84(d)(3)	$1.4867	4/1/2018
Water Rates	Untreated Water Sales No Contract Standard Rate for volume from over 51,000 to 150,000 gallons, per 1,000 gallons (in addition to Volume Charges for the first increment of 10,000 gallons, the second increment of 10,000 gallons and the third increment of 30,000 gallons)	47-84(d)(4)	$1.3970	4/1/2018
Water Rates	Untreated Water Sales No Contract Standard Rate for volume over 151,000 gallons, per 1,000 gallons (in addition to Volume Charges for the first 10,000 gallons, the second increment of 10,000 gallons, the third increment of 30,000 gallons and the fourth increment of 100,000 gallons)	47-84(d)(5)	$1.3521	4/1/2018
Water Rates	Contract Untreated Water sold in excess of contract amount, per 1,000 gallons	47-85	$0.7013	4/1/2018
Water Rates	Contract Untreated Water for agricultural use, general agriculture, per 1,000 gallons	47-89(b)(1)	$143.11	4/1/2018
Water Rates	Contract Untreated Water for agricultural use, rice irrigation, rate for first watering, per acre of contracted land (if diverted through a meter on canal / conveyance system - per 1,000 gallons actually used)	47-89(b)(2)a	$143.11	4/1/2018
Water Rates	Contract Untreated Water for agricultural use, rice irrigation, Rate for each additional watering, per acre of contracted land (if diverted through a meter on canal / conveyance system - per 1,000 gallons actually used)	47-89(b)(2)b	$26.03	4/1/2018

Appendix D

Ordinance Adopting the 2019 Water Conservation Plan

A sample copy of the Houston City Council ordinance for the adoption of this Plan is enclosed in the next page. The sample copy will be replaced with the signed copy after the adoption of the Plan.

City of Houston, Texas Ordinance No. 2019-901

AN ORDINANCE AMENDING ORDINANCE NO. 2019-572; APPROVING THE 2019 WATER CONSERVATION PLAN FOR MUNICIPAL USES AND THE 2019 DROUGHT CONTINGENCY PLAN FOR THE CITY OF HOUSTON; PROVIDING FOR SEVERABILITY; MAKING VARIOUS FINDINGS AND PROVISIONS RELATING TO THE SUBJECT MATTER; AND DECLARING AN EMERGENCY.

* * * * *

WHEREAS, on June 19, 2019 by Ordinance No. 2019-463, City Council approved the 2019 City of Houston Water Conservation Plan and 2019 City of Houston Drought Contingency Plan, which is a required attachment to the Water Conservation Plan;

WHEREAS, the version of the 2019 Water Conservation Plan attached to Ordinance No. 2019-463 was not the final version uploaded to Novus and did not include several paragraphs and appendices;

WHEREAS, the version presented to City Council on July 31, 2019 included all material in the Water Conservation Plan approved by City Council on June 19, 2019, plus the following: Utility profile reports required by the State of Texas; Public comments received by the City during the public comment period; and Information on the City's PACE Program, Community Rain Barrel Sale Program, and Native Plants Propagation Program and Sale.

WHEREAS, the version presented to City Council on July 31, 2019 made no changes to the 2019 City of Houston Drought Contingency Plan, which was and is attached to the Water Conservation Plan as Appendix F.

WHEREAS, Texas Water Code Section 11.1271 requires that each holder of an existing permit, certified filing, or certificate of adjudication for the appropriation of surface water in excess of 1,000 acre-feet per year for municipal, industrial and other purposes must develop, submit and implement a water conservation plan meeting the requirements of the Texas Water

Code as well as the criteria developed by the Texas Commission on Environmental Quality (the "TCEQ"); and

WHEREAS, Texas Water Development Board ("TWDB") requires that Houston's Water Conservation Plan include a copy of Houston's Drought Contingency Plan that meets the requirements set forth in TWDB's Water Conservation Plan Guidance Checklist, Form TWDB-1968; and

WHEREAS, the City of Houston finds it advantageous to provide identical approval dates for both its water conservation plan and its drought contingency plan; and

WHEREAS, the City of Houston intends to comply with the requirements of Texas Water Code, the Texas Administrative Code, the TWDB and the Texas Commission on Environmental Quality ("TCEQ") regarding its Water Conservation Plan and Drought Contingency Plan; and

WHEREAS, after reviewing the City of Houston 2019 Drought Contingency Plan, contained under the 2019 Water Conservation Plan Appendix F, the TCEQ requested that the City of Houston add-text to Pages 100, 101 and 103 of the 2019 Water Conservation Plan, referencing required provisions for contract customer to ensure that the Plan is in compliance with Title 30 Texas Administrative Code Chapter 288, changes the City of Houston has made and now brings forward for City Council review and approval of the amended text;

NOW THEREFORE,

* * * * *

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF HOUSTON, TEXAS:

Section 1. That the findings contained in the Preamble of this Ordinance are determined to be true and correct and are hereby adopted as part of this Ordinance.

Section 2. The City Council hereby approves the complete 2019 Water Conservation Plan for Municipal Uses, which is attached hereto as Exhibit "A," and incorporated herein by reference.

Section 3. The City Council hereby approves the 2019 Drought Contingency Plan for the City of Houston, which is attached hereto as Exhibit "B", and incorporated herein by reference.

Section 3. This ordinance amends Ordinance No. 2019-572 as specified herein.

Section 4. If any provision, section, subsection, sentence, clause, or phrase of this Ordinance, or the application of same to any person or set of circumstances is for any reason held to be unconstitutional, void or invalid, the validity of the remaining portions of this Ordinance or their application to other persons or sets of circumstances shall not be affected thereby, it being the intent of the City Council in adopting this Ordinance that no portion hereof or provision or regulation contained herein shall become inoperative or fail by reason of any unconstitutionality, voidness or invalidity of any other portion hereof, and all provisions of this Ordinance are declared to be severable for that purpose.

Section 5. There exists a public emergency requiring that this Ordinance be passed finally on the date of its introduction as requested in writing by the Mayor; therefore, this Ordinance shall be passed finally on such date and shall take effect immediately upon its passage and approval by the Mayor; however, in the event that the Mayor fails to sign this Ordinance within five days after its passage and adoption, it shall take effect in accordance with Article VI, Section 6, Houston City Charter.

PASSED AND ADOPTED this 20th day of November, 2019.

APPROVED this _____ day of _____, 2019.

_____
Mayor of the City of Houston, Texas

Pursuant to Article VI, Section 6, Houston City Charter, the effective date of the foregoing Ordinance is NOV 2 6 2019.

_____
City Secretary/Assistant

Prepared by Legal Dept. _____)
(GHW/dg 10/28/2019) Senior Assistant City Attorney
(Requested by Carol Ellinger Haddock, P.E., Director, Houston Public Works)
(L.D. File No. 0631900178002)

CAPTION PUBLISHED IN DAILY COURT REVIEW DATE: NOV 2 6 2019

AYE	NO	
✓		MAYOR TURNER
****	****	COUNCIL MEMBERS
✓		STARDIG
✓		DAVIS
✓		COHEN
✓		BOYKINS
✓		MARTIN
✓		LE
✓		TRAVIS
✓		CISNEROS
✓		GALLEGOS
✓		LASTER
✓		MARTHA CASTEX-TATUM
✓		KNOX
✓		ROBINSON
✓		KUBOSH
✓		EDWARDS
✓		CHRISTIE
CAPTION	ADOPTED	

Appendix E

Letter to Region H

A sample copy of the notification letter to the Region H Water Planning Group is enclosed in the next page.

CITY OF HOUSTON
Houston Public Works

Sylvester Turner
Mayor

Carol Ellinger Haddock, P.E.
Director
P.O. Box 1562
Houston, Texas 77251-1562

832.395.2500
www.publicworks.houstontx.gov

July 28, 2019

Mr. Mark Evans
Chair, Region H Water Planning Group
3648 Cypress Creek Parkway #110
Houston, TX 77068

Re: 2019 City of Houston Water Conservation Plan

Dear Mr. Evans,

Enclosed please find a copy of the 2019 City of Houston Water Conservation Plan, which is submitted to the Region H Water Planning Group in accordance with 30 T.A.C. Chapter 288. This plan, which includes the 2019 City of Houston Drought Contingency Plan, is the required 5-year update to the 2014 City of Houston Water Conservation Plan. Additional copies have been provided to the Texas Commission on Environmental Quality and the Texas Water Development Board.

Best regards,

Sharon Citino
Planning Director
Houston Water

Cc: Yvonne Forrest, Deputy Director
Paula Paciorek, Water Conservation Manager

Council Members: Brenda Stardig Jerry Davis Ellen R. Cohen Dwight A. Boykins Dave Martin Steve Le Greg Travis Karla Cisneros
Robert Gallegos Mike Laster Martha Castex-Tatum Mike Knox David W. Robinson Michael Kubosh Amanda K. Edwards Jack Christie

Controller: Chris B. Brown

Appendix F

2019 Drought Contingency Plan

The 2019 Drought Contingency Plan is enclosed in the next page.

DROUGHT CONTINGENCY PLAN
CITY OF HOUSTON

CCN# 99144

PWS# 1010013

July 2019

Section 1 Declaration of Policy, Purpose, and Intent

The purpose of the Drought Contingency Plan (the "Plan") is to establish policies and procedures for the City of Houston to follow in case of a water shortage emergency. A water shortage emergency caused by drought or other uncontrollable circumstances that hinder the City of Houston's ability to meet water demand can range from mild to critical and can disrupt the normal availability of water supplies. Therefore, it is important that the City of Houston establish this procedure so that guidelines exist in the event that a water shortage emergency occurs. The City of Houston Code of Ordinances at Chapter 47, Article VII contains the policy regarding the actions the City of Houston will take in the event of a water shortage or emergency. Definitions of terms used throughout the Plan can be found in Section 47-249 of Article VII.

Section 2 Public Involvement

Opportunity for the public to provide input into the preparation of the Plan was provided by:
(check at least one of the following)

- Scheduling and providing public notice of a public meeting to accept input on the Plan
- Mailed survey with summary of results (attach survey and results)
- Bill insert inviting comment (attach bill insert)
- Other method: Not applicable. The Plan has not changed since its adoption by the Houston City Council in 2014.

Section 3 Public Education

The City of Houston will periodically provide the public with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage.

Drought plan information will be provided by:
(check at least one of the following)

- public meeting
- press releases
- utility bill inserts
- The Plan will be available on the City of Houston's websites.

Section 4 Coordination with Regional Water Planning Groups

The service area of the City of Houston is located within the Region H Water Planning Group. The City of Houston will mail a copy of the Plan to Regional H on June 13, 2019.

Section 5 Notice Requirements

Written notice will be provided to each customer **prior to implementation or termination of each stage of the water restriction program**. Mailed notice will be given to each customer 72 hours prior to the start of water restriction. If notice is hand delivered, the City of Houston understands it cannot enforce the provisions of the Plan for 24 hours after notice is provided. The written notice to customers will contain the following information:

1. the date restrictions will begin;
2. the circumstances that triggered the restrictions;
3. the stages of response and explanation of the restrictions to be implemented; and
4. an explanation of the consequences for violations.

The City of Houston will notify the TCEQ by telephone at (512) 239-4714, or electronic mail at watermon@tceq.state.tx.us prior to implementing Stage II and will notify in writing the Public Drinking Water Section at MC - 155, P.O. Box 13087, Austin, Texas 78711-3087 within five (5) working days of implementation including a copy of the City's restriction notice. The City of Houston will file a status report of its restriction program with the TCEQ at the initiation and termination of mandatory water use restrictions (i.e., Stages II through IV).

Section 6 Violations

With the exception of customers with water service contracts, in accordance with Section 54.001 of the Texas Local Government Code, any person who violates any provision of this article shall be guilty of an offense and upon conviction thereof, shall be punished by a fine of not less than $100.00 nor more than $2,000.00 for each violation. Each act of city water use in violation of this article shall constitute and be punishable as a separate offense. Each day that any violation continues shall constitute and be punishable as a separate offense. Unless another penalty is specifically provided by this Code or by state law, the penalty for violation of any provision of this article shall be as follows:

(1) **For violations of stage two water shortage,** the department may issue a written warning to a customer for a first-time violation. Any subsequent violations are subject to a fine of $100.00 to $2,000.00.

(2) **For violations of stage three water shortage**, the department may issue a written warning to a customer for a first-time violation. Any subsequent violations are subject to a fine of $500.00 to $2,000.00. Additionally, the director may monitor the water account of any customer who has been convicted of a violation of section 47-253. Daily monitoring may continue through the end of the existing water shortage period. The director may turn off city water if a customer has violated the authorized water use during a stage three water shortage on three separate instances within a 30-day period. Water service may be reinstated to a customer after a termination only upon a) payment of all applicable fines and any outstanding water service charges; and b) agreeing to the maximum rate in existence, regardless of the customer's billing rate class, for all future water service provided during the 12 months immediately following the termination and filing such agreement in writing with the department.

(3) **Violations of stage four water shortage** are subject to fines of $1,000.00 to $2,000.00. Additionally, all customers exceeding the allowed water usage during a stage four water shortage by ten percent or more shall pay a 20 percent surcharge for the current and two subsequent billing periods. The director may also turn off city water if a customer has exceeded the authorized water use during a stage four water shortage on three separate instances within a 30-day period. Water service may be reinstated to a customer after termination only upon a) payment of all applicable fines and any outstanding water service charges; and b) agreeing to the maximum rate in existence, regardless of the customer's billing rate class, for all future water service provided during the 12 months immediately following the termination and filing such agreement in writing with the department.

In the event that a customer with a water service contract engages in the unauthorized use of city water, the city shall have the right to pursue any and all rights and remedies

allowed under existing contracts with customers, and any and all remedies allowed under Texas law.

Section 7 Exemptions or Variances

The utility official may grant in writing a temporary variance for an otherwise prohibited water use if the utility official determines that:

(1) Failure to grant the variance would cause an emergency condition immediately threatening the life, safety, welfare, or fire protection of the public, the person requesting the variance, or the environment; or

(2) The applicant cannot comply with the prohibition for technical reasons; or

(3) The applicant agrees to implement alternative methods that will achieve the same or a greater level of reduction in water use.

An application for a variance shall be made in writing with the utility official and shall include the following:

(1) Name and address of the applicant;

(2) Purpose of water use;

(3) Specific provision(s) of this article from which the applicant is requesting relief;

(4) A detailed statement as to how the specific provision(s) of this article adversely affects the applicant or what damage or harm will occur to the applicant or others if the applicant complies with this article;

(5) Description of the relief requested;

(6) Period of time for which the variance is sought;

(7) Alternative water use restrictions or other measures the applicant is taking or proposes to take to conform to the provisions of this article and the compliance date; and

(8) Other pertinent information reasonably required by the utility official to determine whether the criteria of subsection (a) have been met.

No variance shall be retroactive or otherwise justify any violation of the prohibitions hereunder occurring prior to the issuance of the variance. A variance is valid for only the declared water shortage period in existence at the time of issuance and shall expire at the conclusion of the existing water shortage period. If the conclusion of the existing water shortage period is immediately followed by a newly declared water shortage period, consisting of either more or less threatening conditions, a new application for a variance must be filed in accordance with subsection (b) of this section. Notwithstanding the foregoing, a variance may be applied retroactively if issued to a residential customer who is a member of a family consisting of five or more persons living in a single residential unit served by a single water meter.

Section 8 Response Stages

STAGE I – ABNORMAL CONDITIONS (VOLUNATARY):

Target: Achieve a FIVE percent reduction in OVERALL water use.

Stage I will begin:

When the director finds that the city's water supply system is under stress because of lower than average annual rainfall, temperatures that are higher or lower than normal, or other circumstances.

Stage I will end:

When the director finds that the abnormal conditions leading to the declaration either no longer exist, have been mitigated, or have been escalated, and the director files a written declaration to that effect with the city secretary.

Utility Measures:

The director's declaration, which may cover all or a portion of the city's water supply system, shall be in writing and filed with the city secretary. City departments' water use reduction plans shall be implemented immediately upon the declaration of a stage one water shortage period and shall remain in effect until the conclusion of the water shortage period.

Voluntary Water Use Restrictions:

Unless otherwise stated in the declaration, all customers are requested to take the following voluntary water use restriction measures:

(1) Check for and repair all leaks, dripping faucets, and running toilets;

(2) Check for and correct excessive irrigation or uncorrected leaks that result in city water leaving the customer's property by drainage onto adjacent properties or public or private roadways or streets or gutters; and

(3) Irrigate between 7:00 p.m. and 5:00 a.m. of the following day on no more than two days per week in conformity with the following schedule:

a. Sundays and Thursdays for single-family residential customers with even-numbered street addresses; and

b. Saturdays and Wednesdays for single-family residential customers with odd-numbered street addresses; and

c. Tuesdays and Fridays for all other customers.

STAGE II - SEVERE CONDITIONS (MANDATORY):

Target: Achieve a TEN percent reduction in OVERALL water use.

The City of Houston will implement Stage II when, upon the recommendation of the director of the Public Works and Engineering Department, the mayor declares a stage two water shortage upon finding that one or more of the following conditions exist that may impact all or a portion of the city's water supply system:

Triggers:

(1) Combined total storage of surface water supply is less than 24 months, based on a calculated projection of monthly production of city water that includes historic production and information provided by customers;
(2) Combined total storage of surface water supply is less than 16 months, based on a calculated projection of current water production for the most recent 24-hour period;
(3) Current water production is 80 percent of the available treatment capacity;
(4) Loss of approximately 20 percent of available treatment capacity; or
(5) Water pressure readings of 45 pounds per square inch or less throughout all or material portions of the city's treated water distribution system.

Upon initiation and termination of Stage II, the City of Houston will mail a public announcement to its customers. Notice to TCEQ required.

Requirements for Termination:

A stage two water shortage ends when the mayor declares, based on the recommendation from the director that the severe conditions leading to the declaration either no longer exist, have been mitigated, or have been escalated, and the director files a written declaration to that effect with the city secretary.

Utility Measures:

City departments' water use reduction plans shall be implemented immediately upon the declaration of a stage four water shortage period and shall remain in effect until the conclusion of the water shortage period.

The second water source for City of Houston is: (check one)

- Inter-connection with other system
- Purchased water
- Other: Groundwater

Mandatory Water Use Restrictions:

During a stage two water shortage, unless otherwise stated in the declaration, all classes of customers are subject to mandatory restrictions of outdoor use. During a stage two water shortage, outdoor use shall be unlawful with the exception of the following time periods as specified in the declaration:

(1) Between 7:00 p.m. and 5:00 a.m. of the following day on no more than two days per week in conformity with the following schedule:
    a. Sundays and Thursdays for single-family residential customers with even-numbered street addresses; and
    b. Saturdays and Wednesdays for single-family residential customers with odd-numbered street addresses; and
    c. Tuesdays and Fridays for all other customers; or

(2) Between 7:00 p.m. and 5:00 a.m. of the following day on no more than one day per week in conformity with the following schedule:

a. Saturdays for single-family residential customers with odd-numbered addresses;
b. Sundays for single-family residential customers with even-numbered addresses; and
c. Tuesdays for all other customers.

Any outdoor water use that results in city water leaving the customer's property by drainage onto adjacent properties or public or private roadways or streets or gutters shall be unlawful.

STAGE III – EXTREME CONDITIONS (MANDATORY):

Target: Achieve a TWENTY percent reduction in OVERALL water use.

Triggers:

The water utility will implement Stage III when any one of the selected triggers is reached that may impact all or a portion of the city's water supply system:

(1) Combined total storage of surface water supply is less than 18 months based on a calculated projection of monthly production of city water that includes historic production and information provided by customers;
(2) Combined total storage of surface water supply is less than 12 months, based on a calculated projection of current water production for the most recent 24-hour period;
(3) Current water production is 85 percent of the available treatment capacity;
(4) Loss of approximately 25 percent of available treatment capacity; or
(5) Water pressure readings of 40 pounds per square inch or less throughout all or material portions of the city's treated water distribution system.

Upon initiation and termination of Stage III, the City of Houston will mail a public announcement to its customers. Notice to TCEQ required.

Requirements for Termination:

A stage three water shortage ends when, upon the recommendations of the director and the mayor, the city council finds that the extreme conditions leading to the declaration either no longer exist, have been mitigated, or have been escalated, and the city council files a written declaration to that effect with the city secretary.

Utility Measures:

City departments' water use reduction plans shall be implemented immediately upon the declaration of a stage four water shortage period and shall remain in effect until the conclusion of the water shortage period. The Director shall apply any necessary curtailments consistently between classes of customers in accordance with Section §11.039 of the Texas Water Code.

Mandatory Water Use Restrictions:

During a stage three water shortage, all outdoor use shall be unlawful except that customers may use city water to continue production and protect inventory of their primary business products.

STAGE IV – EXCEPTIONAL CONDITIONS (MANDATORY):

Target: Achieve a THIRTY FIVE percent reduction in OVERALL water use.

Triggers:

The water utility will implement Stage IV when any one of the selected triggers is reached that may impact all or a portion of the city's water supply system:

(1) Combined total storage of surface water supply is less than 12 months, based on a calculated projection of monthly production of city water that includes historic production and information provided by customers;
(2) Combined total storage of surface water supply is less than six months, based on a calculated projection of current water production for the most recent 24-hour period;
(3) Current water production is 90 percent of the available treatment capacity; or
(4) Water pressure readings of 35 pounds per square inch or less throughout all or material portions of the city's treated water distribution system.

Upon initiation and termination of Stage IV, the City of Houston will mail a public announcement to its customers. Notice to TCEQ required.

Requirements for Termination:

A stage four water shortage ends when, upon the recommendations of the director and the mayor, the city council finds that the exceptional conditions leading to the declaration either no longer exist or have been mitigated, and the city council files a written declaration to that effect with the city secretary.

Operational Measures:

City departments' water use reduction plans shall be implemented immediately upon the declaration of a stage four water shortage period and shall remain in effect until the conclusion of the water shortage period. The Director shall apply any necessary curtailments consistently between classes of customers in

accordance with Section §11.039 of the Texas Water Code.

Mandatory Water Use Restrictions:

During a stage four water shortage, the following acts or omissions shall be unlawful:

(1) All outdoor use;

(2) Use of more than 4,000 gallons of city water per month by single-family residential customers;

(3) Use of more than 4,000 gallons of city water per month (used per unit, as provided in section 47-71 of City of Houston Code of Ordinance) by multifamily residential customers; and

(4) For all customers other than residential customers, failure to reduce use of city water by 15 percent of baseline usage, or any other percentage if recommended by the director and adopted by city council in the stage four water shortage declaration.

During a stage four water shortage, the director may authorize a ten percent rate reduction for water usage to customers for reductions of city water use by 20 percent or more than those restrictions set forth in subsection (d), except that the ten percent rate reduction shall not be available to customers whose average monthly usage during the preceding 12-month period was less than 4,000 gallons. The rate reduction for water usage shall be effective for the duration of the existing water shortage period.

Immediately upon the declaration of a stage four water shortage, the city may claim force majeure to all of its existing water service contracts consistent with the terms of such water service contracts and in accordance with applicable state law.

SYSTEM OUTAGE or SUPPLY CONTAMINATION

The City of Houston will notify the TCEQ Regional Office as soon as communication can be established.

Section 10 Contract Provisions

The City of Houston will include a provision in every wholesale water contract entered into or renewed after adoption of the plan, including contract extensions, that in case of a shortage of water resulting from drought, the water to be distributed shall be divided in accordance with Texas Water Code §11.039.

Appendix G

Public Comments on the 2019 Water Conservation Plan

Organization/ Citizen	Comment	Staff response
1. Citizen (anonymous) via Public Comment Period for the 2019 Water Conservation Plan Survey 5/28/2019 11:18 PM	A combination of marketing & communication and community outreach. Included in this would be a residential rebate program.	Thank you. We are currently evaluating a residential rebate program.
2. Citizen (anonymous) via Public Comment Period for the 2019 Water Conservation Plan Survey 5/23/2019 3:14 PM	Definitely need to consider educational materials in online site	Yes. We will be working on more visibility via a new Houston Public Works website with a Houston Water page that centralizes all the information about water in one place, including water conservation, quality, billing, regulation, drought contingency plan, tips, and more.
3. Citizen (anonymous) via Public Comment Period for the 2019 Water Conservation Plan Survey 5/21/2019 3:11 PM	Take action against consumers who do not fix their broken waterline after 36 hr. I have seen residents with water gushing down the street unrepaired for almost 10 days.	If you see a broken pipe, please notify Houston as soon as possible by calling Houston's Service Center at 3-1-1 or 713-837-0311. You can also report your request online at www.houston311.org. Reporting concerns via 3-1-1 is the fastest way to address your issue and track resolutions.
4. Citizen (anonymous) via Public Comment Period for the 2019 Water Conservation Plan Survey 5/21/2019 3:02 PM	Fix the leaks! I see leaks last for weeks	If you see a broken pipe, please notify Houston as soon as possible by calling Houston's Service Center at 3-1-1 or 713-837-0311. You can also report your request online at www.houston311.org. Reporting concerns via 3-1-1 is the fastest way to address your issue and track resolutions.
5. Citizen (anonymous) via Public Comment Period for the 2019 Water Conservation Plan Survey 5/21/2019 12:53 PM	Rainwater Harvesting rebates	Thank you. We are currently evaluating a residential rebate program.
6. Citizen (anonymous) via Public Comment Period for the 2019 Water Conservation Plan Survey 5/20/2019 10:55 PM	Reduced shared metered communities	Thank you for your suggestion.
7. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	We understand that the state-required 2019 WCP has been prepared prior to the completion of the City's cost-of-service (water rate) study underway this year and that as a result of that timing, decisions about a major revamping of the WCP are being postponed until the results of that study are available and follow-up to the study is done. We also note that the City has hired a new Water Conservation Manager who now directs the Water	We appreciate your comments. We are currently evaluating water conservation programs that will best fit Houston and its current and future customers.

	Conservation Division created within Houston Water this year. Therefore, we acknowledge that the City's water conservation program is in flux at this time and that changes are on the horizon. Our comments on the draft 2019 WCP are made in that context, including suggestions that might shape the City's water conservation efforts moving forward and that might be incorporated into a revised plan later.	
8. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	While we feel that there have been some improvements in the 2019 WCP from the previous 2014 Plan, and while we believe that several City of Houston activities and initiatives have the potential to enhance efficient water use and reduce per capita water consumption, we must note that Houston's water conservation efforts pale in comparison to that of many other major Texas cities, including Austin, Dallas, El Paso, and San Antonio. Houston is a great city, and it should be a leader – not a follower – in water efficiency and conservation.	We understand your concerns about Houston's water conservation programs not "matching up" to programs offered by other Texas cities. However, among the cities listed, Houston follows second to San Antonio with the lowest total (and residential) GPCD. Dallas, El Paso, Fort Worth, and even Austin currently have higher water use averages compared to Houston. Houston is currently working on improving its water conservation programs. Our goal is to become a leader in water conservation in the region, joining the efforts of other neighboring cities.
9. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	In the **Introduction** to the Plan, Houston Water notes the municipal water conservation goals set by the Region H water plan and predicates its water conservation programs on helping the region to meet these goals. We applaud the City for seeking to develop and implement its programs using the Region H water conservation goals because we believe that those goals reflect the Regional Water Planning Group's recommendations for best management practices for water conservation. We encourage Houston Water to consider incorporating all of those best management practices, including reasonable limitations on outdoor landscape water use, into its water conservation program to enhance the chances for meeting the regional goals.	Yes. Houston is evaluating all water management strategies available – not only those recommended by the Region H Water Planning Group, but also new strategies being developed at the national and international level.
10. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	On page 8, in the discussion of the Houston Wastewater System, the draft WCP notes the large "capacity available to treat additional wastewater – and produce additional water for reuse." Water reuse is one way, of course, for achieving greater water efficiency and reducing the demand for new water. **Are there any specific plans on the part of the City of Houston to implement additional reuse projects to take advantage of that capacity?** If so, the WCP should describe those plans and discuss how they might affect the City's water use.	Houston is currently evaluating future reuse projects (direct and indirect water reuse as well as gray water reuse) and has developed a Houston Water Reuse Task Force to assess water reuse opportunities. No details are currently available to add to the 2019 Water Conservation Plan.
11. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	On page 9, in the discussion of Houston water retail customers, the draft WCP presents a table showing water usage by customer class as of 2018, and single family total annual usage and average MGD is roughly 29% of the total. Some studies done in Texas indicate that outdoor landscape watering is the largest single component of single-family water use. **Has the City conducted any study of water use by single family retail customers – or any study of water use by its multi family or commercial-industrial-institutional retail customers – to analyze types or patterns of water use that would allow Houston Water to target its water conservation efforts to get the most "bang for its buck?" If not, we would suggest that the**	Yes, we agree. There are lots of opportunities in this area, and Houston Water plans to work closely with other service lines, such as Customer Accounts Services (in charge of the Customer Awareness Program) as well as our GIS team to understand our customer base consumer patterns and determine the best programs for each type of customer. In addition, Houston Water will utilize studies already developed in this area to best inform the implementation of new programs.

	City contract for such a study or encourage research by one of Houston's academic institutions to generate the data that would allow more precise targeting of conservation efforts. San Antonio Water System has been successful in using such targeting to focus conservation efforts on large outdoor water users. It is possible that a preliminary step for Houston in this regard would be to use the data generated by participants in the Consumer Awareness Program to suggest possible targeting.	
12. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	On pages 10-12, the draft WCP discusses the topic of Houston's **gallons per capita per day (GPCD)** in terms of total GPCD, residential GPCD, and water loss GPCD – in addition to water loss percentage. We appreciate the candid discussion of the context for the noted reductions in residential GPCD from the previous version of the WCP – namely the higher than average rainfalls during 2014-2018 that played a role in that reduction. We also appreciate the fact that the 2019 WCP uses a much lower baseline GPCD than the 2014 plan and that the City is committing to continued residential water reductions. However, we feel that **the target reduction of 1.6% over a five-year period is well below what could be achieved with an aggressive water conservation program aimed at residential water use**. Elements of such a program would include an active rebate or retrofit program to replace existing low efficiency toilets, clothes washers, and other water-using equipment with high-efficiency options and to assist low-income residents in repairing leaking pipes. The current efforts to address damages to residential properties from Hurricane Harvey and other flooding may ironically result in more water conserving fixtures in operation by retail residential water **customers, which could help lower GPCD. Again, another component of lowering residential** GPCD – a cost-effective one – would be reasonable limitations on outdoor water use.	As described on page 10 of the 2019 City of Houston Water Conservation Plan, Houston's current baselines (5-year historical averages) of 129 for the total GPCD and 62 for the residential GPCD fall into "the efficiency range," per the 2004 Water Conservation Task Force, which utilizes a target goal of 140 or less for the total GPCD. Therefore, Houston plans to implement the percentage of target reduction proposed in the 2019 Water Conservation Plan. We will revisit this percentage of target reduction during the development of the 2024 Plan.
13. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	The GPCD and related discussion on pages 11-12 also covers the topic of water loss. **The draft notes that Houston's water loss is approximately 19% based on the last five years. The comparable figure in the 2014 WCP for five years previous to that plan's development was 14%, indicating that the City has lost ground in tackling this persistent issue.** **We believe that the 2019 WCP should explain why the City was not able to meet the 2014 WCP's five-year water loss reduction goal of 11.2%, indeed why the water loss percentage for 2014-2018 was 19% (and was approximately 17% for the year in 2018). One reason this would be important would be to better understand how realistic the 2019 WCP is in trying to reverse this situation and actually achieve a one percent reduction each year (5% over five years), which is a more aggressive scenario than the 2% reduction**	It is in Houston's best interest to reduce water loss. Houston is aware that there is room for improvement in this area. The size and age of Houston's transmission and distribution system make this system on of the most challenging and complex systems in the world. Houston Water has a team of experts in this field that determines Capital Improvement Projects on an annual basis (scheduled projects). Currently, 2% of Houston's pipeline system is scheduled to be replaced and/or rehabilitated annually. This is 140 miles of pipeline per year - in addition to emergency repairs. Houston Water has created an internal Water Loss Task Force to identify opportunity areas and improve (reduce) water loss percentages over the next years, with the goal of achieving 10% or less water loss.

	over five years that was anticipated in the 2014 WCP. **We realize and appreciate that on pages 12-15 of the draft 2019 WCP the efforts to address water loss through water main replacement (including the commitment of $107 million for capital improvement projects in the water distribution system), the Advanced Metering Infrastructure (AMI) network, dedicating staff to assist with data management and analysis, and other means are discussed. Presumably these will help Houston to achieve a reduction in water loss.** We think that it would be instructive for the WCP to include some examples of where the deployment of these actions and practices have reduced or eliminated specific water loss incidents. We note that the 1% annual reduction in water loss until reaching a water loss goal of 10% is in keeping with the current Region H water plan. There is a possibility, however, that the revised Region H water plan that will be completed in late 2020/early 2021 will actually set a long-term water loss goal of 5% rather than 10%. Indeed, a water loss of 10% for a municipal water system producing the volume of water that Houston does represents a major issue. We grant that tackling the water loss problem in Houston is and will be a costly enterprise. However, we also note that Houston is spending tens of millions of dollars to develop new water supplies, and perhaps some of those dollars would have been better spent addressing water loss. If these new water supplies come online without the City having made significant fixes to water distribution lines, the full benefits of those new water supplies will be decreased by ongoing water loss.	
14. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	We applaud Houston for initiating its **Consumption Awareness Program**, and we note the progress in implementing the program. The draft WCP describes in general the next steps for what is termed "the second phase of implementation." The 2019 Plan would benefit from more detail about the time frame and milestones for these various second phase implementation activities and how they will specifically enhance the City's water conservation efforts. For example, what amount of dollars are budgeted for developing a web portal for multi-family and non-residential retail customers, what is the time frame for rolling out that web portal, and how will it be promoted to those categories of retail customers? The answers to these questions would provide the information to help evaluate how effective these efforts might potentially be in enhancing water use efficiency. The draft WCP discusses the potential for **the AMI network** to aid in gathering and disseminating information on retail customer water use but also notes the declining AMI network capacity due to "aging infrastructure and lack of resources." **The draft Plan states that: "As funds become available, Houston intends to replace obsolete AMI network infrastructure with the goal of having between 85-95% of retail meters read by the AMI network." That is**	The second phase of the Consumption Awareness Program is currently tied to the strategic replacement of Houston's 20+ year old AMR system with an AMI network. More than 95% of the existing automated meter reading system will be replaced. Procurement for the AMI is underway as the RFP should be released for prospective vendors to bid within the next 6 -12 months. Currently, the budget for replacement of the system is estimated at $50M. The implementation will phase in over 10 years and is tentatively scheduled to begin in late 2020. The replacement project will also include funding for establishing interconnectivity with Houston's current web portal thereby facilitating utilization by all customers (residential multifamily, non-residential etc.). The AMI infrastructure will also provide Houston and its customers with the enhanced ability to monitor near real time water usage, forecast water consumption, and identify leaks earlier. Marketing of the conservation tools will be strategically aligned to coincide with implementation of the AMI system. Marketing will be performed through direct mail, online advertisements, and social media posts from Houston. The proposed 10-year migration program to a new AMI network is a detailed plan that has been discussed with Houston's executive leadership. The budget is approximately $50M and is expected to go before City Council in Fiscal Year 2020 for approval.

	a laudable goal and intention, but what is the reality? Is there a detailed plan that prioritizes the parts of the infrastructure that need to be replaced, the cost estimate for that replacement, the preferred time frame for implementation? We understand that tackling this project will no doubt require City Council action, including commitment of funds, but is there a replacement plan that would be the basis for initiating that discussion with the City leadership?	Additional details on cost and implementation will be available upon completion of the request for proposal process and approval by City Council.
15. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	We applaud Houston's use of new plumbing and building codes, which apparently contributed to the gradual reduction in residential GPCD. We also commend specifically Houston's addition of a section on **low impact development** (LID) to the City's Infrastructure Design Manual and the stated commitment to "encourage the use of low impact development practices." However, we believe that the WCP should include some detail about ***how*** – beyond the section in the Manual – the City will be encouraging LID.	Thank you for your suggestion.
16. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	We support the City's commitment to establishing **LEED as the standard for new or replacement city-owned facilities and for major renovation of larger city-owned buildings and facilities**, which will directly and indirectly encourage water efficiency. We recommend that the 2019 WCP include some specific examples of the buildings that have been constructed or renovated since adoption of this standard and level of water savings from use of those standards over previous standards. In this and other sections of the WCP, the Plan will be enhanced by examples or metrics that make Houston Water's water conservation and related efforts more "real" and raise the level of confidence that the Plan is truly something that is being implemented.	We have added a website link to the Plan containing information on past and future LEED projects for Houston's facilities.
17. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	We are pleased that Houston is seeking to pilot conservation software from a third party to evaluate and quantify how specific conservation and efficiency programs for retail and wholesale customers may advance achievement of Houston's conservation goals. We believe that there is substantial potential for the comprehensive approach possible through such software to dramatically affect water use and water demands in the region, for which Houston is a large wholesale supplier. We would be interested to know how within the City of Houston itself the new software will interact with the existing Consumer Awareness Program for retail customers so that the City may benefit from the data available from both these initiatives. The data enrichment from these and other sources certainly provide the foundation for better informed policy decisions at Houston Water, but all of this data need to be coordinated and processed in a way that aids both consumers and policy-makers, not just provide data for data's sake.	Thank you for your comments.
18. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	With regard to the **water education and outreach** aspects of the Houston 2019 WCP, we recognize the significance of the City's Water Works Education Center, especially its value in teaching school children about water and the need to conserve. We have heard discussion in	At this point, there is no intention to move the WaterWorks Education Center to a different location. As noted in the Plan, the WaterWorks Education Center has received more than 30,000 visitors in the last 5 years and has proven to be a productive venue, which demonstrates its accessibility to the community.

	past years about moving the Education Center to a more central location in order to make it accessible to a wider and more diverse group of students. We would appreciate any update on that prospect in the 2019 WCP. However, while we appreciate the City's outreach to school children, we believe that a much more active education and outreach effort for adults is advisable as well. Much more progress is needed in making Houston a leader in water conservation in the near term, and that requires helping to shape the attitudes and actions of adult residential customers, decision makers at CII (Commercial-Industrial-Institutional) operations, and wholesale water supply customers. There are a multitude of water conservation public awareness programs available – such as the state's Water IQ program (also used by North Texas Municipal Water District) and San Antonio's water education materials – which could be tapped by Houston Water and used to educate adults on water wise practices and the need for them, especially with regard to outdoor landscape watering. Granted some of these materials may need to revamped somewhat for an audience for which flooding may be a more relevant concern at present than drought or saving water. Again, however, the long-term best interests of Houston and the region would be well-served by more aggressive promotion of water efficiency and conservation among the residents of the area. Moreover, there are many organizations – such as our own and the Texas Water Foundation – that stand ready to help in this education and outreach effort.	Thank you for your suggestion about the myriad outreach programs available at the state and national levels. We are aware of most of them and are currently assessing potential implementation of additional programs that would target adults from single and multi-family residential households, as well as other programs for commercial, institutional, and industrial accounts.
19. Sierra Club Lone Star Chapter and National Wildlife Federation – 5/30/2019 via email	Concluding Thoughts: Our groups understand the financial, physical, and other challenges that Houston faces in advancing water efficiency and conservation. We believe, however, that the current leadership at Public Works and Houston Water is committed to moving the City forward in this arena. Therefore, we support the adoption of the draft 2019 WCP – with a few tweaks and additional detail – as in effect a "down payment" to be followed by a series of additional measures and enhancements that will lead to a more comprehensive and successful program. We must be candid, however, in saying that a City that helped put a human being on the Moon is way behind the times (and other Texas cities) in its efforts on efficient water use. Houston needs to launch a water conservation initiative befitting of Space City.	Your comments are greatly appreciated and will be considered when developing future water conservation programs.

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RETURN FLOW AUTHORIZATION ACCOUNTING PLAN

Prepared for:

San Jacinto River Authority and City of Houston



10/05/2024

FREESE AND NICHOLS, INC
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

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Appendix A Detailed Calculation Table Summaries

ACRONYMS AND ABBREVIATIONS

COH	City of Houston
MUD	Municipal Utility District
SJRA	San Jacinto River Authority
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
USGS	United States Geological Survey
WWTP	Wastewater Treatment Plant

UNITS

ac-ft	acre-feet
ac-ft/yr	acre-feet per year
cfs	cubic feet per second
MG	millions of gallons
MGD	millions of gallons per day

1.0 INTRODUCTION

The San Jacinto River Authority (SJRA) and the City of Houston, in support of an application for a water use permit, have developed an Accounting Plan workbook in accordance with Texas Commission on Environmental Quality (TCEQ) application requirements. The workbook considers the return flow supply proposed, ownership considerations for the source supply, and environmental flow conditions anticipated to be applied to the proposed project. Upon approval by TCEQ and granting of the associated authorizations, the Accounting Plan will be maintained in an electronic format and made available to the TCEQ Executive Director or the public upon request. Should changing conditions or other factors necessitate alterations to the structure or calculations of the Accounting Plan, the permittees will seek TCEQ approval of proposed changes prior to workbook modification. The relevant sources of supply, contractual conditions, and workbook operation are discussed in greater detail in the following sections.

2.0 SOURCE SUPPLY OVERVIEW

2.1 BACKGROUND AND SETTLEMENT AGREEMENT

In 2017, SJRA and Houston entered into a multi-party Settlement Agreement with Montgomery County Municipal Utility Districts (MUDs) 8 and 9, as well as the City of Huntsville, regarding effluent discharged by the MUDs and Huntsville and flowing to Lake Conroe. The terms of the settlement agreement, which were developed with consideration for TCEQ's counsel and consent in the negotiation process, include the following:

- The MUDs' commitment to SJRA and Houston of "twenty-one percent (21%) of the quantity of water actually discharged, conveyed, and otherwise available for diversion from Lake Conroe...on an annual basis..."
- Huntsville's commitment to SJRA and Houston of "twenty-one percent (21%) of the quantity of water Huntsville discharges to supply the MUDs with water pursuant to [a separate contract] on an annual basis."
- The tracking of discharges by the MUDs and Huntsville on an annual basis, and reporting of committed water to SJRA and Houston for diversion by SJRA and Houston the subsequent year.

Effluent retained by the discharging entities has been permitted by TCEQ through Permit 12510 (MUDs 8 and 9) and Permit 12754 (Huntsville). The SJRA and Houston water use permit application and associated Accounting Plan are intended to support the utilization of the remaining (committed) effluent supplies.

2.2 SOURCE FACILITIES

Montgomery County MUDs 8 and 9 have a single wastewater treatment plant (WWTP) facility with two outfalls which discharge into Lake Conroe. The City of Huntsville operates the Robinson Creek WWTP on Robinson Creek and the N. B. Davidson WWTP on an unnamed tributary of Persimmon Creek, with the discharge from both of these facilities flowing to the West Fork of the San Jacinto River and conveyed to Lake Conroe. Additional information on the WWTP facilities associated with the SJRA and Houston permit application are summarized in ***Table 1***, including the estimated channel loss factors from each point of effluent discharge to the diversion reach.

Table 1: Source Wastewater Treatment Plant Characteristics

Facility	TPDES Permit No.	Outfall	Latitude	Longitude	Permitted Discharge (MGD)	Est. Loss (%)
Montgomery County MUDs 8 & 9 WWTP	WQ0011371001	1	30.390833°N	95.604722°W	1.65	0.08%
		2	30.389722°N	95.604722°W		
Robinson Creek WWTP	WQ0010781004	1	30.645547°N	95.595334°W	2.50	2.20%
N. B. Davidson WWTP	WQ0010781002	1	30.645275°N	95.553197°W	1.60	1.60%

3.0 ELEMENTS OF THE ACCOUNTING PLAN

The Accounting Plan workbook is intended to track effluent committed to SJRA and Houston by the MUDs and Huntsville to assist these parties while also addressing TCEQ requirements. Major elements of the Accounting Plan include functionality to track effluent commitments, effluent diversions, compliance with environmental flow requirements, and compilation of data for water right reporting. Detailed descriptions of the structure and features of the Accounting Plan are included in the following sections.

3.1 WORKBOOK OVERVIEW

The Accounting Plan workbook has been designed for ease of use and review while supporting the accounting needs of the corresponding supply. Column names are descriptive, and units and data types

are labeled. Where practical, logical processes are carried out over multiple columns to reduce equation length and make calculations more understandable.

Shading is applied within the workbook to allow the user to quickly identify the purpose of cell ranges. Regular user inputs are shaded in light yellow, with optional manual overrides in gray. Unshaded (white) cells are normal automatic calculations. The workbook also utilizes conditional formatting in key locations to identify potential data issues by applying red shading.

3.2 WORKBOOK INTEGRITY AND ACCESSIBILITY

In the interest of protecting workbook stability and preventing inadvertent changes to calculations or structure without TCEQ approval, the tabs of the workbook are locked and password protected. The user retains full access to data entry fields and manual overrides, as well as the ability to copy the contents of any cell for export to another workbook or document. Should the user need to copy or examine formulas, this protection may be disabled for each tab using the password "sjracoh". Users are strongly discouraged from disabling workbook protection. It should also be noted that the "Show" and "Hide" buttons on select workbook tabs will relock the corresponding tab when used.

3.3 WORKBOOK TABS

The Accounting Plan workbook contains several tabs for user notifications, data entry, manual overrides, automated calculations, and static reference information. The following summary and report subsections provide additional detail on the contents and function of each of these tabs.

- **Intro** – Introductory tab providing version data, links to other workbook tabs, and a legend to the cell shading conventions applied on other tabs.
- **Tab 1 (Status)** – Provides a concise summary of cumulative year-to-date usage and comparison to discharge, as well as notifications of potential data entry issues and indicators of possible data error locations.
- **Tab 2 (Discharge)** – Serves as the location for user input of daily source effluent information for the prior year, including effluent discharge, effluent diversion by the MUDs, and reported contractual commitment volumes to SJRA and Houston. The tab also performs calculations of estimated channel losses and commitment volumes to assist in identifying potential errors in reported values.

- **Tab 3 (Diversion)** – Serves as the location for user input of daily SJRA and Houston diversion of effluent at Lake Conroe, as well as daily reference gage streamflows. The tab calculates allowable daily diversion based upon stream flow, diversion rate conditions, and remaining effluent availability, and tracks year-to-date cumulative use of the effluent source.

- **Tab 4 (Summary)** – Provides a concise summary of monthly effluent diversions by SJRA and Houston to facilitate water right reporting.

- **Tab R1 (Reference)** – Serves as a general repository for unit conversion factors and static reference information for use by the other workbook tabs. It also provides a location for the user to establish the accounting year for the workbook.

3.3.1 Tab 1 (Status)

Tab 1 provides a concise summary of cumulative year-to-date usage and comparison to discharge, as well as notifications of potential data entry issues and indicators of possible data error locations. Specific sections of the tab are discussed in greater detail below.

3.3.1.1. SJRA & COH Reuse Diversion Summary

The SJRA & COH Reuse Diversion Summary section displays a concise summary of annual effluent committed by the MUDs and Huntsville to SJRA and Houston from Tab 2, along with the year-to-date volume and percentage of effluent diverted and effluent remaining, based on the user input values entered on Tab 3. This section also displays SJRA and Houston's maximum diversion rate. If any of the daily diversion values for SJRA and Houston exceed the diversion rate, conditional formatting is applied to alert the user of potential data entry error.

3.3.1.2. Discharge and Diversion Comparison

This section provides a visual and numeric comparison between the annual amount of discharge available to SJRA and Houston for diversion and the cumulative amount of discharge SJRA and Houston have diverted. The amount of discharge available to SJRA and Houston for diversion is based on the amount of effluent the MUDs and Huntsville have committed to SJRA and Houston, provided by the user input values on Tab 2. The amount of discharge SJRA and Houston have diverted is based on the user input diversion values on Tab 3.

3.3.1.3. Notifications

The Notifications section utilizes user inputs, calculations, and reference values from other tabs to identify potential data entry errors or other issues. The contents of the section remain blank until the embedded logic detects a potential issue, which will cause a written warning and recommendation of which tab to check. Conditional formatting is also applied to draw user attention to the warning.

3.3.2 Tab 2 (Discharge)

Tab 2 serves as the location for user input of daily source effluent information for the prior year, including effluent discharge, effluent diversion by the MUDs, and reported contractual commitment volumes to SJRA and Houston. While data is structured primarily for a daily timestep, the tab also includes a summary section at the top to aggregate daily data by month. Specific sections of the tab are discussed in greater detail below, with detailed documentation of individual calculations included in Tables 2a and 2b of Appendix A.

3.3.2.1. Date (Columns 2.1 to 2.3)

The Date section establishes the date information for Tab 2, based on the accounting plan year information entered on Tab R1. It should be noted that because diversions under the accounting plan are made from effluent discharges from the prior calendar year, Tab 2 dates are calculated for the year prior to the accounting year entered on Tab R1. The date range adjusts automatically for leap year status.

3.3.2.2. MUD 8 and 9 Discharge (Columns 2.4 to 2.9)

The MUD 8 and 9 Discharge section serves as the location for input of the MUDs' daily reported effluent discharge, daily diversion of effluent, and reported effluent commitment to SJRA and Houston. The section also performs calculation of the shares of discharge for both the MUDs and SJRA and Houston, utilizing the contractual supply share percentages provided in Tab R1 and considering effluent lost to the channel between the discharge points at MUDs 8 and 9 and the diversion reach. These calculated estimates are utilized by Tab 1 in comparison to MUD reported values to assist in identifying potential data entry errors. The monthly summary section at the top of the tab is referenced by Tab 1 and Tab 3.

3.3.2.3. Huntsville Discharge (Columns 2.10 to 2.16)

The Huntsville Discharge section serves as the location for input of the City of Huntsville's daily reported effluent discharge volumes from the Robinson Creek and N.B. Davidson wastewater treatment plants that are associated with effluent request by the MUDs. Additionally, the MUDs' reported effluent diversion and commitment to SJRA and Houston are included as user-entered values. The shares of effluent for the MUDs and SJRA and Houston are calculated using the contractual supply share percentages provided in Tab R1 and consider the effluent lost to the channel between the discharge points at the two wastewater treatment facilities and the diversion reach. These calculated estimates are utilized by Tab 1 in comparison to MUD reported values to assist in identifying potential data entry errors. The monthly summary section at the top of the tab is referenced by Tab 1 and Tab 3.

3.3.3 Tab 3 (Diversion)

Serves as the location for user input of daily SJRA and Houston diversion of effluent at Lake Conroe, as well as daily reference gage streamflows. The tab calculates allowable daily diversion based upon stream flow, diversion rate conditions, and remaining effluent availability, and tracks year-to-date use of effluent. While data is structured primarily for a daily timestep, the tab also includes a summary section at the top to aggregate daily data by month. Specific sections of the tab are discussed in greater detail below, with detailed documentation of individual calculations included in Tables 3a and 3b of Appendix A.

3.3.3.1. Date (Columns 3.1 to 3.3)

The Date section establishes the date information for Tab 3, based on the year entered on Tab R1. The date range adjusts automatically for leap year status.

3.3.3.2. Environmental Flow Check (Columns 3.4 to 3.8)

This section includes user-entered values for the daily stream flow at USGS Gage No. 08068000 (West Fork of the San Jacinto River near Conroe, Texas). To address the potential for missing or erroneous gage values due to atypical flow events or monitoring equipment issues, the section includes an optional override which supersedes the metered flow value. The section also compares flows against subsistence flow requirements at the gage to set a flag used elsewhere by the tab to determine if effluent may be diverted.

3.3.3.3. SJRA and COH Lakeside Effluent Diversions (Columns 3.9 to 3.12)

The section provides a location for user-entered values for the daily amount of effluent diverted by SJRA and Houston and tracks the cumulative diversion made by the two entities and the amount of effluent remaining at a daily timestep. To assist in determining diversion amounts, the section also calculates a daily value of allowable effluent diversion amount, based on the amount of discharge committed by the MUDs to SJRA and Houston, the amount of the effluent previously diverted by SJRA and Houston, the maximum authorized daily diversion rate, and gage flows relative to subsistence flow requirements.

3.3.3.4. Ac-Ft Summary (Columns 3.13 to 3.14)

These columns summarize daily and cumulative effluent diversions by SJRA and Houston in acre-feet.

3.3.4 Tab 4 (Summary)

Tab 4 provides a concise summary of monthly effluent diversions by SJRA and Houston to facilitate water right reporting. Specific sections of the tab are discussed in greater detail below, with detailed documentation of individual calculations included in Table 4 of Appendix A.

3.3.4.1. Month (Column 4.1)

The Date section establishes the date information for Tab 4.

3.3.4.2. Diversion Summary (Column 4.2 to 4.3)

The Diversion Summary section displays the monthly diversions made by SJRA and Houston in millions of gallons and in acre-feet.

3.3.5 Tab R1 (Reference)

Tab R1 serves as a general repository for unit conversion factors and static reference information for use by the other workbook tabs. It also provides a location for the user to establish the accounting year for the workbook. Specific tab sections are discussed below, with detailed information on specific calculations documented in Table R1 of Appendix A.

3.3.5.1. Year Reference Data (Column R1.1 to R1.2)

The Year Reference Data section allows the user to identify the relevant accounting year for the workbook, with the entered value used to identify leap year adjustments and to populate date information on other workbook tabs.

3.3.5.2. Discharge (Column R1.3 to R1.4)

The section summarizes the maximum wastewater treatment facility discharge associated with the accounting plan. The values are utilized by Tab 1 to identify potential data entry errors in the effluent discharge data.

3.3.5.3. Carriage Losses (Column R1.5 to R1.6)

This section provides estimated channel loss factors from each point of effluent discharge to the diversion reach. Values are referenced by Tab 2 as part of calculations utilized as a check on entered data for the MUDs' diversions and reported effluent commitments to SJRA and Houston.

3.3.5.4. Supply Shares (Column R1.7 to R1.8)

This section includes the contractually established shares of effluent held by the dischargers, SJRA, and Houston.

3.3.5.5. USGS Gage No. 08068000 (Column R1.9 to R1.11)

The section contains the seasonal subsistence environmental flow factors from Title 30, Texas Administrative Code §298.225 for USGS Gage No. 08068000 (West Fork of the San Jacinto River near Conroe, Texas). Values are included at a monthly timescale. Values from the section are utilized by Tab 3 in conjunction with reported daily streamflow at the gage as part of the evaluation of daily allowable diversion volume.

3.3.5.6. Other Parameters (Column R1.12 to R1.14)

The Other Parameters section of Tab R1 contains information on additional limitations on effluent diversions, including volumetric limits and maximum withdrawal rate.

3.3.5.7. Conversion Factors (Column R1.15 to R1.17)

This section lists unit conversion factors for use by other workbook tabs in order to reduce equation complexity and avoid embedding of commonly utilized conversion factor values in formulas.

APPENDIX A
DETAILED CALCULATION TABLE SUMMARIES

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Appendix A, Table 2a (Daily Data)

Column No	Type[1]	Label	Units	Description	Tab Conn.[2]
2.1	Ref	Day		Day of month.	
2.2	Ref	Month		Month of year.	
2.3	Ref	Date		Date reference.	R1.2
2.4	Input	MUDs Effluent Discharge	gallons	Input data. Amount of effluent discharged by MUDs 8 and 9.	
2.5	Input	MUDs Reported Effluent Diversion	gallons	Input data. Amount of effluent diverted by MUDs 8 and 9 and sourced from MUD discharges.	
2.6	Input	MUDs Reported Commitment to SJRA & COH	gallons	Input data. Amount of effluent from MUD discharges committed to SJRA and Houston by MUDs 8 and 9.	
2.7	Calc	Calculated Carriage Loss	gallons	MUDs' discharge [2.4] multiplied by the channel loss factor [R1.6] between the discharge point and diversion reach.	R1.6
2.8	Calc	Calculated Effluent Share for MUDs	gallons	MUDs' discharge [2.4] less the channel loss amount [2.7], multiplied by the MUD share percentage [R1.8].	R1.8
2.9	Calc	Calculated Effluent Share for SJRA & COH	gallons	MUDs' discharge [2.4] less the channel loss amount [2.7], multiplied by the SJRA and Houston share percentage [R1.8].	R1.8
2.10	Input	Robinson Creek Effluent Discharge for MUD Request	gallons	Input data. Amount of effluent discharged by Robinson Creek WWTP for MUD request.	
2.11	Input	N.B. Davidson Effluent Discharge for MUD Request	gallons	Input data. Amount of effluent discharged by N.B. Davidson WWTP for MUD request.	

Column No	Type[1]	Label	Units	Description	Tab Conn.[2]
2.12	Input	MUDs Reported Effluent Diversion	gallons	Input data. Amount of Huntsville effluent diverted by MUDs 8 and 9.	
2.13	Input	MUDs Reported Commitment to SJRA & COH	gallons	Input data. Amount of Huntsville effluent committed to SJRA and Houston by MUDs 8 and 9.	
2.14	Calc	Calculated Carriage Loss	gallons	Sum of Robinson Creek discharge losses (Robinson Creek discharge [2.10] multiplied by the channel loss factor [R1.6]) and N.B. Davidson discharge losses (N.B. Davidson Discharge [2.11] multiplied by the channel loss factor [R1.6])	R1.6
2.15	Calc	Calculated Effluent Share for MUDs	gallons	Huntsville discharge ([2.10]+[2.11]) less the channel loss amount [2.14], multiplied by the MUDs' share percentage [R1.8].	R1.8
2.16	Calc	Calculated Effluent Share for SJRA & COH	gallons	Huntsville discharge ([2.10]+[2.11]) less the channel loss amount [2.14], multiplied by the SJRA and Houston share percentage [R1.8].	R1.8

1. Several abbreviations for Accounting Plan column type are applied in the Accounting Plan and in this and other Appendix A summary tables. "Ref" indicates reference data, "Calc" signifies automated workbook calculations, and "Input" is used for both mandatory user input columns and optional data override columns.

2. The "Tab Conn." field shown in this and other Appendix A summary tables provides information on formula connections to other workbook tabs.

Appendix A, Table 2b (Monthly Data)

Column No	Type[1]	Label	Units	Description	Tab Conn.
2.1	Ref	Day		Number of days in month.	
2.2	Ref	Month		Month of year.	
2.3	Ref	Date		End date for given month.	R1.2
2.4	Input*	MUDs Effluent Discharge	gallons	Monthly sum of effluent discharged by MUDs 8 and 9.	
2.5	Input*	MUDs Reported Effluent Diversion	gallons	Monthly sum of effluent diverted by MUDs 8 and 9 and sourced from MUD discharges.	
2.6	Input*	MUDs Reported Commitment to SJRA & COH	gallons	Monthly sum of effluent from MUD discharges committed to SJRA and Houston by MUDs 8 and 9.	
2.7	Calc	Calculated Carriage Loss	gallons	Monthly sum of MUDs' discharge carriage loss.	
2.8	Calc	Calculated Effluent Share for MUDs	gallons	Monthly sum of MUDs' share percentage of discharge after carriage losses.	
2.9	Calc	Calculated Effluent Share for SJRA & COH	gallons	Monthly sum of SJRA and Houston share percentage of discharge after carriage losses.	
2.10	Input*	Robinson Creek Effluent Discharge For MUD Request	gallons	Monthly sum of effluent discharged by Robinson Creek WWTP for MUD request.	
2.11	Input*	N.B. Davidson Effluent Discharge For MUD Request	gallons	Monthly sum of effluent discharged by N.B. Davidson WWTP for MUD request.	
2.12	Input*	MUDs Reported Effluent Diversion	gallons	Monthly sum of amount of Huntsville effluent diverted by MUDs 8 and 9.	

Column No	Type[1]	Label	Units	Description	Tab Conn.
2.13	Input*	MUDs Reported Commitment to SJRA & COH	gallons	Monthly sum of amount of Huntsville effluent committed to SJRA and Houston by the MUDs.	
2.14	Calc	Calculated Carriage Loss	gallons	Monthly sum of carriage loss from Huntsville WWTPs released for MUD request.	
2.15	Calc	Calculated Effluent Share for MUDs	gallons	Monthly sum of MUDs' share percentage of Huntsville WWTP discharge after carriage losses.	
2.16	Calc	Calculated Effluent Share for SJRA & COH	gallons	Monthly sum of SJRA and Houston share percentage of Huntsville WWTP discharge after carriage losses.	

1. Inputs are entered at the daily level as shown in Appendix A, Table 2a above.

Appendix A, Table 3a (Daily Data)

Column No	Type	Label	Units	Description	Tab Conn.
3.1	Ref	Day		Day of month.	
3.2	Ref	Month		Month of year.	
3.3	Ref	Date		Date reference.	R1.2
3.4	Input	West Fork Gage Flow	cfs	Input data. Flow at USGS gage 08068000 (West Fork San Jacinto River near Lake Conroe).	
3.5	Input	West Fork Gage Override	cfs	Input data (optional). Overrides flow at USGS gage 08068000 from time series input in [3.4] in the event of missing or erroneous measurements or other issues.	
3.6	Calc	West Fork Adjusted Gage Flow	cfs	If gage override [3.5] is provided, equals [3.5]. Else, equals measured gage flow [3.4].	
3.7	Calc	West Fork Bypass	cfs	Subsistence flow for given month associated with Title 30, Texas Administrative Code §298.225 for USGS gage 08068000.	R1.9, R1.11
3.8	Calc	West Fork Eflows Met?	Y/N	If adjusted gage flow [3.6] is greater than or equal to monthly subsistence flow rate [3.7], equals Y. Else, equals N.	
3.9	Calc	Remaining Effluent Available to SJRA and COH	MG	Year-end commitment of MUDs' and Huntsville commitment converted to units of MG ([2.6]+[2.13]) converted to MG ([R1.17]), less prior day cumulative SJRA and Houston diversion [3.12].	2.6, 2.13, R1.17
3.10	Calc	Allowable Diversion	MG	If West Fork Eflows are not met ([3.8] = "N"), equals 0. Else equals the lesser of the remaining effluent [3.9] and the maximum diversion rate [R1.13] converted to MG.	R1.13, R1.17
3.11	Input	SJRA & COH Diversion	MG	Input data. Amount diverted by SJRA and Houston.	

Column No	Type	Label	Units	Description	Tab Conn.
3.12	Calc	Cumul. SJRA & COH Diversion	MG	Cumulative year-to-date total of SJRA and Houston diversions.	
3.13	Calc	SJRA & COH Diversion	ac-ft	Conversion of [3.11] to ac-ft.	R1.17
3.14	Calc	Cumul. SJRA & COH Diversion	ac-ft	Conversion of [3.12] to ac-ft.	R1.17

Appendix A, Table 3b (Monthly Data)

Column No	Type[1]	Label	Units	Description	Tab Conn.
3.1	Ref	Day		Number of days in month.	
3.2	Ref	Month		Month of year.	
3.3	Ref	Date		End date for given month.	R1.2
3.4	Input*	West Fork Gage Flow	ac-ft	Monthly sum of flow at USGS gage 08068000 (West Fork San Jacinto River near Lake Conroe).	R1.17
3.5	Input*	West Fork Gage Override	count	Monthly count of days for which an override flow at gage 08068000 has been applied.	
3.6	Calc	West Fork Adjusted Gage Flow	ac-ft	Monthly sum of flow at gage 08068000 after applying override flows.	R1.17
3.7	Calc	West Fork Bypass	cfs	Monthly sum of subsistence flow associated with Title 30, Texas Administrative Code §298.225 for USGS gage 08068000.	R1.17
3.8	Calc	West Fork Eflows Met?	Y/N	Not applicable on a monthly timescale.	
3.9	Calc	Remaining Effluent Available to SJRA and COH	MG	End of month value of remaining of SJRA and Houston available effluent for diversion.	
3.10	Calc	Allowable Diversion	MG	Not applicable on a monthly timescale.	
3.11	Input*	SJRA & COH Diversion	MG	Monthly sum of amount diverted by SJRA and Houston.	
3.12	Calc	Cumul. SJRA & COH Diversion	MG	End of month value of cumulative total of diversions by SJRA and Houston.	

Column No	Type[1]	Label	Units	Description	Tab Conn.
3.13	Calc	SJRA & COH Diversion	ac-ft	Monthly sum of amount diverted by SJRA and Houston in ac-ft.	
3.14	Calc	Cumul. SJRA & COH Diversion	ac-ft	End of month value of cumulative total of diversions by SJRA and Houston in ac-ft.	

1. Inputs are entered at the daily level as shown in Appendix A, Table 3a above.

Appendix A, Table 4

Column No	Type	Label	Units	Description	Tab Conn.
4.1	Ref	Month		Month of year.	
4.2	Calc	SJRA and COH Diversion	MG	Monthly sum of SJRA and Houston diversion in MG [3.11].	3.11
4.3	Calc	SJRA and COH Diversion	ac-ft	Monthly sum of SJRA and Houston diversion in ac-ft [3.13].	3.13

Appendix A, Table R1

Column No	Type	Section	Label	Units	Description	Tab Conn.
R1.1	Ref	Year Reference Data	Parameter	ref	Row descriptor of "Year" or "Leap Year".	
R1.2	Input		Value	ref	Data entry cell for the year of Accounting Plan and a calculation cell to determine whether the input year is a leap year.	
R1.3	Ref	Discharge	Location	ref	Wastewater treatment facilities discharging effluent.	
R1.4	Ref		Discharge	MGD	The maximum wastewater treatment facility discharge associated with each facility.	
R1.5	Ref	Carriage Losses	Location	ref	Wastewater treatment facilities discharging effluent.	
R1.6	Ref		Loss Factor	percent	The percent channel loss between the discharge and diversion point.	
R1.7	Ref	Supply Shares	Entity	ref	The entities with direct or contractual ownership of effluent.	
R1.8	Ref		Share	percent	The contractually established shares of effluent held by the entities.	
R1.9	Ref	USGS Gage No. 08068000	Month	date	Months used to define seasons.	
R1.10	Ref		Season	ref	Season name.	
R1.11	Ref		Subsistence Flow	ref	Subsistence flow standards based on season.	

Column No	Type	Section	Label	Units	Description	Tab Conn.
R1.12	Ref	Other Parameters	Parameter	ref	Maximum diversion rate and annual total diversion.	
R1.13	Ref		Value	ref	Diversion rate and maximum authorized diversion values.	
R1.14	Ref		Units	ref	Units associated with values in the sub-table.	
R1.15	Ref	Conversion Factors	To get:	ref	Unit of output value for unit conversion operations.	
R1.16	Ref		From:	ref	Unit of original value for unit conversion operations.	
R1.17	Ref		Multiply by:	ref	Unit conversion factor to be multiplied by original value.	

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