



# Administrative Package Cover Page

**This file contains the following documents:**

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



# Portada de Paquete Administrativo

**Este archivo contiene los siguientes documentos:**

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



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

### PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

#### Plain Language Summary Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

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

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

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

#### ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS DOMESTIC WASTEWATER/STORMWATER

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

Keenan North Development, Ltd. (CN TBD) proposes to operate Keenan North WWTP (RN TBD), a domestic wastewater treatment plant. The facility will be located at approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854, in Montgomery, Montgomery County, Texas 77355. Requesting to permit a WWTP to treat up to 0.495 MGD.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>), total suspended solids (TSS), ammonia nitrogen (NH<sub>3</sub>-N). Domestic wastewater will be treated by a complete mix mode of activated sludge process, including screening, aeration, final clarification, and disinfection..



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

### AGUAS RESIDUALES DOMESTICAS /AGUAS PLUVIALES

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

Keenan North Development, Ltd. (CN TPD) propone operar Keenan North WWTP RN TBD, una planta de tratamiento de aguas residuales. La instalación estará ubicada en **aproximadamente 1 milla al noroeste de la intersección de Keenan Cutoff Rd y FM 2854**, en Montgomery, Condado de Montgomery, Texas 77355. La solicitud es para la instalacion de WWTP por 0.495 MGD.

Se espera que las descargas de la instalación contengan bioquímica de oxígeno carbonoso (CBOD5), solidos suspendidos totales (TSS), nitrógeno amoniacal (NH3-N). Las aguas residuales domésticas. **estará** tratado por un modo de mezcla completa del proceso de lodos activados, que incluye cribado, balsas de aireación, clarificadores, digestores aerobios y desinfección.

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



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

**PROPOSED PERMIT NO. WQ0016686001**

**APPLICATION.** Keenan North Development, Ltd., 28408 Sweetgum Road, Suite B3, Magnolia, Texas 77354, has applied to the Texas Commission on Environmental Quality (TCEQ) for proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0016686001 (EPA I.D. No. TX0147095) to authorize the discharge of treated wastewater at a volume not to exceed a daily average flow of 495,000 gallons per day. The domestic wastewater treatment facility will be located approximately 1.0 mile northwest of the intersection of Farm-to-Market Road 2854 and Keenan Cutoff Road, near the city of Montgomery, in Montgomery County, Texas 77316. The discharge route will be from the plant site to Mound Creek Tributary No. 54, thence to Mound Creek, thence to Lake Creek. TCEQ received this application on December 11, 2024. The permit application will be available for viewing and copying at Charles B. Stewart – West Branch Library, public records viewing area, 202 Bessie Price Owen Drive, Montgomery, in Montgomery County, Texas prior to the date this notice is published in the newspaper. The application, including any updates, and associated notices are available electronically at the following webpage:

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application.

<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.6625,30.332222&level=18>

**ALTERNATIVE LANGUAGE NOTICE.** Alternative language notice in Spanish is available at: <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>.

El aviso de idioma alternativo en español está disponible en

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

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

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

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

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

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

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

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

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

**AGENCY CONTACTS AND INFORMATION.** All public comments and requests must be submitted either electronically at <https://www14.tceq.texas.gov/epic/eComment/>, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit

application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at [www.tceq.texas.gov/goto/pep](http://www.tceq.texas.gov/goto/pep). Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Keenan North Development, Ltd. at the address stated above or by calling Mr. Jonathan Liu, P.E., A&S Engineers, Inc., at 713-942-2700.

Issuance Date: March 18, 2025

# Comisión de Calidad Ambiental del Estado de Texas



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

### PERMISO PROPUESTO NO. WQ0016686001

**SOLICITUD.** Keenan North Development, Ltd., 28408 Sweetgum Road, Suite B3, Magnolia, Texas 77354 ha solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) para el propuesto Permiso No. WQ0016686001 (EPA I.D. No. TX 0147095) del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES) para autorizar la descarga de aguas residuales tratadas en un volumen que no sobrepasa un flujo promedio diario de 495,000 galones por día. La planta está ubicada aproximadamente 1.0 milla al noroeste de la intersección de Farm-to-Market Road 2854 y Keenan Cutoff Road, cerca de la ciudad de Montgomery, en el Condado de Montgomery, Texas 77316. La ruta de descarga será desde el sitio de la planta hasta el afluente No. 54 de Mound Creek, de allí a Mound Creek y de allí a Lake Creek. La TCEQ recibió esta solicitud el diciembre 11, 2024. La solicitud para el permiso está disponible para leerla y copiarla en 202 Bessie Price Owen Drive, Montgomery, en el condado de Montgomery, Texas antes de la fecha de publicación de este aviso en el periódico. La solicitud (cualquier actualización y aviso inclusive) está disponible electrónicamente en la siguiente página web: <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>. Este enlace a un mapa electrónico de la ubicación general del sitio o de la instalación es proporcionado como una cortesía y no es parte de la solicitud o del aviso. Para la ubicación exacta, consulte la solicitud. <https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.6625,30.332222&level=18>

**AVISO ADICIONAL.** El Director Ejecutivo de la TCEQ ha determinado que la solicitud es administrativamente completa y conducirá una revisión técnica de la solicitud. Después de completar la revisión técnica, el Director Ejecutivo puede preparar un borrador del permiso y emitirá una Decisión Preliminar sobre la solicitud. **El aviso de la solicitud y la decisión preliminar serán publicados y enviado a los que están en la lista de correo de las personas a lo largo del condado que desean recibir los avisos y los que están en la lista de correo que desean recibir avisos de esta solicitud. El aviso dará la fecha límite para someter comentarios públicos.**

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

**OPORTUNIDAD DE UNA AUDIENCIA ADMINISTRATIVA DE LO CONTENCIOSO.**

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

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

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

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

**CONTACTOS E INFORMACIÓN DE LA TCEQ.** Todos los comentarios escritos del

**público y los para pedidos una reunión deben ser presentados a la Oficina del Secretario Principal, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 o por el internet at [www.tceq.texas.gov/about/comments.html](http://www.tceq.texas.gov/about/comments.html).** Tenga en cuenta que cualquier información personal que usted proporcione, incluyendo su nombre, número de teléfono, dirección de correo electrónico y dirección física pasarán a formar parte del registro público de la Agencia. Si necesita más información en Español sobre esta solicitud para un permiso o el proceso del permiso, por favor llame a El Programa de Educación Pública de la TCEQ, sin cobro, al 1-800-687-4040. La información general sobre la TCEQ puede ser encontrada en nuestro sitio de la red: [www.tceq.texas.gov](http://www.tceq.texas.gov).

También se puede obtener información adicional del Keenan North Development, Ltd. a la dirección indicada arriba o llamando a Mr. Jonathan Liu, P.E., A&S Engineers, Inc. al 713-942-2700.

Fecha de emisión 18 de marzo de 2025


## Erwin Madrid

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**From:** Eric Williams <elw@as-engineers.com>  
**Sent:** Wednesday, January 22, 2025 8:52 AM  
**To:** Rachel Ellis  
**Cc:** Jonathan D. Liu  
**Subject:** FW: Response: Application for New Permit No. WQ0016686001-Keenan North Development, Ltd.- Notice of Deficiency Letter  
**Attachments:** Avery5160EasyPeelAddressLabels.doc; dom-tpdes-new-nori-munechno (2).docx

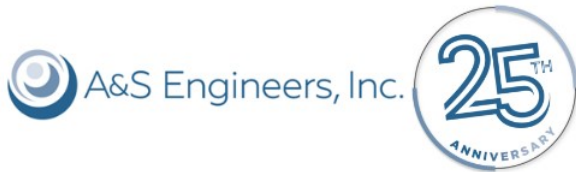
Good Morning Rachel,

Please see below. Are we not supposed to use the TCEQ FTPS for permits?

I have a OneDrive link as well:  [Keenan North TPDES Application Package 15 Jan.pdf](#)

Thanks,

**Eric Williams, P.E.**  
Project Manager



**A&S Engineers, Inc.**

10377 Stella Link Road  
Houston, TX 77025-5445  
D: (713) 942-2775  
[elw@as-engineers.com](mailto:elw@as-engineers.com)  
[www.as-engineers.com](http://www.as-engineers.com)

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**From:** Eric Williams  
**Sent:** Thursday, January 16, 2025 1:31 PM  
**To:** Rachel.Ellis@tceq.texas.gov  
**Cc:** Jonathan D. Liu <jdl@as-engineers.com>; Louis Toumajian <lat@as-engineers.com>  
**Subject:** Response: Application for New Permit No. WQ0016686001-Keenan North Development, Ltd.- Notice of Deficiency Letter

Good Afternoon Rachel,

The NOI looks good (once updated with location), the alternative language copy is attached as well as the labels.



The updated permit package has been sent over via the TCEQ FTPS.

Please let me know if you have any questions.

Thanks,

**Eric Williams, P.E.**  
Project Manager



**A&S Engineers, Inc.**

10377 Stella Link Road  
Houston, TX 77025-5445  
D: (713) 942-2775  
[elw@as-engineers.com](mailto:elw@as-engineers.com)  
[www.as-engineers.com](http://www.as-engineers.com)

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November 23, 2024

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

Re: Domestic Wastewater Discharge Permit - New  
Permit No. WQ TBD  
NPDES Permit No. TX TBD  
Keenan North Development, Ltd.  
A & S Project No. 540008.02

Ladies and Gentlemen:

Keenan North Development, Ltd. seeks a TCEQ permit for a wastewater treatment plant to serve a proposed single family residence development. Attached is a Permit Application for the wastewater treatment plant.

Enclosed are one (1) original and three (3) copies of the Application. The fee is being sent under separate cover to the Revenues Section (MC 214).

If you have any questions or comments, please feel free to call me at (713) 942-2700.

Sincerely,

A handwritten signature in blue ink, appearing to read "Eric Williams", is positioned above the printed name.

Eric Williams, P.E.  
Project Manager

Enclosures: TPDES Permit Application Package for Keenan North Development, Ltd.

cc w/enclosures: Mr. Ahmet Ozan, Keenan North Development, Ltd.  
TCEQ-Houston



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the application.

APPLICANT NAME: Keenan North Development, Ltd.

PERMIT NUMBER (If new, leave blank): WQ00 [Click to enter text.](#)

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

	Y	N		Y	N
Administrative Report 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Original USGS Map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Administrative Report 1.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Affected Landowners Map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPIF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Landowner Disk or Labels	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Core Data Form	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Buffer Zone Map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public Involvement Plan Form	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Flow Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Technical Report 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site Drawing	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Technical Report 1.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Original Photographs	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Design Calculations	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 2.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Solids Management Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 3.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Water Balance	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 3.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 3.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 3.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 4.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 5.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 6.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 7.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

For TCEQ Use Only

Segment Number \_\_\_\_\_ County \_\_\_\_\_  
Expiration Date \_\_\_\_\_ Region \_\_\_\_\_  
Permit Number \_\_\_\_\_



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

**DOMESTIC WASTEWATER PERMIT APPLICATION  
ADMINISTRATIVE REPORT 1.0**

For any questions about this form, please contact the Applications Review and Processing Team at 512-239-4671.

**Section 1. Application Fees (Instructions Page 26)**

Indicate the amount submitted for the application fee (check only one).

Flow	New/Major Amendment	Renewal
<0.05 MGD	\$350.00 <input type="checkbox"/>	\$315.00 <input type="checkbox"/>
≥0.05 but <0.10 MGD	\$550.00 <input type="checkbox"/>	\$515.00 <input type="checkbox"/>
≥0.10 but <0.25 MGD	\$850.00 <input type="checkbox"/>	\$815.00 <input type="checkbox"/>
≥0.25 but <0.50 MGD	\$1,250.00 <input checked="" type="checkbox"/>	\$1,215.00 <input type="checkbox"/>
≥0.50 but <1.0 MGD	\$1,650.00 <input type="checkbox"/>	\$1,615.00 <input type="checkbox"/>
≥1.0 MGD	\$2,050.00 <input type="checkbox"/>	\$2,015.00 <input type="checkbox"/>

Minor Amendment (for any flow) \$150.00 ☐

**Payment Information:**

Mailed Check/Money Order Number:

Check/Money Order Amount:

Name Printed on Check:

EPAY Voucher Number:

Copy of Payment Voucher enclosed? Yes ☐

**Section 2. Type of Application (Instructions Page 26)**

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

- ☐ Publicly-Owned Domestic Wastewater
- ☒ Privately-Owned Domestic Wastewater
- ☐ Conventional Wastewater Treatment

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

- ☐ Active ☒ Inactive

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

- ☒ TPDES Permit  
☐ TLAP  
☐ TPDES Permit with TLAP component  
☐ Subsurface Area Drip Dispersal System (SADDS)

d. Check the box next to the appropriate application type

- ☒ New  
☐ Major Amendment with Renewal  
☐ Major Amendment without Renewal  
☐ Renewal without changes  
☐ Minor Amendment with Renewal  
☐ Minor Amendment without Renewal  
☐ Minor Modification of permit

e. For amendments or modifications, describe the proposed changes: [Click to enter text.](#)

f. For existing permits:

Permit Number: WQ00 [Click to enter text.](#)

EPA I.D. (TPDES only): TX [Click to enter text.](#)

Expiration Date: [Click to enter text.](#)

### Section 3. Facility Owner (Applicant) and Co-Applcant Information (Instructions Page 26)

A. The owner of the facility must apply for the permit.

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

**Keenan North Development, Ltd.**

*(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/>

CN: 606265080

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in 30 TAC § 305.44.

Prefix: Mr.

Last Name, First Name: Ozan, Ahmet

Title: President

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

B. **Co-applicant information.** Complete this section only if another person or entity is required to apply as a co-permittee.

What is the Legal Name of the co-applicant applying for this permit?

[Click to enter text.](#)

*(The legal name must be spelled exactly as filed with the TX SOS, with the County, or in the legal documents forming the entity.)*

If the co-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/>

CN: Click to enter text.

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in 30 TAC § 305.44.

Prefix: Click to enter text.

Last Name, First Name: Click to enter text.

Title: Click to enter text.

Credential: Click to enter text.

Provide a brief description of the need for a co-permittee: Click to enter text.

### C. Core Data Form

Complete the Core Data Form for each customer and include as an attachment. If the customer type selected on the Core Data Form is **Individual**, complete **Attachment 1** of Administrative Report 1.0. Exhibit 20

## Section 4. Application Contact Information (Instructions Page 27)

This is the person(s) TCEQ will contact if additional information is needed about this application. Provide a contact for administrative questions and technical questions.

A. Prefix: Mr.

Last Name, First Name: Liu, Jonathan D.

Title: Project Manager

Credential: P.E.

Organization Name: A&S Engineers, Inc.

Mailing Address: 10377 Stella Link Road

City, State, Zip Code: Houston, TX 77025-5445

Phone No.: 713-942-2700

E-mail Address: jdl@as-engineers.com

Check one or both: ☐ Administrative Contact ☒ Technical Contact

B. Prefix: Mr.

Last Name, First Name: Toumajian, Louis

Title: Project Coordinator II

Credential: E.I.T.

Organization Name: A&S Engineers, Inc.

Mailing Address: 10377 Stella Link Road

City, State, Zip Code: Houston, TX 77025-5445

Phone No.: 713-942-2700

E-mail Address: lat@as-engineers.com

Check one or both: ☒ Administrative Contact ☐ Technical Contact

## Section 5. Permit Contact Information (Instructions Page 27)

Provide the names and contact information for two individuals that can be contacted throughout the permit term.

A. Prefix: Mr.

Last Name, First Name: Ozan, Ahmet

Title: President

Credential: Click to enter text.

Organization Name: Keenan North Development, Ltd.

Mailing Address: 28408 Sweetgum Road

City, State, Zip Code: Magnolia, TX, 77354

Phone No.: 832-375-9897

E-mail Address: OZAN\_TWIST@HOTMAIL.COM

B. Prefix: Mr. Last Name, First Name: Liu, Jonathan D.  
Title: Project Manager Credential: P.E.  
Organization Name: A&S Engineers, Inc.  
Mailing Address: 10377 Stella Link Road City, State, Zip Code: Houston, TX 77025-5445  
Phone No.: 713-942-2700 E-mail Address: jdl@as-engineers.com

## Section 6. Billing Contact Information (Instructions Page 27)

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

Prefix: Mr. Last Name, First Name: OZAN, AHMET  
Title: President Credential: Click to enter text.  
Organization Name: Keenan North Development, Ltd.  
Mailing Address: 28408 Sweetgum Road City, State, Zip Code: Magnolia, TX, 77354  
Phone No.: 832-375-9897 E-mail Address: OZAN\_TWIST@HOTMAIL.COM

## Section 7. DMR/MER Contact Information (Instructions Page 27)

Provide the name and complete mailing address of the person delegated to receive and submit Discharge Monitoring Reports (DMR) (EPA 3320-1) or maintain Monthly Effluent Reports (MER).

Prefix: Mr. Last Name, First Name: OZAN, AHMET  
Title: President Credential: Click to enter text.  
Organization Name: Keenan North Development, Ltd.  
Mailing Address: 28408 Sweetgum Road City, State, Zip Code: Magnolia, TX, 77354  
Phone No.: 832-375-9897 E-mail Address: OZAN\_TWIST@HOTMAIL.COM

## Section 8. Public Notice Information (Instructions Page 27)

### A. Individual Publishing the Notices

Prefix: Mr. Last Name, First Name: Liu, Jonathan D.  
Title: Project Manager Credential: P.E.  
Organization Name: A&S Engineers, Inc.  
Mailing Address: 10377 Stella Link Road City, State, Zip Code: Houston, TX 77025-5445  
Phone No.: Click to enter text. E-mail Address: jdl@as-engineers.com

**B. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package**

Indicate by a check mark the preferred method for receiving the first notice and instructions:

☒ E-mail Address

☐ Fax

☐ Regular Mail

**C. Contact permit to be listed in the Notices**

Prefix: Mr.

Last Name, First Name: Liu, Jonathan D.

Title: Click to enter text.

Credential: P.E.

Organization Name: A&S Engineers, Inc.

Mailing Address: 10377 Stella Link Road

City, State, Zip Code: Houston, TX 77025-5445

Phone No.: Click to enter text.

E-mail Address: jdl@as-engineers.com

**D. Public Viewing Information**

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

Public building name: Charles B. Stewart-West Branch Library

Location within the building: Public Records Viewing Area

Physical Address of Building: 202 Bessie Price Owen Dr.

City: Montgomery

County: Montgomery

Contact (Last Name, First Name): Wilson, Mat

Phone No.: 936-522-2799 Ext.: Click to enter text.

**E. Bilingual Notice Requirements**

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

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

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

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

☒ Yes

☐ No

If **no**, publication of an alternative language notice is not required; **skip to** Section 9 below.

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

☒ Yes

☐ No



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

☐ Yes ☒ No

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

☐ Yes ☒ No

5. If the answer is **yes** to **question 1, 2, 3, or 4**, public notices in an alternative language are required. Which language is required by the bilingual program? [Click to enter text.](#)

#### F. Plain Language Summary Template

Complete the Plain Language Summary (TCEQ Form 20972) and include as an attachment.

**Attachment:** [Exhibit 21](#)

#### G. Public Involvement Plan Form

Complete the Public Involvement Plan Form (TCEQ Form 20960) for each application for a **new permit or major amendment to a permit** and include as an attachment.

**Attachment:** [Exhibit 22](#)

### Section 9. Regulated Entity and Permitted Site Information (Instructions Page 29)

A. If the site is currently regulated by TCEQ, provide the Regulated Entity Number (RN) issued to this site. RN [Click to enter text.](#)

Search the TCEQ's Central Registry at <http://www15.tceq.texas.gov/crpub/> to determine if the site is currently regulated by TCEQ.

B. Name of project or site (the name known by the community where located):

[Keenan North WWTP](#)

C. Owner of treatment facility: [Keenan North Development, Ltd.](#)

Ownership of Facility: ☐ Public ☒ Private ☐ Both ☐ Federal

D. Owner of land where treatment facility is or will be:

Prefix: Last Name, First Name:

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

Organization Name: [Keenan North Development, Ltd.](#)

Mailing Address: [28408 Sweetgum Road](#) City, State, Zip Code: [Magnolia, TX, 77354](#)

Phone No.: [832-375-9897](#) E-mail Address: [OZAN\\_TWIST@HOTMAIL.COM](#)

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

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

E. Owner of effluent disposal site:

Prefix:

Last Name, First Name:

Title:

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

Organization Name:

Mailing Address:

City, State, Zip Code:

Phone No.:

E-mail Address:

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

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

F. Owner sewage sludge disposal site (if authorization is requested for sludge disposal on property owned or controlled by the applicant):

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

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

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

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

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

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

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

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

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

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

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

## Section 10. TPDES Discharge Information (Instructions Page 31)

A. Is the wastewater treatment facility location in the existing permit accurate?

☐ Yes ☒ No

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

Approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854 in Montgomery County.

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

☐ Yes ☒ No

If **no, or a new or amendment permit application**, provide an accurate description of the point of discharge and the discharge route to the nearest classified segment as defined in 30 TAC Chapter 307:

Approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854 in Montgomery County. Discharge into Mound Creek Tributary No. 54 then to Mound Creek, Lake Creek, then into the West Fork San Jacinto River, then to San Jacinto River

City nearest the outfall(s): Montgomery

County in which the outfalls(s) is/are located: Montgomery

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

☐ Yes ☒ No

If **yes**, indicate by a check mark if:

- ☐ Authorization granted      ☐ Authorization pending

For **new and amendment** applications, provide copies of letters that show proof of contact and the approval letter upon receipt.

**Attachment:** N/A

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

## Section 11. TLAP Disposal Information (Instructions Page 32)

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

☐ Yes      ☐ No

If **no, or a new or amendment permit application**, provide an accurate description of the disposal site location:

[Click to enter text.](#)

- B. City nearest the disposal site: [Click to enter text.](#)

- C. County in which the disposal site is located: [Click to enter text.](#)

- D. For **TLAPs**, describe the routing of effluent from the treatment facility to the disposal site:

[Click to enter text.](#)

- E. For **TLAPs**, please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: [Click to enter text.](#)

## Section 12. Miscellaneous Information (Instructions Page 32)

- A. Is the facility located on or does the treated effluent cross American Indian Land?

☐ Yes      ☒ No

- B. If the existing permit contains an onsite sludge disposal authorization, is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes      ☐ No      ☒ Not Applicable

If No, or if a new onsite sludge disposal authorization is being requested in this permit application, provide an accurate location description of the sewage sludge disposal site.

[Click to enter text.](#)

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

☐ Yes ☒ No

If yes, list each person formerly employed by the TCEQ who represented your company and was paid for service regarding the application: [Click to enter text.](#)

D. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

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

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

E. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If yes, please provide the following information:

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

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

## Section 13. Attachments (Instructions Page 33)

Indicate which attachments are included with the Administrative Report. Check all that apply:

☐ Lease agreement or deed recorded easement, if the land where the treatment facility is located or the effluent disposal site are not owned by the applicant or co-applicant.

☒ Original full-size USGS Topographic Map with the following information:

- Applicant's property boundary
- Treatment facility boundary
- Labeled point of discharge for each discharge point (TPDES only)
- Highlighted discharge route for each discharge point (TPDES only)
- Onsite sewage sludge disposal site (if applicable)
- Effluent disposal site boundaries (TLAP only)
- New and future construction (if applicable)
- 1 mile radius information
- 3 miles downstream information (TPDES only)
- All ponds.

☐ Attachment 1 for Individuals as co-applicants

☐ Other Attachments. Please specify: [Click to enter text.](#)

## Section 14. Signature Page (Instructions Page 34)

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

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

Applicant: Keenan North Development, Ltd.

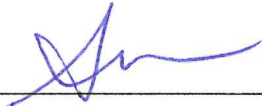
Certification:

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

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


Signatory name (typed or printed): Ahmet Ozan

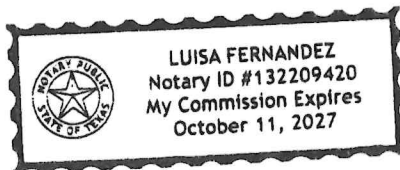
Signatory title: President

Signature:  Date: 11/04/2024  
(Use blue ink)

Subscribed and Sworn to before me by the said Ahmet Ozan  
on this 4<sup>th</sup> day of November, 2024.

My commission expires on the 11 day of October, 2027.

  
Notary Public



[SEAL]

Montgomery  
County, Texas

# DOMESTIC WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.0

The following information is required for new and amendment applications.

## Section 1. Affected Landowner Information (Instructions Page 36)

- A. Indicate by a check mark that the landowners map or drawing, with scale, includes the following information, as applicable:
- ☒ The applicant's property boundaries
  - ☒ The facility site boundaries within the applicant's property boundaries
  - ☐ The distance the buffer zone falls into adjacent properties and the property boundaries of the landowners located within the buffer zone
  - ☒ The property boundaries of all landowners surrounding the applicant's property (Note: if the application is a major amendment for a lignite mine, the map must include the property boundaries of all landowners adjacent to the new facility (ponds).)
  - ☒ The point(s) of discharge and highlighted discharge route(s) clearly shown for one mile downstream
  - ☒ The property boundaries of the landowners located on both sides of the discharge route for one full stream mile downstream of the point of discharge
  - ☐ The property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge if the point of discharge is into a lake, bay, estuary, or affected by tides
  - ☐ The boundaries of the effluent disposal site (for example, irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property
  - ☒ The property boundaries of all landowners surrounding the effluent disposal site
  - ☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners surrounding the applicant's property boundaries where the sewage sludge land application site is located
  - ☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (for example, sludge surface disposal site or sludge monofill) is located
- B. ☒ Indicate by a check mark that a separate list with the landowners' names and mailing addresses cross-referenced to the landowner's map has been provided.
- C. Indicate by a check mark in which format the landowners list is submitted:
- ☒ USB Drive      ☐ Four sets of labels
- D. Provide the source of the landowners' names and mailing addresses: MCAD
- E. As required by *Texas Water Code § 5.115*, is any permanent school fund land affected by this application?
- ☐ Yes      ☒ No

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

Click to enter text.

## Section 2. Original Photographs (Instructions Page 38)

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

- ☒ At least one original photograph of the new or expanded treatment unit location
- ☒ At least two photographs of the existing/proposed point of discharge and as much area downstream (photo 1) and upstream (photo 2) as can be captured. If the discharge is to an open water body (e.g., lake, bay), the point of discharge should be in the right or left edge of each photograph showing the open water and with as much area on each respective side of the discharge as can be captured.
- ☐ At least one photograph of the existing/proposed effluent disposal site
- ☒ A plot plan or map showing the location and direction of each photograph

## Section 3. Buffer Zone Map (Instructions Page 38)

A. Buffer zone map. Provide a buffer zone map on 8.5 x 11-inch paper with all of the following information. The applicant's property line and the buffer zone line may be distinguished by using dashes or symbols and appropriate labels.

- The applicant's property boundary;
- The required buffer zone; and
- Each treatment unit; and
- The distance from each treatment unit to the property boundaries.

B. Buffer zone compliance method. Indicate how the buffer zone requirements will be met. Check all that apply.

- ☒ Ownership
- ☐ Restrictive easement
- ☐ Nuisance odor control
- ☐ Variance

C. Unsuitable site characteristics. Does the facility comply with the requirements regarding unsuitable site characteristic found in 30 TAC § 309.13(a) through (d)?

- ☐ Yes      ☒ No

# **DOMESTIC WASTEWATER PERMIT APPLICATION**

## **SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)**

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

**Attachment:** Exhibit 23



# WATER QUALITY PERMIT

## PAYMENT SUBMITTAL FORM

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

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

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

*BY REGULAR U.S. MAIL*

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

*BY OVERNIGHT/EXPRESS MAIL*

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

**Fee Code:** WQP      **Waste Permit No:** [Click to enter text.](#)

1. Check or Money Order Number: [Click to enter text.](#)
2. Check or Money Order Amount: \$1250.00
3. Date of Check or Money Order: [Click to enter text.](#)
4. Name on Check or Money Order: [Click to enter text.](#)
5. APPLICATION INFORMATION

Name of Project or Site: Keenan North Development, Ltd.

Physical Address of Project or Site: Keenan North WWTP

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

**Staple Check or Money Order in This Space**

# ATTACHMENT 1

## INDIVIDUAL INFORMATION

### Section 1. Individual Information (Instructions Page 41)

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

Prefix (Mr., Ms., Miss): [Click to enter text.](#)

Full legal name (Last Name, First Name, Middle Initial): [Click to enter text.](#)

Driver's License or State Identification Number: [Click to enter text.](#)

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

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

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

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

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

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

#### **For Commission Use Only:**

Customer Number:

Regulated Entity Number:

Permit Number:

# DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST OF COMMON DEFICIENCIES

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

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

Correct and Current Industrial Wastewater Permit Application Forms ☒ Yes  
*(TCEQ Form Nos. 10053 and 10054. Version dated 6/25/2018 or later.)*

Water Quality Permit Payment Submittal Form (Page 19) ☒ Yes  
*(Original payment sent to TCEQ Revenue Section. See instructions for mailing address.)*

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

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

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

## **Things to Know:**

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

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

Landowners Labels or USB Drive attached ☐ N/A ☒ Yes  
*(See instructions for landowner requirements)*

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

Plain Language Summary ☒ Yes



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## DOMESTIC WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.0

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For any questions about this form, please contact the Domestic Wastewater Permitting Team at 512-239-4671.

The following information is required for all renewal, new, and amendment applications.

### Section 1. Permitted or Proposed Flows (Instructions Page 43)

#### A. Existing/Interim I Phase

Design Flow (MGD): 0.165

2-Hr Peak Flow (MGD): 0.66

Estimated construction start date: 01/01/2026

Estimated waste disposal start date: 08/01/2026

#### B. Interim II Phase

Design Flow (MGD): 0.33

2-Hr Peak Flow (MGD): 1.32

Estimated construction start date: 01/01/2027

Estimated waste disposal start date: 10/01/2027

#### C. Final Phase

Design Flow (MGD): 0.495

2-Hr Peak Flow (MGD): 1.98

Estimated construction start date: 01/01/2028

Estimated waste disposal start date: 10/01/2028

#### D. Current Operating Phase

Provide the startup date of the facility: 08/01/2026

### Section 2. Treatment Process (Instructions Page 43)

#### A. Current Operating Phase

Provide a detailed description of the treatment process. **Include the type of treatment plant, mode of operation, and all treatment units.** Start with the plant's head works and

finish with the point of discharge. Include all sludge processing and drying units. **If more than one phase exists or is proposed, a description of *each phase* must be provided.**

The ultimate plant is designed for 495,000 gpd. The aeration basins are planned to be equipped with fine bubble diffusers with a submergence of 10 feet. Chlorine contact tank is designed to add a second activated Sludge basin to increase total plant capacity to 495,000 gpd (Peak of 1,890,000 gpd). Each phase will be an 165k gpd. The final build out will have 4- aeration basins, 3 digesters, 2 clarifiers and 1 chlorine contact basin.

## B. Treatment Units

In Table 1.0(1), provide the treatment unit type, the number of units, and dimensions (length, width, depth) of **each treatment unit, accounting for *all* phases of operation.**

**Table 1.0(1) - Treatment Units**

Treatment Unit Type	Number of Units	Dimensions (L x W x D)

## C. Process Flow Diagram

Provide flow diagrams for the existing facilities and **each** proposed phase of construction.

**Attachment:** Exhibit 7

## Section 3. Site Information and Drawing (Instructions Page 44)

Provide the TPDES discharge outfall latitude and longitude. Enter N/A if not applicable.

- Latitude: 30°19' 56.06"W
- Longitude: 95°39' 50.01"W

Provide the TLAP disposal site latitude and longitude. Enter N/A if not applicable.

- Latitude: N/A
- Longitude: N/A

Provide a site drawing for the facility that shows the following:

- The boundaries of the treatment facility;
- The boundaries of the area served by the treatment facility;
- If land disposal of effluent, the boundaries of the disposal site and all storage/holding ponds; and
- If sludge disposal is authorized in the permit, the boundaries of the land application or disposal site.

**Attachment:** Exhibit 10

Provide the name **and** a description of the area served by the treatment facility.

Keenan Cut Off North Subdivision – A single family residential subdivision of approximately 220 single family residences in Montgomery County, TX.

Collection System Information **for wastewater TPDES permits only:** Provide information for each **uniquely owned** collection system, existing and new, served by this facility, including satellite collection systems. **Please see the instructions for a detailed explanation and examples.**

Collection System Information

Collection System Name	Owner Name	Owner Type	Population Served
Keenan North WWTP Collection	Keenan North Development, Ltd.	Privately Owned	
		Choose an item.	
		Choose an item.	
		Choose an item.	

Section 4. Unbuilt Phases (Instructions Page 45)

Is the application for a renewal of a permit that contains an unbuilt phase or phases?

☐ Yes ☒ No

If **yes**, does the existing permit contain a phase that has not been constructed **within five years** of being authorized by the TCEQ?

☐ Yes ☐ No

If **yes**, provide a detailed discussion regarding the continued need for the unbuilt phase. **Failure to provide sufficient justification may result in the Executive Director recommending denial of the unbuilt phase or phases.**

Click to enter text.

Section 5. Closure Plans (Instructions Page 45)

Have any treatment units been taken out of service permanently, or will any units be taken out of service in the next five years?

☐ Yes ☒ No

If **yes**, was a closure plan submitted to the TCEQ?

☐ Yes ☐ No

If **yes**, provide a brief description of the closure and the date of plan approval.

[Click to enter text.](#)

## Section 6. Permit Specific Requirements (Instructions Page 45)

For applicants with an existing permit, check the Other Requirements or Special Provisions of the permit.

### A. Summary transmittal

Have plans and specifications been approved for the existing facilities and each proposed phase?

☐ Yes ☒ No

If **yes**, provide the date(s) of approval for each phase: [Click to enter text.](#)

Provide information, including dates, on any actions taken to meet a *requirement or provision* pertaining to the submission of a summary transmittal letter. **Provide a copy of an approval letter from the TCEQ, if applicable.**

N/A

### B. Buffer zones

Have the buffer zone requirements been met?

☒ Yes ☐ No

Provide information below, including dates, on any actions taken to meet the conditions of the buffer zone. If available, provide any new documentation relevant to maintaining the buffer zones.

N/A

### C. Other actions required by the current permit

Does the *Other Requirements* or *Special Provisions* section in the existing permit require submission of any other information or other required actions? Examples include Notification of Completion, progress reports, soil monitoring data, etc.

☐ Yes ☒ No

If **yes**, provide information below on the status of any actions taken to meet the conditions of an *Other Requirement* or *Special Provision*.

Click to enter text.

### D. Grit and grease treatment

#### 1. Acceptance of grit and grease waste

Does the facility have a grit and/or grease processing facility onsite that treats and decants or accepts transported loads of grit and grease waste that are discharged directly to the wastewater treatment plant prior to any treatment?

☐ Yes ☒ No

If **No**, stop here and continue with Subsection E. Stormwater Management.

#### 2. Grit and grease processing

Describe below how the grit and grease waste is treated at the facility. In your description, include how and where the grit and grease is introduced to the treatment works and how it is separated or processed. Provide a flow diagram showing how grit and grease is processed at the facility.

Click to enter text.

#### 3. Grit disposal

Does the facility have a Municipal Solid Waste (MSW) registration or permit for grit disposal?

☐ Yes ☐ No

If **No**, contact the TCEQ Municipal Solid Waste team at 512-239-2335. Note: A registration or permit is required for grit disposal. Grit shall not be combined with treatment plant sludge. See the instruction booklet for additional information on grit disposal requirements and restrictions.



Describe the method of grit disposal.

Click to enter text.

#### 4. Grease and decanted liquid disposal

Note: A registration or permit is required for grease disposal. Grease shall not be combined with treatment plant sludge. For more information, contact the TCEQ Municipal Solid Waste team at 512-239-2335.

Describe how the decant and grease are treated and disposed of after grit separation.

Click to enter text.

### E. Stormwater management

#### 1. Applicability

Does the facility have a design flow of 1.0 MGD or greater in any phase?

☐ Yes ☒ No

Does the facility have an approved pretreatment program, under 40 CFR Part 403?

☐ Yes ☒ No

If **no to both of the above**, then skip to Subsection F, Other Wastes Received.

#### 2. MSGP coverage

Is the stormwater runoff from the WWTP and dedicated lands for sewage disposal currently permitted under the TPDES Multi-Sector General Permit (MSGP), TXR050000?

☐ Yes ☐ No

If **yes**, please provide MSGP Authorization Number and skip to Subsection F, Other Wastes Received:

TXR05 Click to enter text. or TXRNE Click to enter text.

If **no**, do you intend to seek coverage under TXR050000?

☐ Yes ☐ No

#### 3. Conditional exclusion

Alternatively, do you intend to apply for a conditional exclusion from permitting based TXR050000 (Multi Sector General Permit) Part II B.2 or TXR050000 (Multi Sector General Permit) Part V, Sector T 3(b)?

☐ Yes ☐ No

If yes, please explain below then proceed to Subsection F, Other Wastes Received:

Click to enter text.

**4. Existing coverage in individual permit**

Is your stormwater discharge currently permitted through this individual TPDES or TLAP permit?

☐ Yes ☐ No

If yes, provide a description of stormwater runoff management practices at the site that are authorized in the wastewater permit then skip to Subsection F, Other Wastes Received.

Click to enter text.

**5. Zero stormwater discharge**

Do you intend to have no discharge of stormwater via use of evaporation or other means?

☐ Yes ☐ No

If yes, explain below then skip to Subsection F. Other Wastes Received.

Click to enter text.

Note: If there is a potential to discharge any stormwater to surface water in the state as the result of any storm event, then permit coverage is required under the MSGP or an individual discharge permit. This requirement applies to all areas of facilities with treatment plants or systems that treat, store, recycle, or reclaim domestic sewage, wastewater or sewage sludge (including dedicated lands for sewage sludge disposal located within the onsite property boundaries) that meet the applicability criteria of above. You have the option of obtaining coverage under the MSGP for direct discharges, (recommended), or obtaining coverage under this individual permit.

**6. Request for coverage in individual permit**

Are you requesting coverage of stormwater discharges associated with your treatment plant under this individual permit?

☐ Yes ☐ No

If yes, provide a description of stormwater runoff management practices at the site for which you are requesting authorization in this individual wastewater permit and describe whether you intend to comingle this discharge with your treated effluent or discharge it via a separate dedicated stormwater outfall. Please also indicate if you

intend to divert stormwater to the treatment plant headworks and indirectly discharge it to water in the state.

[Click to enter text.](#)

Note: Direct stormwater discharges to waters in the state authorized through this individual permit will require the development and implementation of a stormwater pollution prevention plan (SWPPP) and will be subject to additional monitoring and reporting requirements. Indirect discharges of stormwater via headworks recycling will require compliance with all individual permit requirements including 2-hour peak flow limitations. All stormwater discharge authorization requests will require additional information during the technical review of your application.

#### F. Discharges to the Lake Houston Watershed

Does the facility discharge in the Lake Houston watershed?

☐ Yes ☒ No

If yes, attach a Sewage Sludge Solids Management Plan. See Example 5 in the instructions.

[Click to enter text.](#)

#### G. Other wastes received including sludge from other WWTPs and septic waste

##### 1. Acceptance of sludge from other WWTPs

Does or will the facility accept sludge from other treatment plants at the facility site?

☐ Yes ☒ No

**If yes, attach sewage sludge solids management plan. See Example 5 of instructions.**

In addition, provide the date the plant started or is anticipated to start accepting sludge, an estimate of monthly sludge acceptance (gallons or millions of gallons), an estimate of the BOD<sub>5</sub> concentration of the sludge, and the design BOD<sub>5</sub> concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

[Click to enter text.](#)

Note: Permits that accept sludge from other wastewater treatment plants may be required to have influent flow and organic loading monitoring.

##### 2. Acceptance of septic waste

Is the facility accepting or will it accept septic waste?

☐ Yes ☒ No

**If yes, does the facility have a Type V processing unit?**

☐ Yes ☐ No

**If yes, does the unit have a Municipal Solid Waste permit?**

☐ Yes ☐ No

If **yes to any of the above**, provide the date the plant started or is anticipated to start accepting septic waste, an estimate of monthly septic waste acceptance (gallons or millions of gallons), an estimate of the BOD<sub>5</sub> concentration of the septic waste, and the design BOD<sub>5</sub> concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click to enter text.

Note: Permits that accept sludge from other wastewater treatment plants may be required to have influent flow and organic loading monitoring.

**3. Acceptance of other wastes (not including septic, grease, grit, or RCRA, CERCLA or as discharged by IUs listed in Worksheet 6)**

Is or will the facility accept wastes that are not domestic in nature excluding the categories listed above?

☐ Yes ☒ No

If **yes**, provide the date that the plant started accepting the waste, an estimate how much waste is accepted on a monthly basis (gallons or millions of gallons), a description of the entities generating the waste, and any distinguishing chemical or other physical characteristic of the waste. Also note if this information has or has not changed since the last permit action.

Click to enter text.

## Section 7. Pollutant Analysis of Treated Effluent (Instructions Page 50)

Is the facility in operation?

☐ Yes ☒ No

If **no**, this section is not applicable. Proceed to Section 8.

If **yes**, provide effluent analysis data for the listed pollutants. **Wastewater treatment facilities** complete Table 1.0(2). **Water treatment facilities** discharging filter backwash water, complete Table 1.0(3). Provide copies of the laboratory results sheets. **These tables are not applicable for a minor amendment without renewal.** See the instructions for guidance.

Note: The sample date must be within 1 year of application submission.

**Table1.0(2) – Pollutant Analysis for Wastewater Treatment Facilities**

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
CBOD <sub>5</sub> , mg/l					
Total Suspended Solids, mg/l					
Ammonia Nitrogen, mg/l					
Nitrate Nitrogen, mg/l					
Total Kjeldahl Nitrogen, mg/l					
Sulfate, mg/l					
Chloride, mg/l					
Total Phosphorus, mg/l					
pH, standard units					
Dissolved Oxygen*, mg/l					
Chlorine Residual, mg/l					
<i>E.coli</i> (CFU/100ml) freshwater					
Enterococci (CFU/100ml) saltwater					
Total Dissolved Solids, mg/l					
Electrical Conductivity, $\mu$ mohs/cm, †					
Oil & Grease, mg/l					
Alkalinity (CaCO <sub>3</sub> )*, mg/l					

\*TPDES permits only

†TLAP permits only

**Table1.0(3) – Pollutant Analysis for Water Treatment Facilities**

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Total Suspended Solids, mg/l					
Total Dissolved Solids, mg/l					
pH, standard units					
Fluoride, mg/l					
Aluminum, mg/l					
Alkalinity (CaCO <sub>3</sub> ), mg/l					

## Section 8. Facility Operator (Instructions Page 50)

Facility Operator Name: TBDFacility Operator's License Classification and Level: TBDFacility Operator's License Number: TBD

## Section 9. Sludge and Biosolids Management and Disposal (Instructions Page 51)

### A. WWTP's Biosolids Management Facility Type

Check all that apply. See instructions for guidance

- ☐ Design flow  $\geq$  1 MGD
- ☐ Serves  $\geq$  10,000 people
- ☐ Class I Sludge Management Facility (per 40 CFR § 503.9)
- ☐ Biosolids generator
- ☐ Biosolids end user – land application (onsite)
- ☐ Biosolids end user – surface disposal (onsite)
- ☐ Biosolids end user – incinerator (onsite)

### B. WWTP's Biosolids Treatment Process

Check all that apply. See instructions for guidance.

- ☐ Aerobic Digestion
- ☐ Air Drying (or sludge drying beds)
- ☐ Lower Temperature Composting
- ☐ Lime Stabilization
- ☐ Higher Temperature Composting
- ☐ Heat Drying
- ☐ Thermophilic Aerobic Digestion
- ☐ Beta Ray Irradiation
- ☐ Gamma Ray Irradiation
- ☐ Pasteurization
- ☐ Preliminary Operation (e.g. grinding, de-gritting, blending)
- ☐ Thickening (e.g. gravity thickening, centrifugation, filter press, vacuum filter)
- ☐ Sludge Lagoon
- ☐ Temporary Storage ( $< 2$  years)
- ☐ Long Term Storage ( $\geq 2$  years)
- ☐ Methane or Biogas Recovery
- ☐ Other Treatment Process: [Click to enter text.](#)

### C. Biosolids Management

Provide information on the *intended* biosolids management practice. Do not enter every management practice that you want authorized in the permit, as the permit will authorize

all biosolids management practices listed in the instructions. Rather indicate the management practice the facility plans to use.

#### Biosolids Management

Management Practice	Handler or Preparer Type	Bulk or Bag Container	Amount (dry metric tons)	Pathogen Reduction Options	Vector Attraction Reduction Option
Choose an item.	Choose an item.	Choose an item.		Choose an item.	Choose an item.
Choose an item.	Choose an item.	Choose an item.		Choose an item.	Choose an item.
Choose an item.	Choose an item.	Choose an item.		Choose an item.	Choose an item.

If “Other” is selected for Management Practice, please explain (e.g. monofill or transport to another WWTP): [Click to enter text.](#)

#### D. Disposal site

Disposal site name: TBD

TCEQ permit or registration number: TBD

County where disposal site is located: TBD

#### E. Transportation method

Method of transportation (truck, train, pipe, other): TBD

Name of the hauler: TBD

Hauler registration number: TBD

Sludge is transported as a:

Liquid ☒

semi-liquid ☐

semi-solid ☐

solid ☐

## Section 10. Permit Authorization for Sewage Sludge Disposal (Instructions Page 53)

#### A. Beneficial use authorization

Does the existing permit include authorization for land application of sewage sludge for beneficial use?

☐ Yes ☒ No

If **yes**, are you requesting to continue this authorization to land apply sewage sludge for beneficial use?

☐ Yes ☐ No

If **yes**, is the completed **Application for Permit for Beneficial Land Use of Sewage Sludge (TCEQ Form No. 10451)** attached to this permit application (see the instructions for details)?

☐ Yes ☐ No

## B. Sludge processing authorization

Does the existing permit include authorization for any of the following sludge processing, storage or disposal options?

Sludge Composting	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Marketing and Distribution of sludge	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Sludge Surface Disposal or Sludge Monofill	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Temporary storage in sludge lagoons	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

If **yes** to any of the above sludge options and the applicant is requesting to continue this authorization, is the completed **Domestic Wastewater Permit Application: Sewage Sludge Technical Report (TCEQ Form No. 10056)** attached to this permit application?

☐ Yes ☐ No

## Section 11. Sewage Sludge Lagoons (Instructions Page 53)

Does this facility include sewage sludge lagoons?

☐ Yes ☒ No

If yes, complete the remainder of this section. If no, proceed to Section 12.

### A. Location information

The following maps are required to be submitted as part of the application. For each map, provide the Attachment Number.

- Original General Highway (County) Map:  
**Attachment:** [Click to enter text.](#)
- USDA Natural Resources Conservation Service Soil Map:  
**Attachment:** [Click to enter text.](#)
- Federal Emergency Management Map:  
**Attachment:** [Click to enter text.](#)
- Site map:  
**Attachment:** [Click to enter text.](#)

Discuss in a description if any of the following exist within the lagoon area. Check all that apply.

- ☐ Overlap a designated 100-year frequency flood plain
- ☐ Soils with flooding classification
- ☐ Overlap an unstable area
- ☐ Wetlands
- ☐ Located less than 60 meters from a fault
- ☐ None of the above

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



If a portion of the lagoon(s) is located within the 100-year frequency flood plain, provide the protective measures to be utilized including type and size of protective structures:

[Click to enter text.](#)

## B. Temporary storage information

Provide the results for the pollutant screening of sludge lagoons. These results are in addition to pollutant results in *Section 7 of Technical Report 1.0*.

Nitrate Nitrogen, mg/kg: [Click to enter text.](#)

Total Kjeldahl Nitrogen, mg/kg: [Click to enter text.](#)

Total Nitrogen (=nitrate nitrogen + TKN), mg/kg: [Click to enter text.](#)

Phosphorus, mg/kg: [Click to enter text.](#)

Potassium, mg/kg: [Click to enter text.](#)

pH, standard units: [Click to enter text.](#)

Ammonia Nitrogen mg/kg: [Click to enter text.](#)

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

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

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

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

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

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

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

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

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

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

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

Provide the following information:

Volume and frequency of sludge to the lagoon(s): [Click to enter text.](#)

Total dry tons stored in the lagoons(s) per 365-day period: [Click to enter text.](#)

Total dry tons stored in the lagoons(s) over the life of the unit: [Click to enter text.](#)

## C. Liner information

Does the active/proposed sludge lagoon(s) have a liner with a maximum hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec?

☐ Yes ☐ No

If yes, describe the liner below. Please note that a liner is required.

[Click to enter text.](#)

#### D. Site development plan

Provide a detailed description of the methods used to deposit sludge in the lagoon(s):

[Click to enter text.](#)

Attach the following documents to the application.

- Plan view and cross-section of the sludge lagoon(s)  
**Attachment:** [Click to enter text.](#)
- Copy of the closure plan  
**Attachment:** [Click to enter text.](#)
- Copy of deed recordation for the site  
**Attachment:** [Click to enter text.](#)
- Size of the sludge lagoon(s) in surface acres and capacity in cubic feet and gallons  
**Attachment:** [Click to enter text.](#)
- Description of the method of controlling infiltration of groundwater and surface water from entering the site  
**Attachment:** [Click to enter text.](#)
- Procedures to prevent the occurrence of nuisance conditions  
**Attachment:** [Click to enter text.](#)

#### E. Groundwater monitoring

Is groundwater monitoring currently conducted at this site, or are any wells available for groundwater monitoring, or are groundwater monitoring data otherwise available for the sludge lagoon(s)?

☐ Yes ☐ No

If groundwater monitoring data are available, provide a copy. Provide a profile of soil types encountered down to the groundwater table and the depth to the shallowest groundwater as a separate attachment.

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

## Section 12. Authorizations/Compliance/Enforcement (Instructions Page 55)

### A. Additional authorizations

Does the permittee have additional authorizations for this facility, such as reuse authorization, sludge permit, etc?

☐ Yes ☒ No

If yes, provide the TCEQ authorization number and description of the authorization:

Click to enter text.

### B. Permittee enforcement status

Is the permittee currently under enforcement for this facility?

☐ Yes ☒ No

Is the permittee required to meet an implementation schedule for compliance or enforcement?

☐ Yes ☒ No

If yes to either question, provide a brief summary of the enforcement, the implementation schedule, and the current status:

Click to enter text.

## Section 13. RCRA/CERCLA Wastes (Instructions Page 55)

### A. RCRA hazardous wastes

Has the facility received in the past three years, does it currently receive, or will it receive RCRA hazardous waste?

☐ Yes ☒ No

**B. Remediation activity wastewater**

Has the facility received in the past three years, does it currently receive, or will it receive CERCLA wastewater, RCRA remediation/corrective action wastewater or other remediation activity wastewater?

☐ Yes ☒ No

**C. Details about wastes received**

If **yes** to either Subsection A or B above, provide detailed information concerning these wastes with the application.

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

## Section 14. Laboratory Accreditation (Instructions Page 56)

All laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification*, which includes the following general exemptions from National Environmental Laboratory Accreditation Program (NELAP) certification requirements:

- The laboratory is an in-house laboratory and is:
  - periodically inspected by the TCEQ; or
  - located in another state and is accredited or inspected by that state; or
  - performing work for another company with a unit located in the same site; or
  - performing pro bono work for a governmental agency or charitable organization.
- The laboratory is accredited under federal law.
- The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.
- The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review 30 TAC Chapter 25 for specific requirements.

The following certification statement shall be signed and submitted with every application. See the Signature Page section in the Instructions, for a list of designated representatives who may sign the certification.

### CERTIFICATION:

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

Printed Name: Ahmet Ozan

Title: President

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

# DOMESTIC WASTEWATER PERMIT APPLICATION

## TECHNICAL REPORT 1.1

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

### Section 1. Justification for Permit (Instructions Page 57)

#### A. Justification of permit need

Provide a detailed discussion regarding the need for any phase(s) not currently permitted. Failure to provide sufficient justification may result in the Executive Director recommending denial of the proposed phase(s) or permit.

The Keenan Cutoff North subdivision will consist of approximately 220 connections. The construction for the Keenan Cutoff North WWTP is dependent on the developer for the subdivision. The first phase of WWTP construction will be sufficient in capacity for the entire subdivision. The Keenan Cutoff North WWTP will then have an additional 2 phases with a timeline on construction depending on the development pace of the area surrounding the Keenan Cutoff North subdivision

#### B. Regionalization of facilities

For additional guidance, please review [TCEQ's Regionalization Policy for Wastewater Treatment](#)<sup>1</sup>.

Provide the following information concerning the potential for regionalization of domestic wastewater treatment facilities:

##### 1. Municipally incorporated areas

If the applicant is a city, then Item 1 is not applicable. Proceed to Item 2 Utility CCN areas.

Is any portion of the proposed service area located in an incorporated city?

☐ Yes ☒ No ☐ Not Applicable

If yes, within the city limits of: [Click to enter text.](#)

If yes, attach correspondence from the city.

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

If consent to provide service is available from the city, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the city versus the cost of the proposed facility or expansion attached.

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

##### 2. Utility CCN areas

Is any portion of the proposed service area located inside another utility's CCN area?

☐ Yes ☒ No

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<sup>1</sup> <https://www.tceq.texas.gov/permitting/wastewater/tceq-regionalization-for-wastewater>

If **yes**, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the CCN facilities versus the cost of the proposed facility or expansion.

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

### 3. *Nearby WWTPs or collection systems*

Are there any domestic permitted wastewater treatment facilities or collection systems located within a three-mile radius of the proposed facility?

☒ Yes ☐ No

If **yes**, attach a list of these facilities and collection systems that includes each permittee's name and permit number, and an area map showing the location of these facilities and collection systems.

**Attachment:** [Exhibit 16](#)

If **yes**, attach proof of mailing a request for service to each facility and collection system, the letters requesting service, and correspondence from each facility and collection system.

**Attachment:** [Exhibit 16](#)

If the facility or collection system agrees to provide service, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the facility or collection system versus the cost of the proposed facility or expansion.

**Attachment:** [N/A](#)

## Section 2. Proposed Organic Loading (Instructions Page 59)

Is this facility in operation?

☐ Yes ☒ No

If **no**, proceed to Item B, Proposed Organic Loading.

If **yes**, provide organic loading information in Item A, Current Organic Loading

### A. Current organic loading

Facility Design Flow (flow being requested in application): [Click to enter text.](#)

Average Influent Organic Strength or BOD<sub>5</sub> Concentration in mg/l: [Click to enter text.](#)

Average Influent Loading (lbs/day = total average flow X average BOD<sub>5</sub> conc. X 8.34): [Click to enter text.](#)

Provide the source of the average organic strength or BOD<sub>5</sub> concentration.

[Click to enter text.](#)

## B. Proposed organic loading

This table must be completed if this application is for a facility that is not in operation or if this application is to request an increased flow that will impact organic loading.

**Table 1.1(1) – Design Organic Loading**

Source	Total Average Flow (MGD)	Influent BOD5 Concentration (mg/l)
Municipality		
Subdivision	0.165/0.330/0.495	300/300/300
Trailer park – transient		
Mobile home park		
School with cafeteria and showers		
School with cafeteria, no showers		
Recreational park, overnight use		
Recreational park, day use		
Office building or factory		
Motel		
Restaurant		
Hospital		
Nursing home		
Other		
TOTAL FLOW from all sources		
AVERAGE BOD <sub>5</sub> from all sources		

## Section 3. Proposed Effluent Quality and Disinfection (Instructions Page 59)

### A. Existing/Interim I Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: 10

Total Suspended Solids, mg/l: 15

Ammonia Nitrogen, mg/l: 3.0

Total Phosphorus, mg/l: N/A

Dissolved Oxygen, mg/l: 4.0

Other: N/A



### B. Interim II Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: 10

Total Suspended Solids, mg/l: 15

Ammonia Nitrogen, mg/l: 3.0

Total Phosphorus, mg/l: N/A

Dissolved Oxygen, mg/l: 4.0

Other: N/A

### C. Final Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: 10

Total Suspended Solids, mg/l: 15

Ammonia Nitrogen, mg/l: 3.0

Total Phosphorus, mg/l: N/A

Dissolved Oxygen, mg/l: 4.0

Other: N/A

### D. Disinfection Method

Identify the proposed method of disinfection.

☒ Chlorine: 2.0 mg/l after 20 minutes detention time at peak flow

Dechlorination process: Click to enter text.

☐ Ultraviolet Light: Click to enter text. seconds contact time at peak flow

☐ Other: Click to enter text.

## Section 4. Design Calculations (Instructions Page 59)

Attach design calculations and plant features for each proposed phase. Example 4 of the instructions includes sample design calculations and plant features.

Attachment: Exhibit 17

## Section 5. Facility Site (Instructions Page 60)

### A. 100-year floodplain

Will the proposed facilities be located above the 100-year frequency flood level?

☒ Yes ☐ No

If **no**, describe measures used to protect the facility during a flood event. Include a site map showing the location of the treatment plant within the 100-year frequency flood level. If applicable, provide the size and types of protective structures.

Click to enter text.

Provide the source(s) used to determine 100-year frequency flood plain.

FEMA GIS data, FEMA flood map 48339C0350G effective 08/18/2014

For a new or expansion of a facility, will a wetland or part of a wetland be filled?

☐ Yes ☒ No

If **yes**, has the applicant applied for a US Corps of Engineers 404 Dredge and Fill Permit?

☐ Yes ☐ No

If **yes**, provide the permit number: [Click to enter text.](#)

If **no**, provide the approximate date you anticipate submitting your application to the Corps: [Click to enter text.](#)

## B. Wind rose

Attach a wind rose: [Exhibit 19](#)

# Section 6. Permit Authorization for Sewage Sludge Disposal (Instructions Page 60)

## A. Beneficial use authorization

Are you requesting to include authorization to land apply sewage sludge for beneficial use on property located adjacent to the wastewater treatment facility under the wastewater permit?

☐ Yes ☒ No

If **yes**, attach the completed **Application for Permit for Beneficial Land Use of Sewage Sludge (TCEQ Form No. 10451)**: [Click to enter text.](#)

## B. Sludge processing authorization

Identify the sludge processing, storage or disposal options that will be conducted at the wastewater treatment facility:

- ☐ Sludge Composting
- ☐ Marketing and Distribution of sludge
- ☐ Sludge Surface Disposal or Sludge Monofill

If **any of the above**, sludge options are selected, attach the completed **Domestic Wastewater Permit Application: Sewage Sludge Technical Report (TCEQ Form No. 10056)**: [Click to enter text.](#)

# Section 7. Sewage Sludge Solids Management Plan (Instructions Page 61)

Attach a solids management plan to the application.

**Attachment:** [Exhibit 18](#)

The sewage sludge solids management plan must contain the following information:

- Treatment units and processes dimensions and capacities

- Solids generated at 100, 75, 50, and 25 percent of design flow
- Mixed liquor suspended solids operating range at design and projected actual flow
- Quantity of solids to be removed and a schedule for solids removal
- Identification and ownership of the ultimate sludge disposal site
- For facultative lagoons, design life calculations, monitoring well locations and depths, and the ultimate disposal method for the sludge from the facultative lagoon

An example of a sewage sludge solids management plan has been included as Example 5 of the instructions.

# DOMESTIC WASTEWATER PERMIT APPLICATION

## WORKSHEET 2.0: RECEIVING WATERS

The following information is required for all TPDES permit applications.

### Section 1. Domestic Drinking Water Supply (Instructions Page 64)

Is there a surface water intake for domestic drinking water supply located within 5 miles downstream from the point or proposed point of discharge?

☐ Yes ☒ No

If **no**, proceed to Section 2. If **yes**, provide the following:

Owner of the drinking water supply: [Click to enter text.](#)

Distance and direction to the intake: [Click to enter text.](#)

Attach a USGS map that identifies the location of the intake.

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

### Section 2. Discharge into Tidally Affected Waters (Instructions Page 64)

Does the facility discharge into tidally affected waters?

☐ Yes ☒ No

If **no**, proceed to Section 3. If **yes**, complete the remainder of this section. If no, proceed to Section 3.

#### A. Receiving water outfall

Width of the receiving water at the outfall, in feet: [Click to enter text.](#)

#### B. Oyster waters

Are there oyster waters in the vicinity of the discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from outfall(s).

[Click to enter text.](#)

#### C. Sea grasses

Are there any sea grasses within the vicinity of the point of discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from the outfall(s).

[Click to enter text.](#)

### Section 3. Classified Segments (Instructions Page 64)

Is the discharge directly into (or within 300 feet of) a classified segment?

☐ Yes ☒ No

If **yes**, this Worksheet is complete.

If **no**, complete Sections 4 and 5 of this Worksheet.

### Section 4. Description of Immediate Receiving Waters (Instructions Page 65)

Name of the immediate receiving waters: [Click to enter text.](#)

#### A. Receiving water type

Identify the appropriate description of the receiving waters.

- ☒ Stream
- ☐ Freshwater Swamp or Marsh
- ☐ Lake or Pond

Surface area, in acres: [Click to enter text.](#)

Average depth of the entire water body, in feet: [Click to enter text.](#)

Average depth of water body within a 500-foot radius of discharge point, in feet:  
[Click to enter text.](#)

- ☐ Man-made Channel or Ditch
- ☐ Open Bay
- ☐ Tidal Stream, Bayou, or Marsh
- ☐ Other, specify: [Click to enter text.](#)

#### B. Flow characteristics

If a stream, man-made channel or ditch was checked above, provide the following. For existing discharges, check one of the following that best characterizes the area *upstream* of the discharge. For new discharges, characterize the area *downstream* of the discharge (check one).

- ☒ Intermittent - dry for at least one week during most years
- ☐ Intermittent with Perennial Pools - enduring pools with sufficient habitat to maintain significant aquatic life uses
- ☐ Perennial - normally flowing

Check the method used to characterize the area upstream (or downstream for new dischargers).

- ☐ USGS flow records
- ☐ Historical observation by adjacent landowners
- ☒ Personal observation
- ☐ Other, specify: [Click to enter text.](#)

### C. Downstream perennial confluences

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

[Click to enter text.](#)

### D. Downstream characteristics

Do the receiving water characteristics change within three miles downstream of the discharge (e.g., natural or man-made dams, ponds, reservoirs, etc.)?

☐ Yes ☒ No

If yes, discuss how.

[Click to enter text.](#)

### E. Normal dry weather characteristics

Provide general observations of the water body during normal dry weather conditions.

[Click to enter text.](#)

Date and time of observation: [Click to enter text.](#)

Was the water body influenced by stormwater runoff during observations?

☐ Yes ☒ No

## Section 5. General Characteristics of the Waterbody (Instructions Page 66)

### A. Upstream influences

Is the immediate receiving water upstream of the discharge or proposed discharge site influenced by any of the following? Check all that apply.

☐ Oil field activities

☐ Urban runoff

☐ Upstream discharges

☐ Agricultural runoff

☐ Septic tanks

☐ Other(s), specify: [Click to enter text.](#)

## B. Waterbody uses

Observed or evidences of the following uses. Check all that apply.

- |  |  |
|--|--|
| <input type="checkbox"/> Livestock watering    | <input type="checkbox"/> Contact recreation                                      |
| <input type="checkbox"/> Irrigation withdrawal | <input type="checkbox"/> Non-contact recreation                                  |
| <input type="checkbox"/> Fishing               | <input type="checkbox"/> Navigation  |
| <input type="checkbox"/> Domestic water supply | <input type="checkbox"/> Industrial water supply                                 |
| <input type="checkbox"/> Park activities       | <input type="checkbox"/> Other(s), specify: <a href="#">Click to enter text.</a> |

## C. Waterbody aesthetics

Check one of the following that best describes the aesthetics of the receiving water and the surrounding area.

- ☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area; water clarity exceptional
- ☒ Natural Area: trees and/or native vegetation; 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

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 1

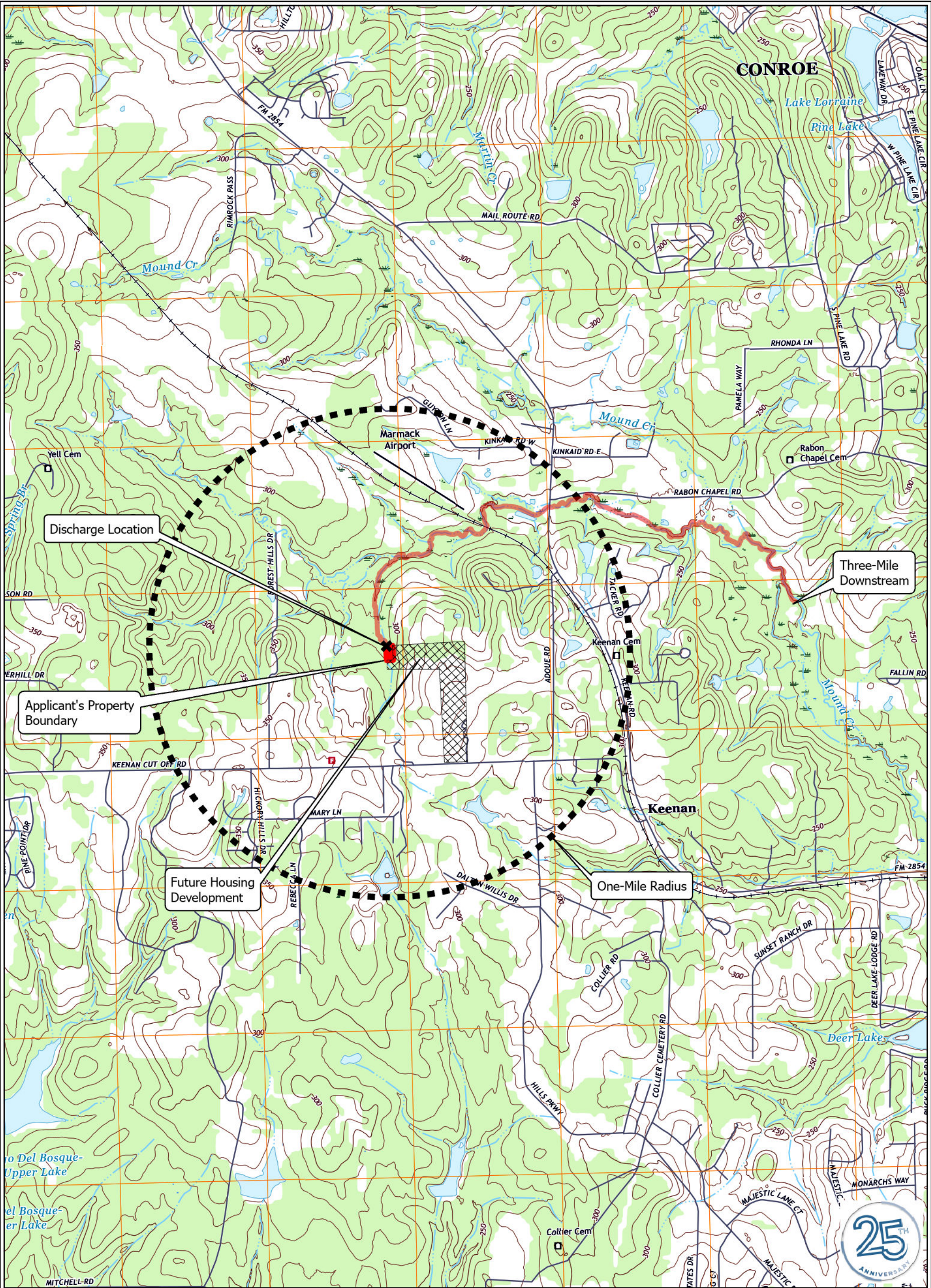
### USGS MAP



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**Texas Engineering Registration No. F-000802**

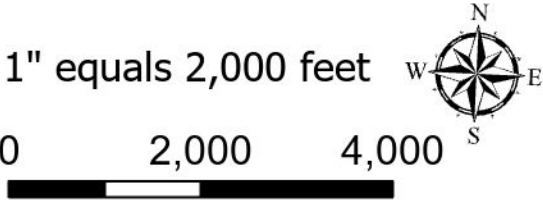




KEENAN NORTH TRACT

USGS MAP

- ✖ Outfall Location
- 1-Mi Buffer
- WWTP Site
- 3-mi Downstream





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NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 2

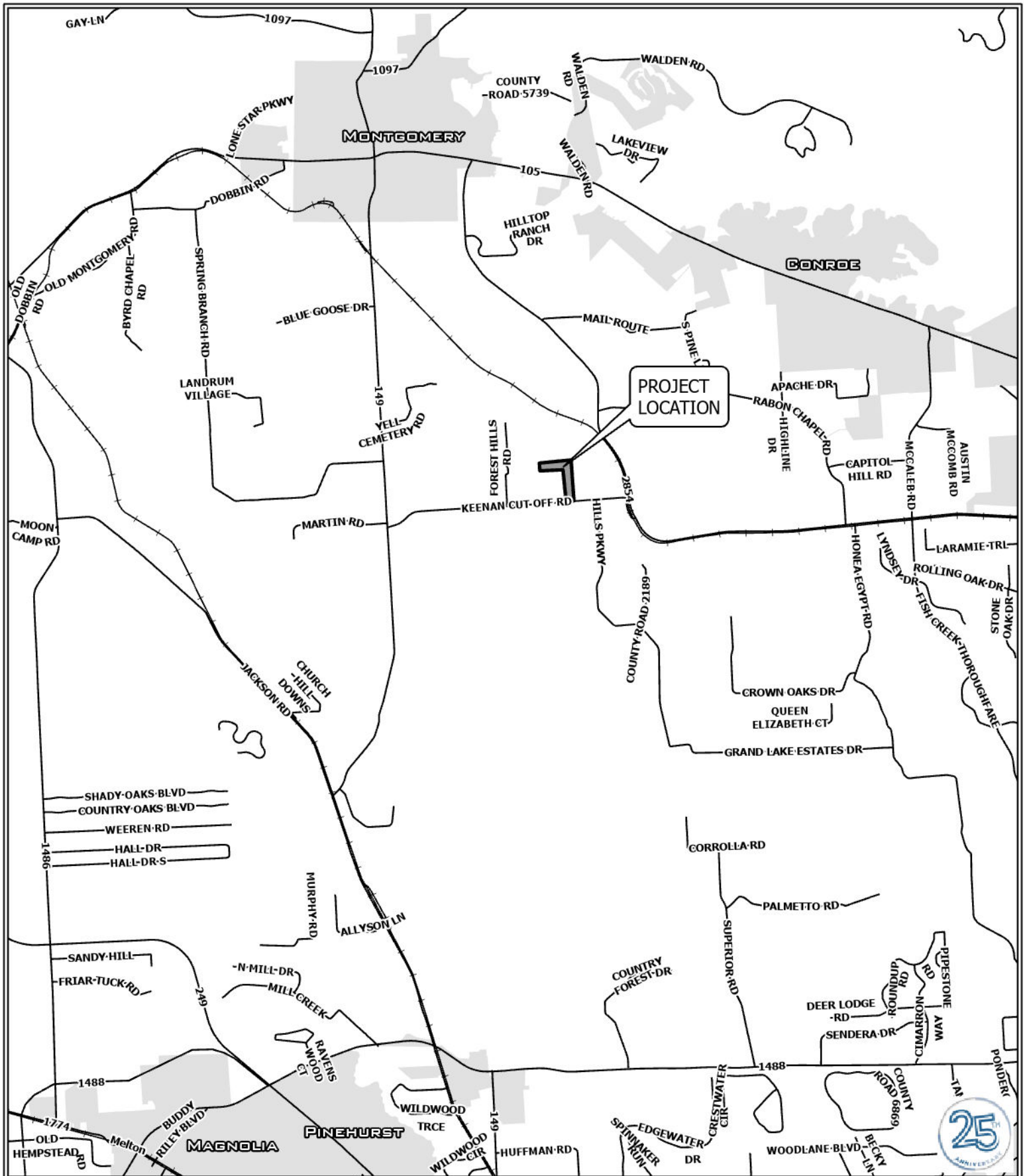
### LOCATION MAP



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---

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OLD HOCKLEY RD TRACT

# WASTEWATER TREATMENT PLAN LOCATION MAP

- County Boundary
- Railroad
- Tract\_Boundary

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Domestic Wastewater Permit Application  
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TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

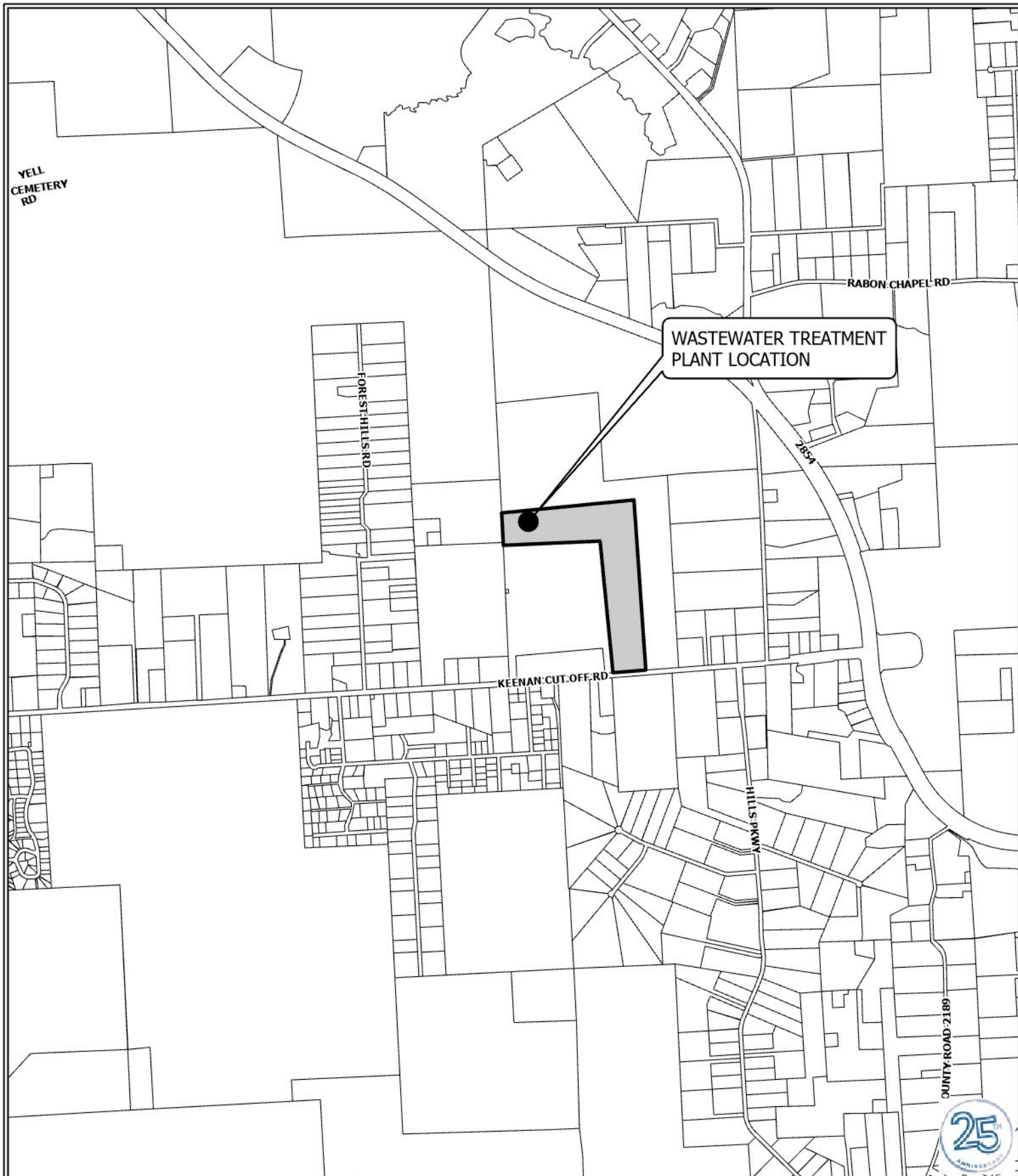
## EXHIBIT 3

### VICINITY MAP



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KEENAN NORTH TRACT

# **WASTEWATER TREATMENT PLAN VICINITY MAP**

- WWTP Location
- MCAD Parcels
- ▬ Service Area



1" equals 2,000 feet  
0 1,000 2,000 3,000

A horizontal graphic scale bar with alternating black and white segments, corresponding to the 0, 1,000, 2,000, and 3,000 foot increments.



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NPDES Permit No. TBD  
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## EXHIBIT 4

### USGS MAP



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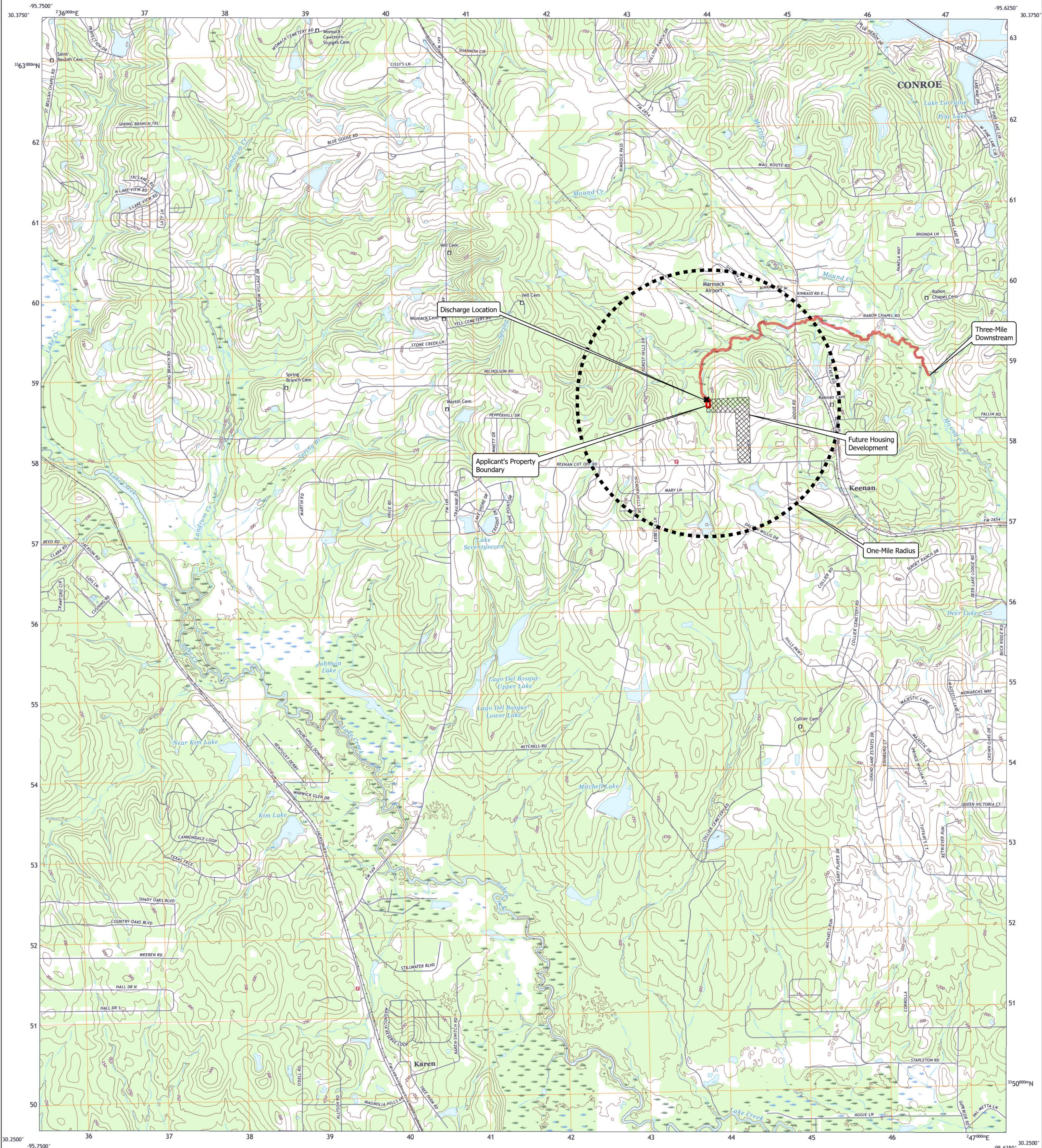




U.S. DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY

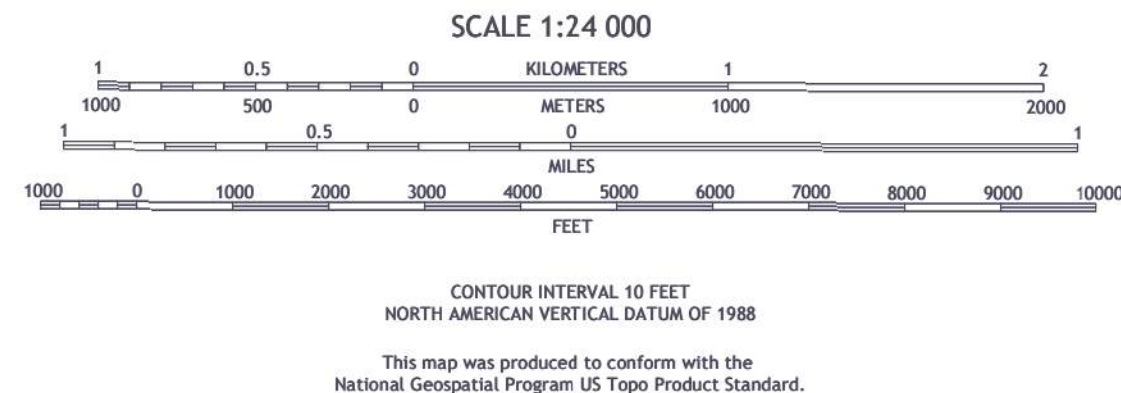
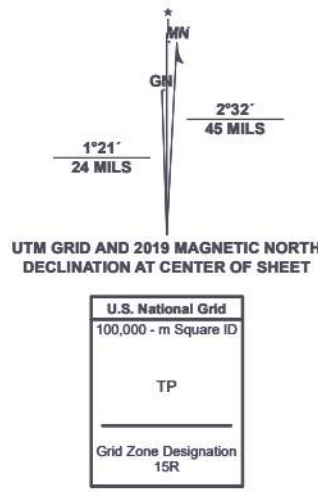


KEENAN QUADRANGLE  
TEXAS - MONTGOMERY COUNTY  
7.5-MINUTE SERIES



Produced by the United States Geological Survey  
North American Datum of 1983 (NAD83)  
World Geodetic System of 1984 (WGS84). Projection and  
1 000-meter grid/Universal Transverse Mercator, Zone 15R  
This map is not a legal document. Boundaries may be  
generalized for this map scale. Private lands within government  
reservations may not be shown. Obtain permission before  
entering private lands.

Imagery.....NAIP, September 2016 - November 2016  
Roads.....U.S. Census Bureau, 2015  
Names.....GNIS, 1979 - 2022  
Hydrography.....National Hydrography Dataset, 2003 - 2018  
Contours.....National Elevation Dataset, 2010  
Boundaries.....Multiple sources; see metadata file 2019 - 2021  
Wetlands.....FWS National Wetlands Inventory Not Available



1	2	3
4	5	6
7	8	9

ADJOINING QUADRANGLES

1 Dacus  
2 Montgomery  
3 Shepard Hill  
4 Plasterville  
5 Cowl Spur  
6 Magnolia West  
7 Magnolia East  
8 Oklahoma

ROAD CLASSIFICATION	
Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD
Interstate Route	US Route
	State Route

KEENAN, TX  
2022

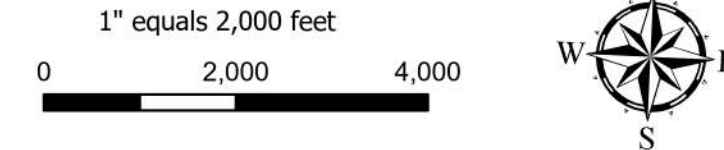


## KEENAN NORTH TRACT

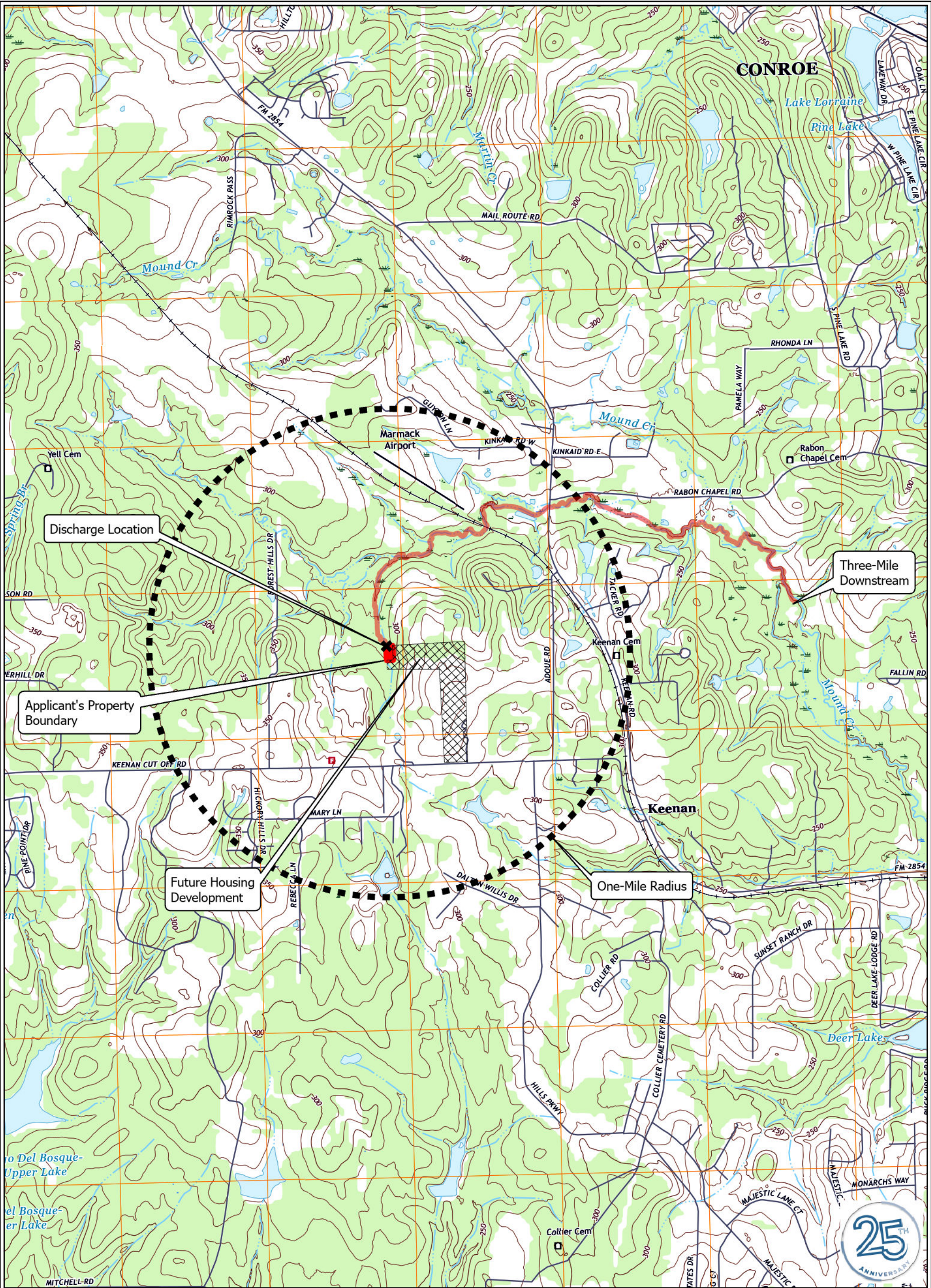
USGS  
Map

- ★ Outfall Location
- 3-mi Downstream
- ▨ Future Development
- ⬜ 1-Mile Buffer Zone
- ▭ Applicant's Property Boundary

A&S Engineers, Inc.



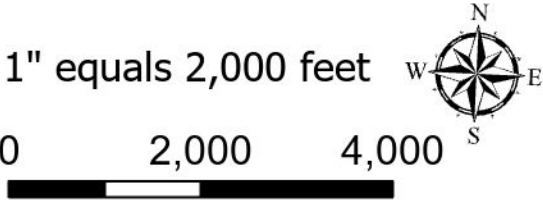




KEENAN NORTH TRACT

USGS MAP

- ✖ Outfall Location
- ▣ 1-Mi Buffer
- ▬ WWTP Site
- 3-mi Downstream





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## EXHIBIT 5

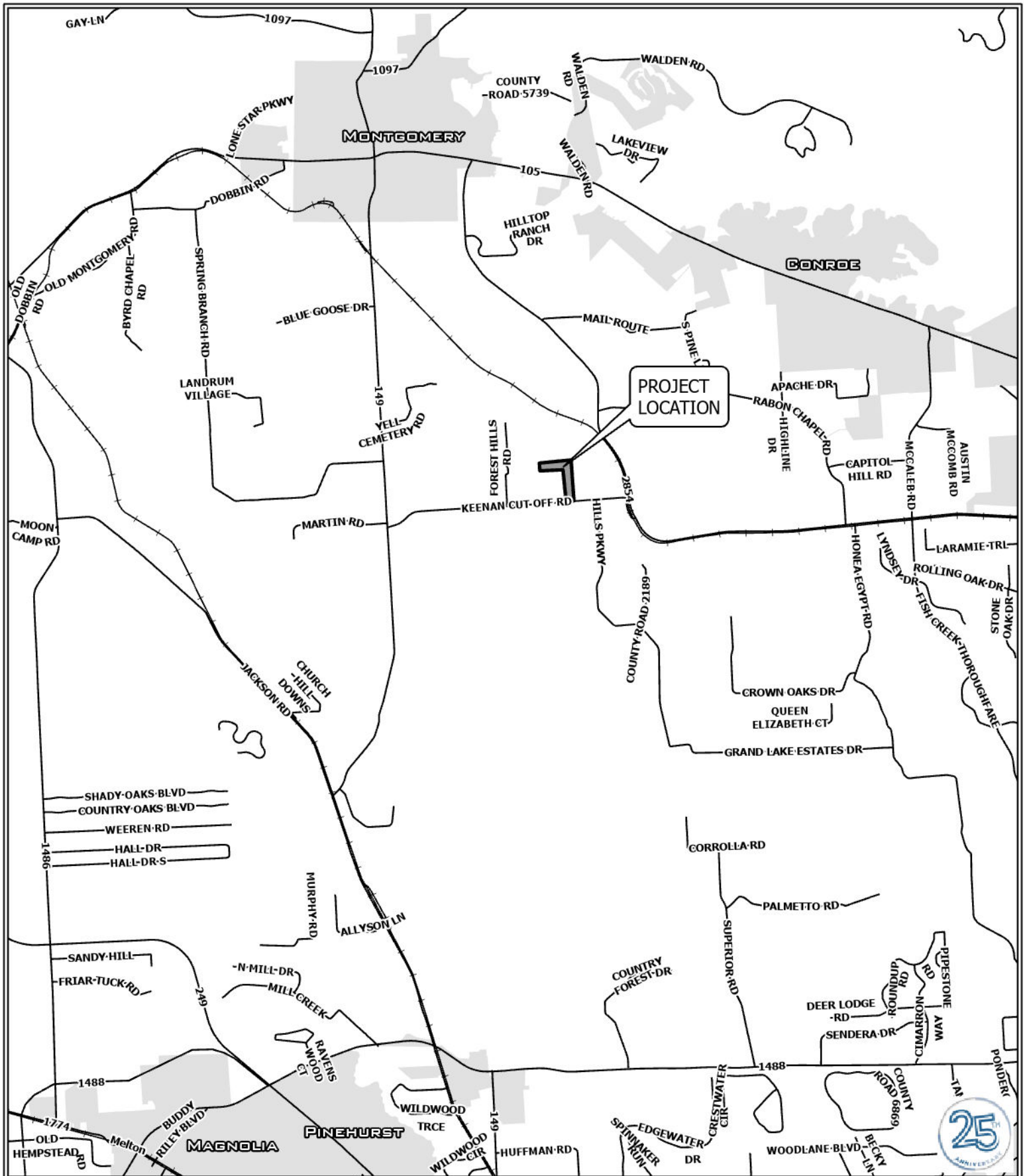
### LOCATION MAP



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OLD HOCKLEY RD TRACT

# WASTEWATER TREATMENT PLAN LOCATION MAP

- County Boundary
- Railroad
- Tract\_Boundary

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## EXHIBIT 6

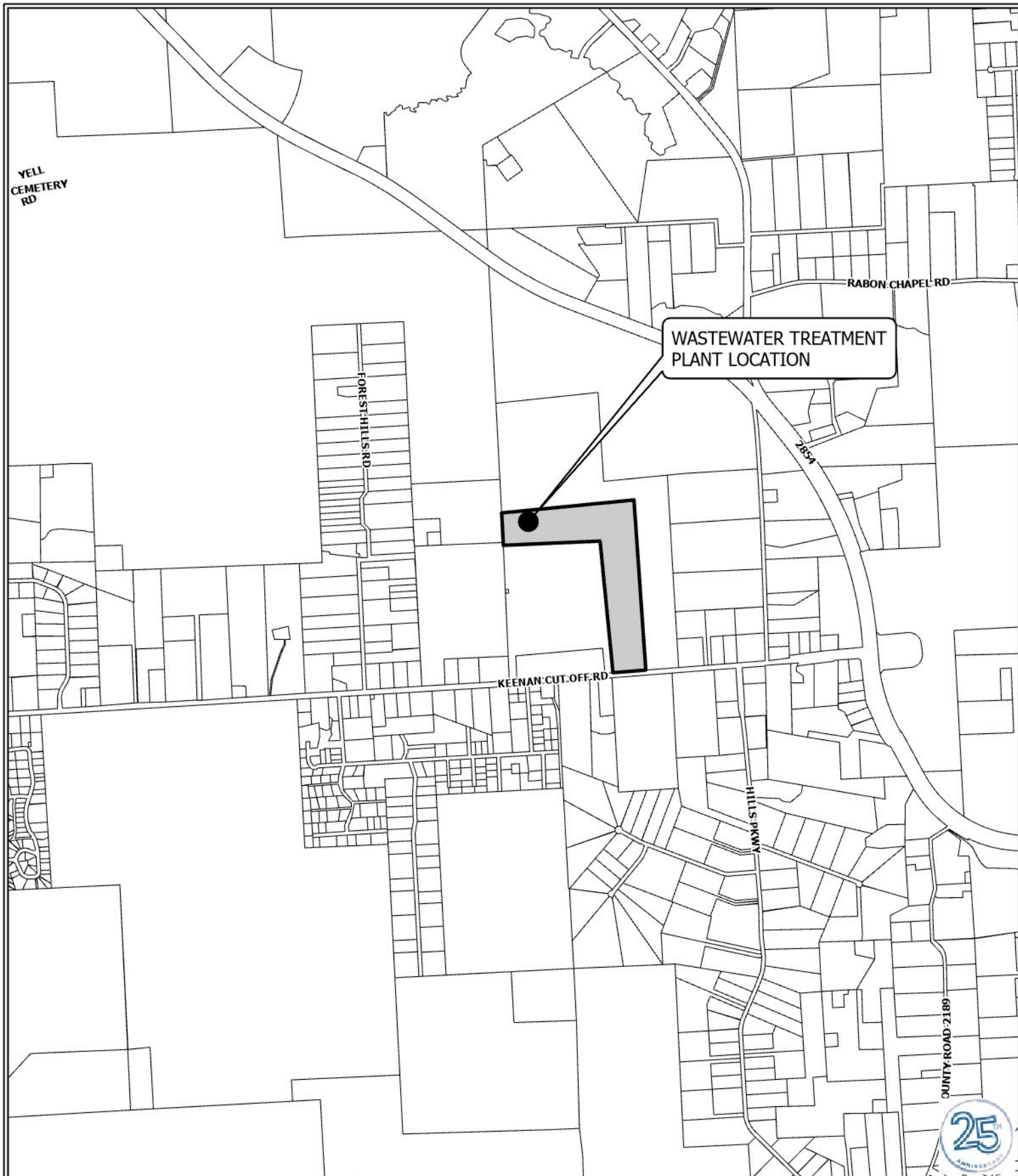
### VICINITY MAP



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KEENAN NORTH TRACT

# **WASTEWATER TREATMENT PLAN VICINITY MAP**

- WWTP Location
- MCAD Parcels
- ▬ Service Area



1" equals 2,000 feet  
0 1,000 2,000 3,000

A horizontal graphic scale bar with alternating black and white segments, corresponding to the 0, 1,000, 2,000, and 3,000 foot increments.



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## EXHIBIT 7

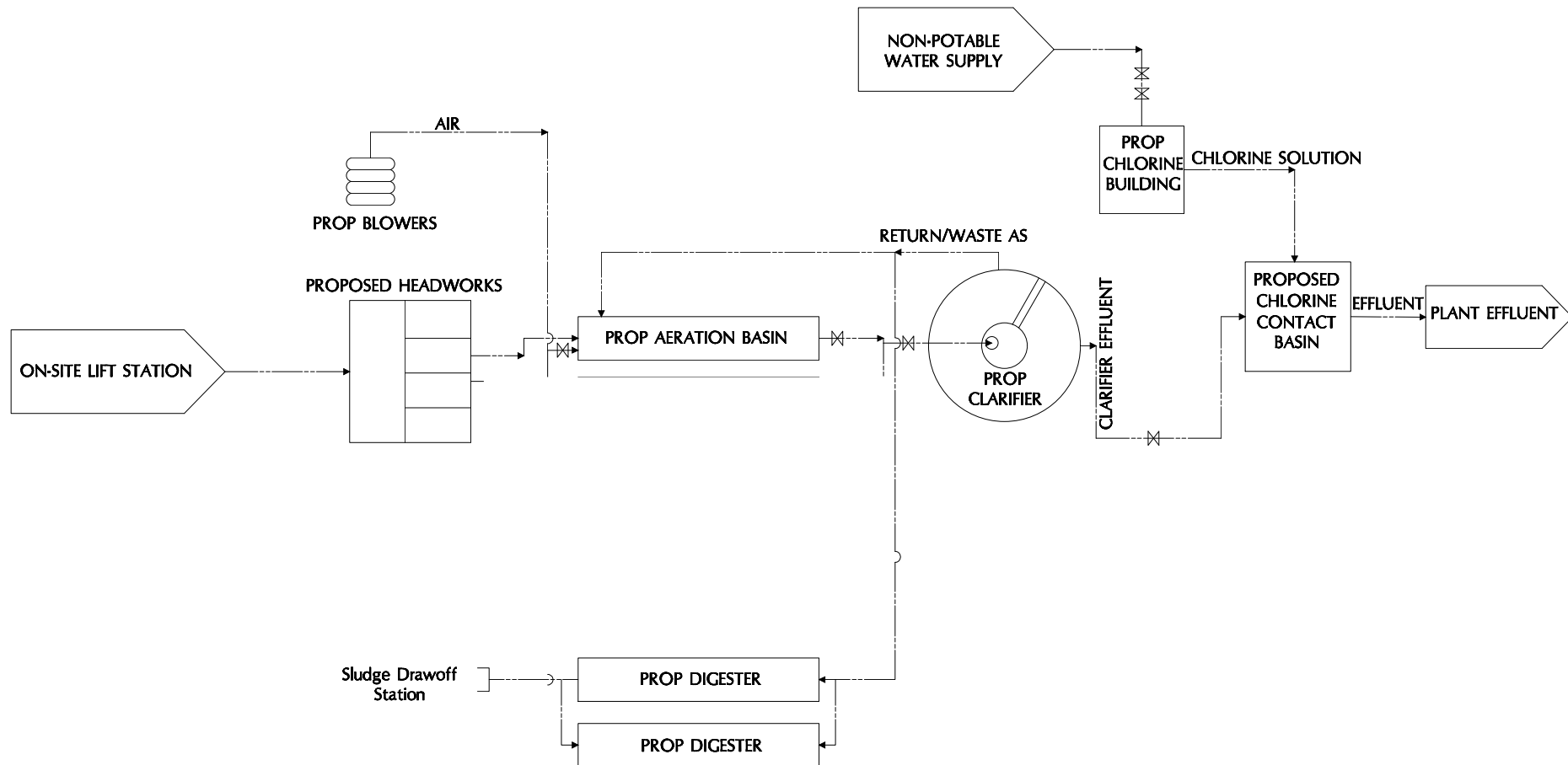
### FLOW DIAGRAMS



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---

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**PROCESS FLOW DIAGRAM**

EXHIBIT 7A  
INTERIM I - 0.165 MGD

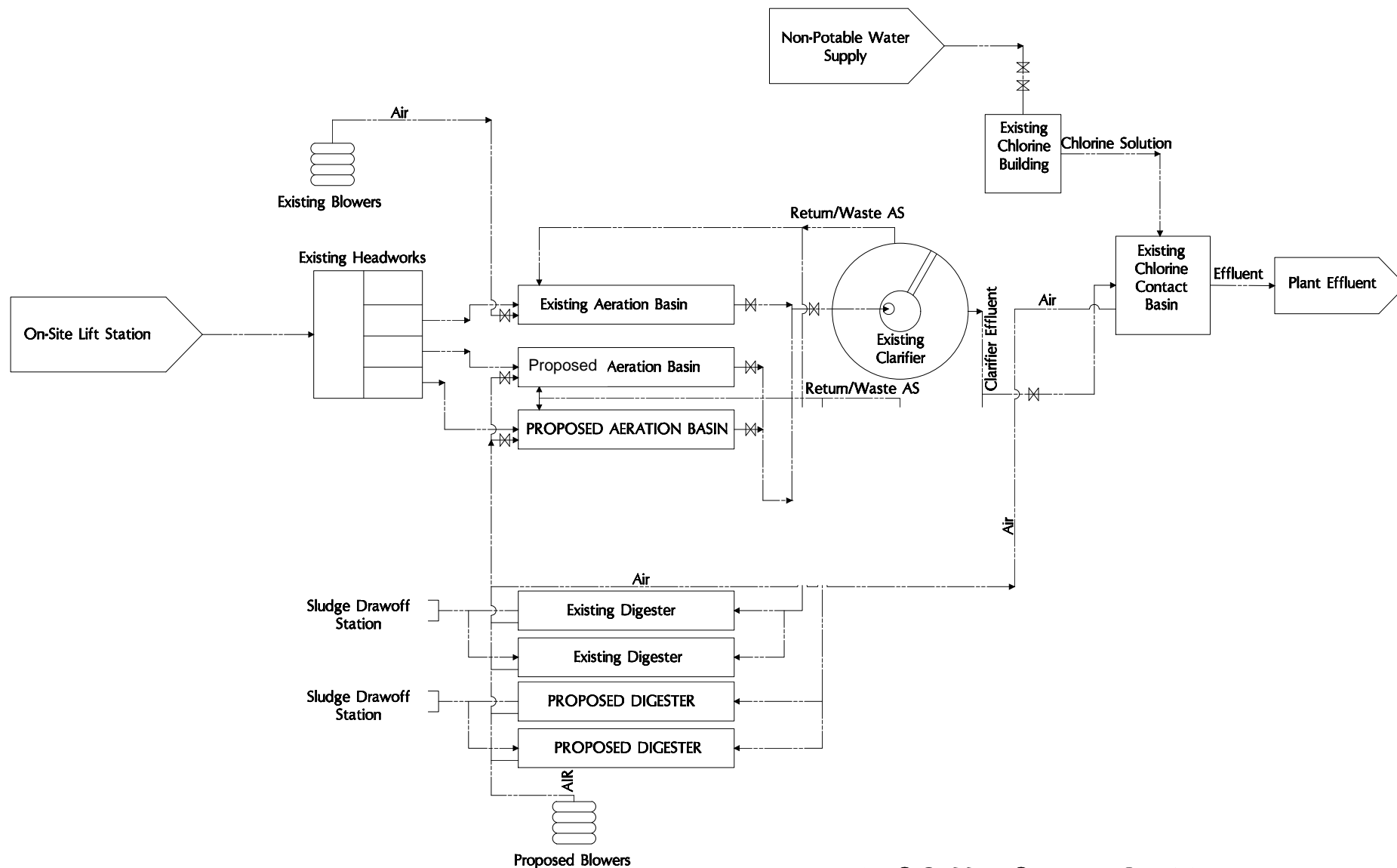
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**PROCESS FLOW DIAGRAM**

EXHIBIT 7B  
INTERIM II - 0.330 MGD

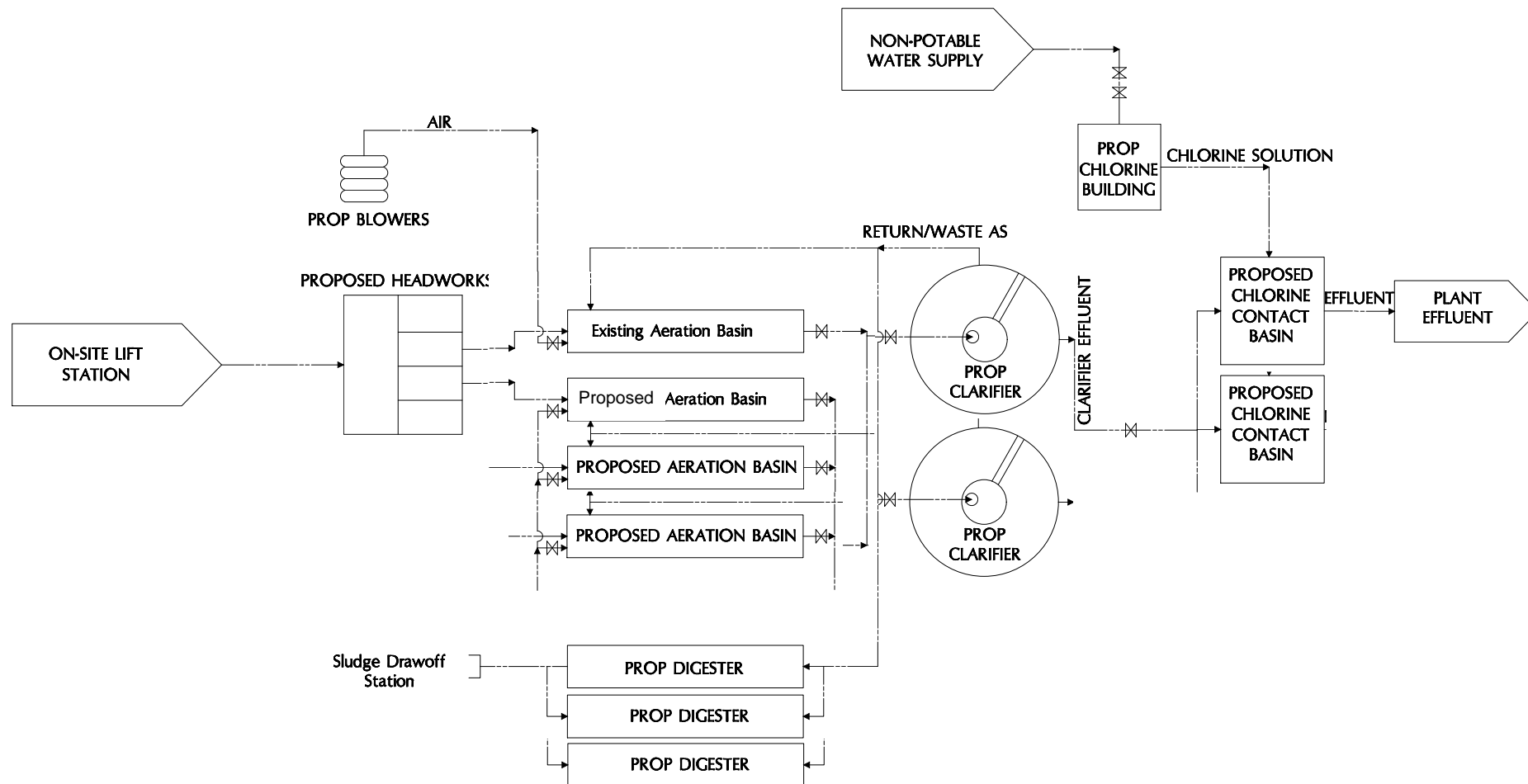
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**PROCESS FLOW DIAGRAM**

EXHIBIT 7C  
INTERIM III - 0.495 MGD

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Keenan North Development, Ltd.  
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## EXHIBIT 8

### TREATMENT PROCESS DESCRIPTION



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## **Treatment Process Description and Design Features**

The proposed Phase I is designed to treat a flow rate 0.165 MGD. The proposed Phase I facility will be a package plant operating as a suspended growth activated sludge process in the single-stage nitrification mode and will be comprised of one (1) onsite grinder pump station, one (1) common headworks with manual bar screen, two (1) aeration basins, one (1) clarifier, one (1) chlorine contact basin, and one (2) aerobic digester. Raw sewage will be pumped from the grinder pump station to the headworks. Then the influent flows to the aeration basin where it will be mixed with return activated sludge to create mixed liquor. The aeration basin will operate in the single –stage nitrification mode to consume organics and break down ammonia. From the aeration basin, the mixed liquor flows to the secondary clarifier for clarification. After clarification, the treated effluent flows to the chlorine contact basin for disinfection and the waste activated sludge is pumped to the digester for further treatment before being hauled off. From the chlorine contact basin, the effluent flows over a weir for flow measurement then on to the outfall.

The proposed Phase II is designed to treat a flow rate 0.330 MGD and will expand the existing package plant. The facility will continue to operate as a suspended growth activated sludge process in the single-stage nitrification mode and will be comprised of one (1) onsite lift station, one (1) common headworks with manual bar screens and flow splitting weirs, three (3) aeration basins, two (1) clarifiers, one (1) chlorine contact basin, and four (4) aerobic digesters. Raw sewage will be pumped from the lift station to the existing headworks where flow is split into two (2) separate trains. Then the influent flows to the aeration basins where it is mixed with return activated sludge to create mixed liquor. The aeration basins operate in the single –stage nitrification mode to consume organics and break down ammonia. From the aeration basins, the mixed liquor flows to the secondary clarifiers for clarification. After clarification, the treated effluent flows to the chlorine contact basin for disinfection and the waste activated sludge is pumped to the digester for further treatment before being hauled off. From the chlorine contact basin, the effluent flows over a weir for flow measurement then on to the outfall.

The final phase of the facility is the proposed operational phase of 0.495 MGD. The proposed facilities for this phase will replace the existing fabricated steel package plants with a new proposed permanent concrete plant that is designed and constructed to treat 0.495 MGD and will operate as a suspended growth activated sludge process in single-stage nitrification mode. This phase will include the existing onsite lift station, one (1) headworks with mechanical bar screen and flow splitting weirs, two (4) aeration basins, two (2) clarifiers, two (2) chlorine contact basins, and two (3) aerobic digesters. In this phase, raw sewage will be pumped from the existing onsite lift station to the proposed headworks where flow will be split into two (2) separate trains. Then the influent flows to the aeration basins where it is mixed with return activated sludge to create mixed liquor. The aeration basins operate in the single –stage nitrification mode to consume organics and break down ammonia. From the aeration basins, the mixed liquor flows to the secondary clarifiers for clarification. After clarification, the treated effluent flows to the chlorine contact basin for disinfection and the waste activated sludge is pumped to the digester for further treatment before being hauled off. From the chlorine contact basin, the effluent flows over a weir for flow measurement then on to the outfall.

- An Autodialer will be installed to detect power outages and equipment failure. The Autodialer will incorporate high level sensors on the wastewater treatment plant units. Once a problem is detected, the Autodialer will call preprogrammed numbers to notify the operations company. Once the notification is answered, the operations company will dispatch an operator to the facility.
- The facility will include an onsite generator for emergency power outages. The generator will provide sufficient power for the grinder/lift station, blowers, and chemical feed system. An automatic transfer switch will be included to transfer the electrical loads to the generator during an outage.
- The plant features stand-by blowers. The collection system will be new and minimum infiltration is anticipated. The plant is to be maintained and operated by personnel licensed by the State of Texas.
- The plant is designed to be maintained without bypassing. Replacement or repair of the interior coating system is the only maintenance item that would necessitate bypassing and the epoxy system should last 20-30 years.
- An intruder resistant fence will be placed around the facility.

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
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NPDES Permit No. TBD  
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## EXHIBIT 9

### TREATMENT UNITS



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## DIMENSIONS OF TREATMENT UNITS

### **A. WWTP PLANT: 0.165 MGD WWTP Complete Mix Activated Sludge**

<u>Type of Unit</u>	<u># of Units</u>	<u>Size (depth, width, length &amp; volume)</u>
Aeration Basin	1	10.5' water depth x 12.0' width x 95.0' length each. Total Volume = 11,970 CF BOD <sub>5</sub> capacity = 342.0 lbs./day @ 35 lbs/day/1000 CF.
Clarifier	1	42' diameter has 1,385 sq. feet, sidewater depth of 10', Volume of 13,854 CF
Chlorine Contact	1	Depth = 9', width = 15', Length = 15.0', Volume = 2,025 CF
Digester	2	10.5' water depth x 12.0' width x 95.0' length each. Total Volume = 23,940 cf

### **B. WWTP PLANT: 0.330 MGD WWTP Complete Mix Activated Sludge**

<u>Type of Unit</u>	<u># of Units</u>	<u>Size (depth, width, length &amp; volume)</u>
Aeration Basin	2	10.5' water depth x 12.0' width x 95.0' length each. Total Volume = 23,940 CF BOD <sub>5</sub> capacity = 684 lbs./day @ 35 lbs/day/1000 CF.
Clarifier	1	42' diameter has 1,385 sq. feet, sidewater depth of 10', Total Volume of 13,854 CF
Chlorine Contact	2	Depth = 9', width = 15, Length = 15.0', Volume = 4,050 CF
Digester	3	10.5' water depth x 12.0' width x 95.0' length each. Total Volume = 35,910 cf

**C. WWTP PLANT: 0.495 MGD WWTP Complete Mix Activated Sludge**

<u>Type of Unit</u>	<u># of Units</u>	<u>Size (depth, width, length &amp; volume)</u>
Aeration Basin	4	10.5' water depth x 12.0' width x 95.0' length each. Volume = 47,880 CF total BOD <sub>5</sub> capacity = 1,368 lbs./day @ 35 lbs/day/1000 CF.
Clarifier	2	42' diameter has 1,385 sq. feet, sidewater depth of 12.0', Volume of 33,250 CF total
Chlorine Contact	2	Depth = 9.0', width = 15.0', Length = 15.0', Volume = 4,050 CF
Digester	3	10.5' water depth x 12.0' width x 95.0' length each. Volume = 35,910 CF total

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NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 10

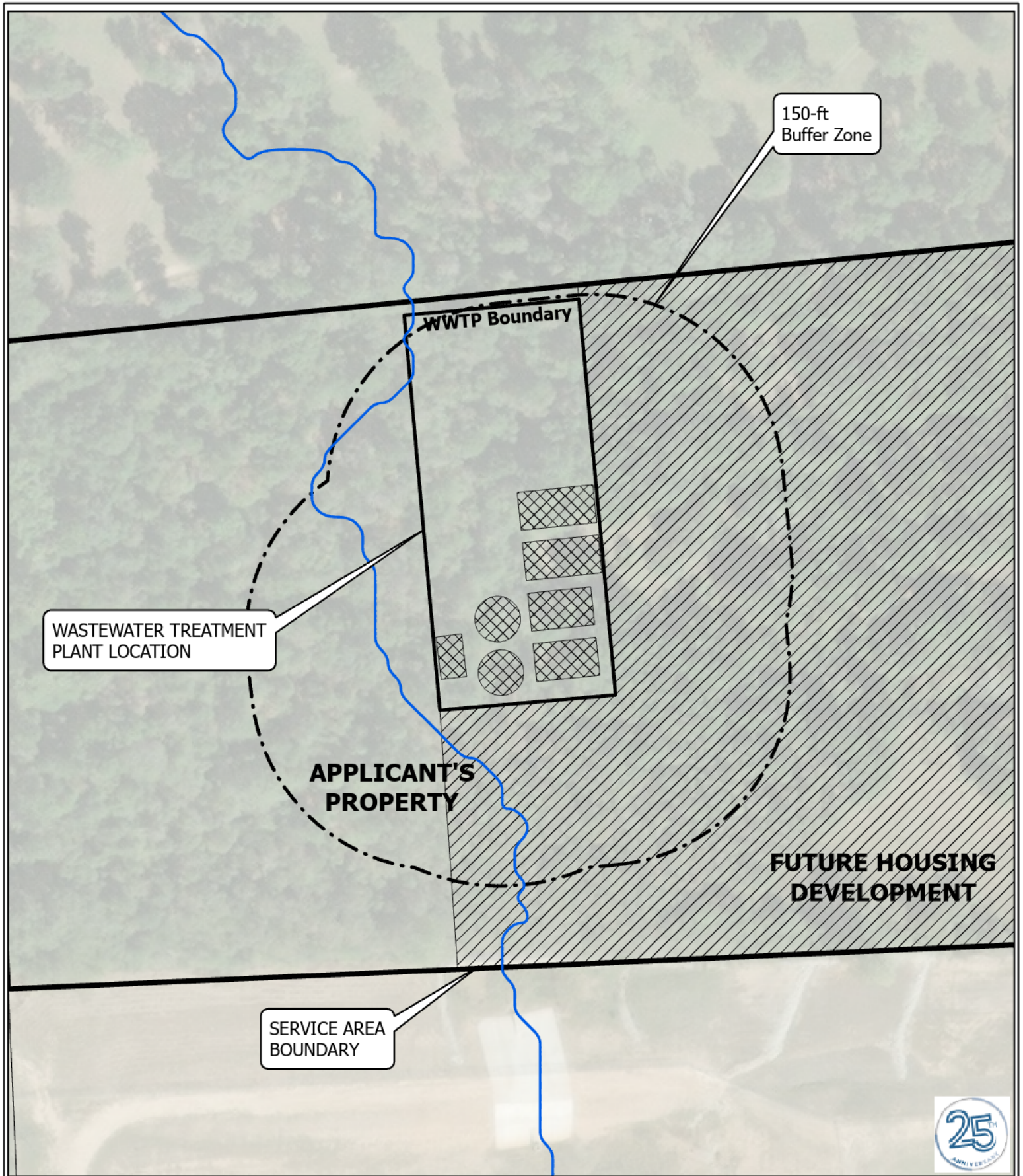
### SITE PLAN



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KEENAN NORTH TRACT

# **SITE PLAN MAP (PHASE III)**

- Stream
- MCAD Parcels
- 150-ft Facility Buffer
- WWTP Site
- Service Area



1 INCH EQUALS 100 FEET

0 50 100 150





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NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 11

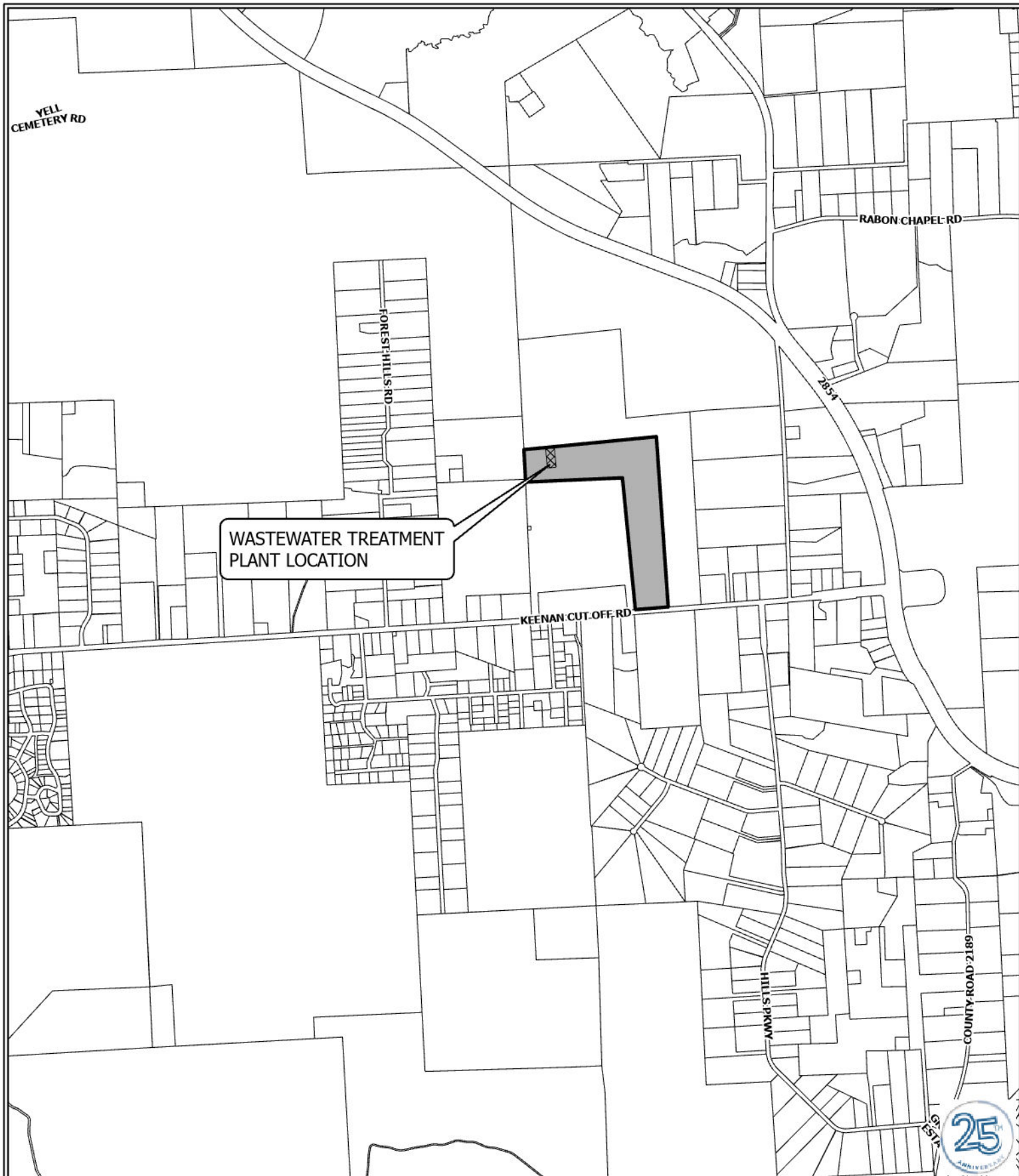
### SERVICE AREA



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KEENAN NORTH TRACT

## SERVICE AREA MAP

-  MCAD Parcels
-  Service Area
-  WWTP Site



1 inch equals 2,000 feet  
 0 1,000 2,000 3,000



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Keenan North Development, Ltd.  
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NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 12

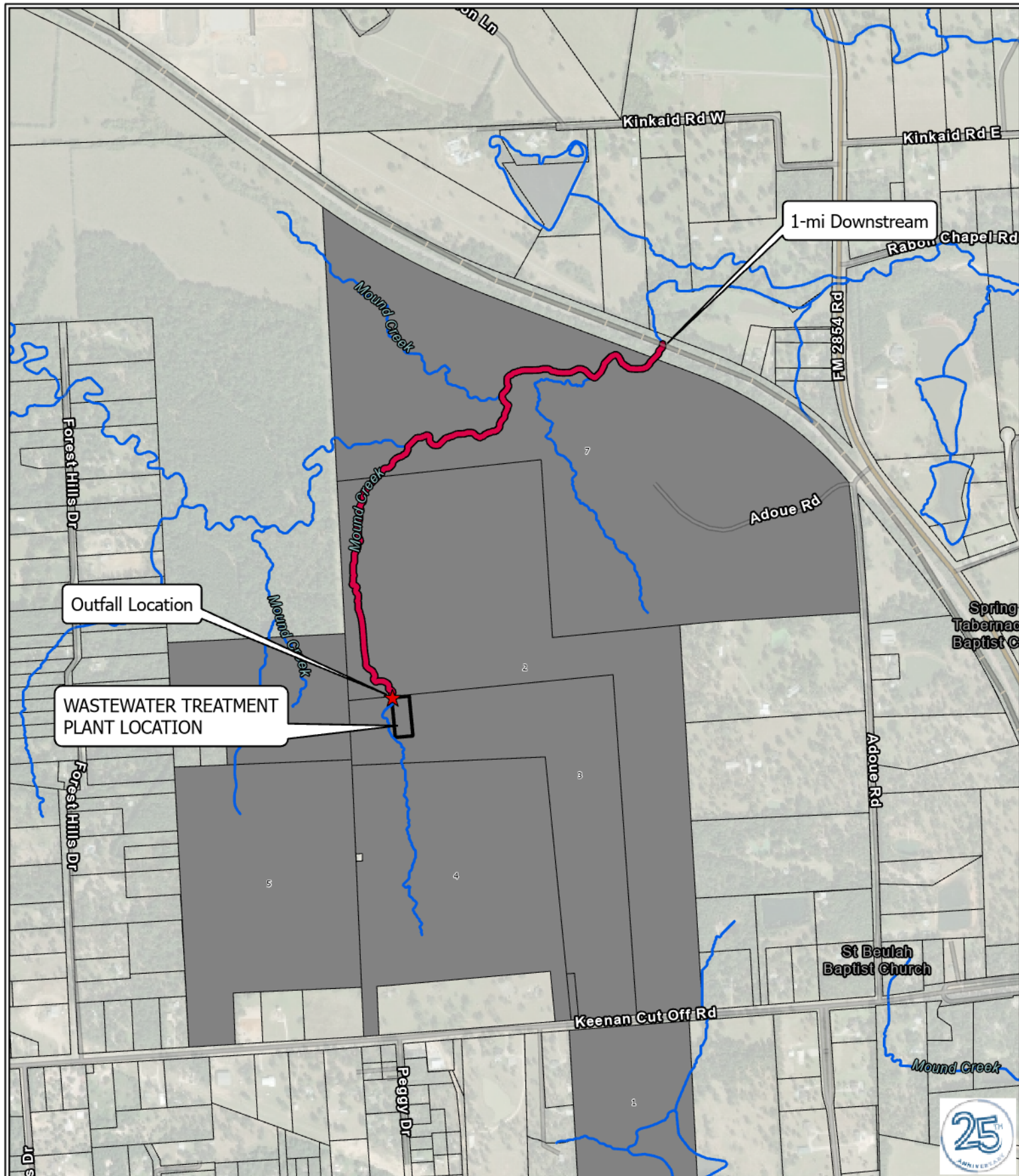
### LANDOWNER MAP & LIST



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Texas Engineering Registration No. F-000802



KEENAN NORTH TRACT

## AFFECTED LAND OWNERS MAP

- Affected Land Owners
- MCAD Parcels
- WWTP Site
- ★ Outfall Location
- Stream
- 1-mi Downstream



A&S Engineers, Inc.

1 inch equals 1,000 feet

0 500 1,000 1,500



# Affected Landowners List

Tract	Owner Name	Street	City	State	Zip		Property Address	MCAD #
1	KEENAN SOUTH DEVELOPMENT LTD	28408 SWEETGUM RD	MAGNOLIA	TX	77354-7111			56669
2	LABELLA INTERESTS LP	333 SIMONTON ST	CONROE	TX	77301-2667		19012 KEENAN CUT OFF	300461
3	KEENAN NORTH DEVELOPEMENT LTD	28408 SWEETGUM RD UNIT B	MAGNOLIA	TX	77354-3189		19202 KEENAN CUT OFF	243974
4	MONTGOMERY ISD	PO BOX 1475	MONTGOMERY	TX	77356-1475		19190 KEENAN CUT OFF	419419
5	KCOP I LP	9805 KATY FWY	HOUSTON	TX	77024-1271		KEENAN CUT OFF	34716
6	WILLIAMS, JEFFICAL	19943 KEENAN CUT OFF RD	MONTGOMERY	TX	77316-2621		19943 KEENAN CUT OFF	34709
7	ADOUE, NORMAN D	7 SENDERO WOODS	BOERNE	TX	78015-8367		7190 ADOUE	34695

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 13

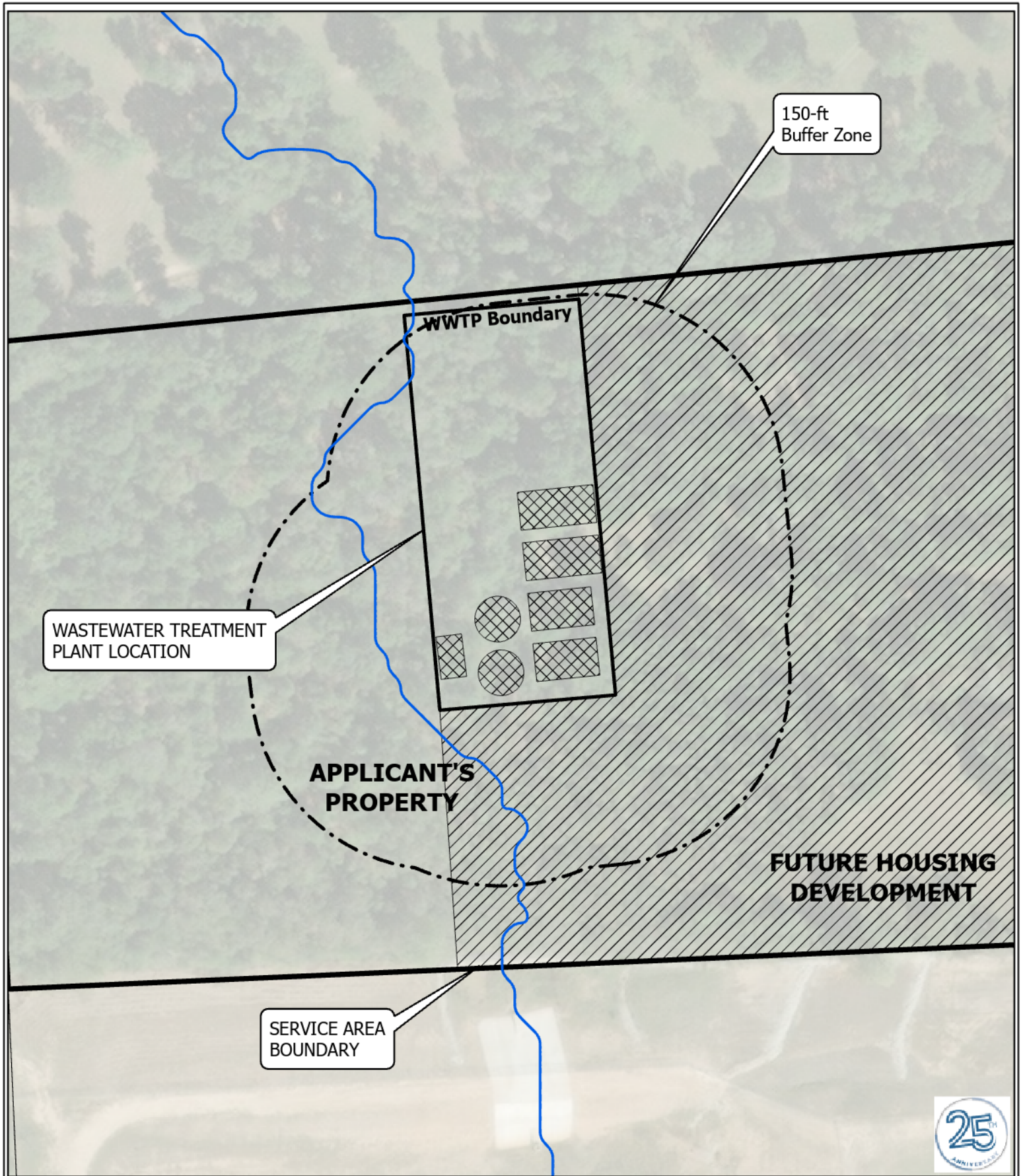
### BUFFER ZONE MAP



---

10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802





KEENAN NORTH TRACT

# **SITE PLAN MAP (PHASE III)**

- Stream
- MCAD Parcels
- 150-ft Facility Buffer
- WWTP Site
- Service Area



1 INCH EQUALS 100 FEET

0 50 100 150



Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 14

ORIGINAL PHOTOGRAPHS & MAP

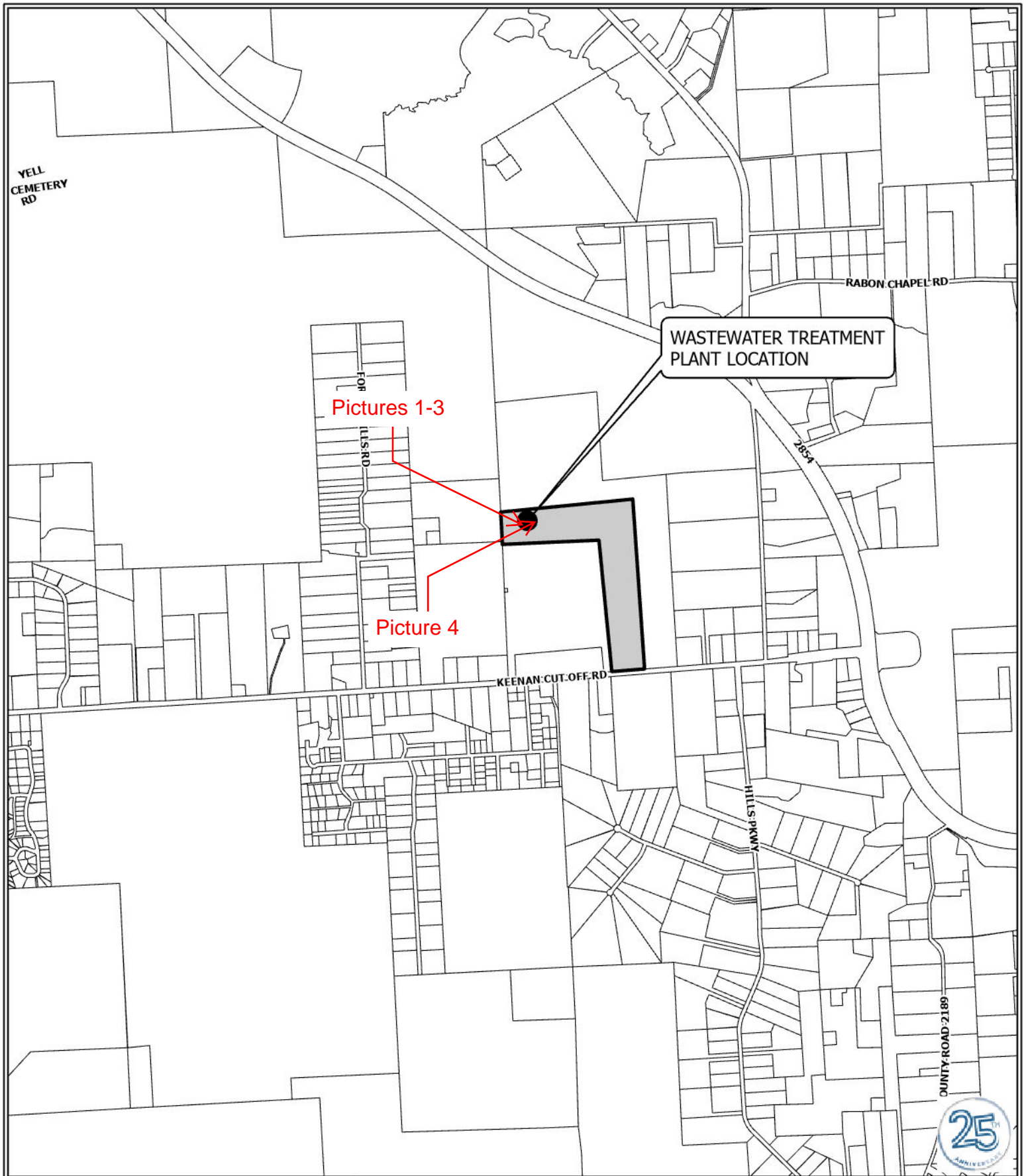


A&S Engineers, Inc.

---

10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802





KEENAN NORTH TRACT

WWTP  
PHOTOGRAPHS  
REFERENCE MAP

- WWTP Location
- MCAD Parcels
- Service Area



1" equals 2,000 feet  
0 1,000 2,000 3,000





Proposed Discharge Point





Proposed Discharge Point -  
Looking North



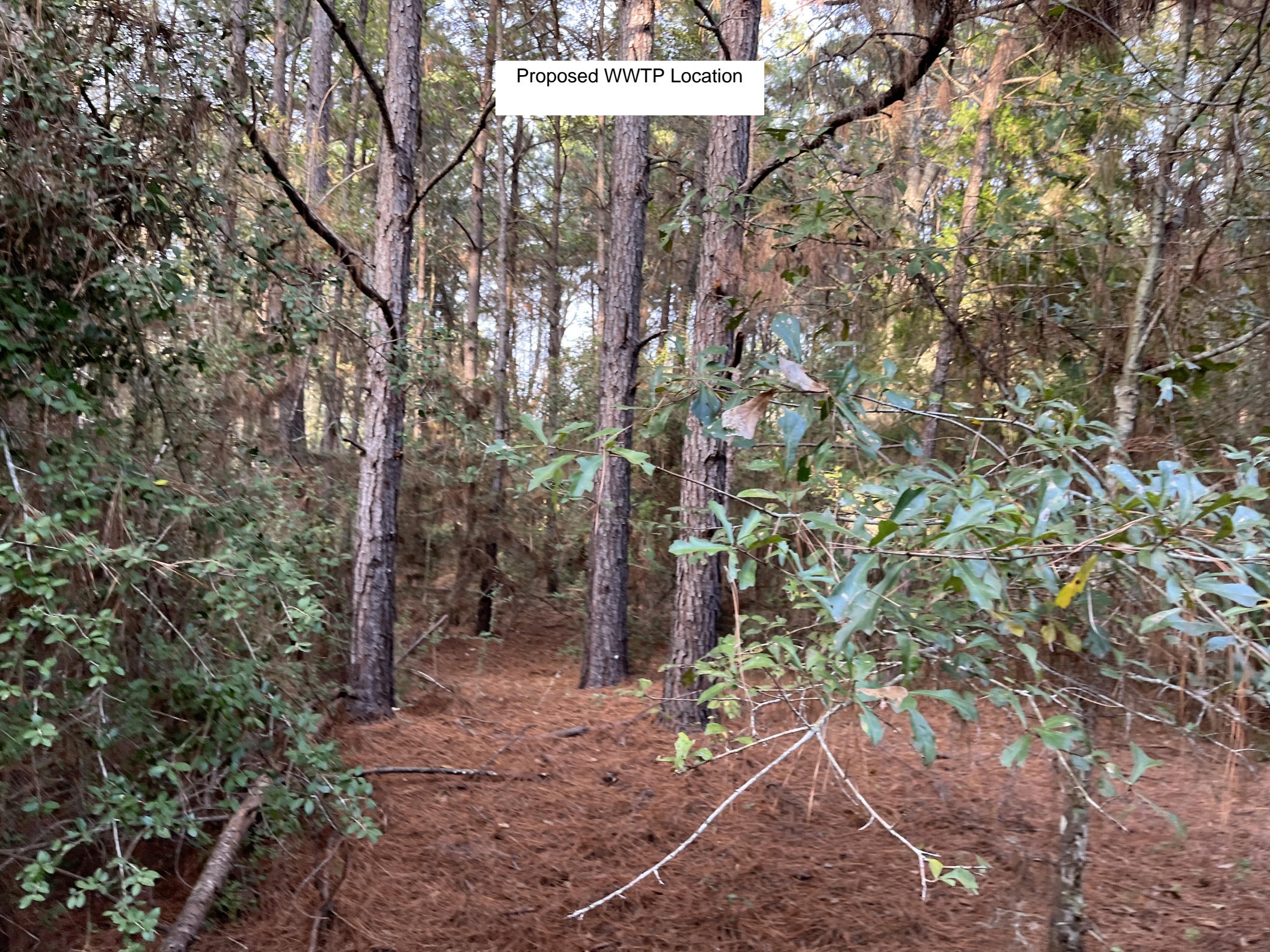


Proposed Discharge Point -  
Looking South





Proposed WWTP Location





Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 15

### SLUDGE DISPOSAL



A&S Engineers, Inc.

---

10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 16

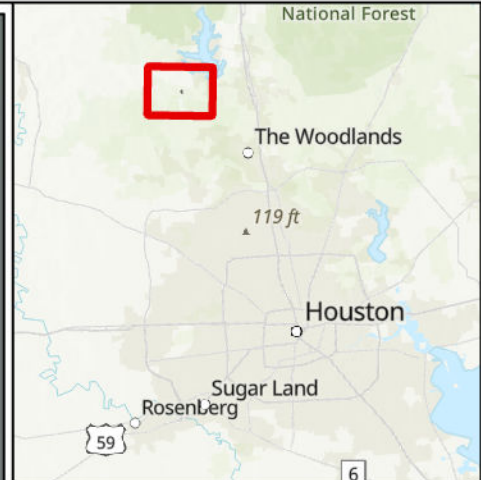
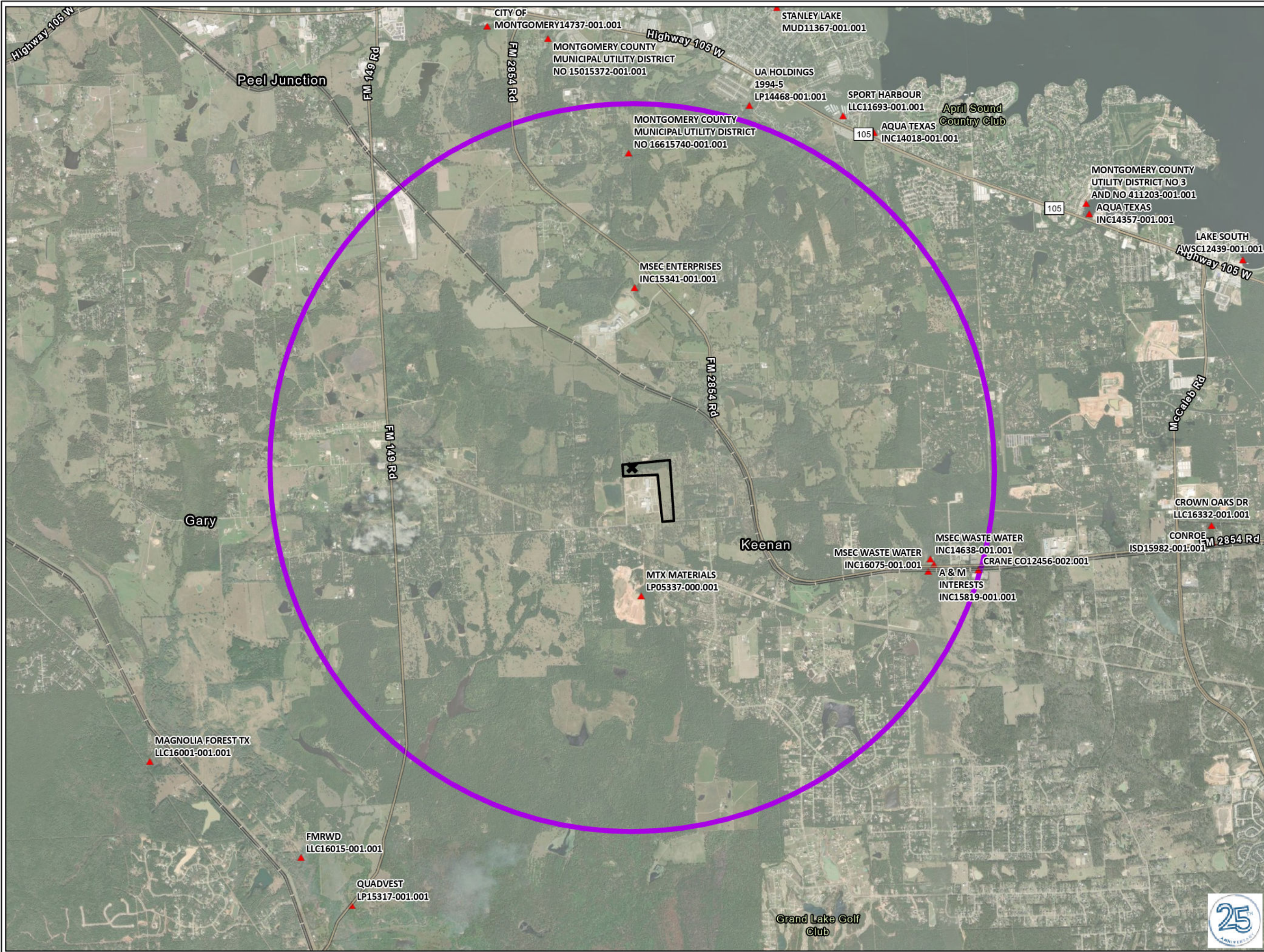
### REGIONALIZATION MAP AND LETTERS



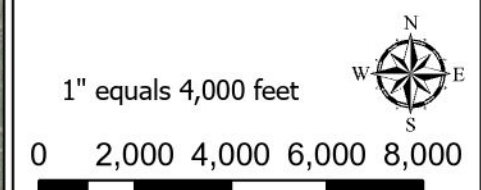
---

**10377 Stella Link Road, Houston, TX 77025**  
**Ph: 713-942-2700 Fax: 713-942-2799**  
**Texas Engineering Registration No. F-000802**





- ▲ TCEQ WWTP Permittee
- ✕ Proposed WWTP
- WWTP 3-Mile Buffer
- Service Area



KEENAN NORTH TRACT

**PERMITTED  
WASTEWATER  
TREATMENT PLANTS  
3-MILE RADIUS**

 A&S Engineers, Inc.





November 19, 2024

Crane Co.  
9860 JOHNSON RD  
MONTGOMERY, TX 77316 -9494

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – Crane WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES \_\_\_\_NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams", is written over a horizontal line.

Eric Williams, P.E.  
Project Manager



November 19, 2024

Preserve HW6, LLC  
3200 SOUTHWEST FWY STE 1870  
HOUSTON, TX 77027 -7502

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – Haven at Highway 6 WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES \_\_\_\_NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams", is positioned above the printed name.

Eric Williams, P.E.  
Project Manager



November 19, 2024

MSEC WASTE WATER INC  
PO BOX 970  
NAVASOTA, TX 77868 -0970

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – Lone Star Landing WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES \_\_\_\_NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams", is positioned above the printed name.

Eric Williams, P.E.  
Project Manager



November 19, 2024

Montgomery County MUD  
406 W. Grand Pkwy S, Ste 260  
Katy, Texas 77494

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – Montgomery County MUD 166 WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES \_\_\_\_NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams", is positioned above the printed name.

Eric Williams, P.E.  
Project Manager



November 19, 2024

MSEC Waste Water, Inc.  
PO BOX 970  
Navasota, TX 77868 -0970

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – MSEC WWTP 2  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES \_\_\_\_NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams", is positioned above the printed name.

Eric Williams, P.E.  
Project Manager



November 19, 2024

MSEC WASTE WATER INC  
PO BOX 970  
NAVASOTA, TX 77868 -0970

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – MSEC WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? ☐ YES ☐ NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams".

Eric Williams, P.E.  
Project Manager



November 19, 2024

MTX Materials, LP  
7720 WESTVIEW DR  
HOUSTON, TX 77055 -5029

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – MTX 1 Plant  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? ☐ YES ☐ NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams".

Eric Williams, P.E.  
Project Manager



November 19, 2024

MTX Materials, LP  
7720 WESTVIEW DR  
HOUSTON, TX 77055 -5029

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – MTX 1 Plant  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES XNO

If "YES", what is the maximum flow that can be accepted NA MGD.

By: [Signature] Date: 11/25/2024

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

[Signature]  
Eric Williams, P.E.  
Project Manager



## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

**CRANE CO.**  
 9860 JOHNSON RD.  
 MONTGOMERY, TX 77316-9494



9590 9402 8452 3156 4949 17

2. Article Number (Transfer from service label)

7014 1200 0001 1922 6336

PS Form 3811, July 2020 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent  
☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

 D. Is delivery address different from item 1? ☐ Yes  
 If YES, enter delivery address below: ☐ No

3. Service Type

☐ Adult Signature  
☐ Adult Signature Restricted Delivery  
☒ Certified Mail®  
☐ Certified Mail Restricted Delivery  
☐ Collect on Delivery  
☐ Collect on Delivery Restricted Delivery

☐ Priority Mail Express®  
☐ Registered Mail™  
☐ Registered Mail Restricted Delivery  
☐ Signature Confirmation™  
☐ Signature Confirmation Restricted Delivery

☐ Mail  
☐ Mail Restricted Delivery

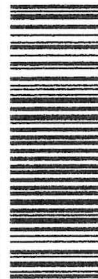
Domestic Return Receipt

 U.S. Postal Service™  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)
For delivery information visit our website at [www.usps.com](http://www.usps.com)

Postage	\$	Postmark Here
Certified Fee		
Return Receipt Fee (Endorsement Required)		
Restricted Delivery Fee (Endorsement Required)		
Total Postage		
Sent To <b>CRANE CO.</b>		
9860 JOHNSON RD.		
MONTGOMERY, TX 77316-9494		

PS Form 3800, August 2000

See Reverse for Instructions

 PLACE STICKER AT TOP OF ENVELOPE TO THE FRONT  
 OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.  
**CERTIFIED MAIL™**

 7014 1200 0001 1922 6336  
 7014 1200 0001 1922 6336

USPS TRACKING#



9590 9402 8452 3156 4949 17

United States  
Postal Service

\* Sender: Please print your name, address, and ZIP+4® in this box\*

 A&S Engineers, Inc.  
 10377 Stella Link Road  
 Houston, TX 77025

 First-Class Mail  
 Postage & Fees Paid  
 USPS  
 Permit No. G-10

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

PRESERVE HW6, LLC  
3200 SOUTHWEST FWY STE 1870  
HOUSTON, TX 77027-7502



9590 9402 8452 3156 4949 86

## 2. Article Number (Transfer from service label)

7014 1200 0001 1922 6374

PS Form 3811, July 2020 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X

☐ Agent  
☐ Addressee

## B. Received by (Printed Name)

## C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

## 3. Service Type

- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                         | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery     | <input type="checkbox"/> Registered Mail™                           |
| <input checked="" type="checkbox"/> Certified Mail®              | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery      | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery                     | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery |   |
| <input type="checkbox"/> Insured Mail                            |   |
| <input type="checkbox"/> Mail Restricted Delivery (500)          |   |

Domestic Return Receipt

U.S. Postal Service™  
**CERTIFIED MAIL™ RECEIPT**  
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Post	

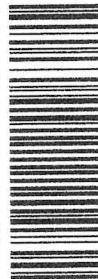
Postmark  
Here

Sent To: PRESERVE HW6, LLC  
3200 SOUTHWEST FWY STE 1870  
HOUSTON, TX 77027-7502  
Street, Apt. or PO Box:  
City, State:

PS Form 3800, August 2006

See Reverse for Instructions

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE  
**CERTIFIED MAIL™**



7014 1200 0001 1922 6374

USPS TRACKING #



9590 9402 8452 3156 4949 86

United States  
Postal Service

\* Sender: Please print your name, address, and ZIP+4® in this box \*

A&S Engineers, Inc.  
10377 Stella Link Road  
Houston, TX 77025

First-Class Mail  
Postage & Fees Paid  
USPS  
Permit No. G-10

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>	
<p>1. Article Addressed to:</p> <p>MSEC WASTE WATER INC. PO BOX 970 NAVASOTA, TX 77868-0970</p>		<p>B. Received by (Printed Name) C. Date of Delivery</p>	
<p>2. Article Number (Transfer from service label)</p> <p>7014 1200 0001 1922 6381</p>		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If YES, enter delivery address below:</p>	
<p>3. Service Type</p> <p><input type="checkbox"/> Adult Signature <input type="checkbox"/> Priority Mail Express®</p> <p><input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail™</p> <p><input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Registered Mail Restricted Delivery</p> <p><input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Signature Confirmation™</p> <p><input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery</p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Restricted Delivery</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> Registered Mail Restricted Delivery (\$500)</p>			

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

U.S. Postal Service™ CERTIFIED MAIL™ RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)	
For delivery information visit our website at <a href="http://www.usps.com">www.usps.com</a>	
Postage \$	Postmark Here
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage	
<p>Sent To MSEC WASTE WATER INC. PO BOX 970 NAVASOTA, TX 77868-0970</p> <p>Street, Apt. N or PO Box N City, State, Zi</p>	

PS Form 3839, August 2013 See Reverse for Instructions

USPS TRACKING#	
9590 9402 8452 3156 4949 24	
<p>United States Postal Service</p> <p>First-Class Mail® Postage &amp; Fees Paid USPS Permit No. G-10</p>	
<p>A&amp;S Engineers, Inc. 10377 Stella Link Road Houston, TX 77029</p>	

\* Sender: Please print your name, address, and ZIP+4® in this box\*

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p> <p>1. Article Addressed to:</p> <p><b>MONTGOMERY COUNTY MUD</b>  <b>406 W. GRAND PKWY S, STE 260</b>  <b>KATY, TX 77494</b></p> <p>9590 9402 8452 3156 4949 62</p> <p>2. Article Number (Transfer from service label)  <b>7014 1200 0001 1922 6398</b></p>		<p>A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No          If YES, enter delivery address below:</p> <p>3. Service Type <input type="checkbox"/> Priority Mail Express® <input type="checkbox"/> Registered Mail™  <input type="checkbox"/> Adult Signature <input type="checkbox"/> Registered Mail Restricted Delivery  <input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Signature Confirmation™  <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery  <input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery  <input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery  <input type="checkbox"/> I Mail <input type="checkbox"/> I Mail Restricted Delivery (500)</p>	

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

U.S. Postal Service™ CERTIFIED MAIL™ RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)	
For delivery information visit our website at <a href="http://www.usps.com">www.usps.com</a>	
Postage \$	Postmark Here
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage	
Sent To <b>MONTGOMERY COUNTY MUD</b> <b>406 W. GRAND PKWAY S, STE 260</b> <b>KATY, TX 77494</b> Street, Apt. No. or PO Box No. City, State, Zi	
PS Form 3800, August 2005 See Reverse for Instructions	

USPS TRACKING# 9590 9402 8452 3156 4949 62	First-Class Mail Postage & Fees Paid USPS Permit No. G-10
<p>United States Postal Service</p> <p>• Sender: Please print your name, address, and ZIP+4® in this box*</p> <p><b>A&amp;S Engineers, Inc.</b>  <b>10377 Stella Link Road</b>  <b>Houston, TX 77025</b></p>	

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p> <p>1. Article Addressed to:</p> <p><b>MSEC WASTE WATER, INC.</b>  <b>PO BOX 970</b>  <b>NAVASOTA, TX 77868-0970</b></p> <p>9590 9402 8452 3156 4949 55</p> <p>2. Article Number (Transfer from service label)  <b>7014 1200 0001 1922 6404</b></p>		<p>A. Signature  <b>X</b> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes          If YES, enter delivery address below: <input type="checkbox"/> No</p> <p>3. Service Type <input type="checkbox"/> Priority Mail Express®  <input type="checkbox"/> Adult Signature <input type="checkbox"/> Registered Mail™  <input checked="" type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail Restricted Delivery  <input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Signature Confirmation™  <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery  <input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Collect on Delivery Restricted Delivery  <input type="checkbox"/> Mail Restricted Delivery (100)</p>	

PS Form 3811, July 2009 PSN 7530-02-000-9053

Domestic Return Receipt

U.S. Postal Service <sup>TM</sup>	
<b>CERTIFIED MAIL<sup>TM</sup> RECEIPT</b>	
<i>(Domestic Mail Only; No Insurance Coverage Provided)</i>	
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Street, Apt. No. or PO Box No.	<b>PO BOX 970</b>
City, State, ZIP	<b>NAVASOTA, TX 77868-0970</b>
PS Form 3820, August 2006 See Reverse for Instructions	

USPS TRACKING#	
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**A&S Engineers, Inc.**  
 10377 Stella Link Road  
 Houston, TX 77025

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1. Article Addressed to:

**MSEC WASTE WATER, INC.**  
PO BOX 970  
NAVASOTA, TX 77868-0970



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2. Article Number (Transfer from service label)

7014 1200 0001 1922 6411

PS Form 3811, July 2020 PSN 7530-02-000-9053

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A. Signature

X

☐ Agent☐ Addressee

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Total Post

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or PO Box

City, State

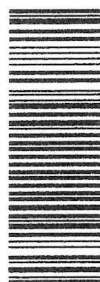
**MSEC WASTE WATER INC.**  
**PO BOX 970**  
**NAVASOTA, TX 77868-0970**

PS Form 3800, August 2009

See Reverse for Instructions

PLACE STICKER ON TOP OF MAILPIECE TO THE RIGHT  
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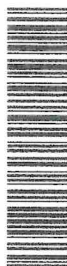
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## 1. Article Addressed to:

MTX MATERIALS, LP  
7720 WESTVIEW DR  
HOUSTON, TX 77055-5029



9590 9402 8452 3156 4949 31

## 2. Article Number (Transfer from service label)

7014 1200 0001 1922 6428

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## A. Signature

X

☐ Agent  
☐ Addressee

## B. Received by (Printed Name)

## C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
 If YES, enter delivery address below: ☐ No

## 3. Service Type

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☐ Collect on Delivery Restricted Delivery  
☐ I Mail  
☐ I Mail Restricted Delivery (500)

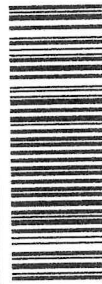
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Domestic Return Receipt

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Total Postage

Postmark  
Here

Sent To

MTX MATERIALS, LP  
7720 WESTVIEW DR  
HOUSTON, TX 77055-5029

Street, Apt. No.  
or PO Box No.  
City, State, ZIP

PS Form 3811, August 2009

See Reverse for Instructions

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1. Article Addressed to:

MSEC WASTE WATER, INC.  
PO BOX 970  
NAVASOTA, TX 77868-0970

2. Article Number (Transfer from service label)  
7014 1200 0001 1922 6404

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature  
X M. Berg

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

3. Service Type  
☐ Adult Signature  
☒ Adult Signature Restricted Delivery  
☒ Certified Mail®  
☐ Certified Mail Restricted Delivery  
☐ Collect on Delivery  
☐ Collect on Delivery Restricted Delivery  
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PO BOX 970  
NAVASOTA, TX 77868-0970

2. Article Number (Transfer from service label)  
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COMPLETE THIS SECTION ON DELIVERY

A. Signature  
X M. Berg

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

3. Service Type  
☐ Adult Signature  
☐ Adult Signature Restricted Delivery  
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Domestic Return Receipt



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## 1. Article Addressed to:

PRESERVE HWS, LLC  
3200 SOUTHWEST FWY STE 1870  
HOUSTON, TX 77027-7502



9590 9402 8452 3156 4949 86

## 2. Article Number (Transfer from service label)

7014 1200 0001 1922 6374

PS Form 3811, July 2020 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X *Jaidy Plume*☐ Agent☐ Address

## B. Received by (Printed Name)

## C. Date of Delivery

- D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

## 3. Service Type

- ☐ Adult Signature  
☐ Adult Signature Restricted Delivery  
☒ Certified Mail®  
☐ Certified Mail Restricted Delivery  
☐ Collect on Delivery  
☐ Collect on Delivery Restricted Delivery  
☐ Insured Mail

☐ Priority Mail Express®☐ Registered Mail™☐ Registered Mail Restricted Delivery☐ Signature Confirmation☐ Signature Confirmation Restricted Delivery☐ Registered Mail Restricted Delivery (500)

Domestic Return Receipt

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
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## 1. Article Addressed to:

MTX MATERIALS, LP  
7720 WESTVIEW DR  
HOUSTON, TX 77055-5029



9590 9402 8452 3156 4949 31

## 2. Article Number (Transfer from service label)

7014 1200 0001 1922 6428

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X

*Sandra Gutierrez*☐ Agent☐ Address

## B. Received by (Printed Name)

*Sandra Gutierrez*

## C. Date of Delivery

- D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

## 3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery

- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation®
- ☐ Signature Confirmation Restricted Delivery

1 Mail

1 Mail Restricted Delivery  
500)



# A&S Engineers, Inc.

November 19, 2024

Preserve HW6, LLC  
3200 SOUTHWEST FWY STE 1870  
HOUSTON, TX 77027 -7502

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – Haven at Highway 6 WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES ☒ NO


If "YES", what is the maximum flow that can be accepted \_\_\_\_MGD.

By:  Date: 11/26/2024

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

  
Eric Williams, P.E.  
Project Manager



Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 17

### DESIGN CALCULATIONS



A&S Engineers, Inc.

---

10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT  
WWTP PROCESS SIZING CALCULATIONS  
PHASE I : 0.165 MGD  
10/31/24

I. DESIGN PARAMETERS

A. Influent Composition

1.	Influent BOD	=	300	mg/l
2.	Influent TSS	=	300	mg/l
3.	Influent NH3-N	=	75	mg/l

B. Hydraulic Considerations

1.	Design Flow	=	0.165	MGD
2.	No. 1 Unit Change		115	gpm
3.	Hydraulic Peaking Factor for Design	=	4.00	Q
4.	Peak Hydraulic Flow	=	0.660	MGD
5.	No. 4 Unit Change		458	gpm

C. Influent Composition Mass Loading (based on Raw & Post Primary Split

1.	Mass BOD Loading	=	413	lb/day
2.	Mass TSS Loading	=	413	lb/day
3.	Mass NH3-N Loading	=	103	lb/day

D. Effluent Composition

1.	Effluent BOD	=	0	mg/l
2.	Effluent TSS	=	0	mg/l
3.	Effluent NH3-N	=	0	mg/l
4.	Effluent TKN	=	0	mg/l
5.	Phosphorous	=	0	mg/l

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

II. ACTIVATED SLUDGE

A. Aeration Influent Composition

1.	Total Design Flow	=	0.17	MGD
2.	Total Influent BOD	=	413	lb/day
3.	Total Influent TSS	=	413	lb/day
4.	Total Influent NH3-N	=	103	lb/day

B. TCEQ Organic Loading Criteria

1.	Organic Loading (TCEQ 217.154)	=	35	lb BOD/1000 cu ft
2.	Organic Loading to Aeration	=	413	lb/day
3.	Aeration Basin Volume Required	=	11,795	cu. ft

C. Minimum Aeration Volume

1.	Min Aeration Volume Based on controlling criteria	=	11,795	cu. ft
2.	Equivalent Loading based on Min Volume	=	35.0	lb BOD/1000 cu ft

Solids Balance Method

1.	(delta X/delta t)	=	Excess Sludge Produced per Day	
		=	Xi1 + Xi2 + aSo + a*N - bXv - Xe	
		=	82.566 lbs/day + 132.1056 lbs/day + (0.6 lb VSS produced / lb BOD applied)(412.83 lbs/day) + (0.12 lb/VSS produced / lb NH3-N applied)(103.2075 lbs/day) - (0.06 lb VSS destroyed / lb MLSS-day)(2195.2 lbs) + 0 lbs/day	
		=	343	lb/day

Where:

	% of Fixed Influent TSS to Aeration Basin	=	20%	of TSS
	(Total Influent TSS to Aeration Basin)	=	413	lbs/day
Xi1	= Fixed Influent TSS to Aeration Basin	=	83	lbs/day
	% of Non-biodegradable Influent VSS	=	40%	of VSS
	(Volatile Influent TSS to Aeration Basin)	=	330	lbs/day
Xi2	= Non-biodegradable Influent VSS	=	132	lbs/day
a	= Synthesis Coefficient	=	0.60	lb VSS produced / lb BOD applied
So	= Influent BOD5	=	413	lbs/day
a*	= Nitrifier Synthesis Coefficient	=	0.12	lb/ VSS produced / lb NH3-N app
N	= Influent NH3-N	=	103	lbs/day
b	= Endogenous Coefficient	=	0.06	lb VSS destroyed / lb MLSS-day
Xv	= MLVSS in Aeration Basin	=	2,195	lbs
Xe	= Effluent TSS (based on effluent 5 mg/L)	=	0.0	lbs/day

Find MLSS in Aeration Basin for WWTP

Ratio of Volatile to Total Suspended Solids	=	0.8	MLVSS / MLSS
Design MLSS Concentration	=	3,000.0	mg/L
Estimated MLVSS Concentration	=	2,400.0	mg/L
Design Solid Retention Time (SRT)	=	8.0	days
MLSS in Aeration Basin	=	2,744	lbs
MLVSS in Aeraton Basin	=	2,195	lbs
Verify MLSS Assumption (SRT x delta X/delta T)	=	2,744	lbs

Fixed Influent TSS to Aeration Basin	=	83	lbs/day
Nonbiodegradable Influent VSS	=	132	lbs/day
Growth Due to Synthesis	=	247.698	lbs/day
Growth Due to Nitrifiers	=	12	lbs/day
Endogenous Destruction	=	132	lbs/day



DESIGN CALCULATIONS

KEENAN NORTH			
WASTEWATER TREATMENT PLANT			
Effluent TSS	=	0	lbs/day
Excess Sludge Produced per Day	=	343	lbs/day
Design F:M Ratio	=	0.15	lb BOD / lb SS
Maximum BOD5 Loading Rate	=	28.16	lbs BOD5 / 1000 cu. Ft.
Required Aeration Basin Volume	=	14,662.1	cu. Ft.
Hydraulic Retention Time	=	16.0	hours
2. Required Aeration Basin Volume per Solids Balance Method			
$2744\text{ lbs} / (8.34 \times 3000\text{ mg/L}) * 10^6 / 7.48$	=	14,662.1	cu. Ft.
D. Number of Aeration Basin Trains			
1. Number of Basins	=	1.0	# trains
2. Design per Flow Basin	=	0.165	MGD
E. Aeration Basin Sizing Calculations			
1. Minimum Total Volume Required	=	14,662	cu. ft
2. Assumed Side Water Depth of Aeration Basin	=	10.50	ft.
3. Minimum Total Surface Area Required	=	1,396	sq. ft
4. Minimum Total Surface Area Required per Train	=	1,396	sq. ft
F. Proposed Aeration Basin Configuration			
1. Proposed Basin Dimensions			
a. Width	=	12.0	ft.
b. Length	=	95.0	ft.
c. Proposed Length to Width Ratio	=	7.92	
2. Number of Aeration Basin Trains (from above)	=	1	# trains
3. Total Volume of Proposed Basins	=	11,970	cu. ft
4. Actual Aeration Basin Loading	=	34	lb BOD5 / 1000 cu. Ft.
5. Actual Hydraulic Retention Time	=	13	hours
6. Actual F:M Ratio	=	0.18	lb BOD / lb SS
7. Check of Proposed Total Basin Volume	=	OK	

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

III. SECONDARY/FINAL CLARIFICATION			
A. Number of Secondary/Final Clarifiers	=	1	
1. Total Flow to Clarifiers	=	0.17	MGD
B. Surface Area Design (TCEQ 217.154(c)(1))			
1. Maximum Surface Loading @ Peak Flow	=	1,200	gpd/sq. ft
2. Surface Area Required @ Peak Flow per Clarifier	=	550	sq. ft
C. Hydraulic Detention Time Design (TCEQ 217.154(c))			
1. Minimum Effective Detention Time @ Peak Flow	=	1.80	Hours
2. Volume Required @ Peak Flow per Clarifier	=	6,618	cu. Ft.
3. Surface Area Required @ Peak Flow (From Above) per Clarifier		550	sq. ft.
D. Effluent Weir Design (TCEQ 217.152(c)(4-5))			
1. Weir loading for plants 1.0 MGD or less	=	20,000	gpd/ft
2. Weir loading for plants over 1.0 MGD	=	30,000	gpd/ft
3. Controlling Criteria	=	20,000	gpd/ft
4. Total Length of Weir Required @ Peak Flow per Clarifier	=	33.0	ft
E. Clarifer Basin Check			
1. Number of Clarifiers	=	1	# clarifiers
2. Minimum Surface Area (From Above) per Clarifier	=	550	sq. ft.
3. Minimums Volume Time (From Above) per Clarifier	=	6,618	cu. Ft.
4. Minimum Weir Total Length (From Above) per Clarifier	=	33.0	ft
5. Clarifier Size (Circular)	=	42	ft
6. Surface Area Per Clarifier (Circular)	=	1,385	sq. ft.
7. Total Surface Area	=	1,385	sq. ft.
8. Surface Area Check	=	OK	
9. Effective Side Water Depth	=	10.00	ft.
10. Total Clarifer Volume	=	13,854	cu. Ft.
11. Total Clarifer Hydraulic Detention Time (Using Prop. Surface Area)	=	3.8	Hours
12. Hydraulic Detention Time Check	=	OK	
13. Design Weir Width - Width of Launder Trough	=	1.0	ft
14. Distance From Outer Concrete Wall	=	1.0	ft
15. Thickness of Each Launder Trough Walls	=	0.00	ft
16. Subsequent Outer Diameter of Effluent Weir	=	40.0	ft
17. Weir Length per Clarifier	=	125.7	ft
18. Weir Loading @ Peak Flow per Clarifier	=	5,252	gpd/ft
19. Weir Length (Loading Rate) per Clarifier Check	=	OK	
F. Return Activated Sludge Flow Rates			
1. Lower Limit Underflow Rate (TCEQ 217.152)	=	200	gpd/sq ft
2. Minimum Total RAS Flow Rate	=	192	gpm
3. Upper Limit Underflow Rate (TCEQ 217.152)	=	400	gpd/sq ft
4. Maximum Total RAS Flow Rate	=	385	gpm

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

IV. DISINFECTION/ CHLORINE CONTACT BASIN

A.	1.	Minimum Effective Detention Time @ Peak Flow Ch. 217.281(b)(1)	=	20	minutes
	2.	Required Volume @ Peak Flow	=	9,167	Gallons
	3.	Unit Change	=	1,225	cu. Ft.
	4.	Proposed Basin Dimensions			
		Number of Proposed Basins	=	1	
		Length of Each Basin	=	15	
		Width of Each Basin	=	15	
		Side Water Depth of Each Basin	=	9	
	4.	Total Volume of Proposed Basin	=	2,025	cu. Ft
	5.	Check of Proposed Total Basin Volume	=	OK	mins
	6.	Hydraulic Detention Time at Design Flow	=	132.2	mins
	7.	Hydraulic Detention Time at Peak Flow	=	33.0	mins
	8.	CHECK	=	OK	
B. Chlorine Contact Basin Air					
	1.	Air Required (CCB Volume * 20 SCFM/1000 CF)	=	40.5	scfm

V. SOLIDS HANDLING

A.	Digester Sizing				
	1.	Percent Biodegradeable Volatile Solids in WAS, %	=	70%	
	2.	Percent Destruction, %	=	30%	
	3.	Digested Solids Production, lbs/day	=	326	lbs/day
	4.	Solids from Clarifier	=	413	lbs/day
	5.	Average Solids	=	369	lbs/day
	6.	Assumed Dig. Conc., mg/l	=	15,000	mg/L
	7.	Req'd. Retention Time, days (TCEQ 217.249 (t)(4)(b))	=	40	days
	8.	Req'd. Volume, cf	=	15,794	cu. ft
	9.	Volume to Loading Ratio. cf/lb BOD/day	=	38.3	cf/lb BOD/day
B.	Digester Design				
	1.	Proposed Digester Dimensions			
		Width of Each Digester	=	12	
		Length of Each Digester	=	95	
		Side Water Depth of Each Digester	=	10.5	
	2.	Number of Digesters	=	2	
	3.	Total Digester Volume	=	23,940	cu. ft
	3.	Actual Digester Storage Capacity	=	61	days
	3.	Digester Volume check	=	OK	
C. Digester Air					
	1.	Air Required (Digester Volume x 20scfm/1000cf)	=	479	scfm



DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

VI. AIRFLOW CALCULATIONS

<b>A. Aeration Air Requirements TCEQ 217.155 (b) (2) (c)</b>			
1.	Total Influent BOD <sub>5</sub>	=	413 lb/day
2.	Total Influent NH3-N	=	103 lb/day
3.	BOD5 Removal	=	413 lb/day
4.	Nh3-N Removal	=	103 lb/day
5.	Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	1.2 lbs O <sub>2</sub> /lb BOD <sub>5</sub>
6.	Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	4.3 lbs O <sub>2</sub> /lb NH3-N
7.	Oxygen Required per Pound of BOD	=	2.3
8.	Depth of Submergence of Diffusers	=	9.00 ft
9.	Diffuser Type (Coarse or Fine)	=	Fine
10.	Clean Water Transfer Efficiency of Fine Bubble Diffuser	=	1.50% per ft of submergence
11.	Clean Water Transfer Efficiency @ Stated Depth	=	18.0%
12.	Wastewater Transfer Efficiency Coefficient for Fine Bubble Diffusers	=	0.45
13.	Wastewater Transfer Efficiency	=	8.1%
14.	Manufacturer Proposed SOTE	=	30.0%
15.	Maximum Clean Water Transfer Efficiency TCEQ 217.155 (b) (2) (A) (iii)	=	26.0%
16.	Check if Over Regulated Maximum	=	OK
17.	Density of Air @ 20 Deg C	=	0.075
18.	Ratio of Oxygen to Air	=	0.230
19.	Diffuser Submergence Correction Factor	=	1.690
20.	Minimum Air Required for Mixing	=	136.800 scfm
21.	Air Required for Treatment	=	789
22.	Manufacturer Proposed Air Required for Treatment	=	280 scfm
<b>B. Airlifts ****(Flowrates Must Be Verified Depending on Size, Submergence, etc.)****</b>			
1.	Return Scum		
	Scum Pump (1)	=	20 scfm
	RAS (1)	=	20 scfm
	WAS (1)	=	20 scfm
	Transfer (1)	=	20 scfm
2.	Total Airlifts Air Requirement	=	80 scfm
<b>C.</b>	<b>Total Air Required</b>	=	1,388 scfm
<b>D.</b>	<b>150% of Design Flow TCEQ 217.155 (b)(5)(c)(iii) for Air Piping</b>	=	2,082 scfm
<b>E.</b>	<b>Proposed Number of Blowers</b>	=	2 # of blowers
<b>F</b>	<b>Invdividual Blower Capacity @ Design Pressure/Largest Out of Service</b>	=	1,388 scfm
<b>G.</b>	<b>Proposed Maximum Air Loss in Air Piping (Calculated Separately)</b>	=	1 psig
<b>H</b>	<b>Design Pressure of Blower</b>	=	5.4 psig

VII. CHLORINE DOSAGE CALCULATIONS

<b>A. Chlorine Dosage Rate TCEQ 217.272 (b)</b>			
1.	Calculated Chlorine Dosage Rate @ Design Flow Eq. K.1 TCEQ 217.272 (a)	=	8.0 mg/l
2.	Calculated Chlorine Dosage Rate @ Peak Flow Eq. K.1 TCEQ 217.272 (a)	=	11 lbs/day
3.	System Set-up (Vacuum or Manifold)	=	44 lbs/day
		=	Vacuum
4.	Minimum Ambient TemperatureTCEQ 217.275 (a) (1)	=	55 Degrees F
5.	Max Withdrawal Rate for One 150-lb Cylinder TCEQ 217.274 (a) (1)	=	55 lbs/day
6.	Max Withdrawal Rate for One Ton Cylinder TCEQ 217.274 (a) (1)	=	440 lbs/day
7.	Required Number of 150-lb Cylinders Eq. K.3 TCEQ 217.273 (b)	=	1 # of cylinders
8.	Required Number of One Ton Cylinders Eq. K.3 TCEQ 217.273 (b)	=	1 # of cylinders
9.	Method of Chlorine Storage ("ton" or "150's")	=	150-lb
10.	Peak Withdrawal Rate	=	55 lbs/day

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT  
WWTP PROCESS SIZING CALCULATIONS  
PHASE II: 0.330 MGD  
10/31/24

I. DESIGN PARAMETERS

A. Influent Composition

1.	Influent BOD	=	300	mg/l
2.	Influent TSS	=	300	mg/l
3.	Influent NH3-N	=	75	mg/l

B. Hydraulic Considerations

1.	Design Flow after Expansion	=	0.330	MGD
2.	No. 1 Unit Change	=	229	gpm
3.	Hydraulic Peaking Factor for Design	=	4.00	Q
4.	Peak Hydraulic Flow	=	1.32	MGD
5.	No. 4 Unit Change	=	917	gpm

C. Influent Composition Mass Loading (based on Raw & Post Primary Split

1.	Mass BOD Loading	=	826	lb/day
2.	Mass TSS Loading	=	826	lb/day
3.	Mass NH3-N Loading	=	206	lb/day

D. Effluent Composition

1.	Effluent BOD	=	0	mg/l
2.	Effluent TSS	=	0	mg/l
3.	Effluent NH3-N	=	0	mg/l
4.	Effluent TKN	=	0	mg/l
5.	Phosphorous	=	0	mg/l

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

II. ACTIVATED SLUDGE

A. Aeration Influent Composition

1.	Total Design Flow	=	0.33	MGD
2.	Total Influent BOD	=	826	lb/day
3.	Total Influent TSS	=	826	lb/day
4.	Total Influent NH3-N	=	206	lb/day

B. TCEQ Organic Loading Criteria

1.	Organic Loading (TCEQ 217.154)	=	35	lb BOD/1000 cu ft
2.	Organic Loading to Aeration	=	826	lb/day
3.	Aeration Basin Volume Required	=	23,590	cu. ft

C. Minimum Aeration Volume

1.	Min Aeration Volume Based on controlling criteria	=	23,590	cu. ft
2.	Equivalent Loading based on Min Volume	=	35.0	lb BOD/1000 cu ft

Solids Balance Method

1.	(delta X/delta t)	=	Excess Sludge Produced per Day	
		=	Xi1 + Xi2 + aSo + a*N - bXv - Xe	
		=	165.132 lbs/day + 264.2112 lbs/day + (0.6 lb VSS produced / lb BOD applied)(825.66 lbs/day) + (0.12 lb/VSS produced / lb NH3-N applied)(206.415 lbs/day) - (0.06 lb VSS destroyed / lb MLSS-day)(4390.4 lbs) + 0 lbs/day	
		=	686	lb/day

Where:

	% of Fixed Influent TSS to Aeration Basin	=	20%	of TSS
	(Total Influent TSS to Aeration Basin)	=	826	lbs/day
Xi1	= Fixed Influent TSS to Aeration Basin	=	165	lbs/day
	% of Non-biodegradable Influent VSS	=	40%	of VSS
	(Volatile Influent TSS to Aeration Basin)	=	661	lbs/day
Xi2	= Non-biodegradable Influent VSS	=	264	lbs/day
a	= Synthesis Coefficient	=	0.60	lb VSS produced / lb BOD applied
So	= Influent BOD5	=	826	lbs/day
a*	= Nitrifier Synthesis Coefficient	=	0.12	lb/ VSS produced / lb NH3-N app
N	= Influent NH3-N	=	206	lbs/day
b	= Endogenous Coefficient	=	0.06	lb VSS destroyed / lb MLSS-day
Xv	= MLVSS in Aeration Basin	=	4,390	lbs
Xe	= Effluent TSS (based on effluent 5 mg/L)	=	0.0	lbs/day

Find MLSS in Aeration Basin for WWTP

Ratio of Volatile to Total Suspended Solids	=	0.8	MLVSS / MLSS
Design MLSS Concentration	=	3,000.0	mg/L
Estimated MLVSS Concentration	=	2,400.0	mg/L
Design Solid Retention Time (SRT)	=	8.0	days
MLSS in Aeration Basin	=	5,488	lbs
MLVSS in Aeraton Basin	=	4,390	lbs
Verify MLSS Assumption (SRT x delta X/delta T)	=	5,489	lbs

Fixed Influent TSS to Aeration Basin	=	165	lbs/day
Nonbiodegradable Influent VSS	=	264	lbs/day
Growth Due to Synthesis	=	495.396	lbs/day
Growth Due to Nitrifiers	=	25	lbs/day
Endogenous Destruction	=	263	lbs/day



DESIGN CALCULATIONS

KEENAN NORTH			
WASTEWATER TREATMENT PLANT			
Effluent TSS	=	0	lbs/day
Excess Sludge Produced per Day	=	686	lbs/day
Design F:M Ratio	=	0.15	lb BOD / lb SS
Maximum BOD5 Loading Rate	=	28.16	lbs BOD5 / 1000 cu. Ft.
Required Aeration Basin Volume	=	29,324.1	cu. Ft.
Hydraulic Retention Time	=	16.0	hours
2. Required Aeration Basin Volume per Solids Balance Method			
$5488\text{ lbs} / (8.34 \times 3000\text{ mg/L}) * 10^6 / 7.48$	=	29,324.1	cu. Ft.
D. Number of Aeration Basin Trains			
1. Number of Basins	=	2.0	# trains
2. Design per Flow Basin	=	0.165	MGD
E. Aeration Basin Sizing Calculations			
1. Minimum Total Volume Required	=	29,324	cu. ft
2. Assumed Side Water Depth of Aeration Basin	=	10.50	ft.
3. Minimum Total Surface Area Required	=	2,793	sq. ft
4. Minimum Total Surface Area Required per Train	=	1,396	sq. ft
F. Proposed Aeration Basin Configuration			
1. Proposed Basin Dimensions			
a. Width	=	12.0	ft.
b. Length	=	95.0	ft.
c. Proposed Length to Width Ratio	=	7.92	
2. Number of Aeration Basin Trains (from above)	=	2	# trains
3. Total Volume of Proposed Basins	=	23,940	cu. ft
4. Actual Aeration Basin Loading	=	34	lb BOD5 / 1000 cu. Ft.
5. Actual Hydraulic Retention Time	=	13	hours
6. Actual F:M Ratio	=	0.18	lb BOD / lb SS
7. Check of Proposed Total Basin Volume	=	OK	

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

III. SECONDARY/FINAL CLARIFICATION			
A. Number of Secondary/Final Clarifiers	=	1	
1. Total Flow to Clarifiers	=	0.33	MGD
B. Surface Area Design (TCEQ 217.154(c)(1))			
1. Maximum Surface Loading @ Peak Flow	=	1,200	gpd/sq. ft
2. Surface Area Required @ Peak Flow per Clarifier	=	1,100	sq. ft
C. Hydraulic Detention Time Design (TCEQ 217.154(c))			
1. Minimum Effective Detention Time @ Peak Flow	=	1.80	Hours
2. Volume Required @ Peak Flow per Clarifier	=	13,235	cu. Ft.
3. Surface Area Required @ Peak Flow (From Above) per Clarifier		1,100	sq. ft.
D. Effluent Weir Design (TCEQ 217.152(c)(4-5))			
1. Weir loading for plants 1.0 MGD or less	=	20,000	gpd/ft
2. Weir loading for plants over 1.0 MGD	=	30,000	gpd/ft
3. Controlling Criteria	=	20,000	gpd/ft
4. Total Length of Weir Required @ Peak Flow per Clarifier	=	66.0	ft
E. Clarifer Basin Check			
1. Number of Clarifiers	=	1	# clarifiers
2. Minimum Surface Area (From Above) per Clarifier	=	1,100	sq. ft.
3. Minimums Volume Time (From Above) per Clarifier	=	13,235	cu. Ft.
4. Minimum Weir Total Length (From Above) per Clarifier	=	66.0	ft
5. Clarifier Size (Circular)	=	42	ft
6. Surface Area Per Clarifier (Circular)	=	1,385	sq. ft.
7. Total Surface Area	=	1,385	sq. ft.
8. Surface Area Check	=	OK	
9. Effective Side Water Depth	=	10.00	ft.
10. Total Clarifer Volume	=	13,854	cu. Ft.
11. Total Clarifer Hydraulic Detention Time (Using Prop. Surface Area)	=	1.9	Hours
12. Hydraulic Detention Time Check	=	OK	
13. Design Weir Width - Width of Launder Trough	=	1.0	ft
14. Distance From Outer Concrete Wall	=	1.0	ft
15. Thickness of Each Launder Trough Walls	=	0.00	ft
16. Subsequent Outer Diameter of Effluent Weir	=	40.0	ft
17. Weir Length per Clarifier	=	125.7	ft
18. Weir Loading @ Peak Flow per Clarifier	=	10,504	gpd/ft
19. Weir Length (Loading Rate) per Clarifier Check	=	OK	
F. Return Activated Sludge Flow Rates			
1. Lower Limit Underflow Rate (TCEQ 217.152)	=	200	gpd/sq ft
2. Minimum Total RAS Flow Rate	=	192	gpm
3. Upper Limit Underflow Rate (TCEQ 217.152)	=	400	gpd/sq ft
4. Maximum Total RAS Flow Rate	=	385	gpm

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

IV. DISINFECTION/ CHLORINE CONTACT BASIN

A.	1.	Minimum Effective Detention Time @ Peak Flow Ch. 217.281(b)(1)	=	20	minutes
	2.	Required Volume @ Peak Flow	=	18,333	Gallons
	3.	Unit Change	=	2,451	cu. Ft.
	4.	Proposed Basin Dimensions			
		Number of Proposed Basins	=	2	
		Length of Each Basin	=	15	
		Width of Each Basin	=	15	
		Side Water Depth of Each Basin	=	9	
	4.	Total Volume of Proposed Basin	=	4,050	cu. Ft
	5.	Check of Proposed Total Basin Volume	=	OK	mins
	6.	Hydraulic Detention Time at Design Flow	=	132.2	mins
	7.	Hydraulic Detention Time at Peak Flow	=	33.0	mins
	8.	CHECK	=	OK	
B. Chlorine Contact Basin Air					
	1.	Air Required (CCB Volume * 20 SCFM/1000 CF)	=	81.0	scfm

V. SOLIDS HANDLING

A.	Digester Sizing				
	1.	Percent Biodegradeable Volatile Solids in WAS, %	=	70%	
	2.	Percent Destruction, %	=	30%	
	3.	Digested Solids Production, lbs/day	=	652	lbs/day
	4.	Solids from Clarifier	=	826	lbs/day
	5.	Average Solids	=	739	lbs/day
	6.	Assumed Dig. Conc., mg/l	=	15,000	mg/L
	7.	Req'd. Retention Time, days (TCEQ 217.249 (t)(4)(b))	=	40	days
	8.	Req'd. Volume, cf	=	31,588	cu. ft
	9.	Volume to Loading Ratio. cf/lb BOD/day	=	38.3	cf/lb BOD/day
	B. Digester Design				
	1.	Proposed Digester Dimensions			
		Width of Each Digester	=	12	
		Length of Each Digester	=	95	
		Side Water Depth of Each Digester	=	10.5	
	2.	Number of Digesters	=	3	
	3.	Total Digester Volume	=	35,910	cu. ft
	3.	Actual Digester Storage Capacity	=	45	days
	3.	Digester Volume check	=	OK	
C. Digester Air					
	1.	Air Required (Digester Volume x 20scfm/1000cf)	=	718	scfm

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

VI. AIRFLOW CALCULATIONS

<b>A. Aeration Air Requirements TCEQ 217.155 (b) (2) (c)</b>			
1.	Total Influent BOD <sub>5</sub>	=	826 lb/day
2.	Total Influent NH3-N	=	206 lb/day
3.	BOD5 Removal	=	826 lb/day
4.	Nh3-N Removal	=	206 lb/day
5.	Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	1.2 lbs O <sub>2</sub> /lb BOD <sub>5</sub>
6.	Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	4.3 lbs O <sub>2</sub> /lb NH3-N
7.	Oxygen Required per Pound of BOD	=	2.3
8.	Depth of Submergence of Diffusers	=	9.00 ft
9.	Diffuser Type (Coarse or Fine)	=	Fine
10.	Clean Water Transfer Efficiency of Fine Bubble Diffuser	=	1.50% per ft of submergence
11.	Clean Water Transfer Efficiency @ Stated Depth	=	18.0%
12.	Wastewater Transfer Efficiency Coefficient for Fine Bubble Diffusers	=	0.45
13.	Wastewater Transfer Efficiency	=	8.1%
14.	Manufacturer Proposed SOTE	=	30.0%
15.	Maximum Clean Water Transfer Efficiency TCEQ 217.155 (b) (2) (A) (iii)	=	26.0%
16.	Check if Over Regulated Maximum	=	OK
17.	Density of Air @ 20 Deg C	=	0.075
18.	Ratio of Oxygen to Air	=	0.230
19.	Diffuser Submergence Correction Factor	=	1.690
20.	Minimum Air Required for Mixing	=	273.600 scfm
21.	Air Required for Treatment	=	1,578
22.	Manufacturer Proposed Air Required for Treatment	=	560 scfm
<b>B. Airlifts ****(Flowrates Must Be Verified Depending on Size, Submergence, etc.)****</b>			
1.	Return Scum		
	Scum Pump (1)	=	20 scfm
	RAS (1)	=	20 scfm
	WAS (1)	=	20 scfm
	Transfer (1)	=	20 scfm
2.	Total Airlifts Air Requirement	=	80 scfm
<b>C. Total Air Required</b>		=	2,457 scfm
<b>D. 150% of Design Flow TCEQ 217.155 (b)(5)(c)(iii) for Air Piping</b>		=	3,685 scfm
<b>E. Proposed Number of Blowers</b>		=	3 # of blowers
<b>F Invdividual Blower Capacity @ Design Pressure/Largest Out of Service</b>		=	1,228 scfm
<b>G. Proposed Maximum Air Loss in Air Piping (Calculated Separately)</b>		=	1 psig
<b>H Design Pressure of Blower</b>		=	4.9 psig

VII. CHLORINE DOSAGE CALCULATIONS

<b>A. Chlorine Dosage Rate TCEQ 217.272 (b)</b>			
1.	Calculated Chlorine Dosage Rate @ Design Flow Eq. K.1 TCEQ 217.272 (a)	=	8.0 mg/l
2.	Calculated Chlorine Dosage Rate @ Peak Flow Eq. K.1 TCEQ 217.272 (a)	=	22 lbs/day
3.	System Set-up (Vacuum or Manifold)	=	88 lbs/day
4.	Minimum Ambient TemperatureTCEQ 217.275 (a) (1)	=	Vacuum
5.	Max Withdrawal Rate for One 150-lb Cylinder TCEQ 217.274 (a) (1)	=	55 Degrees F
6.	Max Withdrawal Rate for One Ton Cylinder TCEQ 217.274 (a) (1)	=	55 lbs/day
7.	Required Number of 150-lb Cylinders Eq. K.3 TCEQ 217.273 (b)	=	440 lbs/day
8.	Required Number of One Ton Cylinders Eq. K.3 TCEQ 217.273 (b)	=	2 # of cylinders
9.	Method of Chlorine Storage ("ton" or "150's")	=	1 # of cylinders
10.	Peak Withdrawal Rate	=	150-lb
			110 lbs/day



DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT  
WWTP PROCESS SIZING CALCULATIONS  
PHASE III: 0.495 MGD  
10/31/24

I. DESIGN PARAMETERS

A. Influent Composition

1.	Influent BOD	=	300	mg/l
2.	Influent TSS	=	300	mg/l
3.	Influent NH3-N	=	75	mg/l

B. Hydraulic Considerations

1.	Design Flow after Expansion	=	0.495	MGD
2.	No. 1 Unit Change		344	gpm
3.	Hydraulic Peaking Factor for Design	=	4.00	Q
4.	Peak Hydraulic Flow	=	1.98	MGD
5.	No. 4 Unit Change		1,375	gpm

C. Influent Composition Mass Loading (based on Raw & Post Primary Split

1.	Mass BOD Loading	=	1,238	lb/day
2.	Mass TSS Loading	=	1,238	lb/day
3.	Mass NH3-N Loading	=	310	lb/day

D. Effluent Composition

1.	Effluent BOD	=	0	mg/l
2.	Effluent TSS	=	0	mg/l
3.	Effluent NH3-N	=	0	mg/l
4.	Effluent TKN	=	0	mg/l
5.	Phosphorous	=	0	mg/l

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

II. ACTIVATED SLUDGE

A. Aeration Influent Composition

1.	Total Design Flow	=	0.50	MGD
2.	Total Influent BOD	=	1,238	lb/day
3.	Total Influent TSS	=	1,238	lb/day
4.	Total Influent NH3-N	=	310	lb/day

B. TCEQ Organic Loading Criteria

1.	Organic Loading (TCEQ 217.154)	=	35	lb BOD/1000 cu ft
2.	Organic Loading to Aeration	=	1,238	lb/day
3.	Aeration Basin Volume Required	=	35,385	cu. ft

C. Minimum Aeration Volume

1.	Min Aeration Volume Based on controlling criteria	=	35,385	cu. ft
2.	Equivalent Loading based on Min Volume	=	35.0	lb BOD/1000 cu ft

Solids Balance Method

1.	(delta X/delta t)	=	Excess Sludge Produced per Day	
		=	Xi1 + Xi2 + aSo + a*N - bXv - Xe	
		=	247.698 lbs/day + 396.3168 lbs/day + (0.6 lb VSS produced / lb BOD applied)(1238.49 lbs/day) + (0.12 lb/VSS produced / lb NH3-N applied)(309.6225 lbs/day) - (0.06 lb VSS destroyed / lb MLSS-day)(6586.4 lbs) + 0 lbs/day	
		=	1029	lb/day

Where:

	% of Fixed Influent TSS to Aeration Basin	=	20%	of TSS
	(Total Influent TSS to Aeration Basin)	=	1,238	lbs/day
Xi1	= Fixed Influent TSS to Aeration Basin	=	248	lbs/day
	% of Non-biodegradable Influent VSS	=	40%	of VSS
	(Volatile Influent TSS to Aeration Basin)	=	991	lbs/day
Xi2	= Non-biodegradable Influent VSS	=	396	lbs/day
a	= Synthesis Coefficient	=	0.60	lb VSS produced / lb BOD applied
So	= Influent BOD5	=	1,238	lbs/day
a*	= Nitrifier Synthesis Coefficient	=	0.12	lb/ VSS produced / lb NH3-N app
N	= Influent NH3-N	=	310	lbs/day
b	= Endogenous Coefficient	=	0.06	lb VSS destroyed / lb MLSS-day
Xv	= MLVSS in Aeration Basin	=	6,586	lbs
Xe	= Effluent TSS (based on effluent 5 mg/L)	=	0.0	lbs/day

Find MLSS in Aeration Basin for WWTP

Ratio of Volatile to Total Suspended Solids	=	0.8	MLVSS / MLSS
Design MLSS Concentration	=	3,000.0	mg/L
Estimated MLVSS Concentration	=	2,400.0	mg/L
Design Solid Retention Time (SRT)	=	8.0	days
MLSS in Aeration Basin	=	8,233	lbs
MLVSS in Aeraton Basin	=	6,586	lbs
Verify MLSS Assumption (SRT x delta X/delta T)	=	8,233	lbs

Fixed Influent TSS to Aeration Basin	=	248	lbs/day
Nonbiodegradable Influent VSS	=	396	lbs/day
Growth Due to Synthesis	=	743.094	lbs/day
Growth Due to Nitrifiers	=	37	lbs/day
Endogenous Destruction	=	395	lbs/day

DESIGN CALCULATIONS

KEENAN NORTH			
WASTEWATER TREATMENT PLANT			
Effluent TSS	=	0	lbs/day
Excess Sludge Produced per Day	=	1,029	lbs/day
Design F:M Ratio	=	0.15	lb BOD / lb SS
Maximum BOD5 Loading Rate	=	28.15	lbs BOD5 / 1000 cu. Ft.
Required Aeration Basin Volume	=	43,991.5	cu. Ft.
Hydraulic Retention Time	=	16.0	hours
2. Required Aeration Basin Volume per Solids Balance Method			
$8233\text{ lbs} / (8.34 \times 3000\text{ mg/L}) * 10^6 / 7.48$	=	43,991.5	cu. Ft.
D. Number of Aeration Basin Trains			
1. Number of Basins	=	4.0	# trains
2. Design per Flow Basin	=	0.124	MGD
E. Aeration Basin Sizing Calculations			
1. Minimum Total Volume Required	=	43,992	cu. ft
2. Assumed Side Water Depth of Aeration Basin	=	10.50	ft.
3. Minimum Total Surface Area Required	=	4,190	sq. ft
4. Minimum Total Surface Area Required per Train	=	1,047	sq. ft
F. Proposed Aeration Basin Configuration			
1. Proposed Basin Dimensions			
a. Width	=	12.0	ft.
b. Length	=	95.0	ft.
c. Proposed Length to Width Ratio	=	7.92	
2. Number of Aeration Basin Trains (from above)	=	4	# trains
3. Total Volume of Proposed Basins	=	47,880	cu. ft
4. Actual Aeration Basin Loading	=	26	lb BOD5 / 1000 cu. Ft.
5. Actual Hydraulic Retention Time	=	17	hours
6. Actual F:M Ratio	=	0.14	lb BOD / lb SS
7. Check of Proposed Total Basin Volume	=	OK	

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

III. SECONDARY/FINAL CLARIFICATION			
A. Number of Secondary/Final Clarifiers	=	2	
1. Total Flow to Clarifiers	=	0.50	MGD
B. Surface Area Design (TCEQ 217.154(c)(1))			
1. Maximum Surface Loading @ Peak Flow	=	1,200	gpd/sq. ft
2. Surface Area Required @ Peak Flow per Clarifier	=	825	sq. ft
C. Hydraulic Detention Time Design (TCEQ 217.154(c))			
1. Minimum Effective Detention Time @ Peak Flow	=	1.80	Hours
2. Volume Required @ Peak Flow per Clarifier	=	9,926	cu. Ft.
3. Surface Area Required @ Peak Flow (From Above) per Clarifier		825	sq. ft.
D. Effluent Weir Design (TCEQ 217.152(c)(4-5))			
1. Weir loading for plants 1.0 MGD or less	=	20,000	gpd/ft
2. Weir loading for plants over 1.0 MGD	=	30,000	gpd/ft
3. Controlling Criteria	=	20,000	gpd/ft
4. Total Length of Weir Required @ Peak Flow per Clarifier	=	49.5	ft
E. Clarifier Basin Check			
1. Number of Clarifiers	=	2	# clarifiers
2. Minimum Surface Area (From Above) per Clarifier	=	825	sq. ft.
3. Minimums Volume Time (From Above) per Clarifier	=	9,926	cu. Ft.
4. Minimum Weir Total Length (From Above) per Clarifier	=	49.5	ft
5. Clarifier Size (Circular)	=	42	ft
6. Surface Area Per Clarifier (Circular)	=	1,385	sq. ft.
7. Total Surface Area	=	2,771	sq. ft.
8. Surface Area Check	=	OK	
9. Effective Side Water Depth	=	12.00	ft.
10. Total Clarifer Volume	=	33,250	cu. Ft.
11. Total Clarifer Hydraulic Detention Time (Using Prop. Surface Area)	=	3.0	Hours
12. Hydraulic Detention Time Check	=	OK	
13. Design Weir Width - Width of Launder Trough	=	1.0	ft
14. Distance From Outer Concrete Wall	=	1.0	ft
15. Thickness of Each Launder Trough Walls	=	0.00	ft
16. Subsequent Outer Diameter of Effluent Weir	=	40.0	ft
17. Weir Length per Clarifier	=	125.7	ft
18. Weir Loading @ Peak Flow per Clarifier	=	7,878	gpd/ft
19. Weir Length (Loading Rate) per Clarifier Check	=	OK	
F. Return Activated Sludge Flow Rates			
1. Lower Limit Underflow Rate (TCEQ 217.152)	=	200	gpd/sq ft
2. Minimum Total RAS Flow Rate	=	385	gpm
3. Upper Limit Underflow Rate (TCEQ 217.152)	=	400	gpd/sq ft
4. Maximum Total RAS Flow Rate	=	770	gpm



DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

IV. DISINFECTION/ CHLORINE CONTACT BASIN

A.	1.	Minimum Effective Detention Time @ Peak Flow Ch. 217.281(b)(1)	=	20	minutes
	2.	Required Volume @ Peak Flow	=	27,500	Gallons
	3.	Unit Change	=	3,676	cu. Ft.
	4.	Proposed Basin Dimensions			
		Number of Proposed Basins	=	2	
		Length of Each Basin	=	15	
		Width of Each Basin	=	15.0	
		Side Water Depth of Each Basin	=	9	
	4.	Total Volume of Proposed Basin	=	4,050	cu. Ft
	5.	Check of Proposed Total Basin Volume	=	OK	mins
	6.	Hydraulic Detention Time at Design Flow	=	88.1	mins
	7.	Hydraulic Detention Time at Peak Flow	=	22.0	mins
	8.	CHECK	=	OK	
B.	Chlorine Contact Basin Air				
1.	Air Required (CCB Volume * 20 SCFM/1000 CF)	=	81.0	scfm	

V. SOLIDS HANDLING

A.

Digester Sizing

1.	Percent Biodegradeable Volatile Solids in WAS, %	=	70%	
2.	Percent Destruction, %	=	30%	
3.	Digested Solids Production, lbs/day	=	978	lbs/day
4.	Solids from Clarifier	=	1,238	lbs/day
5.	Average Solids	=	1,108	lbs/day
6.	Assumed Dig. Conc., mg/l	=	15,000	mg/L
7.	Req'd. Retention Time, days (TCEQ 217.249 (t)(4)(b))	=	28	days
8.	Req'd. Volume, cf	=	33,168	cu. ft
9.	Volume to Loading Ratio. cf/lb BOD/day	=	26.8	cf/lb BOD/day

B.

Digester Design

1.	Proposed Digester Dimensions			
	Width of Each Digester	=	12	
	Length of Each Digester	=	95	
	Side Water Depth of Each Digester	=	10.5	
2.	Number of Digesters	=	3	
3.	Total Digester Volume	=	35,910	cu. ft
3.	Actual Digester Storage Capacity	=	30	days
3.	Digester Volume check	=	OK	

C.

Digester Air

1.	Air Required (Digester Volume x 20scfm/1000cf)	=	718	scfm
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DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

VI. AIRFLOW CALCULATIONS

<b>A. Aeration Air Requirements TCEQ 217.155 (b) (2) (c)</b>			
1.	Total Influent BOD <sub>5</sub>	=	1,238 lb/day
2.	Total Influent NH3-N	=	310 lb/day
3.	BOD5 Removal	=	1,238 lb/day
4.	Nh3-N Removal	=	310 lb/day
5.	Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	1.2 lbs O <sub>2</sub> /lb BOD <sub>5</sub>
6.	Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	4.3 lbs O <sub>2</sub> /lb NH3-N
7.	Oxygen Required per Pound of BOD	=	2.3
8.	Depth of Submergence of Diffusers	=	9.00 ft
9.	Diffuser Type (Coarse or Fine)	=	Fine
10.	Clean Water Transfer Efficiency of Fine Bubble Diffuser	=	1.50% per ft of submergence
11.	Clean Water Transfer Efficiency @ Stated Depth	=	18.0%
12.	Wastewater Transfer Efficiency Coefficient for Fine Bubble Diffusers	=	0.45
13.	Wastewater Transfer Efficiency	=	8.1%
14.	Manufacturer Proposed SOTE	=	30.0%
15.	Maximum Clean Water Transfer Efficiency TCEQ 217.155 (b) (2) (A) (iii)	=	26.0%
16.	Check if Over Regulated Maximum	=	OK
17.	Density of Air @ 20 Deg C	=	0.075
18.	Ratio of Oxygen to Air	=	0.230
19.	Diffuser Submergence Correction Factor	=	1.690
20.	Minimum Air Required for Mixing	=	547.200 scfm
21.	Air Required for Treatment	=	2,367
22.	Manufacturer Proposed Air Required for Treatment	=	840 scfm
<b>B. Airlifts ****(Flowrates Must Be Verified Depending on Size, Submergence, etc.)****</b>			
1.	Return Scum		
	Scum Pump (1)	=	20 scfm
	RAS (1)	=	20 scfm
	WAS (1)	=	20 scfm
	Transfer (1)	=	20 scfm
2.	Total Airlifts Air Requirement	=	80 scfm
<b>C. Total Air Required</b>		=	3,246 scfm
<b>D. 150% of Design Flow TCEQ 217.155 (b)(5)(c)(iii) for Air Piping</b>		=	4,869 scfm
<b>E. Proposed Number of Blowers</b>		=	3 # of blowers
<b>F Invdividual Blower Capacity @ Design Pressure/Largest Out of Service</b>		=	1,623 scfm
<b>G. Proposed Maximum Air Loss in Air Piping (Calculated Separately)</b>		=	1 psig
<b>H Design Pressure of Blower</b>		=	4.9 psig

VII. CHLORINE DOSAGE CALCULATIONS

<b>A. Chlorine Dosage Rate TCEQ 217.272 (b)</b>		=	8.0 mg/l
1.	Calculated Chlorine Dosage Rate @ Design Flow Eq. K.1 TCEQ 217.272 (a)	=	33 lbs/day
2.	Calculated Chlorine Dosage Rate @ Peak Flow Eq. K.1 TCEQ 217.272 (a)	=	132 lbs/day
3.	System Set-up (Vacuum or Manifold)	=	Vacuum
4.	Minimum Ambient TemperatureTCEQ 217.275 (a) (1)	=	55 Degrees F
5.	Max Withdrawal Rate for One 150-lb Cylinder TCEQ 217.274 (a) (1)	=	55 lbs/day
6.	Max Withdrawal Rate for One Ton Cylinder TCEQ 217.274 (a) (1)	=	440 lbs/day
7.	Required Number of 150-lb Cylinders Eq. K.3 TCEQ 217.273 (b)	=	3 # of cylinders
8.	Required Number of One Ton Cylinders Eq. K.3 TCEQ 217.273 (b)	=	1 # of cylinders
9.	Method of Chlorine Storage ("ton" or "150's")	=	150-lb
10.	Peak Withdrawal Rate	=	165 lbs/day

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 18

### SOLIDS MANAGEMENT PLAN



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10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802

# SLUDGE MANAGEMENT PLAN OLD HOCKLEY

## Proposed Phase I – 0.500 MGD

### 1. Type of Treatment Process

#### AERATION BASINS

The proposed facility is a 0.495 million gallons per day (MGD) conventional activated sludge process utilizing an aeration basin. The following table shows the process design and sludge generation calculations for the design flow of this facility.

$$\text{BOD} = 300 \text{ mg/l} \times 8.34 \text{ lbs/gal} \times 0.495 \text{ MGD} = 1,240 \text{ lbs BOD per Day}$$

### 2. Dimensions and Capacities

#### AEROBIC DIGESTER

The treatment facility has two solids holding tank with maximum total volume of 35,910 cubic feet. The tanks are 12-feet W by 95-feet L with 10.5-foot side water depth.

The total Digester capacity of 35,910 cubic feet is greater than the required digester capacity based on 20 cubic feet per lb. of BOD times 1,240 lbs of BOD loading for the 0.495 MGD WWTP.

### 3. Sludge Generation Calculations

Sludge generation calculations showing the amount of solids generated at 100%, 75%, 50% and 25% of design flow are included in the following tables. These represent the solids that must be wasted from the activated sludge process and that must be stabilized in the aerobic digester.

Solids @ 100% Qavg lb/day	Solids @ 75% Qavg lb/day	Solids @ 50% Qavg lb/day	Solids @ 25% Qavg lb/day
1,240	930	620	310

### 4. Operating Range of Mixed Liquor Suspended Solids

It is anticipated that the MLSS for all phases will be approximately 2,400 mg/l on the average. The range for MLSS is anticipated to be between 2,000 and 4,000 mg/l during various stages of loading.



## 5. Solids Removal Procedures

### Conventional Aerated Mixed Liquor WWTP

The removal of waste activated sludge from the proposed conventional aerated mixed liquor activated sludge WWTP is achieved by wasting sludge from the clarifier and transferred by airlift pump to the aerobic digester. Additional thickening of sludge prior to transfer to the digester by periodically, (two or three times per week) having the air supply and mixing in the aerobic digester shut off allowing solids to settle to the bottom of the digester. The supernatant liquor is decanted by an adjustable decant airlift pump located in each digester and is returned to influent grinder pump station via the plant drain system. After sufficient digestion, sludge is hauled in liquid form by a licensed transporter. The liquid sludge is transported to registered site.

## 6. Quantity of Solids to be Removed and Solids Removal Schedule

The quantity of solids to be removed at various plant loadings are presented in the following table. The quantities shown in the tabulation are monthly quantities based upon the influent BOD of 300 mg/l and TSS of 300 mg/l. If the strength of the influent wastewater varies significantly, solids removal quantities will be different.

PHASE III	@100% Flow Capacity		@75% Flow Capacity		@50% Flow Capacity		@25% Flow Capacity	
0.495 MGD	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day
	2.5	12,375	2.5	9,281	2.5	6,187	2.5	3,093

### Sludge Age

The sludge age based on having 35,910 cubic feet (268,625 gallons) of total digester capacity, 2.5% solids and the above generated sludge volume is 21 days for 100% flow capacity, 29 days for 75% capacity, 42 days for 50% capacity and 86 days for 25% capacity.

## 7. Identification of Disposal Site

The disposal of sludge from the WWTP will be contracted to a sludge management and disposal contractor for either further treatment or disposal. The sludge will be hauled to either to treatment facility permitted to handle sludge or a registered land fill or a land application site. Solids documentation will be assured by measuring the volume of each sludge withdrawal and measuring the sludge solids concentrations. All required data will be included in the annual sludge report to the TCEQ.

# **SLUDGE MANAGEMENT PLAN OLD HOCKLEY**

## **Proposed Phase I – 0.165 MGD**

### **1. Type of Treatment Process**

#### **AERATION BASINS**

The proposed facility is a 0.165 million gallons per day (MGD) conventional activated sludge process utilizing an aeration basin. The following table shows the process design and sludge generation calculations for the design flow of this facility.

$$\text{BOD} = 300 \text{ mg/l} \times 8.34 \text{ lbs/gal} \times 0.165 \text{ MGD} = 413 \text{ lbs BOD per Day}$$

### **2. Dimensions and Capacities**

#### **AEROBIC DIGESTER**

The treatment facility has a solids holding tank with maximum total volume of 23,940 cubic feet. The tanks are 12-feet W by 95-feet L with 10.5 foot side water depth.

The total Digester capacity of 11,970 cubic feet is greater than the required digester capacity based on 20 cubic feet per lb. of BOD times 413 lbs of BOD loading for the 0.165 MGD WWTP.

### **3. Sludge Generation Calculations**

Sludge generation calculations showing the amount of solids generated at 100%, 75%, 50% and 25% of design flow are included in the following tables. These represent the solids that must be wasted from the activated sludge process and that must be stabilized in the aerobic digester.

Solids @ 100% Qavg lb/day	Solids @ 75% Qavg lb/day	Solids @ 50% Qavg lb/day	Solids @ 25% Qavg lb/day
413	310	207	103

### **4. Operating Range of Mixed Liquor Suspended Solids**

It is anticipated that the MLSS for all phases will be approximately 2,400 mg/l on the average. The range for MLSS is anticipated to be between 2,000 and 4,000 mg/l during various stages of loading.

## 5. Solids Removal Procedures

### Conventional Aerated Mixed Liquor WWTP

The removal of waste activated sludge from the proposed conventional aerated mixed liquor activated sludge WWTP is achieved by wasting sludge from the clarifier and transferred by airlift pump to the aerobic digester. Additional thickening of sludge prior to transfer to the digester by periodically, (two or three times per week) having the air supply and mixing in the aerobic digester shut off allowing solids to settle to the bottom of the digester. The supernatant liquor is decanted by an adjustable decant airlift pump located in each digester and is returned to influent grinder pump station via the plant drain system. After sufficient digestion, sludge is hauled in liquid form by a licensed transporter. The liquid sludge is transported to registered site.

## 6. Quantity of Solids to be Removed and Solids Removal Schedule

The quantity of solids to be removed at various plant loadings are presented in the following table. The quantities shown in the tabulation are monthly quantities based upon the influent BOD of 300 mg/l and TSS of 300 mg/l. If the strength of the influent wastewater varies significantly, solids removal quantities will be different.

PHASE I	@100% Flow Capacity		@75% Flow Capacity		@50% Flow Capacity		@25% Flow Capacity	
0.165 MGD	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day
	2.5	4,125	2.5	3,094	2.5	2,063	2.5	1,031

### Sludge Age

The sludge age based on having 23,940 cubic feet (179,083 gallons) of total digester capacity, 2.5% solids and the above generated sludge volume is 43 days for 100% flow capacity, 57 days for 75% capacity, 86 days for 50% capacity and 173 days for 25% capacity.

## 7. Identification of Disposal Site

The disposal of sludge from the WWTP will be contracted to a sludge management and disposal contractor for either further treatment or disposal. The sludge will be hauled to either to treatment facility permitted to handle sludge or a registered land fill or a land application site. Solids documentation will be assured by measuring the volume of each sludge withdrawal and measuring the sludge solids concentrations. All required data will be included in the annual sludge report to the TCEQ.

# **SLUDGE MANAGEMENT PLAN OLD HOCKLEY**

## **Proposed Phase I – 0.330 MGD**

### **1. Type of Treatment Process**

#### **AERATION BASINS**

The proposed facility is a 0.330 million gallons per day (MGD) conventional activated sludge process utilizing an aeration basin. The following table shows the process design and sludge generation calculations for the design flow of this facility.

$$\text{BOD} = 300 \text{ mg/l} \times 8.34 \text{ lbs/gal} \times 0.330 \text{ MGD} = 826 \text{ lbs BOD per Day}$$

### **2. Dimensions and Capacities**

#### **AEROBIC DIGESTER**

The treatment facility has two solids holding tank with maximum total volume of 35,910 cubic feet. The tanks are 12-feet W by 95-feet L with 10.5 foot side water depth.

The total Digester capacity of 26,208 cubic feet is greater than the required digester capacity based on 20 cubic feet per lb. of BOD times 826 lbs of BOD loading for the 0.330 MGD WWTP.

### **3. Sludge Generation Calculations**

Sludge generation calculations showing the amount of solids generated at 100%, 75%, 50% and 25% of design flow are included in the following tables. These represent the solids that must be wasted from the activated sludge process and that must be stabilized in the aerobic digester.

Solids @ 100% Qavg lb/day	Solids @ 75% Qavg lb/day	Solids @ 50% Qavg lb/day	Solids @ 25% Qavg lb/day
826	620	414	206

### **4. Operating Range of Mixed Liquor Suspended Solids**

It is anticipated that the MLSS for all phases will be approximately 2,400 mg/l on the average. The range for MLSS is anticipated to be between 2,000 and 4,000 mg/l during various stages of loading.



## 5. Solids Removal Procedures

### Conventional Aerated Mixed Liquor WWTP

The removal of waste activated sludge from the proposed conventional aerated mixed liquor activated sludge WWTP is achieved by wasting sludge from the clarifier and transferred by airlift pump to the aerobic digester. Additional thickening of sludge prior to transfer to the digester by periodically, (two or three times per week) having the air supply and mixing in the aerobic digester shut off allowing solids to settle to the bottom of the digester. The supernatant liquor is decanted by an adjustable decant airlift pump located in each digester and is returned to influent grinder pump station via the plant drain system. After sufficient digestion, sludge is hauled in liquid form by a licensed transporter. The liquid sludge is transported to registered site.

## 6. Quantity of Solids to be Removed and Solids Removal Schedule

The quantity of solids to be removed at various plant loadings are presented in the following table. The quantities shown in the tabulation are monthly quantities based upon the influent BOD of 300 mg/l and TSS of 300 mg/l. If the strength of the influent wastewater varies significantly, solids removal quantities will be different.

PHASE II	@100% Flow Capacity		@75% Flow Capacity		@50% Flow Capacity		@25% Flow Capacity	
0.330 MGD	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day
	2.5	8,250	2.5	6,187	2.5	4,125	2.5	2,062

### Sludge Age

The sludge age based on having 35,910 cubic feet (268,625 gallons) of total digester capacity, 2.5% solids and the above generated sludge volume is 32 days for 100% flow capacity, 43 days for 75% capacity, 64 days for 50% capacity and 130 days for 25% capacity.

## 7. Identification of Disposal Site

The disposal of sludge from the WWTP will be contracted to a sludge management and disposal contractor for either further treatment or disposal. The sludge will be hauled to either to treatment facility permitted to handle sludge or a registered land fill or a land application site. Solids documentation will be assured by measuring the volume of each sludge withdrawal and measuring the sludge solids concentrations. All required data will be included in the annual sludge report to the TCEQ.

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 19

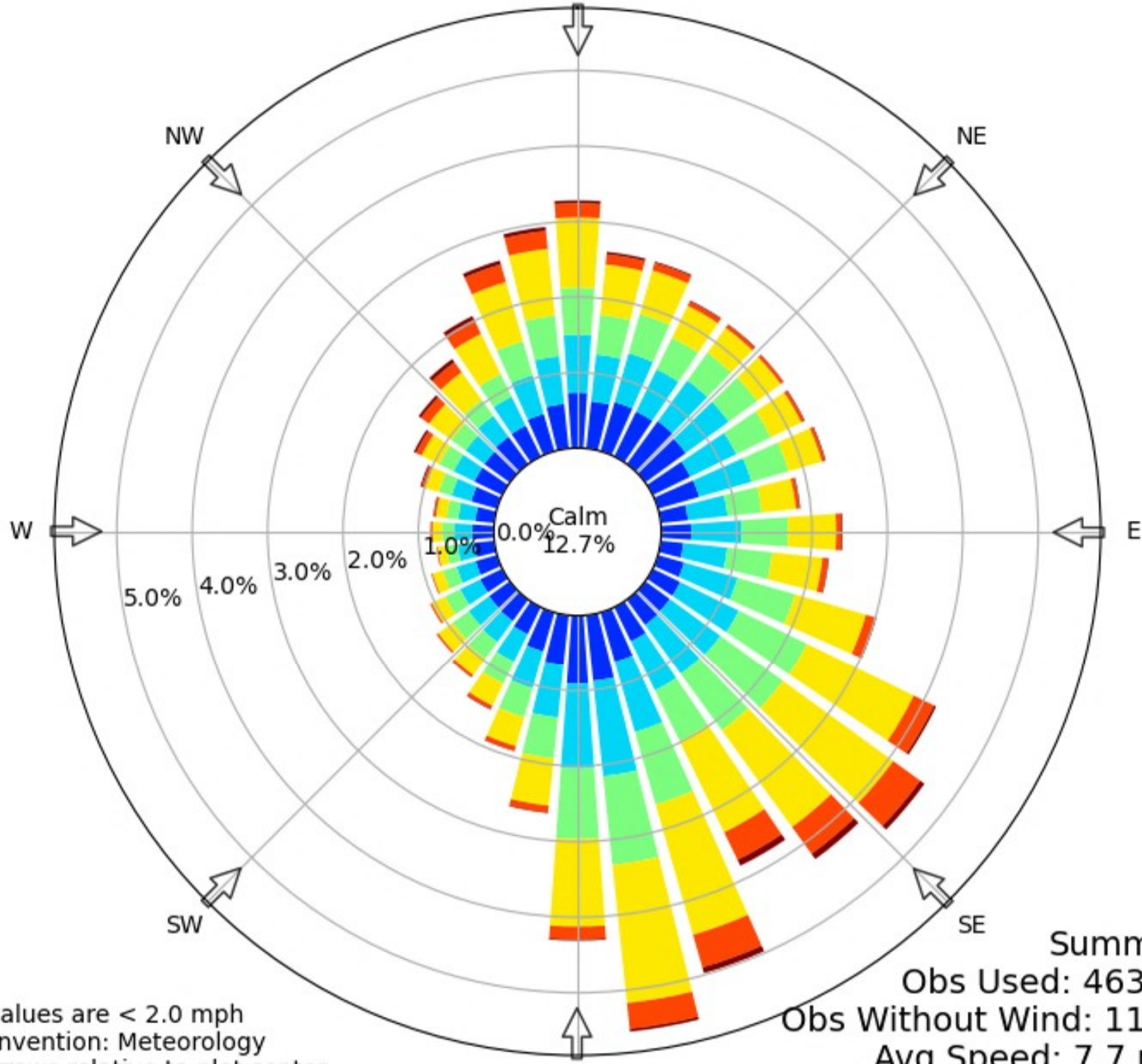
### WIND ROSE



A&S Engineers, Inc.

---

10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802



Calm values are < 2.0 mph  
Bar Convention: Meteorology  
Flow arrow relative to plot center

Summary  
Obs Used: 463473  
Obs Without Wind: 11470  
Avg Speed: 7.7 mph

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 20

### CORE DATA FORM



A&S Engineers, Inc.

---

10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802





# TCEQ Core Data Form

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

## SECTION I: General Information

<b>1. Reason for Submission</b> (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)		<input type="checkbox"/> Other
<b>2. Customer Reference Number</b> (if issued)	<a href="#">Follow this link to search for CN or RN numbers in Central Registry**</a>	<b>3. Regulated Entity Reference Number</b> (if issued)
CN		RN

## SECTION II: Customer Information

<b>4. General Customer Information</b>		<b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy)			
<input checked="" type="checkbox"/> New Customer <input type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership					
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)					
<i>The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).</i>					
<b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)				<i>If new Customer, enter previous Customer below:</i>	
Keenan North Development, Ltd.					
<b>7. TX SOS/CPA Filing Number</b>		<b>8. TX State Tax ID</b> (11 digits)		<b>9. Federal Tax ID</b> (9 digits)  99-2592231	<b>10. DUNS Number</b> (if applicable)
<b>11. Type of Customer:</b>		<input type="checkbox"/> Corporation		<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input checked="" type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Other:	
<b>12. Number of Employees</b>				<b>13. Independently Owned and Operated?</b>	
<input checked="" type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following					
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Owner & Operator <input type="checkbox"/> Other:					
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant					
<b>15. Mailing Address:</b>	28408 Sweetgum Road, Suite B3				
	City	Magnolia	State	TX	ZIP 77354
<b>16. Country Mailing Information</b> (if outside USA)				<b>17. E-Mail Address</b> (if applicable)	
				OZAN_TWIST@HOTMAIL.COM	
<b>18. Telephone Number</b>		<b>19. Extension or Code</b>		<b>20. Fax Number</b> (if applicable)	

## SECTION III: Regulated Entity Information

<b>21. General Regulated Entity Information</b> <i>(If 'New Regulated Entity' is selected, a new permit application is also required.)</i>							
<input checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information							
<i>The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).</i>							
<b>22. Regulated Entity Name</b> <i>(Enter name of the site where the regulated action is taking place.)</i>							
Keenan North WWTP							
<b>23. Street Address of the Regulated Entity:</b>  <u>(No PO Boxes)</u>	TBD Keenan Cutoff Rd						
	<b>City</b>	Montgomery	<b>State</b>	TX	<b>ZIP</b>	77316	<b>ZIP + 4</b>
<b>24. County</b>	Montgomery						

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

<b>25. Description to Physical Location:</b>	Approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854 in Montgomery County.						
<b>26. Nearest City</b>				<b>State</b>		<b>Nearest ZIP Code</b>	
Montgomery				TX		77316	
<i>Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).</i>							
<b>27. Latitude (N) In Decimal:</b>			<b>28. Longitude (W) In Decimal:</b>				
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
30	19	56.4	95	39	45.7		
<b>29. Primary SIC Code</b>		<b>30. Secondary SIC Code</b>		<b>31. Primary NAICS Code</b>		<b>32. Secondary NAICS Code</b>	
(4 digits)		(4 digits)		(5 or 6 digits)		(5 or 6 digits)	
4952				221320			
<b>33. What is the Primary Business of this entity?</b> <i>(Do not repeat the SIC or NAICS description.)</i>							
Wastewater treatment plant							
<b>34. Mailing Address:</b>		28408 Sweetgum Road, Suite B3					
<b>Address:</b>							
<b>City</b>	Magnolia	<b>State</b>	TX	<b>ZIP</b>	77354	<b>ZIP + 4</b>	
<b>35. E-Mail Address:</b>		OZAN_TWIST@HOTMAIL.COM					
<b>36. Telephone Number</b>			<b>37. Extension or Code</b>			<b>38. Fax Number</b> <i>(if applicable)</i>	
( 832 ) 375-9897						(   )   -	

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

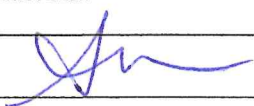
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input checked="" type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

## **SECTION IV: Preparer Information**

<b>40. Name:</b>	Eric Williams, PE			<b>41. Title:</b>	Project Manager
<b>42. Telephone Number</b>	<b>43. Ext./Code</b>	<b>44. Fax Number</b>	<b>45. E-Mail Address</b>		
( 713 ) 942-2700		( ) -	elw@as-engineers.com		

## **SECTION V: Authorized Signature**

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

<b>Company:</b>	Keenan North Development, Ltd.		<b>Job Title:</b>	President	
<b>Name (In Print):</b>	Ahmet Ozan			<b>Phone:</b>	( 832 ) 375- 9897
<b>Signature:</b>				<b>Date:</b>	11/04/2024

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 21

### PLAIN LANGUAGE SUMMARY



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**10377 Stella Link Road, Houston, TX 77025**  
**Ph: 713-942-2700 Fax: 713-942-2799**  
**Texas Engineering Registration No. F-000802**





## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

### PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

#### Plain Language Summary Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

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

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

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

#### ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS DOMESTIC WASTEWATER/STORMWATER

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

Keenan North Development, Ltd. (CN TBD) proposes to operate Keenan North WWTP (RN TBD), a domestic wastewater treatment plant. The facility will be located at approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854, in Montgomery, Montgomery County, Texas 77355. Requesting to permit a WWTP to treat up to 0.495 MGD.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>), total suspended solids (TSS), ammonia nitrogen (NH<sub>3</sub>-N). Domestic wastewater will be treated by a complete mix mode of activated sludge process, including screening, aeration, final clarification, and disinfection..

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

### AGUAS RESIDUALES DOMESTICAS /AGUAS PLUVIALES

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

Keenan North Development, Ltd. (CN TPD) propone operar Keenan North WWTP RN TBD, una planta de tratamiento de aguas residuales. La instalación estará ubicada en **aproximadamente 1 milla al noroeste de la intersección de Keenan Cutoff Rd y FM 2854**, en Montgomery, Condado de Montgomery, Texas 77355. La solicitud es para la instalacion de WWTP por 0.495 MGD.

Se espera que las descargas de la instalación contengan bioquímica de oxígeno carbonoso (CBOD5), solidos suspendidos totales (TSS), nitrógeno amoniacal (NH3-N). Las aguas residuales domésticas. **estará** tratado por un modo de mezcla completa del proceso de lodos activados, que incluye cribado, balsas de aireación, clarificadores, digestores aerobios y desinfección.

## INSTRUCTIONS

1. Enter the name of applicant in this section. The applicant name should match the name associated with the customer number.
2. Enter the Customer Number in this section. Each Individual or Organization is issued a unique 11-digit identification number called a CN (e.g. CN123456789).
3. Choose “operates” in this section for existing facility applications or choose “proposes to operate” for new facility applications.
4. Enter the name of the facility in this section. The facility name should match the name associated with the regulated entity number.
5. Enter the Regulated Entity number in this section. Each site location is issued a unique 11-digit identification number called an RN (e.g. RN123456789).
6. Choose the appropriate article (a or an) to complete the sentence.
7. Enter a description of the facility in this section. For example: steam electric generating facility, nitrogenous fertilizer manufacturing facility, etc.
8. Choose “is” for an existing facility or “will be” for a new facility.
9. Enter the location of the facility in this section.
10. Enter the City nearest the facility in this section.
11. Enter the County nearest the facility in this section.
12. Enter the zip code for the facility address in this section.
13. Enter a summary of the application request in this section. For example: renewal to discharge 25,000 gallons per day of treated domestic wastewater, new application to discharge process wastewater and stormwater on an intermittent and flow-variable basis, or major amendment to reduce monitoring frequency for pH, etc. If more than one outfall is included in the application, provide applicable information for each individual outfall.
14. List all pollutants expected in the discharge from this facility in this section. If applicable, refer to the pollutants from any federal numeric effluent limitations that apply to your facility.
15. Enter the discharge types from your facility in this section (e.g., stormwater, process wastewater, once through cooling water, etc.)
16. Choose the appropriate verb tense to complete the sentence.
17. Enter a description of the wastewater treatment used at your facility. Include a description of each process, starting with initial treatment and finishing with the outfall/point of disposal. Use additional lines for individual discharge types if necessary.

Questions or comments concerning this form may be directed to the Water Quality Division's Application Review and Processing Team by email at [WO-ARPTeam@tceq.texas.gov](mailto:WO-ARPTeam@tceq.texas.gov) or by phone at (512) 239-4671.

## Example

### Individual Industrial Wastewater Application

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

ABC Corporation (CN600000000) operates the Starr Power Station (RN10000000000), a two-unit gas-fired electric generating facility. Unit 1 has a generating capacity of 393 megawatts (MWs) and Unit 2 has a generating capacity of 528 MWs. The facility is located at 1356 Starr Street, near the City of Austin, Travis County, Texas 78753.

This application is for a renewal to discharge 870,000,000 gallons per day of once through cooling water, auxiliary cooling water, and also authorizes the following waste streams monitored inside the facility (internal outfalls) before it is mixed with the other wastewaters authorized for discharge via main Outfall 001, referred to as “previously monitored effluents” (low-volume wastewater, metal-cleaning waste, and stormwater (from diked oil storage area yards and storm drains)) via Outfall 001. Low-volume waste sources, metal-cleaning waste, and stormwater drains on a continuous and flow-variable basis via internal Outfall 101.

The discharge of once through cooling water via Outfall 001 and low-volume waste and metal-cleaning waste via Outfall 101 from this facility is subject to federal effluent limitation guidelines at 40 CFR Part 423. The pollutants expected from these discharges based on 40 CFR Part 423 are: free available chlorine, total residual chlorine, total suspended solids, oil and grease, total iron, total copper, and pH. Temperature is also expected from these discharges. Additional potential pollutants are included in the Industrial Wastewater Application Technical Report, Worksheet 2.0.

Cooling water and boiler make-up water are supplied by Lake Starr Reservoir. The City of Austin municipal water plant (CN600000000, PWS 00000) supplies the facility’s potable water and serves as an alternate source of boiler make-up water. Water from the Lake Starr Reservoir is withdrawn at the intake structure and treated with sodium hypochlorite to prevent biofouling and sodium bromide as a chlorine enhancer to improve efficacy and then passed through condensers and auxiliary equipment on a once-through basis to cool equipment and condense exhaust steam.

Low-volume wastewater from blowdown of boiler Units 1 and 2 and metal-cleaning wastes receive no treatment prior to discharge via Outfall 101. Plant floor and equipment drains and stormwater runoff from diked oil storage areas, yards, and storm drains are routed through an oil and water separator prior to discharge via Outfall 101. Domestic wastewater, blowdown, and backwash water from the service water filter, clarifier, and sand filter are routed to the Starr Creek Domestic Sewage Treatment Plant, TPDES Permit No. WQ0010000001, for treatment and disposal. Metal-cleaning waste from equipment cleaning is generally disposed of off-site.



Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 22

### PUBLIC INVOLVEMENT PLAN



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10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802



Texas Commission on Environmental Quality

## Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

### Section 1. Preliminary Screening

- ☒ New Permit or Registration Application  
☐ New Activity - modification, registration, amendment, facility, etc. (see instructions)

**If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.**

### Section 2. Secondary Screening

- ☒ Requires public notice,  
☐ Considered to have significant public interest, **and**  
☐ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

**If all the above boxes are not checked, a Public Involvement Plan is not necessary.  
Stop after Section 2 and submit the form.**

- ☐ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

### Section 3. Application Information

#### Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V  
Waste ☐ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire  
☐ Radioactive Material Licensing ☐ Underground Injection Control

#### Water Quality

- ☒ Texas Pollutant Discharge Elimination System (TPDES)  
☐ Texas Land Application Permit (TLAP)  
☐ State Only Concentrated Animal Feeding Operation (CAFO)  
☐ Water Treatment Plant Residuals Disposal Permit  
☐ Class B Biosolids Land Application Permit  
☐ Domestic Septage Land Application Registration

#### Water Rights New Permit

- ☐ New Appropriation of Water  
☐ New or existing reservoir

#### Amendment to an Existing Water Right

- ☐ Add a New Appropriation of Water  
☐ Add a New or Existing Reservoir  
☐ Major Amendment that could affect other water rights or the environment

### Section 4. Plain Language Summary

Provide a brief description of planned activities.

Keenan North Development, Ltd. (CN TBD) proposes to operate Keenan North WWTP (RN TBD), a domestic wastewater treatment plant. The facility will be located at approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854, in Montgomery, Montgomery County, Texas 77355. Requesting to permit a WWTP to treat up to 0.495 MGD. Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD5), total suspended solids (TSS), ammonia nitrogen (NH3-N). Domestic wastewater will be treated by a complete mix mode of activated sludge process, including screening, aeration, final clarification, and disinfection..

## Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

**Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.**

Montgomery

(City)

Montgomery

(County)

(Census Tract)

Please indicate which of these three is the level used for gathering the following information.

☐

City

☐

County

☐

Census Tract

- (a) Percent of people over 25 years of age who at least graduated from high school
- (b) Per capita income for population near the specified location
- (c) Percent of minority population and percent of population by race within the specified location
- (d) Percent of Linguistically Isolated Households by language within the specified location
- (e) Languages commonly spoken in area by percentage
- (f) Community and/or Stakeholder Groups
- (g) Historic public interest or involvement



## Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☐ Yes ☒ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☐ No

If Yes, please describe.

**If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.**

(c) Will you provide notice of this application in alternative languages?

☒ Yes ☐ No

**Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.**

If yes, how will you provide notice in alternative languages?

- ☒ Publish in alternative language newspaper
- ☐ Posted on Commissioner's Integrated Database Website
- ☐ Mailed by TCEQ's Office of the Chief Clerk
- ☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☒ Yes ☐ No

(e) If a public meeting is held, will a translator be provided if requested?

☒ Yes ☐ No

(f) Hard copies of the application will be available at the following (check all that apply):

- ☒ TCEQ Regional Office ☒ TCEQ Central Office
- ☒ Public Place (specify) Charles B. Stewart-West Branch Library

## Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☐ Yes ☐ No

What types of notice will be provided?

- ☐ Publish in alternative language newspaper
- ☐ Posted on Commissioner's Integrated Database Website
- ☐ Mailed by TCEQ's Office of the Chief Clerk
- ☐ Other (specify)

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 23

SPIF



A&S Engineers, Inc.

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10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

### FOR AGENCIES REVIEWING DOMESTIC OR INDUSTRIAL TPDES WASTEWATER PERMIT APPLICATIONS

#### TCEQ USE ONLY:

Application type: \_\_\_\_Renewal \_\_\_\_Major Amendment \_\_\_\_Minor Amendment \_\_\_\_New

County: \_\_\_\_\_ Segment Number: \_\_\_\_\_

Admin Complete Date: \_\_\_\_\_

Agency Receiving SPIF:

\_\_\_\_ Texas Historical Commission

\_\_\_\_ U.S. Fish and Wildlife

\_\_\_\_ Texas Parks and Wildlife Department

\_\_\_\_ U.S. Army Corps of Engineers

**This form applies to TPDES permit applications only.** (Instructions, Page 53)

Complete this form as a separate document. TCEQ will mail a copy to each agency as required by our agreement with EPA. If any of the items are not completely addressed or further information is needed, we will contact you to provide the information before issuing the permit. Address each item completely.

**Do not refer to your response to any item in the permit application form.** Provide each attachment for this form separately from the Administrative Report of the application. The application will not be declared administratively complete without this SPIF form being completed in its entirety including all attachments. Questions or comments concerning this form may be directed to the Water Quality Division's Application Review and Processing Team by email at [WQ-ARPTeam@tceq.texas.gov](mailto:WQ-ARPTeam@tceq.texas.gov) or by phone at (512) 239-4671.

The following applies to all applications:

1. Permittee: Keenan North Development, Ltd.

Permit No. WQ00 N/A

EPA ID No. TX N/A

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

**Approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854 in Montgomery County.**

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

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Louis Toumajian

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

Title: Project Coordinator II

Mailing Address: 10377 Stella Link Road

City, State, Zip Code: Houston, TX 77025-5445

Phone No.: 713-942-2700 Ext.:

Fax No.:

E-mail Address: lat@as-engineers.com

2. List the county in which the facility is located: Montgomery
3. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property.

N/A

4. Provide a description of the effluent discharge route. The discharge route must follow the flow of effluent from the point of discharge to the nearest major watercourse (from the point of discharge to a classified segment as defined in 30 TAC Chapter 307). If known, please identify the classified segment number.

**Approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854 in Montgomery County. Discharge into Mound Creek Tributary No. 54 then to Mound Creek, Lake Creek, then into the West Fork San Jacinto River, then to San Jacinto River**

5. Please provide a separate 7.5-minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. Please highlight the discharge route from the point of discharge for a distance of one mile downstream. (This map is required in addition to the map in the administrative report).

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

Does your project involve any of the following? Check all that apply.

- ☒ Proposed access roads, utility lines, construction easements
- ☐ Visual effects that could damage or detract from a historic property's integrity
- ☐ Vibration effects during construction or as a result of project design
- ☐ Additional phases of development that are planned for the future
- ☐ Sealing caves, fractures, sinkholes, other karst features



☐ Disturbance of vegetation or wetlands

1. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features):

Normal grading and drainage work as well as clearing and grubbing.

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

Existing land is wooded and vegetated.

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

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

Projected construction dates of Summer 2026

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

The property is currently vacant, to be developed into single family residence development



November 23, 2024

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

Re: Domestic Wastewater Discharge Permit - New  
Permit No. WQ TBD  
NPDES Permit No. TX TBD  
Keenan North Development, Ltd.  
A & S Project No. 540008.02

Ladies and Gentlemen:

Keenan North Development, Ltd. seeks a TCEQ permit for a wastewater treatment plant to serve a proposed single family residence development. Attached is a Permit Application for the wastewater treatment plant.

Enclosed are one (1) original and three (3) copies of the Application. The fee is being sent under separate cover to the Revenues Section (MC 214).

If you have any questions or comments, please feel free to call me at (713) 942-2700.

Sincerely,

A handwritten signature in blue ink, appearing to read "Eric Williams", is positioned above the printed name.

Eric Williams, P.E.  
Project Manager

Enclosures: TPDES Permit Application Package for Keenan North Development, Ltd.

cc w/enclosures: Mr. Ahmet Ozan, Keenan North Development, Ltd.  
TCEQ-Houston



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the application.

APPLICANT NAME: Keenan North Development, Ltd.

PERMIT NUMBER (If new, leave blank): WQ00 [Click to enter text.](#)

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

	Y	N		Y	N
Administrative Report 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Original USGS Map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Administrative Report 1.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Affected Landowners Map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPIF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Landowner Disk or Labels	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Core Data Form	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Buffer Zone Map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public Involvement Plan Form	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Flow Diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Technical Report 1.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site Drawing	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Technical Report 1.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Original Photographs	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 2.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Design Calculations	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 2.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Solids Management Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Worksheet 3.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Water Balance	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worksheet 3.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 3.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 3.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 4.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 5.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 6.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Worksheet 7.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

For TCEQ Use Only

Segment Number \_\_\_\_\_ County \_\_\_\_\_  
Expiration Date \_\_\_\_\_ Region \_\_\_\_\_  
Permit Number \_\_\_\_\_



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

**DOMESTIC WASTEWATER PERMIT APPLICATION  
ADMINISTRATIVE REPORT 1.0**

For any questions about this form, please contact the Applications Review and Processing Team at 512-239-4671.

**Section 1. Application Fees (Instructions Page 26)**

Indicate the amount submitted for the application fee (check only one).

Flow	New/Major Amendment	Renewal
<0.05 MGD	\$350.00 <input type="checkbox"/>	\$315.00 <input type="checkbox"/>
≥0.05 but <0.10 MGD	\$550.00 <input type="checkbox"/>	\$515.00 <input type="checkbox"/>
≥0.10 but <0.25 MGD	\$850.00 <input type="checkbox"/>	\$815.00 <input type="checkbox"/>
≥0.25 but <0.50 MGD	\$1,250.00 <input checked="" type="checkbox"/>	\$1,215.00 <input type="checkbox"/>
≥0.50 but <1.0 MGD	\$1,650.00 <input type="checkbox"/>	\$1,615.00 <input type="checkbox"/>
≥1.0 MGD	\$2,050.00 <input type="checkbox"/>	\$2,015.00 <input type="checkbox"/>

Minor Amendment (for any flow) \$150.00 ☐

**Payment Information:**

Mailed Check/Money Order Number:

Check/Money Order Amount:

Name Printed on Check:

EPAY Voucher Number:

Copy of Payment Voucher enclosed? Yes ☐

**Section 2. Type of Application (Instructions Page 26)**

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

- ☐ Publicly-Owned Domestic Wastewater
- ☒ Privately-Owned Domestic Wastewater
- ☐ Conventional Wastewater Treatment

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

- ☐ Active ☒ Inactive



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

- ☒ TPDES Permit  
☐ TLAP  
☐ TPDES Permit with TLAP component  
☐ Subsurface Area Drip Dispersal System (SADDS)

d. Check the box next to the appropriate application type

- ☒ New  
☐ Major Amendment with Renewal  
☐ Major Amendment without Renewal  
☐ Renewal without changes  
☐ Minor Amendment with Renewal  
☐ Minor Amendment without Renewal  
☐ Minor Modification of permit

e. For amendments or modifications, describe the proposed changes: [Click to enter text.](#)

f. For existing permits:

Permit Number: WQ00 [Click to enter text.](#)

EPA I.D. (TPDES only): TX [Click to enter text.](#)

Expiration Date: [Click to enter text.](#)

### Section 3. Facility Owner (Applicant) and Co-Applcant Information (Instructions Page 26)

A. The owner of the facility must apply for the permit.

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

**Keenan North Development, Ltd.**

*(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/>

CN: 606265080

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in 30 TAC § 305.44.

Prefix: Mr.

Last Name, First Name: Ozan, Ahmet

Title: President

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

B. **Co-applicant information.** Complete this section only if another person or entity is required to apply as a co-permittee.

What is the Legal Name of the co-applicant applying for this permit?

[Click to enter text.](#)

*(The legal name must be spelled exactly as filed with the TX SOS, with the County, or in the legal documents forming the entity.)*

If the co-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/>

CN: Click to enter text.

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in 30 TAC § 305.44.

Prefix: Click to enter text.

Last Name, First Name: Click to enter text.

Title: Click to enter text.

Credential: Click to enter text.

Provide a brief description of the need for a co-permittee: Click to enter text.

### C. Core Data Form

Complete the Core Data Form for each customer and include as an attachment. If the customer type selected on the Core Data Form is **Individual**, complete **Attachment 1** of Administrative Report 1.0. Exhibit 20

## Section 4. Application Contact Information (Instructions Page 27)

This is the person(s) TCEQ will contact if additional information is needed about this application. Provide a contact for administrative questions and technical questions.

- A. Prefix: Mr. Last Name, First Name: Liu, Jonathan D.  
Title: Project Manager Credential: P.E.  
Organization Name: A&S Engineers, Inc.  
Mailing Address: 10377 Stella Link Road City, State, Zip Code: Houston, TX 77025-5445  
Phone No.: 713-942-2700 E-mail Address: jdl@as-engineers.com  
Check one or both: ☐ Administrative Contact ☒ Technical Contact
- B. Prefix: Mr. Last Name, First Name: Toumajian, Louis  
Title: Project Coordinator II Credential: E.I.T.  
Organization Name: A&S Engineers, Inc.  
Mailing Address: 10377 Stella Link Road City, State, Zip Code: Houston, TX 77025-5445  
Phone No.: 713-942-2700 E-mail Address: lat@as-engineers.com  
Check one or both: ☒ Administrative Contact ☐ Technical Contact

## Section 5. Permit Contact Information (Instructions Page 27)

Provide the names and contact information for two individuals that can be contacted throughout the permit term.

- A. Prefix: Mr. Last Name, First Name: Ozan, Ahmet  
Title: President Credential: Click to enter text.  
Organization Name: Keenan North Development, Ltd.  
Mailing Address: 28408 Sweetgum Road City, State, Zip Code: Magnolia, TX, 77354  
Phone No.: 832-375-9897 E-mail Address: OZAN\_TWIST@HOTMAIL.COM

B. Prefix: Mr. Last Name, First Name: Liu, Jonathan D.  
Title: Project Manager Credential: P.E.  
Organization Name: A&S Engineers, Inc.  
Mailing Address: 10377 Stella Link Road City, State, Zip Code: Houston, TX 77025-5445  
Phone No.: 713-942-2700 E-mail Address: jdl@as-engineers.com

## Section 6. Billing Contact Information (Instructions Page 27)

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

Prefix: Mr. Last Name, First Name: OZAN, AHMET  
Title: President Credential: Click to enter text.  
Organization Name: Keenan North Development, Ltd.  
Mailing Address: 28408 Sweetgum Road City, State, Zip Code: Magnolia, TX, 77354  
Phone No.: 832-375-9897 E-mail Address: OZAN\_TWIST@HOTMAIL.COM

## Section 7. DMR/MER Contact Information (Instructions Page 27)

Provide the name and complete mailing address of the person delegated to receive and submit Discharge Monitoring Reports (DMR) (EPA 3320-1) or maintain Monthly Effluent Reports (MER).

Prefix: Mr. Last Name, First Name: OZAN, AHMET  
Title: President Credential: Click to enter text.  
Organization Name: Keenan North Development, Ltd.  
Mailing Address: 28408 Sweetgum Road City, State, Zip Code: Magnolia, TX, 77354  
Phone No.: 832-375-9897 E-mail Address: OZAN\_TWIST@HOTMAIL.COM

## Section 8. Public Notice Information (Instructions Page 27)

### A. Individual Publishing the Notices

Prefix: Mr. Last Name, First Name: Liu, Jonathan D.  
Title: Project Manager Credential: P.E.  
Organization Name: A&S Engineers, Inc.  
Mailing Address: 10377 Stella Link Road City, State, Zip Code: Houston, TX 77025-5445  
Phone No.: Click to enter text. E-mail Address: jdl@as-engineers.com

**B. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package**

Indicate by a check mark the preferred method for receiving the first notice and instructions:

☒ E-mail Address

☐ Fax

☐ Regular Mail

**C. Contact permit to be listed in the Notices**

Prefix: Mr.

Last Name, First Name: Liu, Jonathan D.

Title: Click to enter text.

Credential: P.E.

Organization Name: A&S Engineers, Inc.

Mailing Address: 10377 Stella Link Road

City, State, Zip Code: Houston, TX 77025-5445

Phone No.: Click to enter text.

E-mail Address: jdl@as-engineers.com

**D. Public Viewing Information**

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

Public building name: Charles B. Stewart-West Branch Library

Location within the building: Public Records Viewing Area

Physical Address of Building: 202 Bessie Price Owen Dr.

City: Montgomery

County: Montgomery

Contact (Last Name, First Name): Wilson, Mat

Phone No.: 936-522-2799 Ext.: Click to enter text.

**E. Bilingual Notice Requirements**

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

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

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

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

☒ Yes

☐ No

If **no**, publication of an alternative language notice is not required; **skip to** Section 9 below.

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

☒ Yes

☐ No



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

☐ Yes ☒ No

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

☐ Yes ☒ No

5. If the answer is **yes** to **question 1, 2, 3, or 4**, public notices in an alternative language are required. Which language is required by the bilingual program? [Click to enter text.](#)

#### F. Plain Language Summary Template

Complete the Plain Language Summary (TCEQ Form 20972) and include as an attachment.

**Attachment:** [Exhibit 21](#)

#### G. Public Involvement Plan Form

Complete the Public Involvement Plan Form (TCEQ Form 20960) for each application for a **new permit or major amendment to a permit** and include as an attachment.

**Attachment:** [Exhibit 22](#)

### Section 9. Regulated Entity and Permitted Site Information (Instructions Page 29)

A. If the site is currently regulated by TCEQ, provide the Regulated Entity Number (RN) issued to this site. RN [Click to enter text.](#)

Search the TCEQ's Central Registry at <http://www15.tceq.texas.gov/crpub/> to determine if the site is currently regulated by TCEQ.

B. Name of project or site (the name known by the community where located):

[Keenan North WWTP](#)

C. Owner of treatment facility: [Keenan North Development, Ltd.](#)

Ownership of Facility: ☐ Public ☒ Private ☐ Both ☐ Federal

D. Owner of land where treatment facility is or will be:

Prefix: Last Name, First Name:

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

Organization Name: [Keenan North Development, Ltd.](#)

Mailing Address: [28408 Sweetgum Road](#) City, State, Zip Code: [Magnolia, TX, 77354](#)

Phone No.: [832-375-9897](#) E-mail Address: [OZAN\\_TWIST@HOTMAIL.COM](#)

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

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

E. Owner of effluent disposal site:

Prefix:

Last Name, First Name:

Title:

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

Organization Name:

Mailing Address:

City, State, Zip Code:

Phone No.:

E-mail Address:

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

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

F. Owner sewage sludge disposal site (if authorization is requested for sludge disposal on property owned or controlled by the applicant):

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

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

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

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

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

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

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

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

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

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

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

## Section 10. TPDES Discharge Information (Instructions Page 31)

A. Is the wastewater treatment facility location in the existing permit accurate?

☐ Yes ☒ No

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

Approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854 in Montgomery County.

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

☐ Yes ☒ No

If **no, or a new or amendment permit application**, provide an accurate description of the point of discharge and the discharge route to the nearest classified segment as defined in 30 TAC Chapter 307:

Approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854 in Montgomery County. Discharge into Mound Creek Tributary No. 54 then to Mound Creek, Lake Creek, then into the West Fork San Jacinto River, then to San Jacinto River

City nearest the outfall(s): Montgomery

County in which the outfalls(s) is/are located: Montgomery

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

☐ Yes ☒ No

If **yes**, indicate by a check mark if:

- ☐ Authorization granted      ☐ Authorization pending

For **new and amendment** applications, provide copies of letters that show proof of contact and the approval letter upon receipt.

**Attachment:** N/A

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

## Section 11. TLAP Disposal Information (Instructions Page 32)

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

- ☐ Yes      ☐ No

If **no, or a new or amendment permit application**, provide an accurate description of the disposal site location:

[Click to enter text.](#)

- B. City nearest the disposal site: [Click to enter text.](#)

- C. County in which the disposal site is located: [Click to enter text.](#)

- D. For **TLAPs**, describe the routing of effluent from the treatment facility to the disposal site:

[Click to enter text.](#)

- E. For **TLAPs**, please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: [Click to enter text.](#)

## Section 12. Miscellaneous Information (Instructions Page 32)

- A. Is the facility located on or does the treated effluent cross American Indian Land?

- ☐ Yes      ☒ No

- B. If the existing permit contains an onsite sludge disposal authorization, is the location of the sewage sludge disposal site in the existing permit accurate?

- ☐ Yes      ☐ No      ☒ Not Applicable

If No, or if a new onsite sludge disposal authorization is being requested in this permit application, provide an accurate location description of the sewage sludge disposal site.

[Click to enter text.](#)

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

☐ Yes ☒ No

If yes, list each person formerly employed by the TCEQ who represented your company and was paid for service regarding the application: [Click to enter text.](#)

D. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

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

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

E. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If yes, please provide the following information:

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

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

## Section 13. Attachments (Instructions Page 33)

Indicate which attachments are included with the Administrative Report. Check all that apply:

☐ Lease agreement or deed recorded easement, if the land where the treatment facility is located or the effluent disposal site are not owned by the applicant or co-applicant.

☒ Original full-size USGS Topographic Map with the following information:

- Applicant's property boundary
- Treatment facility boundary
- Labeled point of discharge for each discharge point (TPDES only)
- Highlighted discharge route for each discharge point (TPDES only)
- Onsite sewage sludge disposal site (if applicable)
- Effluent disposal site boundaries (TLAP only)
- New and future construction (if applicable)
- 1 mile radius information
- 3 miles downstream information (TPDES only)
- All ponds.

☐ Attachment 1 for Individuals as co-applicants

☐ Other Attachments. Please specify: [Click to enter text.](#)



## Section 14. Signature Page (Instructions Page 34)

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

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

Applicant: Keenan North Development, Ltd.

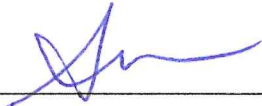
Certification:

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

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


Signatory name (typed or printed): Ahmet Ozan

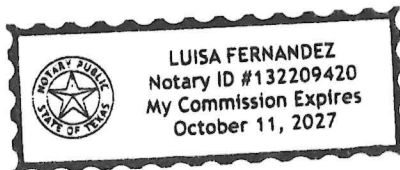
Signatory title: President

Signature:  Date: 11/04/2024  
(Use blue ink)

Subscribed and Sworn to before me by the said Ahmet Ozan  
on this 4th day of November, 2024.

My commission expires on the 11 day of October, 2027.

  
Notary Public



[SEAL]

Montgomery  
County, Texas

# DOMESTIC WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.0

The following information is required for new and amendment applications.

## Section 1. Affected Landowner Information (Instructions Page 36)

- A. Indicate by a check mark that the landowners map or drawing, with scale, includes the following information, as applicable:
- ☒ The applicant's property boundaries
  - ☒ The facility site boundaries within the applicant's property boundaries
  - ☐ The distance the buffer zone falls into adjacent properties and the property boundaries of the landowners located within the buffer zone
  - ☒ The property boundaries of all landowners surrounding the applicant's property (Note: if the application is a major amendment for a lignite mine, the map must include the property boundaries of all landowners adjacent to the new facility (ponds).)
  - ☒ The point(s) of discharge and highlighted discharge route(s) clearly shown for one mile downstream
  - ☒ The property boundaries of the landowners located on both sides of the discharge route for one full stream mile downstream of the point of discharge
  - ☐ The property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge if the point of discharge is into a lake, bay, estuary, or affected by tides
  - ☐ The boundaries of the effluent disposal site (for example, irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property
  - ☒ The property boundaries of all landowners surrounding the effluent disposal site
  - ☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners surrounding the applicant's property boundaries where the sewage sludge land application site is located
  - ☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (for example, sludge surface disposal site or sludge monofill) is located
- B. ☒ Indicate by a check mark that a separate list with the landowners' names and mailing addresses cross-referenced to the landowner's map has been provided.
- C. Indicate by a check mark in which format the landowners list is submitted:
- ☒ USB Drive      ☐ Four sets of labels
- D. Provide the source of the landowners' names and mailing addresses: MCAD
- E. As required by *Texas Water Code § 5.115*, is any permanent school fund land affected by this application?
- ☐ Yes      ☒ No

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

Click to enter text.

## Section 2. Original Photographs (Instructions Page 38)

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

- ☒ At least one original photograph of the new or expanded treatment unit location
- ☒ At least two photographs of the existing/proposed point of discharge and as much area downstream (photo 1) and upstream (photo 2) as can be captured. If the discharge is to an open water body (e.g., lake, bay), the point of discharge should be in the right or left edge of each photograph showing the open water and with as much area on each respective side of the discharge as can be captured.
- ☐ At least one photograph of the existing/proposed effluent disposal site
- ☒ A plot plan or map showing the location and direction of each photograph

## Section 3. Buffer Zone Map (Instructions Page 38)

A. Buffer zone map. Provide a buffer zone map on 8.5 x 11-inch paper with all of the following information. The applicant's property line and the buffer zone line may be distinguished by using dashes or symbols and appropriate labels.

- The applicant's property boundary;
- The required buffer zone; and
- Each treatment unit; and
- The distance from each treatment unit to the property boundaries.

B. Buffer zone compliance method. Indicate how the buffer zone requirements will be met. Check all that apply.

- ☒ Ownership
- ☐ Restrictive easement
- ☐ Nuisance odor control
- ☐ Variance

C. Unsuitable site characteristics. Does the facility comply with the requirements regarding unsuitable site characteristic found in 30 TAC § 309.13(a) through (d)?

- ☐ Yes      ☒ No

# **DOMESTIC WASTEWATER PERMIT APPLICATION**

## **SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)**

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

**Attachment:** Exhibit 23



# WATER QUALITY PERMIT

## PAYMENT SUBMITTAL FORM

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

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

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

*BY REGULAR U.S. MAIL*

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

*BY OVERNIGHT/EXPRESS MAIL*

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

**Fee Code: WQP**      **Waste Permit No:** [Click to enter text.](#)

1. Check or Money Order Number: [Click to enter text.](#)
2. Check or Money Order Amount: \$1250.00
3. Date of Check or Money Order: [Click to enter text.](#)
4. Name on Check or Money Order: [Click to enter text.](#)
5. APPLICATION INFORMATION

Name of Project or Site: Keenan North Development, Ltd.

Physical Address of Project or Site: Keenan North WWTP

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

**Staple Check or Money Order in This Space**

# ATTACHMENT 1

## INDIVIDUAL INFORMATION

### Section 1. Individual Information (Instructions Page 41)

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

Prefix (Mr., Ms., Miss): [Click to enter text.](#)

Full legal name (Last Name, First Name, Middle Initial): [Click to enter text.](#)

Driver's License or State Identification Number: [Click to enter text.](#)

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

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

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

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

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

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

#### **For Commission Use Only:**

Customer Number:

Regulated Entity Number:

Permit Number:

# DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST OF COMMON DEFICIENCIES

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

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

Correct and Current Industrial Wastewater Permit Application Forms ☒ Yes  
*(TCEQ Form Nos. 10053 and 10054. Version dated 6/25/2018 or later.)*

Water Quality Permit Payment Submittal Form (Page 19) ☒ Yes  
*(Original payment sent to TCEQ Revenue Section. See instructions for mailing address.)*

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

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

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

## **Things to Know:**

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

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

Landowners Labels or USB Drive attached ☐ N/A ☒ Yes  
*(See instructions for landowner requirements)*

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

Plain Language Summary ☒ Yes



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## DOMESTIC WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.0

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For any questions about this form, please contact the Domestic Wastewater Permitting Team at 512-239-4671.

The following information is required for all renewal, new, and amendment applications.

### Section 1. Permitted or Proposed Flows (Instructions Page 43)

#### A. Existing/Interim I Phase

Design Flow (MGD): 0.165

2-Hr Peak Flow (MGD): 0.66

Estimated construction start date: 01/01/2026

Estimated waste disposal start date: 08/01/2026

#### B. Interim II Phase

Design Flow (MGD): 0.33

2-Hr Peak Flow (MGD): 1.32

Estimated construction start date: 01/01/2027

Estimated waste disposal start date: 10/01/2027

#### C. Final Phase

Design Flow (MGD): 0.495

2-Hr Peak Flow (MGD): 1.98

Estimated construction start date: 01/01/2028

Estimated waste disposal start date: 10/01/2028

#### D. Current Operating Phase

Provide the startup date of the facility: 08/01/2026

### Section 2. Treatment Process (Instructions Page 43)

#### A. Current Operating Phase

Provide a detailed description of the treatment process. **Include the type of treatment plant, mode of operation, and all treatment units.** Start with the plant's head works and

finish with the point of discharge. Include all sludge processing and drying units. **If more than one phase exists or is proposed, a description of *each phase* must be provided.**

The ultimate plant is designed for 495,000 gpd. The aeration basins are planned to be equipped with fine bubble diffusers with a submergence of 10 feet. Chlorine contact tank is designed to add a second activated Sludge basin to increase total plant capacity to 495,000 gpd (Peak of 1,890,000 gpd). Each phase will be an 165k gpd. The final build out will have 4- aeration basins, 3 digesters, 2 clarifiers and 1 chlorine contact basin.

## B. Treatment Units

In Table 1.0(1), provide the treatment unit type, the number of units, and dimensions (length, width, depth) of **each treatment unit, accounting for *all* phases of operation.**

**Table 1.0(1) - Treatment Units**

Treatment Unit Type	Number of Units	Dimensions (L x W x D)

## C. Process Flow Diagram

Provide flow diagrams for the existing facilities and **each** proposed phase of construction.

**Attachment:** Exhibit 7

## Section 3. Site Information and Drawing (Instructions Page 44)

Provide the TPDES discharge outfall latitude and longitude. Enter N/A if not applicable.

- Latitude: 30°19' 56.06"W
- Longitude: 95°39' 50.01"W

Provide the TLAP disposal site latitude and longitude. Enter N/A if not applicable.

- Latitude: N/A
- Longitude: N/A

Provide a site drawing for the facility that shows the following:

- The boundaries of the treatment facility;
- The boundaries of the area served by the treatment facility;
- If land disposal of effluent, the boundaries of the disposal site and all storage/holding ponds; and
- If sludge disposal is authorized in the permit, the boundaries of the land application or disposal site.

**Attachment:** Exhibit 10



Provide the name **and** a description of the area served by the treatment facility.

Keenan Cut Off North Subdivision – A single family residential subdivision of approximately 220 single family residences in Montgomery County, TX.

Collection System Information **for wastewater TPDES permits only:** Provide information for each **uniquely owned** collection system, existing and new, served by this facility, including satellite collection systems. **Please see the instructions for a detailed explanation and examples.**

Collection System Information

Collection System Name	Owner Name	Owner Type	Population Served
Keenan North WWTP Collection	Keenan North Development, Ltd.	Privately Owned	
		Choose an item.	
		Choose an item.	
		Choose an item.	

Section 4. Unbuilt Phases (Instructions Page 45)

Is the application for a renewal of a permit that contains an unbuilt phase or phases?

☐ Yes ☒ No

If **yes**, does the existing permit contain a phase that has not been constructed **within five years** of being authorized by the TCEQ?

☐ Yes ☐ No

If **yes**, provide a detailed discussion regarding the continued need for the unbuilt phase. **Failure to provide sufficient justification may result in the Executive Director recommending denial of the unbuilt phase or phases.**

Click to enter text.

Section 5. Closure Plans (Instructions Page 45)

Have any treatment units been taken out of service permanently, or will any units be taken out of service in the next five years?

☐ Yes ☒ No

If **yes**, was a closure plan submitted to the TCEQ?

☐ Yes ☐ No

If **yes**, provide a brief description of the closure and the date of plan approval.

[Click to enter text.](#)

## Section 6. Permit Specific Requirements (Instructions Page 45)

For applicants with an existing permit, check the Other Requirements or Special Provisions of the permit.

### A. Summary transmittal

Have plans and specifications been approved for the existing facilities and each proposed phase?

☐ Yes ☒ No

If **yes**, provide the date(s) of approval for each phase: [Click to enter text.](#)

Provide information, including dates, on any actions taken to meet a *requirement or provision* pertaining to the submission of a summary transmittal letter. **Provide a copy of an approval letter from the TCEQ, if applicable.**

N/A

### B. Buffer zones

Have the buffer zone requirements been met?

☒ Yes ☐ No

Provide information below, including dates, on any actions taken to meet the conditions of the buffer zone. If available, provide any new documentation relevant to maintaining the buffer zones.

N/A

### C. Other actions required by the current permit

Does the *Other Requirements* or *Special Provisions* section in the existing permit require submission of any other information or other required actions? Examples include Notification of Completion, progress reports, soil monitoring data, etc.

☐ Yes ☒ No

If **yes**, provide information below on the status of any actions taken to meet the conditions of an *Other Requirement* or *Special Provision*.

Click to enter text.

### D. Grit and grease treatment

#### 1. Acceptance of grit and grease waste

Does the facility have a grit and/or grease processing facility onsite that treats and decants or accepts transported loads of grit and grease waste that are discharged directly to the wastewater treatment plant prior to any treatment?

☐ Yes ☒ No

If **No**, stop here and continue with Subsection E. Stormwater Management.

#### 2. Grit and grease processing

Describe below how the grit and grease waste is treated at the facility. In your description, include how and where the grit and grease is introduced to the treatment works and how it is separated or processed. Provide a flow diagram showing how grit and grease is processed at the facility.

Click to enter text.

#### 3. Grit disposal

Does the facility have a Municipal Solid Waste (MSW) registration or permit for grit disposal?

☐ Yes ☐ No

If **No**, contact the TCEQ Municipal Solid Waste team at 512-239-2335. Note: A registration or permit is required for grit disposal. Grit shall not be combined with treatment plant sludge. See the instruction booklet for additional information on grit disposal requirements and restrictions.

Describe the method of grit disposal.

Click to enter text.

#### 4. Grease and decanted liquid disposal

Note: A registration or permit is required for grease disposal. Grease shall not be combined with treatment plant sludge. For more information, contact the TCEQ Municipal Solid Waste team at 512-239-2335.

Describe how the decant and grease are treated and disposed of after grit separation.

Click to enter text.

### E. Stormwater management

#### 1. Applicability

Does the facility have a design flow of 1.0 MGD or greater in any phase?

☐ Yes ☒ No

Does the facility have an approved pretreatment program, under 40 CFR Part 403?

☐ Yes ☒ No

If **no to both of the above**, then skip to Subsection F, Other Wastes Received.

#### 2. MSGP coverage

Is the stormwater runoff from the WWTP and dedicated lands for sewage disposal currently permitted under the TPDES Multi-Sector General Permit (MSGP), TXR050000?

☐ Yes ☐ No

If **yes**, please provide MSGP Authorization Number and skip to Subsection F, Other Wastes Received:

TXR05 Click to enter text. or TXRNE Click to enter text.

If **no**, do you intend to seek coverage under TXR050000?

☐ Yes ☐ No

#### 3. Conditional exclusion

Alternatively, do you intend to apply for a conditional exclusion from permitting based TXR050000 (Multi Sector General Permit) Part II B.2 or TXR050000 (Multi Sector General Permit) Part V, Sector T 3(b)?

☐ Yes ☐ No

If yes, please explain below then proceed to Subsection F, Other Wastes Received:

Click to enter text.

**4. Existing coverage in individual permit**

Is your stormwater discharge currently permitted through this individual TPDES or TLAP permit?

☐ Yes ☐ No

If yes, provide a description of stormwater runoff management practices at the site that are authorized in the wastewater permit then skip to Subsection F, Other Wastes Received.

Click to enter text.

**5. Zero stormwater discharge**

Do you intend to have no discharge of stormwater via use of evaporation or other means?

☐ Yes ☐ No

If yes, explain below then skip to Subsection F. Other Wastes Received.

Click to enter text.

Note: If there is a potential to discharge any stormwater to surface water in the state as the result of any storm event, then permit coverage is required under the MSGP or an individual discharge permit. This requirement applies to all areas of facilities with treatment plants or systems that treat, store, recycle, or reclaim domestic sewage, wastewater or sewage sludge (including dedicated lands for sewage sludge disposal located within the onsite property boundaries) that meet the applicability criteria of above. You have the option of obtaining coverage under the MSGP for direct discharges, (recommended), or obtaining coverage under this individual permit.

**6. Request for coverage in individual permit**

Are you requesting coverage of stormwater discharges associated with your treatment plant under this individual permit?

☐ Yes ☐ No

If yes, provide a description of stormwater runoff management practices at the site for which you are requesting authorization in this individual wastewater permit and describe whether you intend to comingle this discharge with your treated effluent or discharge it via a separate dedicated stormwater outfall. Please also indicate if you



intend to divert stormwater to the treatment plant headworks and indirectly discharge it to water in the state.

[Click to enter text.](#)

Note: Direct stormwater discharges to waters in the state authorized through this individual permit will require the development and implementation of a stormwater pollution prevention plan (SWPPP) and will be subject to additional monitoring and reporting requirements. Indirect discharges of stormwater via headworks recycling will require compliance with all individual permit requirements including 2-hour peak flow limitations. All stormwater discharge authorization requests will require additional information during the technical review of your application.

#### F. Discharges to the Lake Houston Watershed

Does the facility discharge in the Lake Houston watershed?

☐ Yes ☒ No

If yes, attach a Sewage Sludge Solids Management Plan. See Example 5 in the instructions.

[Click to enter text.](#)

#### G. Other wastes received including sludge from other WWTPs and septic waste

##### 1. Acceptance of sludge from other WWTPs

Does or will the facility accept sludge from other treatment plants at the facility site?

☐ Yes ☒ No

**If yes, attach sewage sludge solids management plan. See Example 5 of instructions.**

In addition, provide the date the plant started or is anticipated to start accepting sludge, an estimate of monthly sludge acceptance (gallons or millions of gallons), an estimate of the BOD<sub>5</sub> concentration of the sludge, and the design BOD<sub>5</sub> concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

[Click to enter text.](#)

Note: Permits that accept sludge from other wastewater treatment plants may be required to have influent flow and organic loading monitoring.

##### 2. Acceptance of septic waste

Is the facility accepting or will it accept septic waste?

☐ Yes ☒ No

**If yes, does the facility have a Type V processing unit?**

☐ Yes ☐ No

**If yes, does the unit have a Municipal Solid Waste permit?**

☐ Yes ☐ No

If **yes to any of the above**, provide the date the plant started or is anticipated to start accepting septic waste, an estimate of monthly septic waste acceptance (gallons or millions of gallons), an estimate of the BOD<sub>5</sub> concentration of the septic waste, and the design BOD<sub>5</sub> concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click to enter text.

Note: Permits that accept sludge from other wastewater treatment plants may be required to have influent flow and organic loading monitoring.

**3. Acceptance of other wastes (not including septic, grease, grit, or RCRA, CERCLA or as discharged by IUs listed in Worksheet 6)**

Is or will the facility accept wastes that are not domestic in nature excluding the categories listed above?

☐ Yes ☒ No

If **yes**, provide the date that the plant started accepting the waste, an estimate how much waste is accepted on a monthly basis (gallons or millions of gallons), a description of the entities generating the waste, and any distinguishing chemical or other physical characteristic of the waste. Also note if this information has or has not changed since the last permit action.

Click to enter text.

## Section 7. Pollutant Analysis of Treated Effluent (Instructions Page 50)

Is the facility in operation?

☐ Yes ☒ No

If **no**, this section is not applicable. Proceed to Section 8.

If **yes**, provide effluent analysis data for the listed pollutants. **Wastewater treatment facilities** complete Table 1.0(2). **Water treatment facilities** discharging filter backwash water, complete Table 1.0(3). Provide copies of the laboratory results sheets. **These tables are not applicable for a minor amendment without renewal.** See the instructions for guidance.

Note: The sample date must be within 1 year of application submission.

**Table1.0(2) – Pollutant Analysis for Wastewater Treatment Facilities**

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
CBOD <sub>5</sub> , mg/l					
Total Suspended Solids, mg/l					
Ammonia Nitrogen, mg/l					
Nitrate Nitrogen, mg/l					
Total Kjeldahl Nitrogen, mg/l					
Sulfate, mg/l					
Chloride, mg/l					
Total Phosphorus, mg/l					
pH, standard units					
Dissolved Oxygen*, mg/l					
Chlorine Residual, mg/l					
<i>E.coli</i> (CFU/100ml) freshwater					
Enterococci (CFU/100ml) saltwater					
Total Dissolved Solids, mg/l					
Electrical Conductivity, $\mu$ mohs/cm, †					
Oil & Grease, mg/l					
Alkalinity (CaCO <sub>3</sub> )*, mg/l					

\*TPDES permits only

†TLAP permits only

**Table1.0(3) – Pollutant Analysis for Water Treatment Facilities**

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Total Suspended Solids, mg/l					
Total Dissolved Solids, mg/l					
pH, standard units					
Fluoride, mg/l					
Aluminum, mg/l					
Alkalinity (CaCO <sub>3</sub> ), mg/l					

## Section 8. Facility Operator (Instructions Page 50)

Facility Operator Name: TBDFacility Operator's License Classification and Level: TBDFacility Operator's License Number: TBD

## Section 9. Sludge and Biosolids Management and Disposal (Instructions Page 51)

### A. WWTP's Biosolids Management Facility Type

Check all that apply. See instructions for guidance

- ☐ Design flow  $\geq$  1 MGD
- ☐ Serves  $\geq$  10,000 people
- ☐ Class I Sludge Management Facility (per 40 CFR § 503.9)
- ☐ Biosolids generator
- ☐ Biosolids end user – land application (onsite)
- ☐ Biosolids end user – surface disposal (onsite)
- ☐ Biosolids end user – incinerator (onsite)

### B. WWTP's Biosolids Treatment Process

Check all that apply. See instructions for guidance.

- ☐ Aerobic Digestion
- ☐ Air Drying (or sludge drying beds)
- ☐ Lower Temperature Composting
- ☐ Lime Stabilization
- ☐ Higher Temperature Composting
- ☐ Heat Drying
- ☐ Thermophilic Aerobic Digestion
- ☐ Beta Ray Irradiation
- ☐ Gamma Ray Irradiation
- ☐ Pasteurization
- ☐ Preliminary Operation (e.g. grinding, de-gritting, blending)
- ☐ Thickening (e.g. gravity thickening, centrifugation, filter press, vacuum filter)
- ☐ Sludge Lagoon
- ☐ Temporary Storage ( $< 2$  years)
- ☐ Long Term Storage ( $\geq 2$  years)
- ☐ Methane or Biogas Recovery
- ☐ Other Treatment Process: [Click to enter text.](#)

### C. Biosolids Management

Provide information on the *intended* biosolids management practice. Do not enter every management practice that you want authorized in the permit, as the permit will authorize

all biosolids management practices listed in the instructions. Rather indicate the management practice the facility plans to use.

#### Biosolids Management

Management Practice	Handler or Preparer Type	Bulk or Bag Container	Amount (dry metric tons)	Pathogen Reduction Options	Vector Attraction Reduction Option
Choose an item.	Choose an item.	Choose an item.		Choose an item.	Choose an item.
Choose an item.	Choose an item.	Choose an item.		Choose an item.	Choose an item.
Choose an item.	Choose an item.	Choose an item.		Choose an item.	Choose an item.

If “Other” is selected for Management Practice, please explain (e.g. monofill or transport to another WWTP): [Click to enter text.](#)

#### D. Disposal site

Disposal site name: TBD

TCEQ permit or registration number: TBD

County where disposal site is located: TBD

#### E. Transportation method

Method of transportation (truck, train, pipe, other): TBD

Name of the hauler: TBD

Hauler registration number: TBD

Sludge is transported as a:

Liquid ☒

semi-liquid ☐

semi-solid ☐

solid ☐

## Section 10. Permit Authorization for Sewage Sludge Disposal (Instructions Page 53)

#### A. Beneficial use authorization

Does the existing permit include authorization for land application of sewage sludge for beneficial use?

☐ Yes ☒ No

If **yes**, are you requesting to continue this authorization to land apply sewage sludge for beneficial use?

☐ Yes ☐ No

If **yes**, is the completed **Application for Permit for Beneficial Land Use of Sewage Sludge (TCEQ Form No. 10451)** attached to this permit application (see the instructions for details)?

☐ Yes ☐ No



## B. Sludge processing authorization

Does the existing permit include authorization for any of the following sludge processing, storage or disposal options?

Sludge Composting	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Marketing and Distribution of sludge	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Sludge Surface Disposal or Sludge Monofill	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Temporary storage in sludge lagoons	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

If **yes** to any of the above sludge options and the applicant is requesting to continue this authorization, is the completed **Domestic Wastewater Permit Application: Sewage Sludge Technical Report (TCEQ Form No. 10056)** attached to this permit application?

☐ Yes ☐ No

## Section 11. Sewage Sludge Lagoons (Instructions Page 53)

Does this facility include sewage sludge lagoons?

☐ Yes ☒ No

If yes, complete the remainder of this section. If no, proceed to Section 12.

### A. Location information

The following maps are required to be submitted as part of the application. For each map, provide the Attachment Number.

- Original General Highway (County) Map:  
**Attachment:** [Click to enter text.](#)
- USDA Natural Resources Conservation Service Soil Map:  
**Attachment:** [Click to enter text.](#)
- Federal Emergency Management Map:  
**Attachment:** [Click to enter text.](#)
- Site map:  
**Attachment:** [Click to enter text.](#)

Discuss in a description if any of the following exist within the lagoon area. Check all that apply.

- ☐ Overlap a designated 100-year frequency flood plain
- ☐ Soils with flooding classification
- ☐ Overlap an unstable area
- ☐ Wetlands
- ☐ Located less than 60 meters from a fault
- ☐ None of the above

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

If a portion of the lagoon(s) is located within the 100-year frequency flood plain, provide the protective measures to be utilized including type and size of protective structures:

[Click to enter text.](#)

## B. Temporary storage information

Provide the results for the pollutant screening of sludge lagoons. These results are in addition to pollutant results in *Section 7 of Technical Report 1.0*.

Nitrate Nitrogen, mg/kg: [Click to enter text.](#)

Total Kjeldahl Nitrogen, mg/kg: [Click to enter text.](#)

Total Nitrogen (=nitrate nitrogen + TKN), mg/kg: [Click to enter text.](#)

Phosphorus, mg/kg: [Click to enter text.](#)

Potassium, mg/kg: [Click to enter text.](#)

pH, standard units: [Click to enter text.](#)

Ammonia Nitrogen mg/kg: [Click to enter text.](#)

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

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

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

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

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

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

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

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

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

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

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

Provide the following information:

Volume and frequency of sludge to the lagoon(s): [Click to enter text.](#)

Total dry tons stored in the lagoons(s) per 365-day period: [Click to enter text.](#)

Total dry tons stored in the lagoons(s) over the life of the unit: [Click to enter text.](#)

## C. Liner information

Does the active/proposed sludge lagoon(s) have a liner with a maximum hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec?

☐ Yes ☐ No

If yes, describe the liner below. Please note that a liner is required.

[Click to enter text.](#)

#### D. Site development plan

Provide a detailed description of the methods used to deposit sludge in the lagoon(s):

[Click to enter text.](#)

Attach the following documents to the application.

- Plan view and cross-section of the sludge lagoon(s)  
**Attachment:** [Click to enter text.](#)
- Copy of the closure plan  
**Attachment:** [Click to enter text.](#)
- Copy of deed recordation for the site  
**Attachment:** [Click to enter text.](#)
- Size of the sludge lagoon(s) in surface acres and capacity in cubic feet and gallons  
**Attachment:** [Click to enter text.](#)
- Description of the method of controlling infiltration of groundwater and surface water from entering the site  
**Attachment:** [Click to enter text.](#)
- Procedures to prevent the occurrence of nuisance conditions  
**Attachment:** [Click to enter text.](#)

#### E. Groundwater monitoring

Is groundwater monitoring currently conducted at this site, or are any wells available for groundwater monitoring, or are groundwater monitoring data otherwise available for the sludge lagoon(s)?

☐ Yes ☐ No

If groundwater monitoring data are available, provide a copy. Provide a profile of soil types encountered down to the groundwater table and the depth to the shallowest groundwater as a separate attachment.

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

## Section 12. Authorizations/Compliance/Enforcement (Instructions Page 55)

### A. Additional authorizations

Does the permittee have additional authorizations for this facility, such as reuse authorization, sludge permit, etc?

☐ Yes ☒ No

If yes, provide the TCEQ authorization number and description of the authorization:

Click to enter text.

### B. Permittee enforcement status

Is the permittee currently under enforcement for this facility?

☐ Yes ☒ No

Is the permittee required to meet an implementation schedule for compliance or enforcement?

☐ Yes ☒ No

If yes to either question, provide a brief summary of the enforcement, the implementation schedule, and the current status:

Click to enter text.

## Section 13. RCRA/CERCLA Wastes (Instructions Page 55)

### A. RCRA hazardous wastes

Has the facility received in the past three years, does it currently receive, or will it receive RCRA hazardous waste?

☐ Yes ☒ No

**B. Remediation activity wastewater**

Has the facility received in the past three years, does it currently receive, or will it receive CERCLA wastewater, RCRA remediation/corrective action wastewater or other remediation activity wastewater?

☐ Yes ☒ No

**C. Details about wastes received**

If **yes** to either Subsection A or B above, provide detailed information concerning these wastes with the application.

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



## Section 14. Laboratory Accreditation (Instructions Page 56)

All laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification*, which includes the following general exemptions from National Environmental Laboratory Accreditation Program (NELAP) certification requirements:

- The laboratory is an in-house laboratory and is:
  - periodically inspected by the TCEQ; or
  - located in another state and is accredited or inspected by that state; or
  - performing work for another company with a unit located in the same site; or
  - performing pro bono work for a governmental agency or charitable organization.
- The laboratory is accredited under federal law.
- The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.
- The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review 30 TAC Chapter 25 for specific requirements.

The following certification statement shall be signed and submitted with every application. See the Signature Page section in the Instructions, for a list of designated representatives who may sign the certification.

### CERTIFICATION:

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

Printed Name: Ahmet Ozan

Title: President

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

# DOMESTIC WASTEWATER PERMIT APPLICATION

## TECHNICAL REPORT 1.1

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

### Section 1. Justification for Permit (Instructions Page 57)

#### A. Justification of permit need

Provide a detailed discussion regarding the need for any phase(s) not currently permitted. Failure to provide sufficient justification may result in the Executive Director recommending denial of the proposed phase(s) or permit.

The Keenan Cutoff North subdivision will consist of approximately 220 connections. The construction for the Keenan Cutoff North WWTP is dependent on the developer for the subdivision. The first phase of WWTP construction will be sufficient in capacity for the entire subdivision. The Keenan Cutoff North WWTP will then have an additional 2 phases with a timeline on construction depending on the development pace of the area surrounding the Keenan Cutoff North subdivision

#### B. Regionalization of facilities

For additional guidance, please review [TCEQ's Regionalization Policy for Wastewater Treatment](#)<sup>1</sup>.

Provide the following information concerning the potential for regionalization of domestic wastewater treatment facilities:

##### 1. Municipally incorporated areas

If the applicant is a city, then Item 1 is not applicable. Proceed to Item 2 Utility CCN areas.

Is any portion of the proposed service area located in an incorporated city?

☐ Yes ☒ No ☐ Not Applicable

If yes, within the city limits of: [Click to enter text.](#)

If yes, attach correspondence from the city.

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

If consent to provide service is available from the city, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the city versus the cost of the proposed facility or expansion attached.

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

##### 2. Utility CCN areas

Is any portion of the proposed service area located inside another utility's CCN area?

☐ Yes ☒ No

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<sup>1</sup> <https://www.tceq.texas.gov/permitting/wastewater/tceq-regionalization-for-wastewater>

If **yes**, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the CCN facilities versus the cost of the proposed facility or expansion.

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

### 3. *Nearby WWTPs or collection systems*

Are there any domestic permitted wastewater treatment facilities or collection systems located within a three-mile radius of the proposed facility?

☒ Yes ☐ No

If **yes**, attach a list of these facilities and collection systems that includes each permittee's name and permit number, and an area map showing the location of these facilities and collection systems.

**Attachment:** [Exhibit 16](#)

If **yes**, attach proof of mailing a request for service to each facility and collection system, the letters requesting service, and correspondence from each facility and collection system.

**Attachment:** [Exhibit 16](#)

If the facility or collection system agrees to provide service, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the facility or collection system versus the cost of the proposed facility or expansion.

**Attachment:** [N/A](#)

## Section 2. Proposed Organic Loading (Instructions Page 59)

Is this facility in operation?

☐ Yes ☒ No

If **no**, proceed to Item B, Proposed Organic Loading.

If **yes**, provide organic loading information in Item A, Current Organic Loading

### A. Current organic loading

Facility Design Flow (flow being requested in application): [Click to enter text.](#)

Average Influent Organic Strength or BOD<sub>5</sub> Concentration in mg/l: [Click to enter text.](#)

Average Influent Loading (lbs/day = total average flow X average BOD<sub>5</sub> conc. X 8.34): [Click to enter text.](#)

Provide the source of the average organic strength or BOD<sub>5</sub> concentration.

[Click to enter text.](#)

## B. Proposed organic loading

This table must be completed if this application is for a facility that is not in operation or if this application is to request an increased flow that will impact organic loading.

**Table 1.1(1) – Design Organic Loading**

Source	Total Average Flow (MGD)	Influent BOD5 Concentration (mg/l)
Municipality		
Subdivision	0.165/0.330/0.495	300/300/300
Trailer park – transient		
Mobile home park		
School with cafeteria and showers		
School with cafeteria, no showers		
Recreational park, overnight use		
Recreational park, day use		
Office building or factory		
Motel		
Restaurant		
Hospital		
Nursing home		
Other		
TOTAL FLOW from all sources		
AVERAGE BOD <sub>5</sub> from all sources		

## Section 3. Proposed Effluent Quality and Disinfection (Instructions Page 59)

### A. Existing/Interim I Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: 10

Total Suspended Solids, mg/l: 15

Ammonia Nitrogen, mg/l: 3.0

Total Phosphorus, mg/l: N/A

Dissolved Oxygen, mg/l: 4.0

Other: N/A

### B. Interim II Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: 10

Total Suspended Solids, mg/l: 15

Ammonia Nitrogen, mg/l: 3.0

Total Phosphorus, mg/l: N/A

Dissolved Oxygen, mg/l: 4.0

Other: N/A

### C. Final Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: 10

Total Suspended Solids, mg/l: 15

Ammonia Nitrogen, mg/l: 3.0

Total Phosphorus, mg/l: N/A

Dissolved Oxygen, mg/l: 4.0

Other: N/A

### D. Disinfection Method

Identify the proposed method of disinfection.

☒ Chlorine: 2.0 mg/l after 20 minutes detention time at peak flow

Dechlorination process: Click to enter text.

☐ Ultraviolet Light: Click to enter text. seconds contact time at peak flow

☐ Other: Click to enter text.

## Section 4. Design Calculations (Instructions Page 59)

Attach design calculations and plant features for each proposed phase. Example 4 of the instructions includes sample design calculations and plant features.

Attachment: Exhibit 17

## Section 5. Facility Site (Instructions Page 60)

### A. 100-year floodplain

Will the proposed facilities be located above the 100-year frequency flood level?

☒ Yes ☐ No

If **no**, describe measures used to protect the facility during a flood event. Include a site map showing the location of the treatment plant within the 100-year frequency flood level. If applicable, provide the size and types of protective structures.

Click to enter text.



Provide the source(s) used to determine 100-year frequency flood plain.

FEMA GIS data, FEMA flood map 48339C0350G effective 08/18/2014

For a new or expansion of a facility, will a wetland or part of a wetland be filled?

☐ Yes ☒ No

If **yes**, has the applicant applied for a US Corps of Engineers 404 Dredge and Fill Permit?

☐ Yes ☐ No

If **yes**, provide the permit number: [Click to enter text.](#)

If **no**, provide the approximate date you anticipate submitting your application to the Corps: [Click to enter text.](#)

## B. Wind rose

Attach a wind rose: [Exhibit 19](#)

# Section 6. Permit Authorization for Sewage Sludge Disposal (Instructions Page 60)

## A. Beneficial use authorization

Are you requesting to include authorization to land apply sewage sludge for beneficial use on property located adjacent to the wastewater treatment facility under the wastewater permit?

☐ Yes ☒ No

If **yes**, attach the completed **Application for Permit for Beneficial Land Use of Sewage Sludge (TCEQ Form No. 10451)**: [Click to enter text.](#)

## B. Sludge processing authorization

Identify the sludge processing, storage or disposal options that will be conducted at the wastewater treatment facility:

- ☐ Sludge Composting
- ☐ Marketing and Distribution of sludge
- ☐ Sludge Surface Disposal or Sludge Monofill

If **any of the above**, sludge options are selected, attach the completed **Domestic Wastewater Permit Application: Sewage Sludge Technical Report (TCEQ Form No. 10056)**: [Click to enter text.](#)

# Section 7. Sewage Sludge Solids Management Plan (Instructions Page 61)

Attach a solids management plan to the application.

**Attachment:** [Exhibit 18](#)

The sewage sludge solids management plan must contain the following information:

- Treatment units and processes dimensions and capacities

- Solids generated at 100, 75, 50, and 25 percent of design flow
- Mixed liquor suspended solids operating range at design and projected actual flow
- Quantity of solids to be removed and a schedule for solids removal
- Identification and ownership of the ultimate sludge disposal site
- For facultative lagoons, design life calculations, monitoring well locations and depths, and the ultimate disposal method for the sludge from the facultative lagoon

An example of a sewage sludge solids management plan has been included as Example 5 of the instructions.

# DOMESTIC WASTEWATER PERMIT APPLICATION

## WORKSHEET 2.0: RECEIVING WATERS

The following information is required for all TPDES permit applications.

### Section 1. Domestic Drinking Water Supply (Instructions Page 64)

Is there a surface water intake for domestic drinking water supply located within 5 miles downstream from the point or proposed point of discharge?

☐ Yes ☒ No

If **no**, proceed to Section 2. If **yes**, provide the following:

Owner of the drinking water supply: [Click to enter text.](#)

Distance and direction to the intake: [Click to enter text.](#)

Attach a USGS map that identifies the location of the intake.

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

### Section 2. Discharge into Tidally Affected Waters (Instructions Page 64)

Does the facility discharge into tidally affected waters?

☐ Yes ☒ No

If **no**, proceed to Section 3. If **yes**, complete the remainder of this section. If no, proceed to Section 3.

#### A. Receiving water outfall

Width of the receiving water at the outfall, in feet: [Click to enter text.](#)

#### B. Oyster waters

Are there oyster waters in the vicinity of the discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from outfall(s).

[Click to enter text.](#)

#### C. Sea grasses

Are there any sea grasses within the vicinity of the point of discharge?

☐ Yes ☐ No

If **yes**, provide the distance and direction from the outfall(s).

[Click to enter text.](#)

### Section 3. Classified Segments (Instructions Page 64)

Is the discharge directly into (or within 300 feet of) a classified segment?

☐ Yes ☒ No

If **yes**, this Worksheet is complete.

If **no**, complete Sections 4 and 5 of this Worksheet.

### Section 4. Description of Immediate Receiving Waters (Instructions Page 65)

Name of the immediate receiving waters: [Click to enter text.](#)

#### A. Receiving water type

Identify the appropriate description of the receiving waters.

- ☒ Stream
- ☐ Freshwater Swamp or Marsh
- ☐ Lake or Pond

Surface area, in acres: [Click to enter text.](#)

Average depth of the entire water body, in feet: [Click to enter text.](#)

Average depth of water body within a 500-foot radius of discharge point, in feet:  
[Click to enter text.](#)

- ☐ Man-made Channel or Ditch
- ☐ Open Bay
- ☐ Tidal Stream, Bayou, or Marsh
- ☐ Other, specify: [Click to enter text.](#)

#### B. Flow characteristics

If a stream, man-made channel or ditch was checked above, provide the following. For existing discharges, check one of the following that best characterizes the area *upstream* of the discharge. For new discharges, characterize the area *downstream* of the discharge (check one).

- ☒ Intermittent - dry for at least one week during most years
- ☐ Intermittent with Perennial Pools - enduring pools with sufficient habitat to maintain significant aquatic life uses
- ☐ Perennial - normally flowing

Check the method used to characterize the area upstream (or downstream for new dischargers).

- ☐ USGS flow records
- ☐ Historical observation by adjacent landowners
- ☒ Personal observation
- ☐ Other, specify: [Click to enter text.](#)

### C. Downstream perennial confluences

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

[Click to enter text.](#)

### D. Downstream characteristics

Do the receiving water characteristics change within three miles downstream of the discharge (e.g., natural or man-made dams, ponds, reservoirs, etc.)?

☐ Yes ☒ No

If yes, discuss how.

[Click to enter text.](#)

### E. Normal dry weather characteristics

Provide general observations of the water body during normal dry weather conditions.

[Click to enter text.](#)

Date and time of observation: [Click to enter text.](#)

Was the water body influenced by stormwater runoff during observations?

☐ Yes ☒ No

## Section 5. General Characteristics of the Waterbody (Instructions Page 66)

### A. Upstream influences

Is the immediate receiving water upstream of the discharge or proposed discharge site influenced by any of the following? Check all that apply.

☐ Oil field activities

☐ Urban runoff

☐ Upstream discharges

☐ Agricultural runoff

☐ Septic tanks

☐ Other(s), specify: [Click to enter text.](#)



## B. Waterbody uses

Observed or evidences of the following uses. Check all that apply.

- |  |  |
|--|--|
| <input type="checkbox"/> Livestock watering    | <input type="checkbox"/> Contact recreation                                      |
| <input type="checkbox"/> Irrigation withdrawal | <input type="checkbox"/> Non-contact recreation                                  |
| <input type="checkbox"/> Fishing               | <input type="checkbox"/> Navigation  |
| <input type="checkbox"/> Domestic water supply | <input type="checkbox"/> Industrial water supply                                 |
| <input type="checkbox"/> Park activities       | <input type="checkbox"/> Other(s), specify: <a href="#">Click to enter text.</a> |

## C. Waterbody aesthetics

Check one of the following that best describes the aesthetics of the receiving water and the surrounding area.

- ☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area; water clarity exceptional
- ☒ Natural Area: trees and/or native vegetation; 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

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A&S Project No. 540008.02

## EXHIBIT 1

### USGS MAP

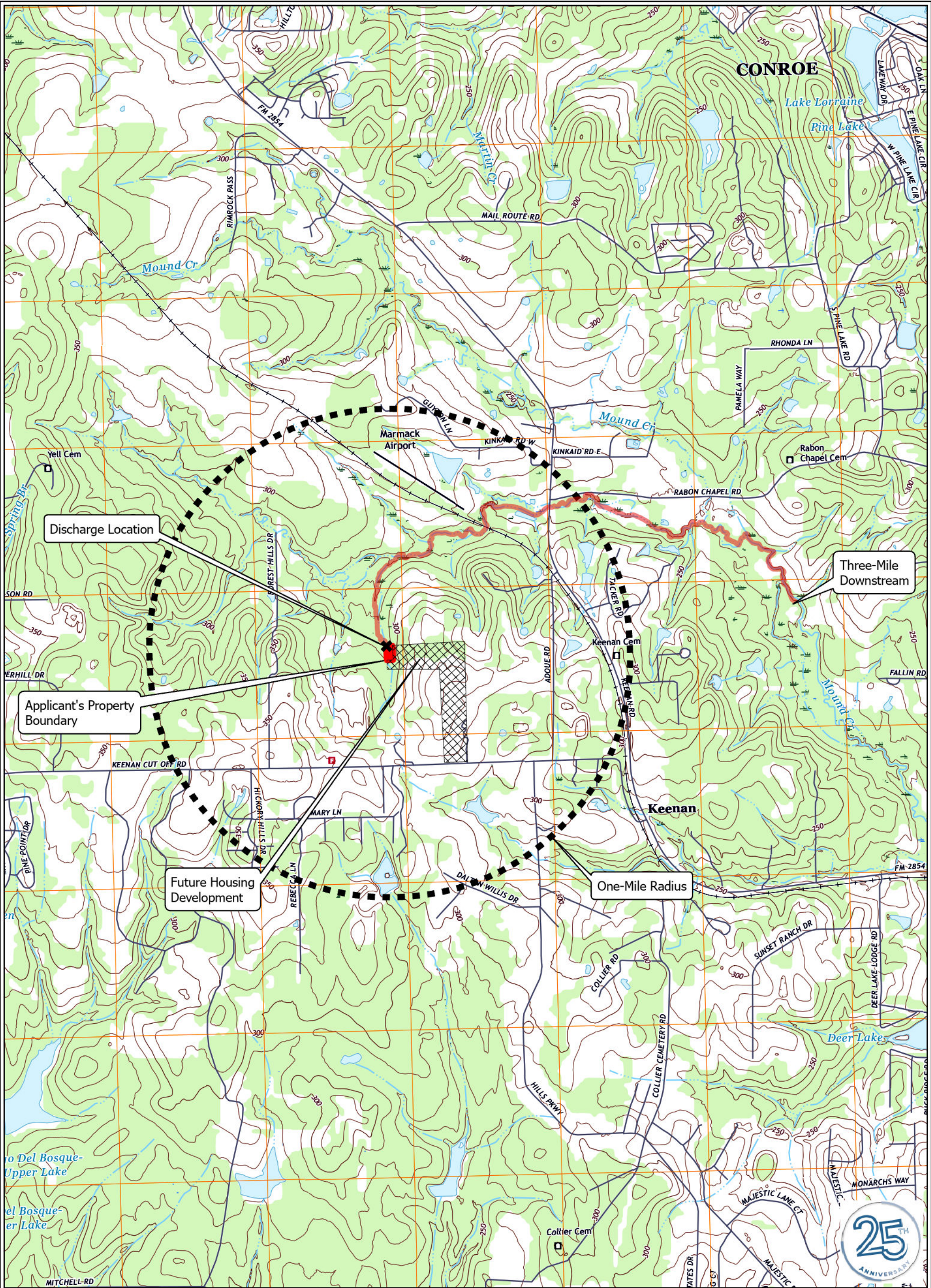


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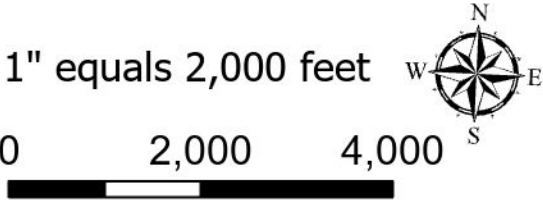




KEENAN NORTH TRACT

USGS MAP

- ✖ Outfall Location
- ▣ 1-Mi Buffer
- ▬ WWTP Site
- 3-mi Downstream





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## EXHIBIT 2

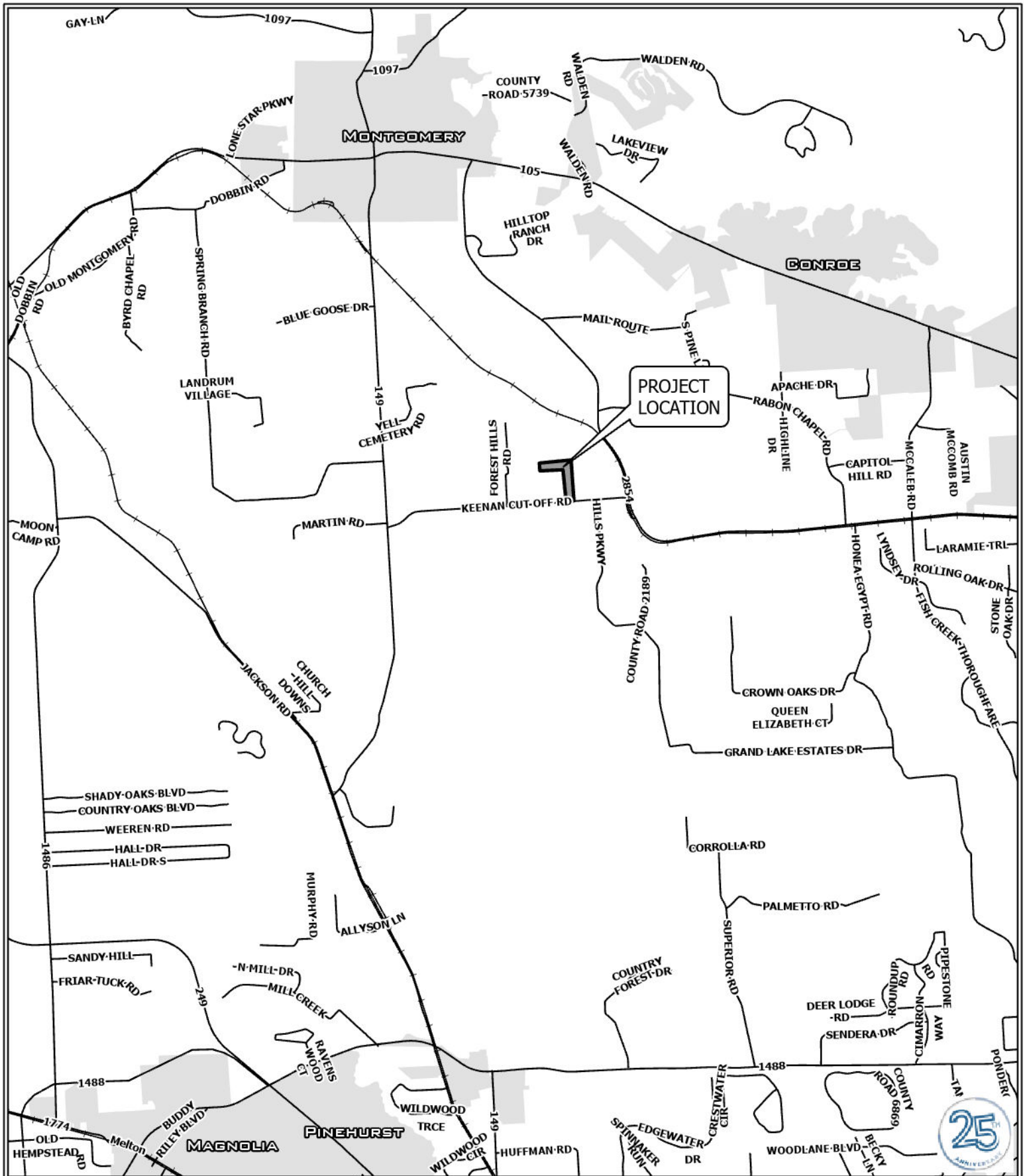
### LOCATION MAP



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OLD HOCKLEY RD TRACT

# WASTEWATER TREATMENT PLAN LOCATION MAP

-  County Boundary
-  Railroad
-  Tract\_Boundary



DRAWING NOT TO SCALE





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## EXHIBIT 3

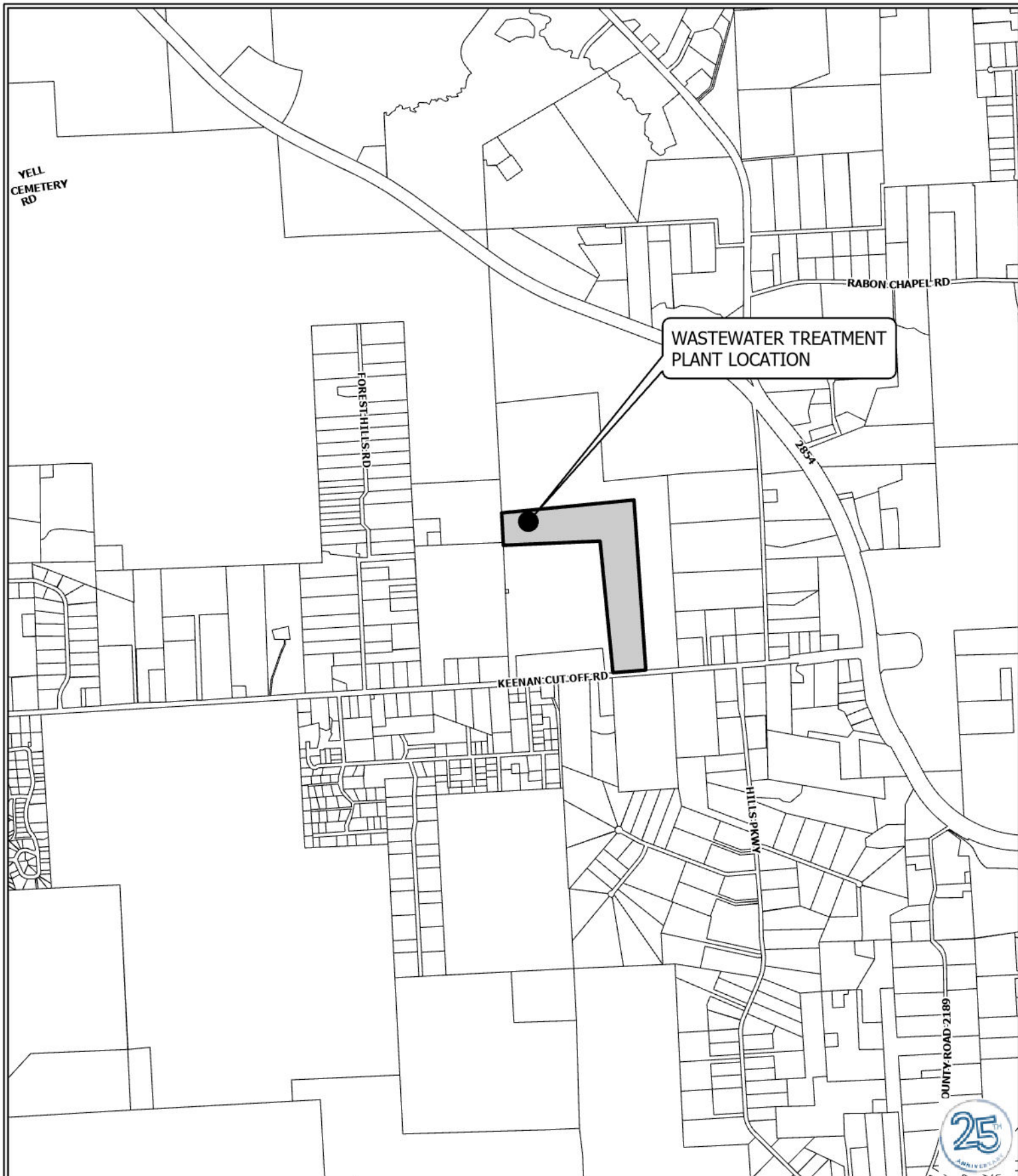
### VICINITY MAP



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KEENAN NORTH TRACT

# **WASTEWATER TREATMENT PLAN VICINITY MAP**

- WWTP Location
- MCAD Parcels
- Service Area



1" equals 2,000 feet  
0 1,000 2,000 3,000

A horizontal graphic scale bar with alternating black and white segments, corresponding to the 0, 1,000, 2,000, and 3,000 foot increments.



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## EXHIBIT 4

### USGS MAP



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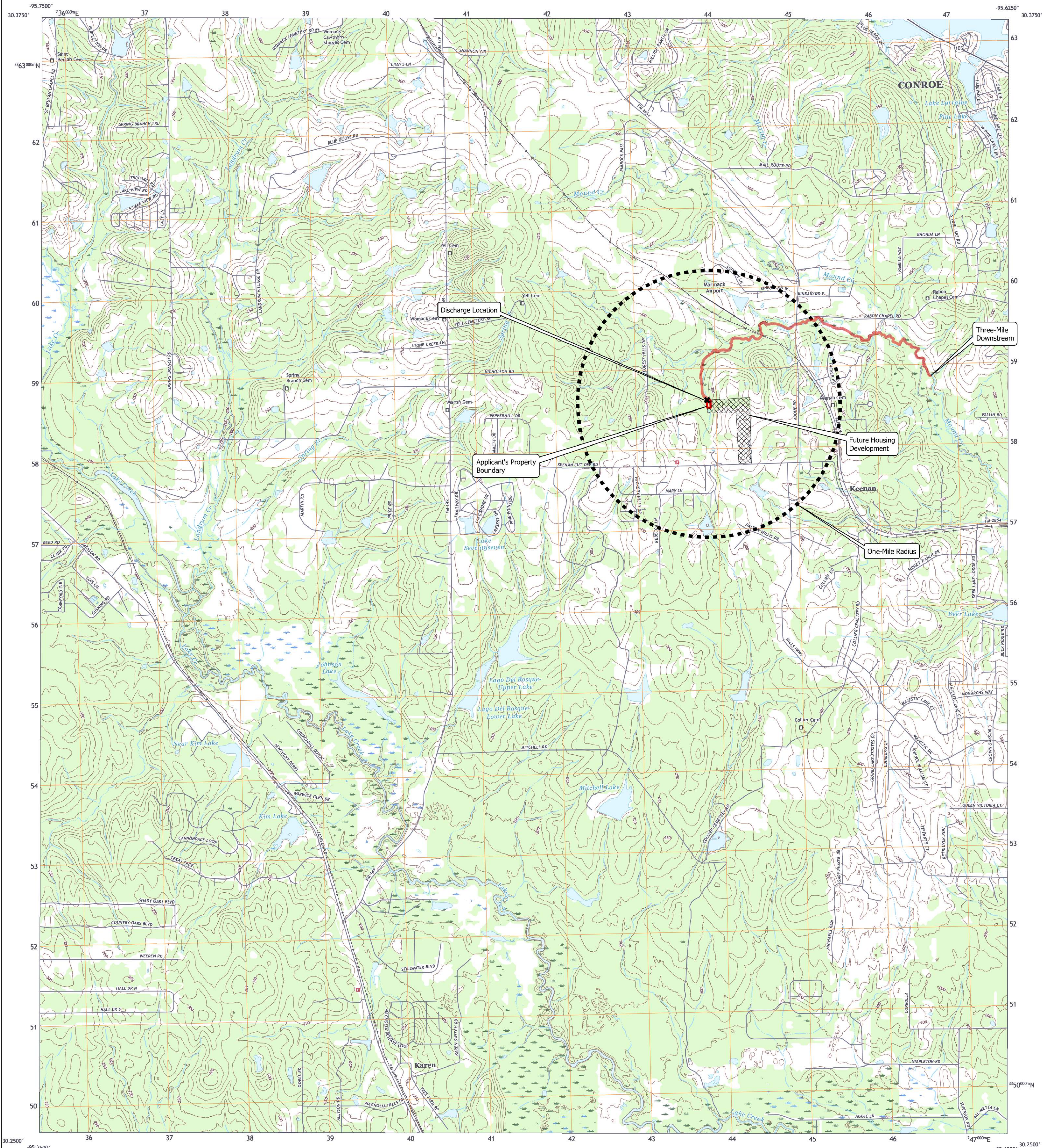




U.S. DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY

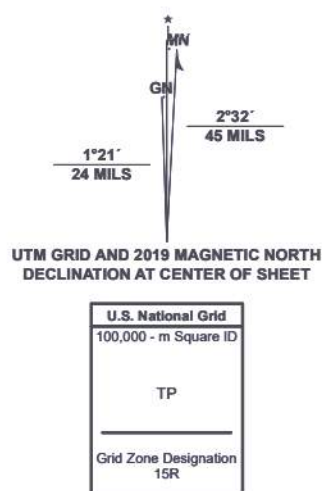


KEENAN QUADRANGLE  
TEXAS - MONTGOMERY COUNTY  
7.5-MINUTE SERIES



Produced by the United States Geological Survey  
North American Datum of 1983 (NAD83)  
World Geodetic System of 1984 (WGS84). Projection and  
1 000-meter grid/Universal Transverse Mercator, Zone 15R  
This map is not a legal document. Boundaries may be  
generalized for this map scale. Private lands within government  
reservations may not be shown. Obtain permission before  
entering private lands.

Imagery.....NAIP, September 2016 - November 2016  
Roads.....U.S. Census Bureau, 2015  
Names.....GNIS, 1979 - 2022  
Hydrography.....National Hydrography Dataset, 2003 - 2018  
Contours.....National Elevation Dataset, 2010  
Boundaries.....Multiple sources; see metadata file 2019 - 2021  
Wetlands.....FWS National Wetlands Inventory Not Available



CONTOUR INTERVAL 10 FEET  
NORTH AMERICAN VERTICAL DATUM OF 1988  
This map was produced to conform with the  
National Geospatial Program US Topo Product Standard.



1	2	3
4	5	6
7	8	9

ADJOINING QUADRANGLES

1 Dacus  
2 Montgomery  
3 Shepard Hill  
4 Plasterville  
5 Cowl Spur  
6 Magnolia West  
7 Magnolia East  
8 Oklahoma

ROAD CLASSIFICATION

Expressway  
Secondary Hwy  
Ramp  
Interstate Route  
Local Connector  
Local Road  
4WD  
US Route  
State Route

KEENAN, TX  
2022

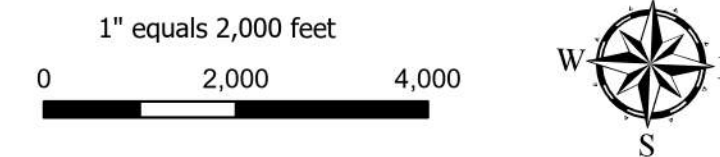


## KEENAN NORTH TRACT

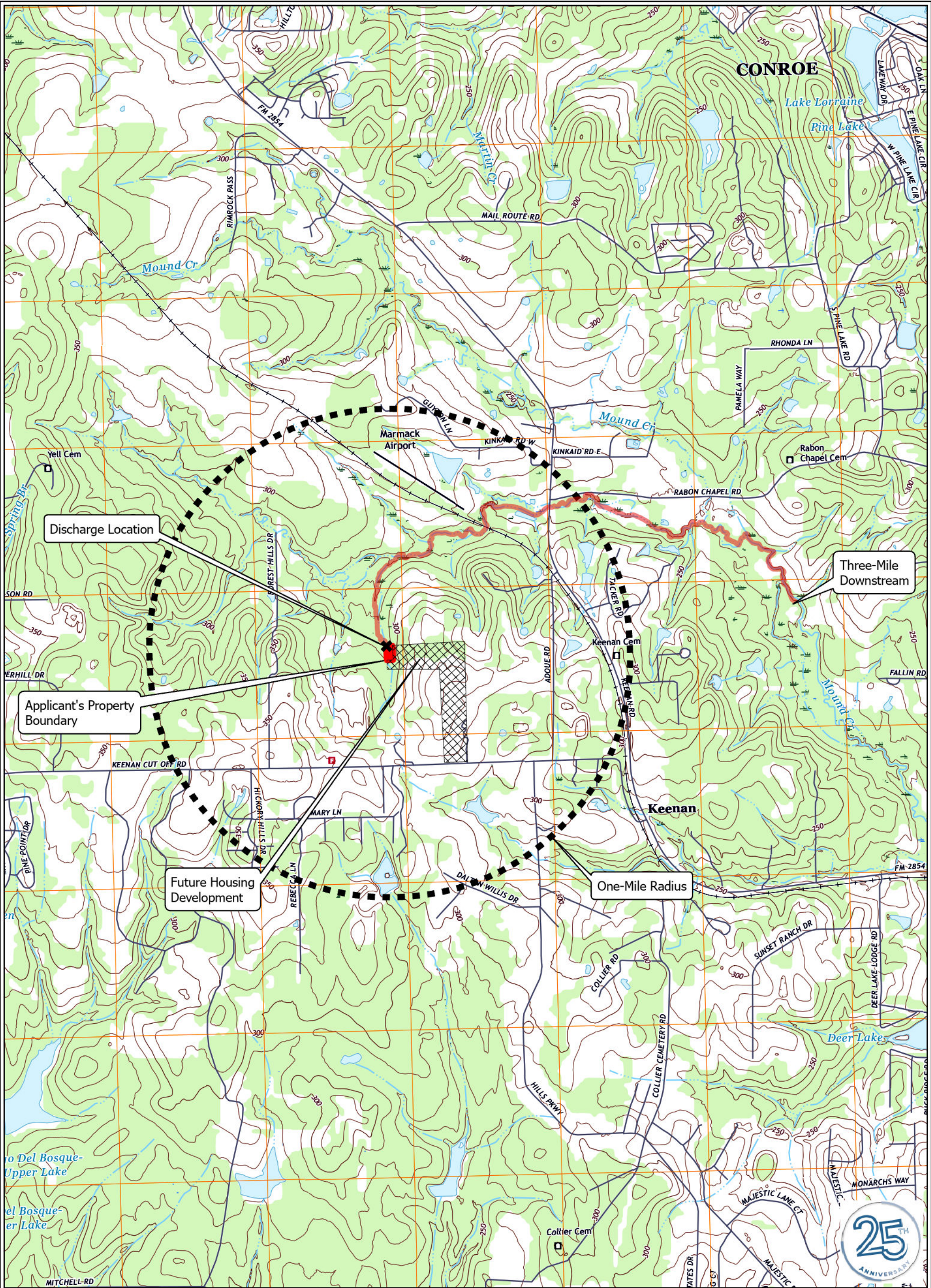
# USGS Map

- ✱ Outfall Location
- 3-mi Downstream
- ▨ Future Development
- ▤ 1-Mile Buffer Zone
- ▭ Applicant's Property Boundary

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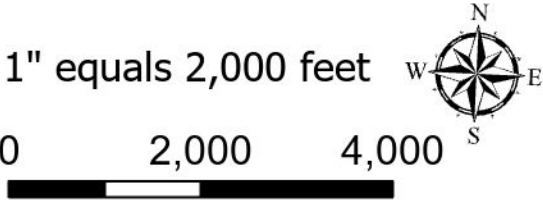




KEENAN NORTH TRACT

USGS MAP

- ✖ Outfall Location
- ▣ 1-Mi Buffer
- ▬ WWTP Site
- 3-mi Downstream





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## EXHIBIT 5

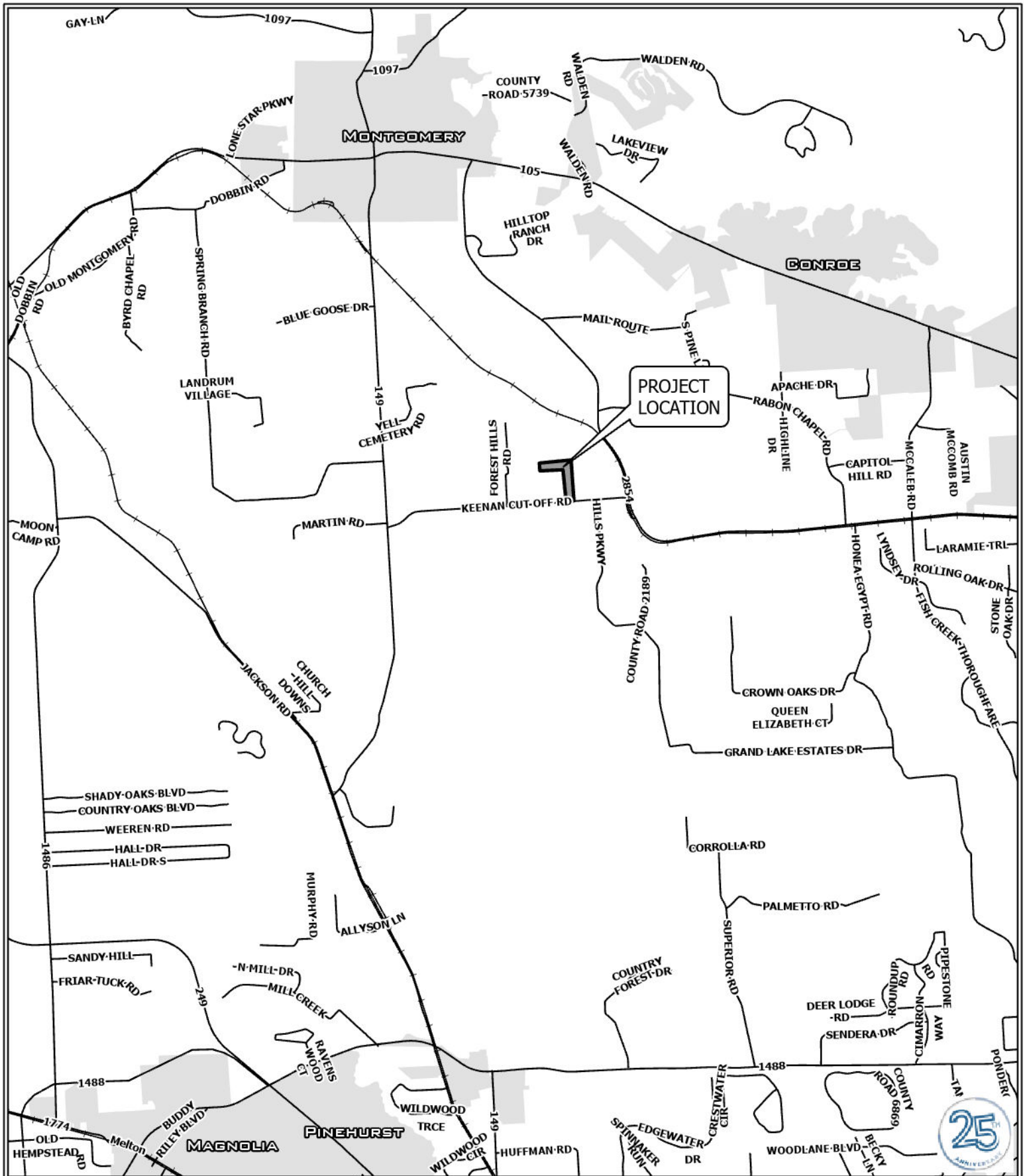
### LOCATION MAP



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OLD HOCKLEY RD TRACT

# WASTEWATER TREATMENT PLAN LOCATION MAP

- County Boundary
- Railroad
- Tract Boundary



DRAWING NOT TO SCALE



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## EXHIBIT 6

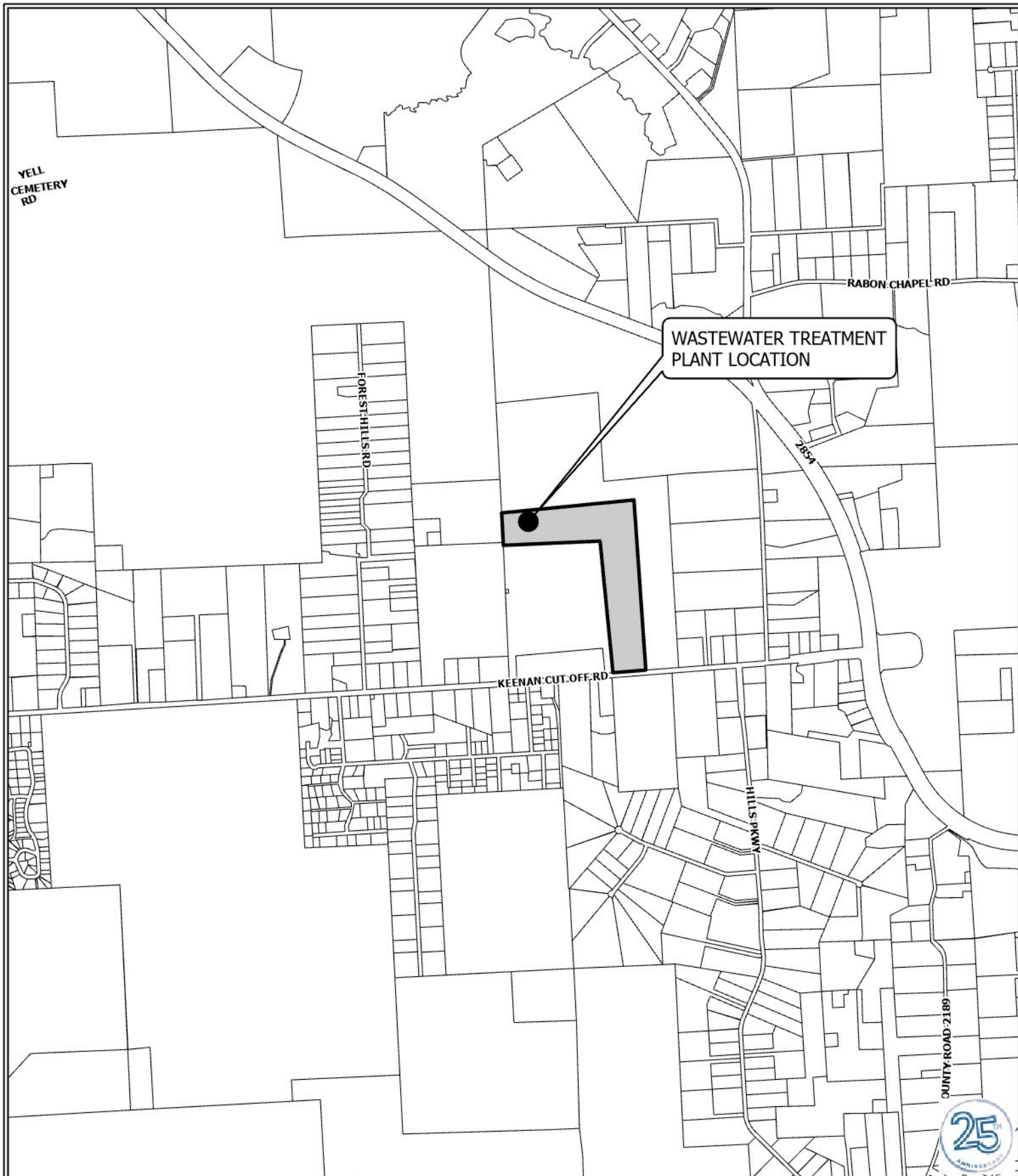
### VICINITY MAP



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---

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KEENAN NORTH TRACT

# **WASTEWATER TREATMENT PLAN VICINITY MAP**

- WWTP Location
- MCAD Parcels
- ▬ Service Area



1" equals 2,000 feet  
0 1,000 2,000 3,000

A horizontal graphic scale bar with alternating black and white segments, corresponding to the 0, 1,000, 2,000, and 3,000 foot increments.



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## EXHIBIT 7

### FLOW DIAGRAMS

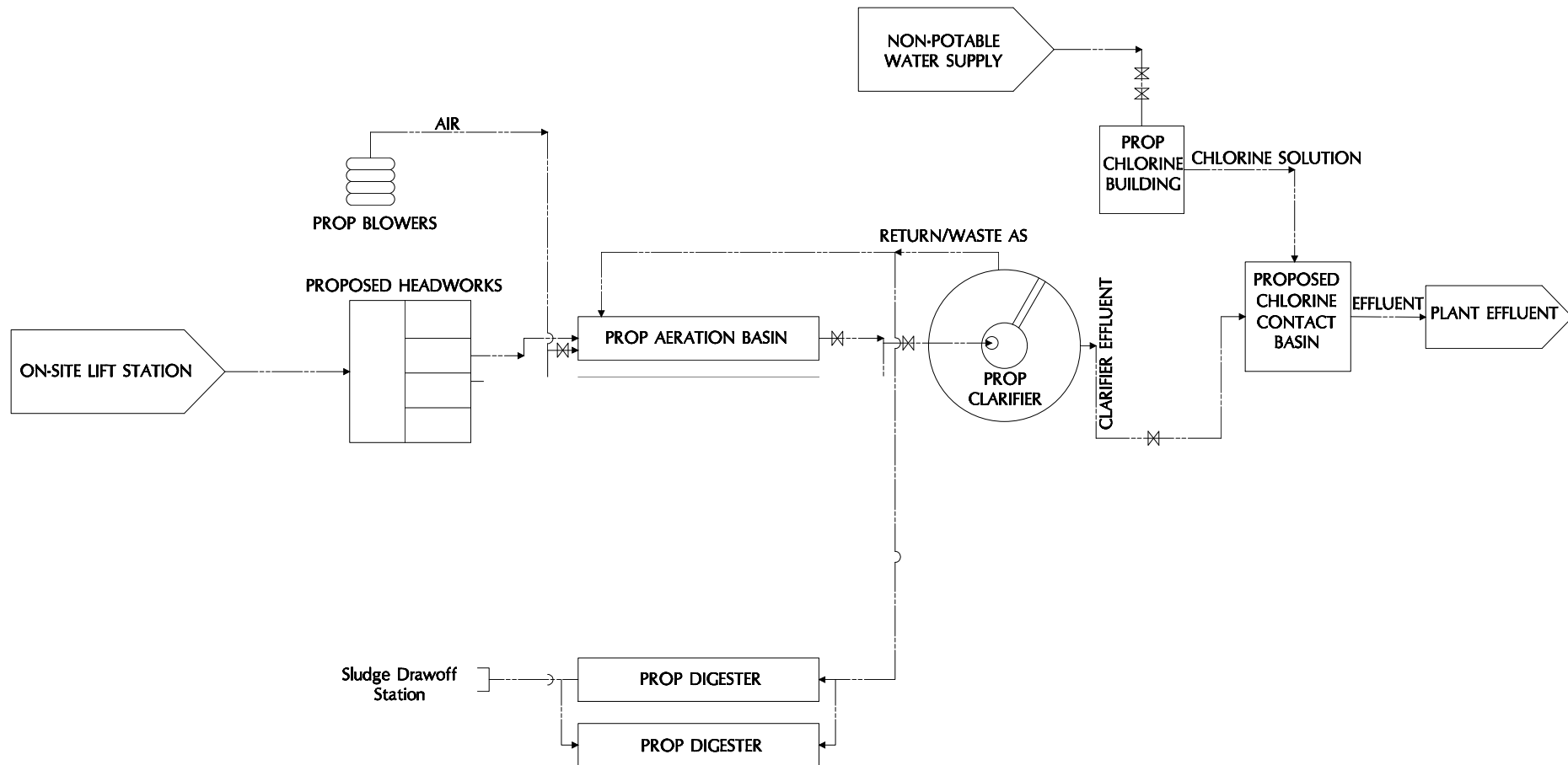


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**PROCESS FLOW DIAGRAM**

EXHIBIT 7A  
INTERIM I - 0.165 MGD

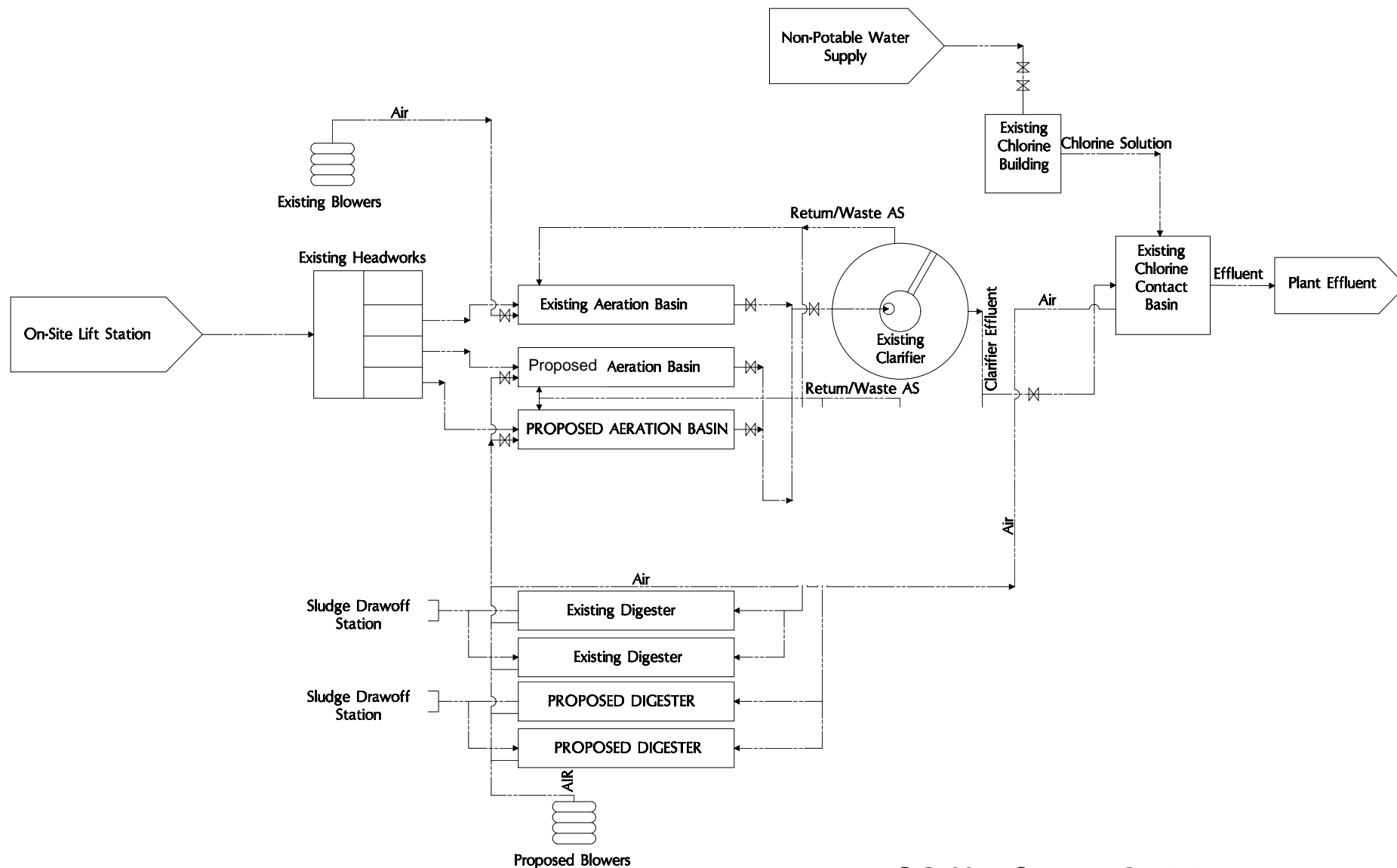
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**PROCESS FLOW DIAGRAM**

EXHIBIT 7B  
INTERIM II - 0.330 MGD

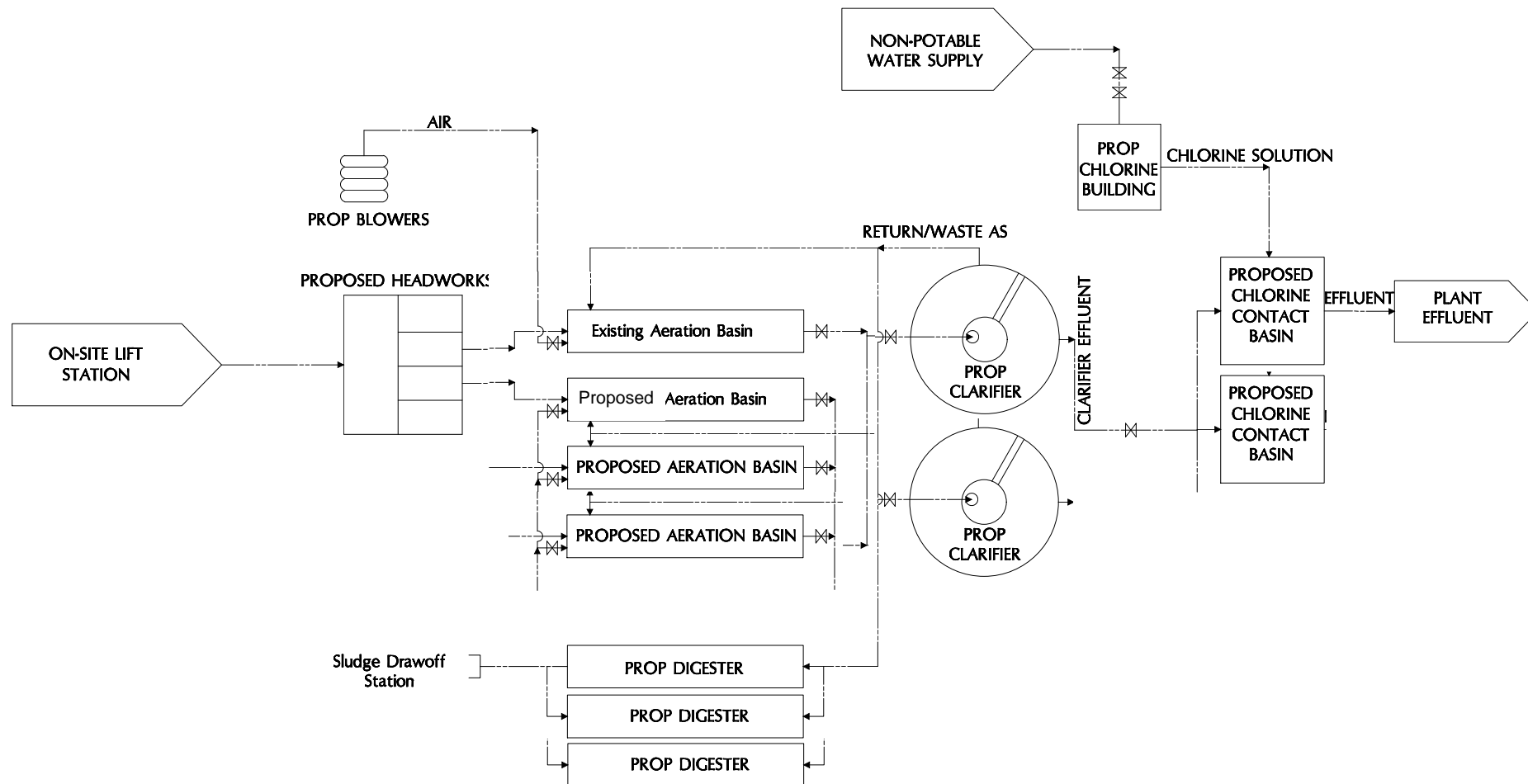
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**PROCESS FLOW DIAGRAM**

EXHIBIT 7C  
INTERIM III - 0.495 MGD

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## EXHIBIT 8

### TREATMENT PROCESS DESCRIPTION



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## **Treatment Process Description and Design Features**

The proposed Phase I is designed to treat a flow rate 0.165 MGD. The proposed Phase I facility will be a package plant operating as a suspended growth activated sludge process in the single-stage nitrification mode and will be comprised of one (1) onsite grinder pump station, one (1) common headworks with manual bar screen, two (1) aeration basins, one (1) clarifier, one (1) chlorine contact basin, and one (2) aerobic digester. Raw sewage will be pumped from the grinder pump station to the headworks. Then the influent flows to the aeration basin where it will be mixed with return activated sludge to create mixed liquor. The aeration basin will operate in the single –stage nitrification mode to consume organics and break down ammonia. From the aeration basin, the mixed liquor flows to the secondary clarifier for clarification. After clarification, the treated effluent flows to the chlorine contact basin for disinfection and the waste activated sludge is pumped to the digester for further treatment before being hauled off. From the chlorine contact basin, the effluent flows over a weir for flow measurement then on to the outfall.

The proposed Phase II is designed to treat a flow rate 0.330 MGD and will expand the existing package plant. The facility will continue to operate as a suspended growth activated sludge process in the single-stage nitrification mode and will be comprised of one (1) onsite lift station, one (1) common headworks with manual bar screens and flow splitting weirs, three (3) aeration basins, two (1) clarifiers, one (1) chlorine contact basin, and four (4) aerobic digesters. Raw sewage will be pumped from the lift station to the existing headworks where flow is split into two (2) separate trains. Then the influent flows to the aeration basins where it is mixed with return activated sludge to create mixed liquor. The aeration basins operate in the single –stage nitrification mode to consume organics and break down ammonia. From the aeration basins, the mixed liquor flows to the secondary clarifiers for clarification. After clarification, the treated effluent flows to the chlorine contact basin for disinfection and the waste activated sludge is pumped to the digester for further treatment before being hauled off. From the chlorine contact basin, the effluent flows over a weir for flow measurement then on to the outfall.

The final phase of the facility is the proposed operational phase of 0.495 MGD. The proposed facilities for this phase will replace the existing fabricated steel package plants with a new proposed permanent concrete plant that is designed and constructed to treat 0.495 MGD and will operate as a suspended growth activated sludge process in single-stage nitrification mode. This phase will include the existing onsite lift station, one (1) headworks with mechanical bar screen and flow splitting weirs, two (4) aeration basins, two (2) clarifiers, two (2) chlorine contact basins, and two (3) aerobic digesters. In this phase, raw sewage will be pumped from the existing onsite lift station to the proposed headworks where flow will be split into two (2) separate trains. Then the influent flows to the aeration basins where it is mixed with return activated sludge to create mixed liquor. The aeration basins operate in the single –stage nitrification mode to consume organics and break down ammonia. From the aeration basins, the mixed liquor flows to the secondary clarifiers for clarification. After clarification, the treated effluent flows to the chlorine contact basin for disinfection and the waste activated sludge is pumped to the digester for further treatment before being hauled off. From the chlorine contact basin, the effluent flows over a weir for flow measurement then on to the outfall.

- An Autodialer will be installed to detect power outages and equipment failure. The Autodialer will incorporate high level sensors on the wastewater treatment plant units. Once a problem is detected, the Autodialer will call preprogrammed numbers to notify the operations company. Once the notification is answered, the operations company will dispatch an operator to the facility.
- The facility will include an onsite generator for emergency power outages. The generator will provide sufficient power for the grinder/lift station, blowers, and chemical feed system. An automatic transfer switch will be included to transfer the electrical loads to the generator during an outage.
- The plant features stand-by blowers. The collection system will be new and minimum infiltration is anticipated. The plant is to be maintained and operated by personnel licensed by the State of Texas.
- The plant is designed to be maintained without bypassing. Replacement or repair of the interior coating system is the only maintenance item that would necessitate bypassing and the epoxy system should last 20-30 years.
- An intruder resistant fence will be placed around the facility.

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## EXHIBIT 9

### TREATMENT UNITS



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## DIMENSIONS OF TREATMENT UNITS

### **A. WWTP PLANT: 0.165 MGD WWTP Complete Mix Activated Sludge**

<u>Type of Unit</u>	<u># of Units</u>	<u>Size (depth, width, length &amp; volume)</u>
Aeration Basin	1	10.5' water depth x 12.0' width x 95.0' length each. Total Volume = 11,970 CF BOD <sub>5</sub> capacity = 342.0 lbs./day @ 35 lbs/day/1000 CF.
Clarifier	1	42' diameter has 1,385 sq. feet, sidewater depth of 10', Volume of 13,854 CF
Chlorine Contact	1	Depth = 9', width = 15', Length = 15.0', Volume = 2,025 CF
Digester	2	10.5' water depth x 12.0' width x 95.0' length each. Total Volume = 23,940 cf

### **B. WWTP PLANT: 0.330 MGD WWTP Complete Mix Activated Sludge**

<u>Type of Unit</u>	<u># of Units</u>	<u>Size (depth, width, length &amp; volume)</u>
Aeration Basin	2	10.5' water depth x 12.0' width x 95.0' length each. Total Volume = 23,940 CF BOD <sub>5</sub> capacity = 684 lbs./day @ 35 lbs/day/1000 CF.
Clarifier	1	42' diameter has 1,385 sq. feet, sidewater depth of 10', Total Volume of 13,854 CF
Chlorine Contact	2	Depth = 9', width = 15, Length = 15.0', Volume = 4,050 CF
Digester	3	10.5' water depth x 12.0' width x 95.0' length each. Total Volume = 35,910 cf



**C. WWTP PLANT: 0.495 MGD WWTP Complete Mix Activated Sludge**

<u>Type of Unit</u>	<u># of Units</u>	<u>Size (depth, width, length &amp; volume)</u>
Aeration Basin	4	10.5' water depth x 12.0' width x 95.0' length each. Volume = 47,880 CF total BOD <sub>5</sub> capacity = 1,368 lbs./day @ 35 lbs/day/1000 CF.
Clarifier	2	42' diameter has 1,385 sq. feet, sidewater depth of 12.0', Volume of 33,250 CF total
Chlorine Contact	2	Depth = 9.0', width = 15.0', Length = 15.0', Volume = 4,050 CF
Digester	3	10.5' water depth x 12.0' width x 95.0' length each. Volume = 35,910 CF total

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## EXHIBIT 10

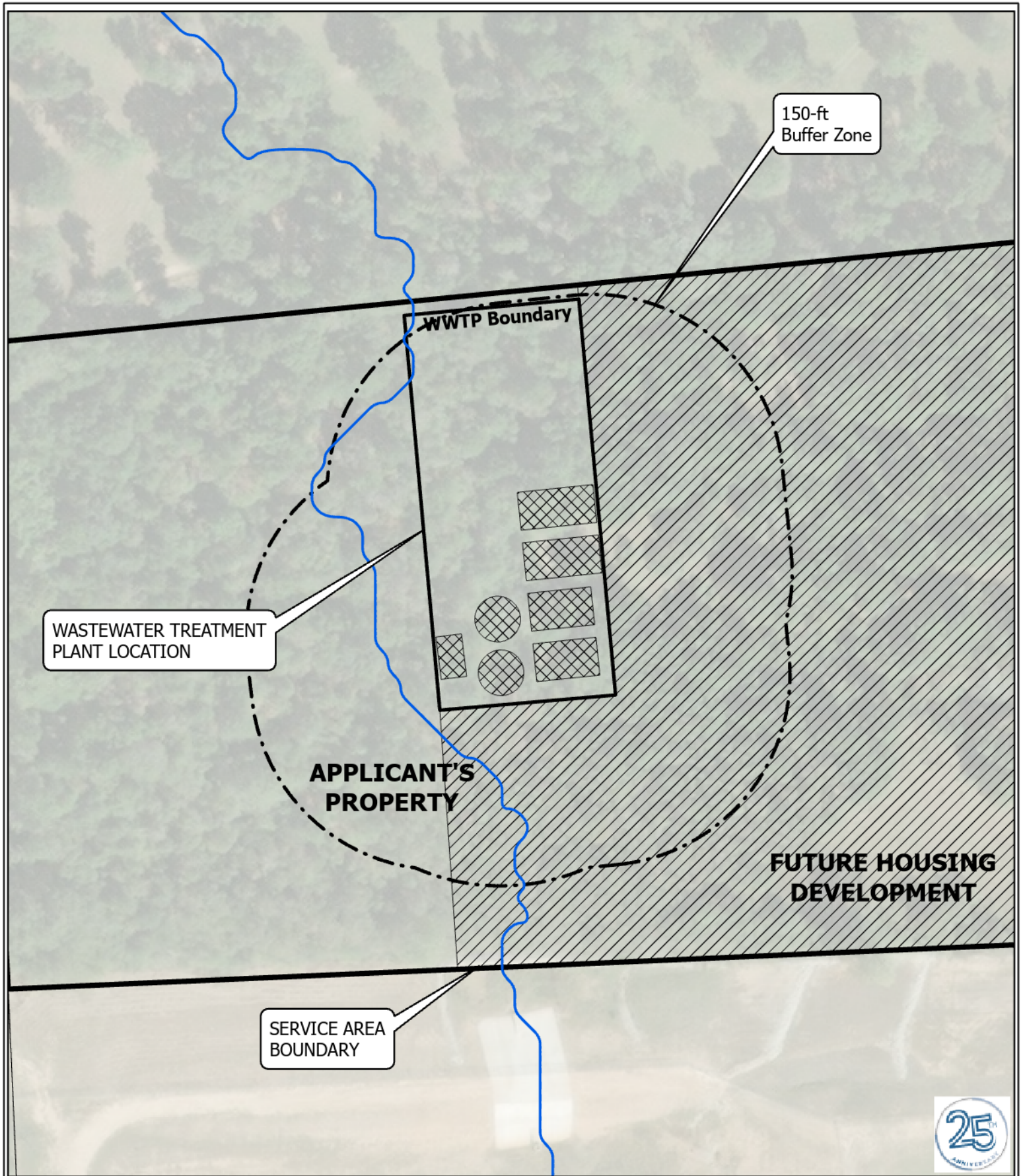
### SITE PLAN



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KEENAN NORTH TRACT

# **SITE PLAN MAP (PHASE III)**

- Stream
- MCAD Parcels
- 150-ft Facility Buffer
- WWTP Site
- Service Area



1 INCH EQUALS 100 FEET

0 50 100 150



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## EXHIBIT 11

### SERVICE AREA

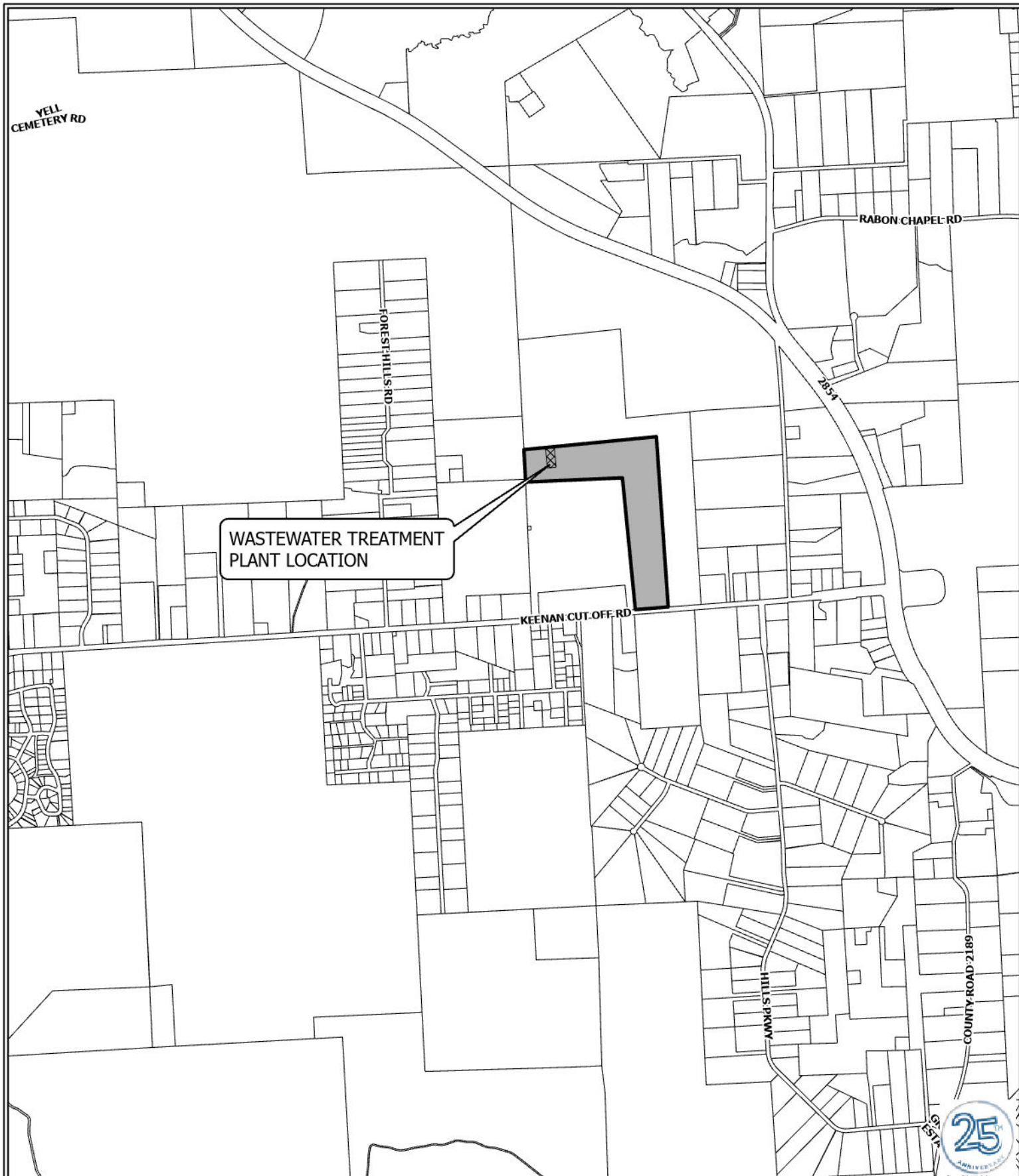


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KEENAN NORTH TRACT

## SERVICE AREA MAP

-  MCAD Parcels
-  Service Area
-  WWTP Site



1 inch equals 2,000 feet

0 1,000 2,000 3,000



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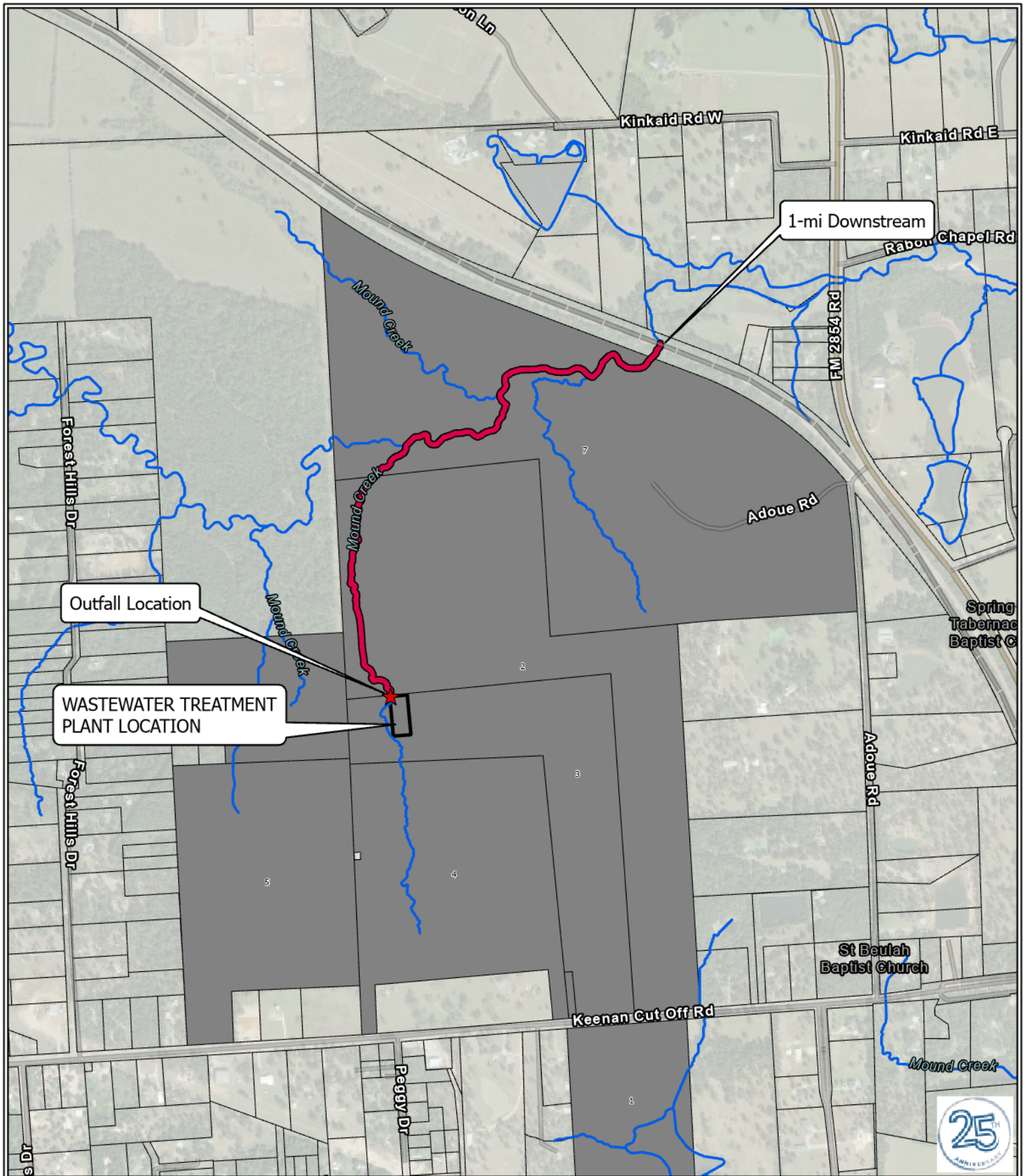
## EXHIBIT 12

### LANDOWNER MAP & LIST



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KEENAN NORTH TRACT

## AFFECTED LAND OWNERS MAP

- Affected Land Owners
- MCAD Parcels
- WWTP Site
- ★ Outfall Location
- Stream
- 1-mi Downstream



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1 inch equals 1,000 feet

0 500 1,000 1,500



# Affected Landowners List

Tract	Owner Name	Street	City	State	Zip		Property Address	MCAD #
1	KEENAN SOUTH DEVELOPMENT LTD	28408 SWEETGUM RD	MAGNOLIA	TX	77354-7111			56669
2	LABELLA INTERESTS LP	333 SIMONTON ST	CONROE	TX	77301-2667		19012 KEENAN CUT OFF	300461
3	KEENAN NORTH DEVELOPEMENT LTD	28408 SWEETGUM RD UNIT B	MAGNOLIA	TX	77354-3189		19202 KEENAN CUT OFF	243974
4	MONTGOMERY ISD	PO BOX 1475	MONTGOMERY	TX	77356-1475		19190 KEENAN CUT OFF	419419
5	KCOP I LP	9805 KATY FWY	HOUSTON	TX	77024-1271		KEENAN CUT OFF	34716
6	WILLIAMS, JEFFICAL	19943 KEENAN CUT OFF RD	MONTGOMERY	TX	77316-2621		19943 KEENAN CUT OFF	34709
7	ADOUE, NORMAN D	7 SENDERO WOODS	BOERNE	TX	78015-8367		7190 ADOUE	34695



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## EXHIBIT 13

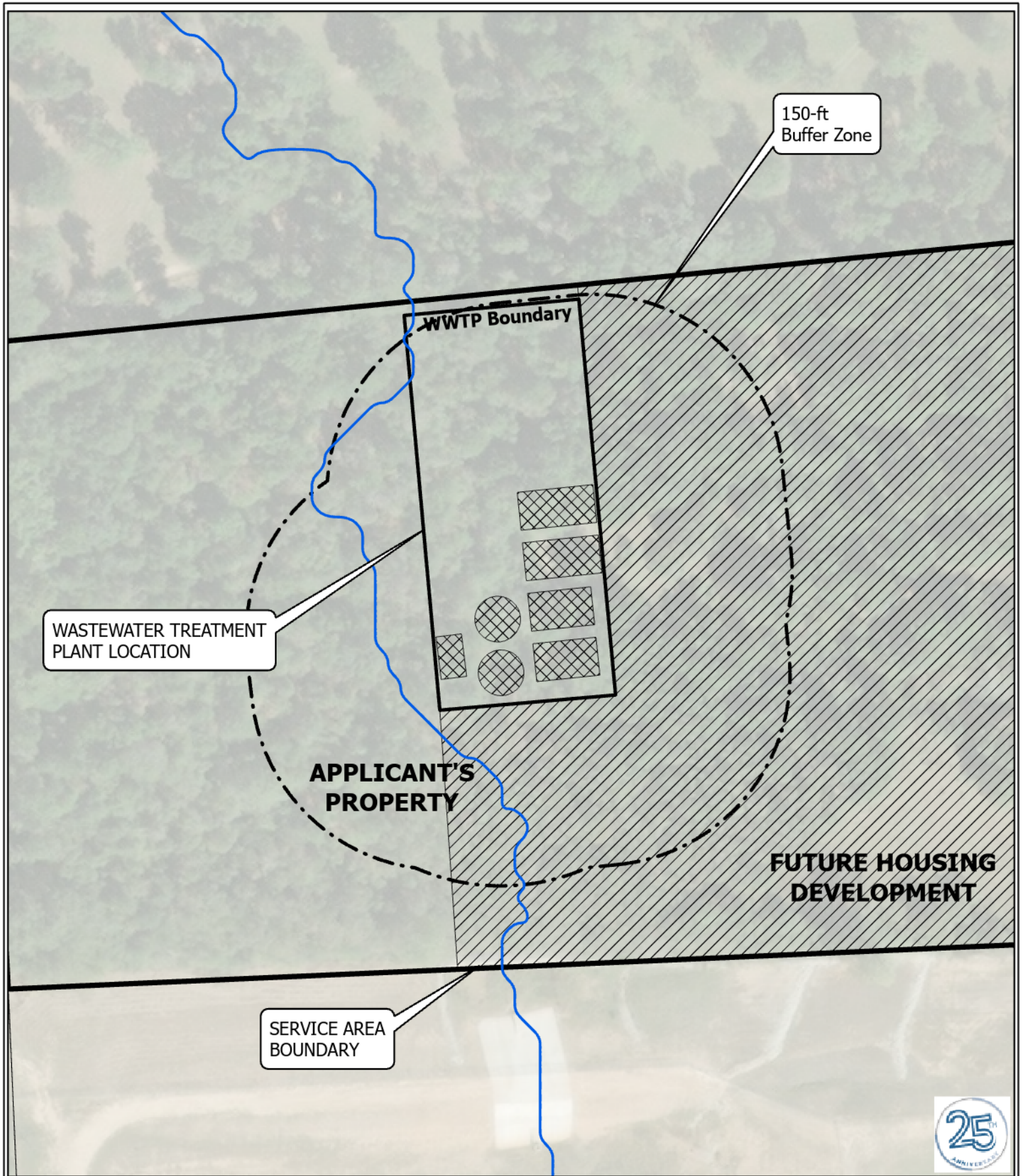
### BUFFER ZONE MAP



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KEENAN NORTH TRACT

# **SITE PLAN MAP (PHASE III)**

- Stream
- MCAD Parcels
- 150-ft Facility Buffer
- WWTP Site
- Service Area



1 INCH EQUALS 100 FEET

0 50 100 150



Domestic Wastewater Permit Application  
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## EXHIBIT 14

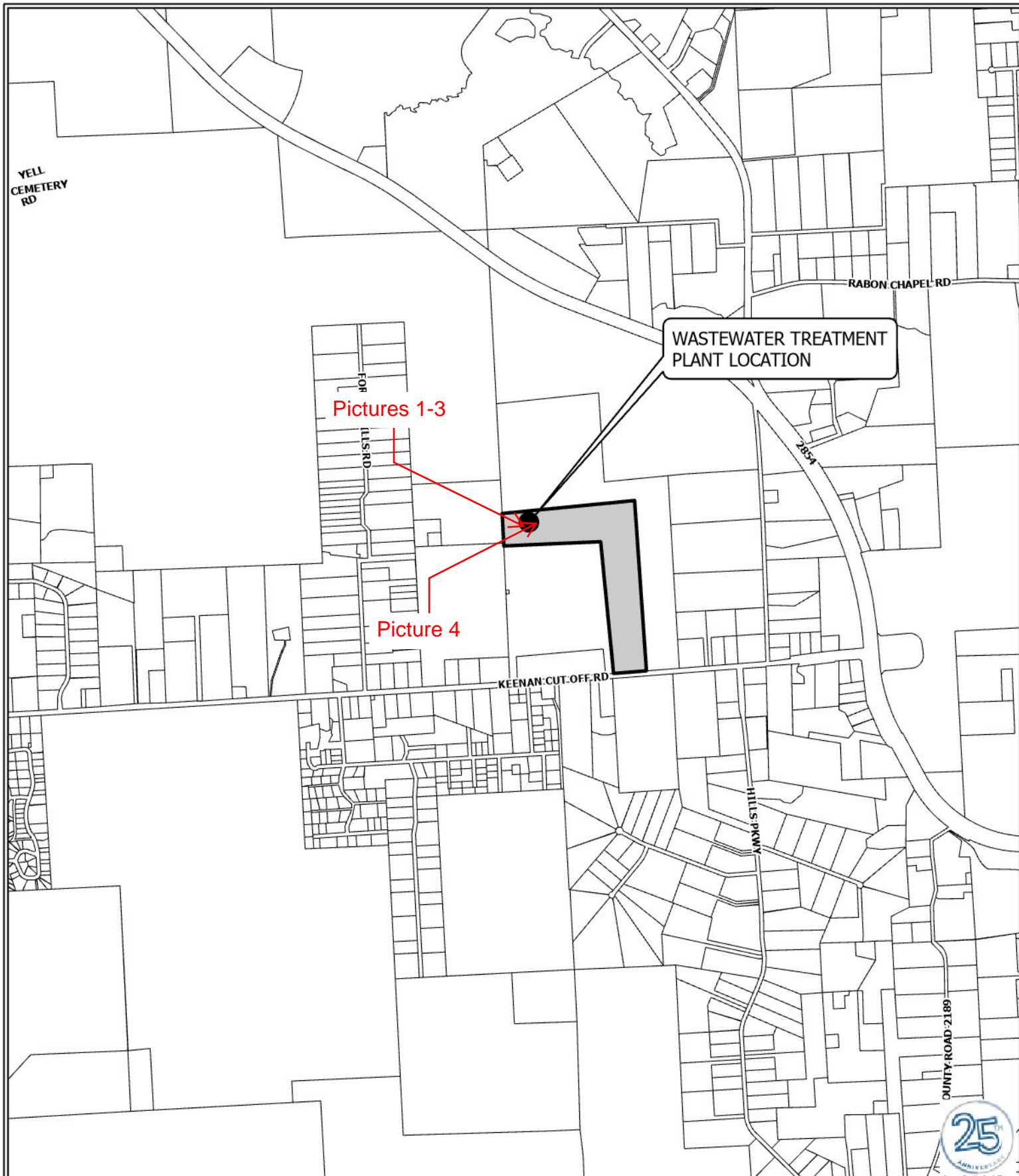
ORIGINAL PHOTOGRAPHS & MAP



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KEENAN NORTH TRACT

WWTP  
PHOTOGRAPHS  
REFERENCE MAP

- WWTP Location
- MCAD Parcels
- Service Area



1" equals 2,000 feet  
0 1,000 2,000 3,000





Proposed Discharge Point





Proposed Discharge Point -  
Looking North



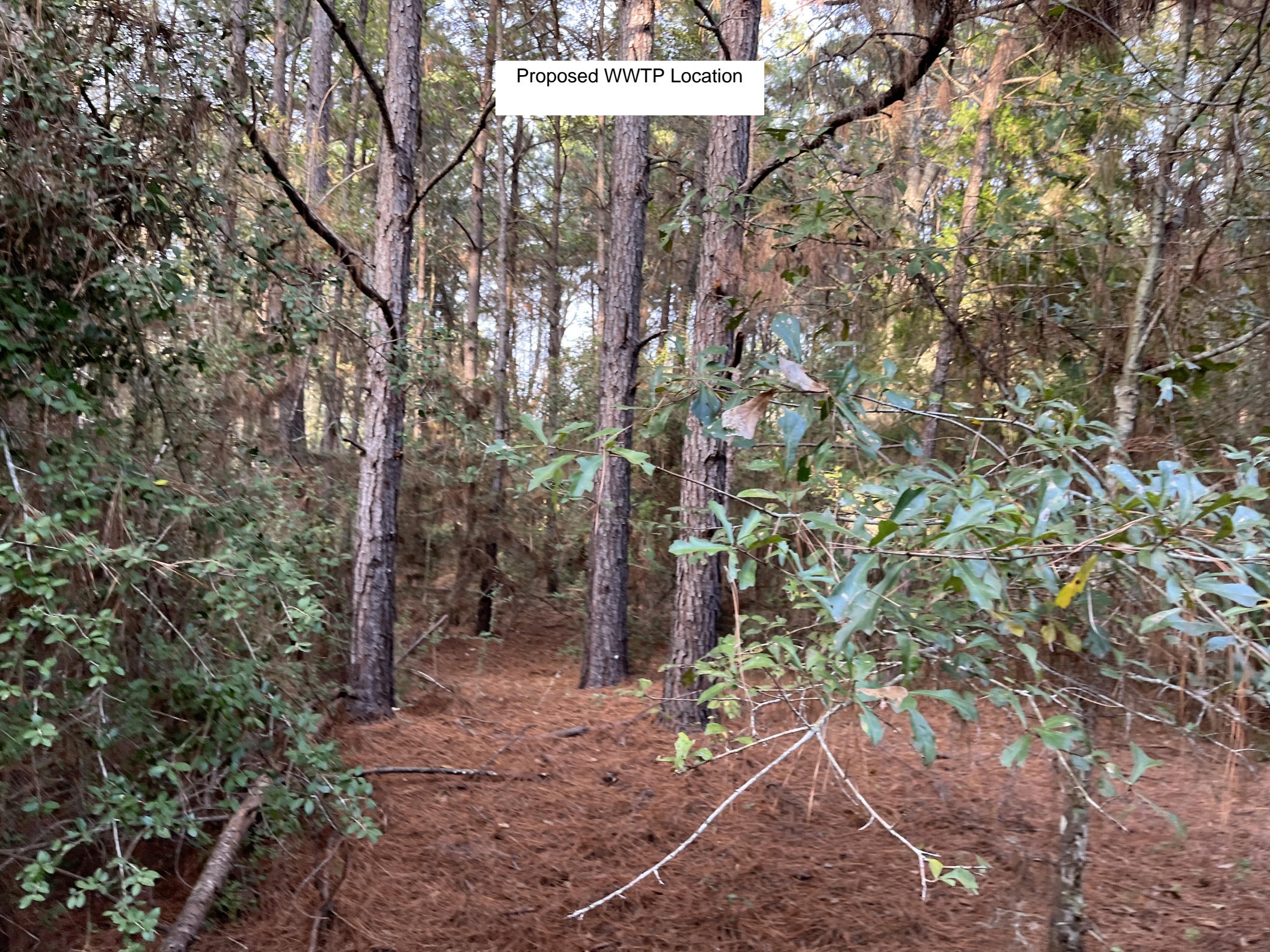


Proposed Discharge Point -  
Looking South





Proposed WWTP Location





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## EXHIBIT 15

### SLUDGE DISPOSAL



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A&S Project No. 540008.02

## EXHIBIT 16

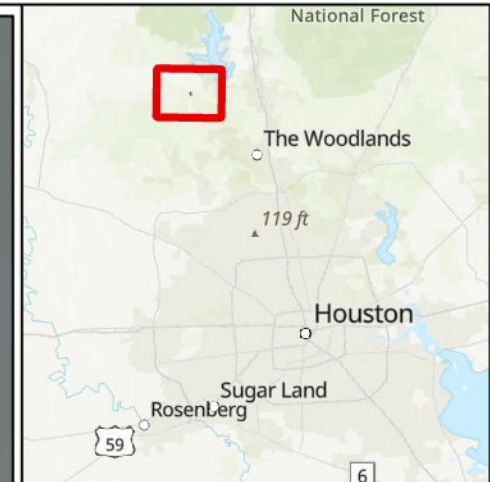
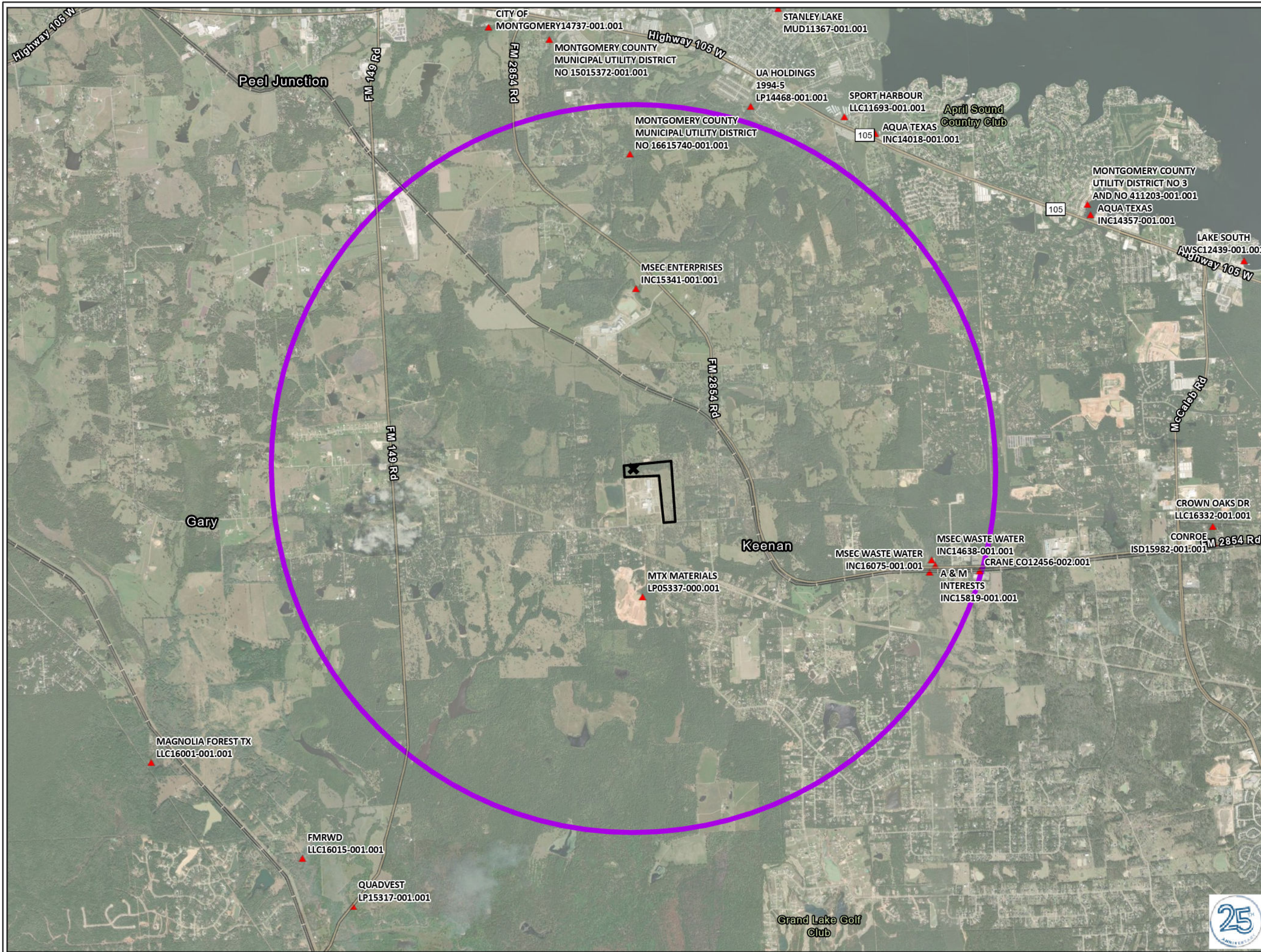
### REGIONALIZATION MAP AND LETTERS



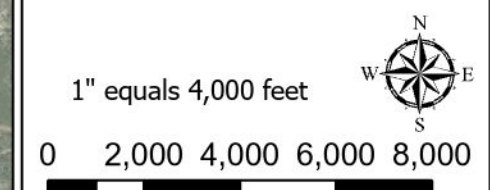
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**10377 Stella Link Road, Houston, TX 77025**  
**Ph: 713-942-2700 Fax: 713-942-2799**  
**Texas Engineering Registration No. F-000802**





- ▲ TCEQ WWTP Permittee
- ✕ Proposed WWTP
- WWTP 3-Mile Buffer
- Service Area



KEENAN NORTH TRACT

**PERMITTED  
WASTEWATER  
TREATMENT PLANTS  
3-MILE RADIUS**

 A&S Engineers, Inc.





November 19, 2024

Crane Co.  
9860 JOHNSON RD  
MONTGOMERY, TX 77316 -9494

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – Crane WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES \_\_\_\_NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams".

Eric Williams, P.E.  
Project Manager





November 19, 2024

Preserve HW6, LLC  
3200 SOUTHWEST FWY STE 1870  
HOUSTON, TX 77027 -7502

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – Haven at Highway 6 WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES \_\_\_\_NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams", is positioned above the printed name.

Eric Williams, P.E.  
Project Manager



November 19, 2024

MSEC WASTE WATER INC  
PO BOX 970  
NAVASOTA, TX 77868 -0970

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – Lone Star Landing WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES \_\_\_\_NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams".

Eric Williams, P.E.  
Project Manager



November 19, 2024

Montgomery County MUD  
406 W. Grand Pkwy S, Ste 260  
Katy, Texas 77494

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – Montgomery County MUD 166 WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES \_\_\_\_NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams".

Eric Williams, P.E.  
Project Manager



November 19, 2024

MSEC Waste Water, Inc.  
PO BOX 970  
Navasota, TX 77868 -0970

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – MSEC WWTP 2  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES \_\_\_\_NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams", is positioned above the printed name.

Eric Williams, P.E.  
Project Manager





November 19, 2024

MSEC WASTE WATER INC  
PO BOX 970  
NAVASOTA, TX 77868 -0970

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – MSEC WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? ☐ YES ☐ NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams".

Eric Williams, P.E.  
Project Manager



November 19, 2024

MTX Materials, LP  
7720 WESTVIEW DR  
HOUSTON, TX 77055 -5029

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – MTX 1 Plant  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? ☐ YES ☐ NO

If "YES", what is the maximum flow that can be accepted \_\_\_\_\_MGD.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

A handwritten signature in black ink, appearing to read "Eric Williams".

Eric Williams, P.E.  
Project Manager



November 19, 2024

MTX Materials, LP  
7720 WESTVIEW DR  
HOUSTON, TX 77055 -5029

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – MTX 1 Plant  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES XNO

If "YES", what is the maximum flow that can be accepted NA MGD.

By: [Signature] Date: 11/25/2024

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

[Signature]  
Eric Williams, P.E.  
Project Manager

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

**CRANE CO.**  
9860 JOHNSON RD.  
MONTGOMERY, TX 77316-9494



9590 9402 8452 3156 4949 17

2. Article Number (Transfer from service label)

7014 1200 0001 1922 6336

PS Form 3811, July 2020 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent  
☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
 If YES, enter delivery address below: ☐ No

3. Service Type

☐ Adult Signature  
☐ Adult Signature Restricted Delivery  
☒ Certified Mail®  
☐ Certified Mail Restricted Delivery  
☐ Collect on Delivery  
☐ Collect on Delivery Restricted Delivery

☐ Priority Mail Express®  
☐ Registered Mail™  
☐ Registered Mail Restricted Delivery  
☐ Signature Confirmation™  
☐ Signature Confirmation Restricted Delivery

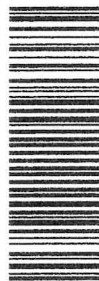
☐ Mail  
☐ Mail Restricted Delivery

J0

Domestic Return Receipt

PLACE STICKER AT TOP OF ENVELOPE TO THE FRONT  
 OF THE RETURN ADDRESS. FOLD AT DOTTED LINE.

CERTIFIED MAIL™



7014 1200 0001 1922 6336  
 7014 1200 0001 1922 6336

U.S. Postal Service™  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com).

Postage	\$	Postmark Here
Certified Fee		
Return Receipt Fee (Endorsement Required)		
Restricted Delivery Fee (Endorsement Required)		
Total Postage		
Sent To <b>CRANE CO.</b>		
9860 JOHNSON RD.		
MONTGOMERY, TX 77316-9494		
Street, Apt. No., or P.O. Box No. City, State, ZIP+		

PS Form 3800, August 2000

See Reverse for Instructions

USPS TRACKING#



9590 9402 8452 3156 4949 17

United States  
Postal Service

\* Sender: Please print your name, address, and ZIP+4® in this box\*

**A&S Engineers, Inc.**  
 10377 Stella Link Road  
 Houston, TX 77025

First-Class Mail  
 Postage & Fees Paid  
 USPS  
 Permit No. G-10



## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

**PRESERVE HW6, LLC**  
 3200 SOUTHWEST FWY STE 1870  
 HOUSTON, TX 77027-7502



9590 9402 8452 3156 4949 86

## 2. Article Number (Transfer from service label)

7014 1200 0001 1922 6374

PS Form 3811, July 2020 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X

☐ Agent  
☐ Addressee

## B. Received by (Printed Name)

## C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
 If YES, enter delivery address below: ☐ No

## 3. Service Type

- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                         | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery     | <input type="checkbox"/> Registered Mail™                           |
| <input checked="" type="checkbox"/> Certified Mail®              | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery      | <input type="checkbox"/> Signature Confirmation™                    |
| <input type="checkbox"/> Collect on Delivery                     | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery |   |
| <input type="checkbox"/> Insured Mail                            |   |
| <input type="checkbox"/> Mail Restricted Delivery (500)          |   |

Domestic Return Receipt

**U.S. Postal Service™**  
**CERTIFIED MAIL™ RECEIPT**  
*(Domestic Mail Only; No Insurance Coverage Provided)*

For delivery information visit our website at [www.usps.com](http://www.usps.com)

Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Post	

Postmark Here

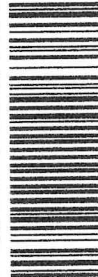
Sent To: **PRESERVE HW6, LLC**  
 Street, Apt. or PO Box: **3200 SOUTHWEST FWY STE 1870**  
 City, State: **HOUSTON, TX 77027-7502**

PS Form 3800, August 2006

See Reverse for Instructions

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
 OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

**CERTIFIED MAIL™**



7014 1200 0001 1922 6374

USPS TRACKING #



9590 9402 8452 3156 4949 86

**United States**  
**Postal Service**

\* Sender: Please print your name, address, and ZIP+4® in this box\*

**A&S Engineers, Inc.**  
 10377 Stella Link Road  
 Houston, TX 77025

First-Class Mail  
 Postage & Fees Paid  
 USPS  
 Permit No. G-10

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>	
<p>1. Article Addressed to:</p> <p>MSEC WASTE WATER INC. PO BOX 970 NAVASOTA, TX 77868-0970</p>		<p>B. Received by (Printed Name) C. Date of Delivery</p>	
<p>2. Article Number (Transfer from service label)</p> <p>7014 1200 0001 1922 6381</p>		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If YES, enter delivery address below:</p>	
<p>3. Service Type</p> <p><input type="checkbox"/> Adult Signature <input type="checkbox"/> Priority Mail Express®</p> <p><input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail™</p> <p><input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Registered Mail Restricted Delivery</p> <p><input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Signature Confirmation™</p> <p><input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery</p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Restricted Delivery</p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery (over \$500)</p>			

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

U.S. Postal Service™ CERTIFIED MAIL™ RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)	
For delivery information visit our website at <a href="http://www.usps.com">www.usps.com</a>	
Postage \$	Postmark Here
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage	
<p>Sent To MSEC WASTE WATER INC. PO BOX 970 NAVASOTA, TX 77868-0970</p> <p>PS Form 3839, August 2019 See Reverse for Instructions</p>	

USPS TRACKING#	
9590 9402 8452 3156 4949 24	
<p>United States Postal Service</p> <p>First-Class Mail® Postage &amp; Fees Paid USPS Permit No. G-10</p>	

<p>A&amp;S Engineers, Inc. 10377 Stella Link Road Houston, TX 77029</p>	<p>* Sender: Please print your name, address, and ZIP+4® in this box*</p>
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SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p> <p>1. Article Addressed to:</p> <p><b>MONTGOMERY COUNTY MUD</b>  <b>406 W. GRAND PKWY S, STE 260</b>  <b>KATY, TX 77494</b></p> <p>9590 9402 8452 3156 4949 62</p> <p>2. Article Number (Transfer from service label)  <b>7014 1200 0001 1922 6398</b></p>		<p>A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No          If YES, enter delivery address below:</p> <p>3. Service Type <input type="checkbox"/> Priority Mail Express®  <input type="checkbox"/> Adult Signature <input type="checkbox"/> Registered Mail™  <input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail Restricted Delivery  <input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Signature Confirmation™  <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery  <input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery  <input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery  <input type="checkbox"/> I Mail <input type="checkbox"/> I Mail Restricted Delivery (500)</p>	

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

U.S. Postal Service™ CERTIFIED MAIL™ RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)	
For delivery information visit our website at <a href="http://www.usps.com">www.usps.com</a>	
Postage \$	Postmark Here
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage	
Sent To <b>MONTGOMERY COUNTY MUD</b> <b>406 W. GRAND PKWAY S, STE 260</b> <b>KATY, TX 77494</b> Street, Apt. No. or PO Box No. City, State, Zi	
PS Form 3800, August 2005 See Reverse for Instructions	

USPS TRACKING#	
9590 9402 8452 3156 4949 62	First-Class Mail Postage & Fees Paid USPS Permit No. G-10
United States Postal Service * Sender: Please print your name, address, and ZIP+4® in this box* <b>A&amp;S Engineers, Inc.</b> <b>10377 Stella Link Road</b> <b>Houston, TX 77025</b>	

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>	
<p>1. Article Addressed to:</p> <p><b>MSEC WASTE WATER, INC.</b> PO BOX 970 NAVASOTA, TX 77868-0970</p>		<p>B. Received by (Printed Name) C. Date of Delivery</p>	
<p>2. Article Number (Transfer from service label)</p> <p>9590 9402 8452 3156 4949 55</p> <p>7014 1200 0001 1922 6404</p>		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If YES, enter delivery address below:</p>	
<p>3. Service Type</p> <p><input type="checkbox"/> Adult Signature <input type="checkbox"/> Priority Mail Express®</p> <p><input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail™</p> <p><input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Registered Mail Restricted Delivery</p> <p><input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Signature Confirmation™</p> <p><input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery</p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery</p> <p><input type="checkbox"/> Mail Restricted Delivery (100)</p>			

PS Form 3811, July 2009 PSN 7530-02-000-9053

Domestic Return Receipt

U.S. Postal Service <sup>TM</sup>	
<p><b>CERTIFIED MAIL<sup>TM</sup> RECEIPT</b></p> <p>(Domestic Mail Only; No Insurance Coverage Provided)</p>	
<p>For delivery information visit our website at <a href="http://www.usps.com">www.usps.com</a></p>	
<p>Postage \$</p> <p>Certified Fee</p> <p>Return Receipt Fee (Endorsement Required)</p> <p>Restricted Delivery Fee (Endorsement Required)</p> <p>Total Postage</p>	<p>Postmark Here</p>
<p>Sent To <b>MSEC WASTE WATER INC.</b> <b>PO BOX 970</b> <b>NAVASOTA, TX 77868-0970</b></p> <p>Signature, Apt. No. or PO Box No. _____ City, State, Zip _____</p>	

PS Form 3820, August 2006

See Reverse for Instructions

<p>USPS TRACKING#</p> <p>9590 9402 8452 3156 4949 55</p>	<p>First-Class Mail</p> <p>Postage &amp; Fees Paid</p> <p>USPS</p> <p>Permit No. G-10</p>
--	---

A&S Engineers, Inc.  
10377 Stella Link Road  
Houston, TX 77025

United States Postal Service

\* Sender: Please print your name, address, and ZIP+4® in this box\*



SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<p>■ Complete items 1, 2, and 3.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p>		<p>A. Signature <span style="float: right;"><input type="checkbox"/> Agent <input type="checkbox"/> Addressee</span></p> <p><b>X</b></p>	
<p>1. Article Addressed to:</p> <p><b>MSEC WASTE WATER, INC.</b> PO BOX 970 NAVASOTA, TX 77868-0970</p>		<p>B. Received by (Printed Name) <span style="float: right;">C. Date of Delivery</span></p>	
<p>2. Article Number (Transfer from service label)</p> <p>7014 1200 0001 1922 6411</p>		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>	
<p>3. Service Type</p> <p><input type="checkbox"/> Adult Signature <span style="float: right;"><input type="checkbox"/> Priority Mail Express®</span></p> <p><input type="checkbox"/> Adult Signature Restricted Delivery <span style="float: right;"><input type="checkbox"/> Registered Mail™</span></p> <p><input checked="" type="checkbox"/> Certified Mail® <span style="float: right;"><input type="checkbox"/> Registered Mail Restricted Delivery</span></p> <p><input type="checkbox"/> Certified Mail Restricted Delivery <span style="float: right;"><input type="checkbox"/> Signature Confirmation™</span></p> <p><input type="checkbox"/> Collect on Delivery <span style="float: right;"><input type="checkbox"/> Signature Confirmation Restricted Delivery</span></p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery <span style="float: right;"><input type="checkbox"/> Restricted Delivery</span></p> <p><input type="checkbox"/> Mail Restricted Delivery <span style="float: right;"><input type="checkbox"/> (S)</span></p>			

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

U.S. Postal Service™ CERTIFIED MAIL™ RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)	
For delivery information visit our website at <a href="http://www.usps.com">www.usps.com</a>	
<p>Postage \$</p> <p>Certified Fee</p> <p>Return Receipt Fee (Endorsement Required)</p> <p>Restricted Delivery Fee (Endorsement Required)</p> <p>Total Pos</p>	<p>Postmark Here</p>
<p>Sent To <b>MSEC WASTE WATER INC.</b> <b>PO BOX 970</b> <b>NAVASOTA, TX 77868-0970</b></p>	

PS Form 3800, August 2009 See Reverse for Instructions

USPS TRACKING#	
<p>9590 9402 8452 3156 4949 48</p>	
<p>First-Class Mail Postage &amp; Fees Paid USPS Permit No. G-10</p>	
<p>United States Postal Service</p>	
<p>• Sender: Please print your name, address, and ZIP+4® in this box*</p> <p><b>A&amp;S Engineers, Inc.</b> 10377 Stella Link Road Houston, TX 77025</p>	

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

MTX MATERIALS, LP  
7720 WESTVIEW DR  
HOUSTON, TX 77055-5029



9590 9402 8452 3156 4949 31

## 2. Article Number (Transfer from service label)

7014 1200 0001 1922 6428

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X

☐ Agent  
☐ Addressee

## B. Received by (Printed Name)

## C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

## 3. Service Type

☐ Adult Signature  
☐ Adult Signature Restricted Delivery  
☒ Certified Mail®  
☐ Certified Mail Restricted Delivery  
☐ Collect on Delivery  
☐ Collect on Delivery Restricted Delivery  
☐ I Mail  
☐ I Mail Restricted Delivery (500)

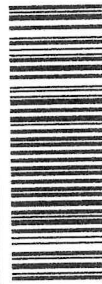
☐ Priority Mail Express®  
☐ Registered Mail™  
☐ Registered Mail Restricted Delivery  
☐ Signature Confirmation™  
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053

Domestic Return Receipt

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT  
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

**CERTIFIED MAIL™**



9590 9402 8452 3156 4949 31  
7014 1200 0001 1922 6428

U.S. Postal Service™  
**CERTIFIED MAIL™ RECEIPT**  
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

Postage \$

Certified Fee

Return Receipt Fee  
(Endorsement Required)Restricted Delivery Fee  
(Endorsement Required)

Total Postage

Postmark  
Here

Sent To

MTX MATERIALS, LP  
7720 WESTVIEW DR  
HOUSTON, TX 77055-5029

Street, Apt. No.  
or PO Box No.  
City, State, ZIP

PS Form 3811, August 2009

See Reverse for Instructions

United States  
Postal Service

9590 9402 8452 3156 4949 31



USPS TRACKING® #



First-Class Mail  
Postage & Fees Paid  
USPS  
Permit No. G-10

\* Sender: Please print your name, address, and ZIP+4® in this box \*

A&S Engineers, Inc.  
10377 Stella Link Road  
Houston, TX 77025

COMPLETE THIS SECTION ON DELIVERY

A. Signature

☒ Agent

☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?

☐ Yes

☐ No

If YES, enter delivery address below:

3. Service Type

☐ Priority Mail Express®

☐ Registered Mail™

☐ Adult Signature

☐ Registered Mail Restricted Delivery

☒ Certified Mail®

☐ Certified Mail Restricted Delivery

☐ Signature Confirmation™

☐ Signature Confirmation Restricted Delivery

☐ Collect on Delivery

☐ Collect on Delivery Restricted Delivery

Mail

Mail Restricted Delivery

300

1. Article Addressed to:

Complete items 1, 2, and 3.

Print your name and address on the reverse so that we can return the card to you.

Attach this card to the back of the mailpiece, or on the front if space permits.

MSEC WASTE WATER, INC.

PO BOX 970

NAVASOTA, TX 77868-0970

9590 9402 8452 3156 4949 55

2. Article Number (Transfer from service label)

7014 1200 0001 1922 6404

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature

☐ Agent

☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?

☐ Yes

☐ No

If YES, enter delivery address below:

3. Service Type

☐ Priority Mail Express®

☐ Registered Mail™

☐ Adult Signature

☐ Registered Mail Restricted Delivery

☒ Certified Mail®

☐ Certified Mail Restricted Delivery

☐ Signature Confirmation™

☐ Signature Confirmation Restricted Delivery

☐ Collect on Delivery

☐ Collect on Delivery Restricted Delivery

Mail

Mail Restricted Delivery

300

1. Article Addressed to:

Complete items 1, 2, and 3.

Print your name and address on the reverse so that we can return the card to you.

Attach this card to the back of the mailpiece, or on the front if space permits.

MSEC WASTE WATER INC.

PO BOX 970

NAVASOTA, TX 77868-0970

9590 9402 8452 3156 4949 24

2. Article Number (Transfer from service label)

7014 1200 0001 1922 6381

PS Form 3811, July 2020 PSN 7530-02-000-9053

SENDER: COMPLETE THIS SECTION

Complete items 1, 2, and 3.

Print your name and address on the reverse so that we can return the card to you.

Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MSEC WASTE WATER, INC.

PO BOX 970

NAVASOTA, TX 77868-0970

9590 9402 8452 3156 4949 48

2. Article Number (Transfer from service label)

7014 1200 0001 1922 6411

COMPLETE THIS SECTION ON DELIVERY

A. Signature

☒ Agent

☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1?

☐ Yes

☐ No

If YES, enter delivery address below:

3. Service Type

☐ Priority Mail Express®

☐ Registered Mail™

☐ Adult Signature

☐ Registered Mail Restricted Delivery

☒ Certified Mail®

☐ Certified Mail Restricted Delivery

☐ Signature Confirmation™

☐ Signature Confirmation Restricted Delivery

☐ Collect on Delivery

☐ Collect on Delivery Restricted Delivery

Mail

Mail Restricted Delivery

10

## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

PRESERVE HWS, LLC  
3200 SOUTHWEST FWY STE 1870  
HOUSTON, TX 77027-7502



9590 9402 8452 3156 4949 86

## 2. Article Number (Transfer from service label)

7014 1200 0001 1922 6374

PS Form 3811, July 2020 PSN 7530-02-000-9053

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X *Jaidy Plume*

- ☐ Agent  
☐ Address

## B. Received by (Printed Name)

## C. Date of Delivery

- D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

## 3. Service Type

- |  |   |
|--|---|
| <input type="checkbox"/> Adult Signature                           | <input type="checkbox"/> Priority Mail Express®                     |
| <input type="checkbox"/> Adult Signature Restricted Delivery       | <input type="checkbox"/> Registered Mail™                           |
| <input checked="" type="checkbox"/> Certified Mail®                | <input type="checkbox"/> Registered Mail Restricted Delivery        |
| <input type="checkbox"/> Certified Mail Restricted Delivery        | <input type="checkbox"/> Signature Confirmation                     |
| <input type="checkbox"/> Collect on Delivery                       | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery   |   |
| <input type="checkbox"/> Insured Mail                              |   |
| <input type="checkbox"/> Registered Mail Restricted Delivery (500) |   |

Domestic Return Receipt



## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

MTX MATERIALS, LP  
7720 WESTVIEW DR  
HOUSTON, TX 77055-5029



9590 9402 8452 3156 4949 31

## 2. Article Number (Transfer from service label)

7014 1200 0001 1922 6428

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X

Sandra Gutierrez

☐ Agent☐ Address

## B. Received by (Printed Name)

Sandra Gutierrez

## C. Date of Delivery

- D. Is delivery address different from item 1? ☐ Yes  
If YES, enter delivery address below: ☐ No

## 3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery

- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation®
- ☐ Signature Confirmation Restricted Delivery

1 Mail

1 Mail Restricted Delivery  
500)



# A&S Engineers, Inc.

November 19, 2024

Preserve HW6, LLC  
3200 SOUTHWEST FWY STE 1870  
HOUSTON, TX 77027 -7502

Attn: District Engineer

Re: Keenan North Development, Ltd.  
TCEQ Wastewater Discharge Permit Application  
Regionalization Inquiry – Haven at Highway 6 WWTP  
A&S Project 540008.02

To Whom It May Concern:

Keenan North Development, Ltd. has prepared a wastewater discharge permit application for a new domestic wastewater treatment plant in Montgomery County with a ultimate final capacity of 0.495 MGD. One of the items to be addressed by the Texas Commission on Environmental Quality in a wastewater discharge permit application is regionalization. As part of this process, we will investigate the feasibility of obtaining capacity for the 0.495 MGD wastewater flow from a neighboring plant.

Is it possible for your utility to accept flows from the proposed facility? \_\_\_\_YES ☒ NO


If "YES", what is the maximum flow that can be accepted \_\_\_\_MGD.

By:  Date: 11/26/2024

Please date, sign and return your reply by email to [elw@as-engineers.com](mailto:elw@as-engineers.com)

If you have any questions, please feel free to contact me at 713-942-2700.

Regards,

  
Eric Williams, P.E.  
Project Manager

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 17

### DESIGN CALCULATIONS



A&S Engineers, Inc.

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10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT  
WWTP PROCESS SIZING CALCULATIONS  
PHASE I : 0.165 MGD  
10/31/24

I. DESIGN PARAMETERS

A. Influent Composition

1.	Influent BOD	=	300	mg/l
2.	Influent TSS	=	300	mg/l
3.	Influent NH3-N	=	75	mg/l

B. Hydraulic Considerations

1.	Design Flow	=	0.165	MGD
2.	No. 1 Unit Change		115	gpm
3.	Hydraulic Peaking Factor for Design	=	4.00	Q
4.	Peak Hydraulic Flow	=	0.660	MGD
5.	No. 4 Unit Change		458	gpm

C. Influent Composition Mass Loading (based on Raw & Post Primary Split

1.	Mass BOD Loading	=	413	lb/day
2.	Mass TSS Loading	=	413	lb/day
3.	Mass NH3-N Loading	=	103	lb/day

D. Effluent Composition

1.	Effluent BOD	=	0	mg/l
2.	Effluent TSS	=	0	mg/l
3.	Effluent NH3-N	=	0	mg/l
4.	Effluent TKN	=	0	mg/l
5.	Phosphorous	=	0	mg/l



DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

II. ACTIVATED SLUDGE

A. Aeration Influent Composition

1.	Total Design Flow	=	0.17	MGD
2.	Total Influent BOD	=	413	lb/day
3.	Total Influent TSS	=	413	lb/day
4.	Total Influent NH3-N	=	103	lb/day

B. TCEQ Organic Loading Criteria

1.	Organic Loading (TCEQ 217.154)	=	35	lb BOD/1000 cu ft
2.	Organic Loading to Aeration	=	413	lb/day
3.	Aeration Basin Volume Required	=	11,795	cu. ft

C. Minimum Aeration Volume

1.	Min Aeration Volume Based on controlling criteria	=	11,795	cu. ft
2.	Equivalent Loading based on Min Volume	=	35.0	lb BOD/1000 cu ft

Solids Balance Method

1.	(delta X/delta t)	=	Excess Sludge Produced per Day	
		=	Xi1 + Xi2 + aSo + a*N - bXv - Xe	
		=	82.566 lbs/day + 132.1056 lbs/day + (0.6 lb VSS produced / lb BOD applied)(412.83 lbs/day) + (0.12 lb/VSS produced / lb NH3-N applied)(103.2075 lbs/day) - (0.06 lb VSS destroyed / lb MLSS-day)(2195.2 lbs) + 0 lbs/day	
		=	343	lb/day

Where:

	% of Fixed Influent TSS to Aeration Basin	=	20%	of TSS
	(Total Influent TSS to Aeration Basin)	=	413	lbs/day
Xi1	= Fixed Influent TSS to Aeration Basin	=	83	lbs/day
	% of Non-biodegradable Influent VSS	=	40%	of VSS
	(Volatile Influent TSS to Aeration Basin)	=	330	lbs/day
Xi2	= Non-biodegradable Influent VSS	=	132	lbs/day
a	= Synthesis Coefficient	=	0.60	lb VSS produced / lb BOD applied
So	= Influent BOD5	=	413	lbs/day
a*	= Nitrifier Synthesis Coefficient	=	0.12	lb/ VSS produced / lb NH3-N app
N	= Influent NH3-N	=	103	lbs/day
b	= Endogenous Coefficient	=	0.06	lb VSS destroyed / lb MLSS-day
Xv	= MLVSS in Aeration Basin	=	2,195	lbs
Xe	= Effluent TSS (based on effluent 5 mg/L)	=	0.0	lbs/day

Find MLSS in Aeration Basin for WWTP

Ratio of Volatile to Total Suspended Solids	=	0.8	MLVSS / MLSS
Design MLSS Concentration	=	3,000.0	mg/L
Estimated MLVSS Concentration	=	2,400.0	mg/L
Design Solid Retention Time (SRT)	=	8.0	days
MLSS in Aeration Basin	=	2,744	lbs
MLVSS in Aeraton Basin	=	2,195	lbs
Verify MLSS Assumption (SRT x delta X/delta T)	=	2,744	lbs

Fixed Influent TSS to Aeration Basin	=	83	lbs/day
Nonbiodegradable Influent VSS	=	132	lbs/day
Growth Due to Synthesis	=	247.698	lbs/day
Growth Due to Nitrifiers	=	12	lbs/day
Endogenous Destruction	=	132	lbs/day

DESIGN CALCULATIONS

KEENAN NORTH			
WASTEWATER TREATMENT PLANT			
Effluent TSS	=	0	lbs/day
Excess Sludge Produced per Day	=	343	lbs/day
Design F:M Ratio	=	0.15	lb BOD / lb SS
Maximum BOD5 Loading Rate	=	28.16	lbs BOD5 / 1000 cu. Ft.
Required Aeration Basin Volume	=	14,662.1	cu. Ft.
Hydraulic Retention Time	=	16.0	hours
2. Required Aeration Basin Volume per Solids Balance Method			
$2744\text{ lbs} / (8.34 \times 3000\text{ mg/L}) * 10^6 / 7.48$	=	14,662.1	cu. Ft.
D. Number of Aeration Basin Trains			
1. Number of Basins	=	1.0	# trains
2. Design per Flow Basin	=	0.165	MGD
E. Aeration Basin Sizing Calculations			
1. Minimum Total Volume Required	=	14,662	cu. ft
2. Assumed Side Water Depth of Aeration Basin	=	10.50	ft.
3. Minimum Total Surface Area Required	=	1,396	sq. ft
4. Minimum Total Surface Area Required per Train	=	1,396	sq. ft
F. Proposed Aeration Basin Configuration			
1. Proposed Basin Dimensions			
a. Width	=	12.0	ft.
b. Length	=	95.0	ft.
c. Proposed Length to Width Ratio	=	7.92	
2. Number of Aeration Basin Trains (from above)	=	1	# trains
3. Total Volume of Proposed Basins	=	11,970	cu. ft
4. Actual Aeration Basin Loading	=	34	lb BOD5 / 1000 cu. Ft.
5. Actual Hydraulic Retention Time	=	13	hours
6. Actual F:M Ratio	=	0.18	lb BOD / lb SS
7. Check of Proposed Total Basin Volume	=	OK	

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

III. SECONDARY/FINAL CLARIFICATION			
A. Number of Secondary/Final Clarifiers	=	1	
1. Total Flow to Clarifiers	=	0.17	MGD
B. Surface Area Design (TCEQ 217.154(c)(1))			
1. Maximum Surface Loading @ Peak Flow	=	1,200	gpd/sq. ft
2. Surface Area Required @ Peak Flow per Clarifier	=	550	sq. ft
C. Hydraulic Detention Time Design (TCEQ 217.154(c))			
1. Minimum Effective Detention Time @ Peak Flow	=	1.80	Hours
2. Volume Required @ Peak Flow per Clarifier	=	6,618	cu. Ft.
3. Surface Area Required @ Peak Flow (From Above) per Clarifier		550	sq. ft.
D. Effluent Weir Design (TCEQ 217.152(c)(4-5))			
1. Weir loading for plants 1.0 MGD or less	=	20,000	gpd/ft
2. Weir loading for plants over 1.0 MGD	=	30,000	gpd/ft
3. Controlling Criteria	=	20,000	gpd/ft
4. Total Length of Weir Required @ Peak Flow per Clarifier	=	33.0	ft
E. Clarifer Basin Check			
1. Number of Clarifiers	=	1	# clarifiers
2. Minimum Surface Area (From Above) per Clarifier	=	550	sq. ft.
3. Minimums Volume Time (From Above) per Clarifier	=	6,618	cu. Ft.
4. Minimum Weir Total Length (From Above) per Clarifier	=	33.0	ft
5. Clarifier Size (Circular)	=	42	ft
6. Surface Area Per Clarifier (Circular)	=	1,385	sq. ft.
7. Total Surface Area	=	1,385	sq. ft.
8. Surface Area Check	=	OK	
9. Effective Side Water Depth	=	10.00	ft.
10. Total Clarifer Volume	=	13,854	cu. Ft.
11. Total Clarifer Hydraulic Detention Time (Using Prop. Surface Area)	=	3.8	Hours
12. Hydraulic Detention Time Check	=	OK	
13. Design Weir Width - Width of Launder Trough	=	1.0	ft
14. Distance From Outer Concrete Wall	=	1.0	ft
15. Thickness of Each Launder Trough Walls	=	0.00	ft
16. Subsequent Outer Diameter of Effluent Weir	=	40.0	ft
17. Weir Length per Clarifier	=	125.7	ft
18. Weir Loading @ Peak Flow per Clarifier	=	5,252	gpd/ft
19. Weir Length (Loading Rate) per Clarifier Check	=	OK	
F. Return Activated Sludge Flow Rates			
1. Lower Limit Underflow Rate (TCEQ 217.152)	=	200	gpd/sq ft
2. Minimum Total RAS Flow Rate	=	192	gpm
3. Upper Limit Underflow Rate (TCEQ 217.152)	=	400	gpd/sq ft
4. Maximum Total RAS Flow Rate	=	385	gpm

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

IV. DISINFECTION/ CHLORINE CONTACT BASIN

A.	1.	Minimum Effective Detention Time @ Peak Flow Ch. 217.281(b)(1)	=	20	minutes
	2.	Required Volume @ Peak Flow	=	9,167	Gallons
	3.	Unit Change	=	1,225	cu. Ft.
	4.	Proposed Basin Dimensions			
		Number of Proposed Basins	=	1	
		Length of Each Basin	=	15	
		Width of Each Basin	=	15	
		Side Water Depth of Each Basin	=	9	
	4.	Total Volume of Proposed Basin	=	2,025	cu. Ft
	5.	Check of Proposed Total Basin Volume	=	OK	mins
	6.	Hydraulic Detention Time at Design Flow	=	132.2	mins
	7.	Hydraulic Detention Time at Peak Flow	=	33.0	mins
	8.	CHECK	=	OK	
B. Chlorine Contact Basin Air					
	1.	Air Required (CCB Volume * 20 SCFM/1000 CF)	=	40.5	scfm

V. SOLIDS HANDLING

A.	Digester Sizing				
	1.	Percent Biodegradeable Volatile Solids in WAS, %	=	70%	
	2.	Percent Destruction, %	=	30%	
	3.	Digested Solids Production, lbs/day	=	326	lbs/day
	4.	Solids from Clarifier	=	413	lbs/day
	5.	Average Solids	=	369	lbs/day
	6.	Assumed Dig. Conc., mg/l	=	15,000	mg/L
	7.	Req'd. Retention Time, days (TCEQ 217.249 (t)(4)(b))	=	40	days
	8.	Req'd. Volume, cf	=	15,794	cu. ft
	9.	Volume to Loading Ratio. cf/lb BOD/day	=	38.3	cf/lb BOD/day
B.	Digester Design				
	1.	Proposed Digester Dimensions			
		Width of Each Digester	=	12	
		Length of Each Digester	=	95	
		Side Water Depth of Each Digester	=	10.5	
	2.	Number of Digesters	=	2	
	3.	Total Digester Volume	=	23,940	cu. ft
	3.	Actual Digester Storage Capacity	=	61	days
	3.	Digester Volume check	=	OK	
C. Digester Air					
	1.	Air Required (Digester Volume x 20scfm/1000cf)	=	479	scfm



DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

VI. AIRFLOW CALCULATIONS

<b>A. Aeration Air Requirements TCEQ 217.155 (b) (2) (c)</b>		
1. Total Influent BOD <sub>5</sub>	=	413 lb/day
2. Total Influent NH3-N	=	103 lb/day
3. BOD5 Removal	=	413 lb/day
4. Nh3-N Removal	=	103 lb/day
5. Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	1.2 lbs O <sub>2</sub> /lb BOD <sub>5</sub>
6. Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	4.3 lbs O <sub>2</sub> /lb NH3-N
7. Oxygen Required per Pound of BOD	=	2.3
8. Depth of Submergence of Diffusers	=	9.00 ft
9. Diffuser Type (Coarse or Fine)	=	Fine
10. Clean Water Transfer Efficiency of Fine Bubble Diffuser	=	1.50% per ft of submergence
11. Clean Water Transfer Efficiency @ Stated Depth	=	18.0%
12. Wastewater Transfer Efficiency Coefficient for Fine Bubble Diffusers	=	0.45
13. Wastewater Transfer Efficiency	=	8.1%
14. Manufacturer Proposed SOTE	=	30.0%
15. Maximum Clean Water Transfer Efficiency TCEQ 217.155 (b) (2) (A) (iii)	=	26.0%
16. Check if Over Regulated Maximum	=	OK
17. Density of Air @ 20 Deg C	=	0.075
18. Ratio of Oxygen to Air	=	0.230
19. Diffuser Submergence Correction Factor	=	1.690
20. Minimum Air Required for Mixing	=	136.800 scfm
21. Air Required for Treatment	=	789
22. Manufacturer Proposed Air Required for Treatment	=	280 scfm
<b>B. Airlifts ****(Flowrates Must Be Verified Depending on Size, Submergence, etc.)****</b>		
1. Return Scum		
Scum Pump (1)	=	20 scfm
RAS (1)	=	20 scfm
WAS (1)	=	20 scfm
Transfer (1)	=	20 scfm
2. Total Airlifts Air Requirement	=	80 scfm
<b>C. Total Air Required</b>		
	=	1,388 scfm
<b>D. 150% of Design Flow TCEQ 217.155 (b)(5)(c)(iii) for Air Piping</b>		
	=	2,082 scfm
<b>E. Proposed Number of Blowers</b>		
	=	2 # of blowers
<b>F Invdividual Blower Capacity @ Design Pressure/Largest Out of Service</b>		
	=	1,388 scfm
<b>G. Proposed Maximum Air Loss in Air Piping (Calculated Separately)</b>		
	=	1 psig
<b>H Design Pressure of Blower</b>		
	=	5.4 psig

VII. CHLORINE DOSAGE CALCULATIONS

<b>A. Chlorine Dosage Rate TCEQ 217.272 (b)</b>		
1. Calculated Chlorine Dosage Rate @ Design Flow Eq. K.1 TCEQ 217.272 (a)	=	8.0 mg/l
2. Calculated Chlorine Dosage Rate @ Peak Flow Eq. K.1 TCEQ 217.272 (a)	=	11 lbs/day
3. System Set-up (Vacuum or Manifold)	=	44 lbs/day
4. Minimum Ambient TemperatureTCEQ 217.275 (a) (1)	=	Vacuum
5. Max Withdrawal Rate for One 150-lb Cylinder TCEQ 217.274 (a) (1)	=	55 Degrees F
6. Max Withdrawal Rate for One Ton Cylinder TCEQ 217.274 (a) (1)	=	55 lbs/day
7. Required Number of 150-lb Cylinders Eq. K.3 TCEQ 217.273 (b)	=	440 lbs/day
8. Required Number of One Ton Cylinders Eq. K.3 TCEQ 217.273 (b)	=	1 # of cylinders
9. Method of Chlorine Storage ("ton" or "150's")	=	1 # of cylinders
10. Peak Withdrawal Rate	=	150-lb
		55 lbs/day

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT  
WWTP PROCESS SIZING CALCULATIONS  
PHASE II: 0.330 MGD  
10/31/24

I. DESIGN PARAMETERS

A. Influent Composition

1.	Influent BOD	=	300	mg/l
2.	Influent TSS	=	300	mg/l
3.	Influent NH3-N	=	75	mg/l

B. Hydraulic Considerations

1.	Design Flow after Expansion	=	0.330	MGD
2.	No. 1 Unit Change	=	229	gpm
3.	Hydraulic Peaking Factor for Design	=	4.00	Q
4.	Peak Hydraulic Flow	=	1.32	MGD
5.	No. 4 Unit Change	=	917	gpm

C. Influent Composition Mass Loading (based on Raw & Post Primary Split

1.	Mass BOD Loading	=	826	lb/day
2.	Mass TSS Loading	=	826	lb/day
3.	Mass NH3-N Loading	=	206	lb/day

D. Effluent Composition

1.	Effluent BOD	=	0	mg/l
2.	Effluent TSS	=	0	mg/l
3.	Effluent NH3-N	=	0	mg/l
4.	Effluent TKN	=	0	mg/l
5.	Phosphorous	=	0	mg/l

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

II. ACTIVATED SLUDGE

A. Aeration Influent Composition

1.	Total Design Flow	=	0.33	MGD
2.	Total Influent BOD	=	826	lb/day
3.	Total Influent TSS	=	826	lb/day
4.	Total Influent NH3-N	=	206	lb/day

B. TCEQ Organic Loading Criteria

1.	Organic Loading (TCEQ 217.154)	=	35	lb BOD/1000 cu ft
2.	Organic Loading to Aeration	=	826	lb/day
3.	Aeration Basin Volume Required	=	23,590	cu. ft

C. Minimum Aeration Volume

1.	Min Aeration Volume Based on controlling criteria	=	23,590	cu. ft
2.	Equivalent Loading based on Min Volume	=	35.0	lb BOD/1000 cu ft

Solids Balance Method

1.	(delta X/delta t)	=	Excess Sludge Produced per Day	
		=	Xi1 + Xi2 + aSo + a*N - bXv - Xe	
		=	165.132 lbs/day + 264.2112 lbs/day + (0.6 lb VSS produced / lb BOD applied)(825.66 lbs/day) + (0.12 lb/VSS produced / lb NH3-N applied)(206.415 lbs/day) - (0.06 lb VSS destroyed / lb MLSS-day)(4390.4 lbs) + 0 lbs/day	
		=	686	lb/day

Where:

	% of Fixed Influent TSS to Aeration Basin	=	20%	of TSS
	(Total Influent TSS to Aeration Basin)	=	826	lbs/day
Xi1	= Fixed Influent TSS to Aeration Basin	=	165	lbs/day
	% of Non-biodegradable Influent VSS	=	40%	of VSS
	(Volatile Influent TSS to Aeration Basin)	=	661	lbs/day
Xi2	= Non-biodegradable Influent VSS	=	264	lbs/day
a	= Synthesis Coefficient	=	0.60	lb VSS produced / lb BOD applied
So	= Influent BOD5	=	826	lbs/day
a*	= Nitrifier Synthesis Coefficient	=	0.12	lb/ VSS produced / lb NH3-N app
N	= Influent NH3-N	=	206	lbs/day
b	= Endogenous Coefficient	=	0.06	lb VSS destroyed / lb MLSS-day
Xv	= MLVSS in Aeration Basin	=	4,390	lbs
Xe	= Effluent TSS (based on effluent 5 mg/L)	=	0.0	lbs/day

Find MLSS in Aeration Basin for WWTP

Ratio of Volatile to Total Suspended Solids	=	0.8	MLVSS / MLSS
Design MLSS Concentration	=	3,000.0	mg/L
Estimated MLVSS Concentration	=	2,400.0	mg/L
Design Solid Retention Time (SRT)	=	8.0	days
MLSS in Aeration Basin	=	5,488	lbs
MLVSS in Aeraton Basin	=	4,390	lbs
Verify MLSS Assumption (SRT x delta X/delta T)	=	5,489	lbs

Fixed Influent TSS to Aeration Basin	=	165	lbs/day
Nonbiodegradable Influent VSS	=	264	lbs/day
Growth Due to Synthesis	=	495.396	lbs/day
Growth Due to Nitrifiers	=	25	lbs/day
Endogenous Destruction	=	263	lbs/day

DESIGN CALCULATIONS

KEENAN NORTH			
WASTEWATER TREATMENT PLANT			
Effluent TSS	=	0	lbs/day
Excess Sludge Produced per Day	=	686	lbs/day
Design F:M Ratio	=	0.15	lb BOD / lb SS
Maximum BOD5 Loading Rate	=	28.16	lbs BOD5 / 1000 cu. Ft.
Required Aeration Basin Volume	=	29,324.1	cu. Ft.
Hydraulic Retention Time	=	16.0	hours
2. Required Aeration Basin Volume per Solids Balance Method			
$5488\text{ lbs} / (8.34 \times 3000\text{ mg/L}) * 10^6 / 7.48$	=	29,324.1	cu. Ft.
D. Number of Aeration Basin Trains			
1. Number of Basins	=	2.0	# trains
2. Design per Flow Basin	=	0.165	MGD
E. Aeration Basin Sizing Calculations			
1. Minimum Total Volume Required	=	29,324	cu. ft
2. Assumed Side Water Depth of Aeration Basin	=	10.50	ft.
3. Minimum Total Surface Area Required	=	2,793	sq. ft
4. Minimum Total Surface Area Required per Train	=	1,396	sq. ft
F. Proposed Aeration Basin Configuration			
1. Proposed Basin Dimensions			
a. Width	=	12.0	ft.
b. Length	=	95.0	ft.
c. Proposed Length to Width Ratio	=	7.92	
2. Number of Aeration Basin Trains (from above)	=	2	# trains
3. Total Volume of Proposed Basins	=	23,940	cu. ft
4. Actual Aeration Basin Loading	=	34	lb BOD5 / 1000 cu. Ft.
5. Actual Hydraulic Retention Time	=	13	hours
6. Actual F:M Ratio	=	0.18	lb BOD / lb SS
7. Check of Proposed Total Basin Volume	=	OK	



DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

III. SECONDARY/FINAL CLARIFICATION			
A. Number of Secondary/Final Clarifiers	=	1	
1. Total Flow to Clarifiers	=	0.33	MGD
B. Surface Area Design (TCEQ 217.154(c)(1))			
1. Maximum Surface Loading @ Peak Flow	=	1,200	gpd/sq. ft
2. Surface Area Required @ Peak Flow per Clarifier	=	1,100	sq. ft
C. Hydraulic Detention Time Design (TCEQ 217.154(c))			
1. Minimum Effective Detention Time @ Peak Flow	=	1.80	Hours
2. Volume Required @ Peak Flow per Clarifier	=	13,235	cu. Ft.
3. Surface Area Required @ Peak Flow (From Above) per Clarifier		1,100	sq. ft.
D. Effluent Weir Design (TCEQ 217.152(c)(4-5))			
1. Weir loading for plants 1.0 MGD or less	=	20,000	gpd/ft
2. Weir loading for plants over 1.0 MGD	=	30,000	gpd/ft
3. Controlling Criteria	=	20,000	gpd/ft
4. Total Length of Weir Required @ Peak Flow per Clarifier	=	66.0	ft
E. Clarifer Basin Check			
1. Number of Clarifiers	=	1	# clarifiers
2. Minimum Surface Area (From Above) per Clarifier	=	1,100	sq. ft.
3. Minimums Volume Time (From Above) per Clarifier	=	13,235	cu. Ft.
4. Minimum Weir Total Length (From Above) per Clarifier	=	66.0	ft
5. Clarifier Size (Circular)	=	42	ft
6. Surface Area Per Clarifier (Circular)	=	1,385	sq. ft.
7. Total Surface Area	=	1,385	sq. ft.
8. Surface Area Check	=	OK	
9. Effective Side Water Depth	=	10.00	ft.
10. Total Clarifer Volume	=	13,854	cu. Ft.
11. Total Clarifer Hydraulic Detention Time (Using Prop. Surface Area)	=	1.9	Hours
12. Hydraulic Detention Time Check	=	OK	
13. Design Weir Width - Width of Launder Trough	=	1.0	ft
14. Distance From Outer Concrete Wall	=	1.0	ft
15. Thickness of Each Launder Trough Walls	=	0.00	ft
16. Subsequent Outer Diameter of Effluent Weir	=	40.0	ft
17. Weir Length per Clarifier	=	125.7	ft
18. Weir Loading @ Peak Flow per Clarifier	=	10,504	gpd/ft
19. Weir Length (Loading Rate) per Clarifier Check	=	OK	
F. Return Activated Sludge Flow Rates			
1. Lower Limit Underflow Rate (TCEQ 217.152)	=	200	gpd/sq ft
2. Minimum Total RAS Flow Rate	=	192	gpm
3. Upper Limit Underflow Rate (TCEQ 217.152)	=	400	gpd/sq ft
4. Maximum Total RAS Flow Rate	=	385	gpm

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

IV. DISINFECTION/ CHLORINE CONTACT BASIN

A.	1.	Minimum Effective Detention Time @ Peak Flow Ch. 217.281(b)(1)	=	20	minutes
	2.	Required Volume @ Peak Flow	=	18,333	Gallons
	3.	Unit Change	=	2,451	cu. Ft.
	4.	Proposed Basin Dimensions			
		Number of Proposed Basins	=	2	
		Length of Each Basin	=	15	
		Width of Each Basin	=	15	
		Side Water Depth of Each Basin	=	9	
	4.	Total Volume of Proposed Basin	=	4,050	cu. Ft
	5.	Check of Proposed Total Basin Volume	=	OK	mins
	6.	Hydraulic Detention Time at Design Flow	=	132.2	mins
	7.	Hydraulic Detention Time at Peak Flow	=	33.0	mins
	8.	CHECK	=	OK	
B. Chlorine Contact Basin Air					
	1.	Air Required (CCB Volume * 20 SCFM/1000 CF)	=	81.0	scfm

V. SOLIDS HANDLING

A.	Digester Sizing				
	1.	Percent Biodegradeable Volatile Solids in WAS, %	=	70%	
	2.	Percent Destruction, %	=	30%	
	3.	Digested Solids Production, lbs/day	=	652	lbs/day
	4.	Solids from Clarifier	=	826	lbs/day
	5.	Average Solids	=	739	lbs/day
	6.	Assumed Dig. Conc., mg/l	=	15,000	mg/L
	7.	Req'd. Retention Time, days (TCEQ 217.249 (t)(4)(b))	=	40	days
	8.	Req'd. Volume, cf	=	31,588	cu. ft
	9.	Volume to Loading Ratio. cf/lb BOD/day	=	38.3	cf/lb BOD/day
B.	Digester Design				
	1.	Proposed Digester Dimensions			
		Width of Each Digester	=	12	
		Length of Each Digester	=	95	
		Side Water Depth of Each Digester	=	10.5	
	2.	Number of Digesters	=	3	
	3.	Total Digester Volume	=	35,910	cu. ft
	3.	Actual Digester Storage Capacity	=	45	days
	3.	Digester Volume check	=	OK	
C. Digester Air					
	1.	Air Required (Digester Volume x 20scfm/1000cf)	=	718	scfm

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

VI. AIRFLOW CALCULATIONS

<b>A. Aeration Air Requirements TCEQ 217.155 (b) (2) (c)</b>		
1. Total Influent BOD <sub>5</sub>	=	826 lb/day
2. Total Influent NH3-N	=	206 lb/day
3. BOD5 Removal	=	826 lb/day
4. Nh3-N Removal	=	206 lb/day
5. Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	1.2 lbs O <sub>2</sub> /lb BOD <sub>5</sub>
6. Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	4.3 lbs O <sub>2</sub> /lb NH3-N
7. Oxygen Required per Pound of BOD	=	2.3
8. Depth of Submergence of Diffusers	=	9.00 ft
9. Diffuser Type (Coarse or Fine)	=	Fine
10. Clean Water Transfer Efficiency of Fine Bubble Diffuser	=	1.50% per ft of submergence
11. Clean Water Transfer Efficiency @ Stated Depth	=	18.0%
12. Wastewater Transfer Efficiency Coefficient for Fine Bubble Diffusers	=	0.45
13. Wastewater Transfer Efficiency	=	8.1%
14. Manufacturer Proposed SOTE	=	30.0%
15. Maximum Clean Water Transfer Efficiency TCEQ 217.155 (b) (2) (A) (iii)	=	26.0%
16. Check if Over Regulated Maximum	=	OK
17. Density of Air @ 20 Deg C	=	0.075
18. Ratio of Oxygen to Air	=	0.230
19. Diffuser Submergence Correction Factor	=	1.690
20. Minimum Air Required for Mixing	=	273.600 scfm
21. Air Required for Treatment	=	1,578
22. Manufacturer Proposed Air Required for Treatment	=	560 scfm
<b>B. Airlifts ****(Flowrates Must Be Verified Depending on Size, Submergence, etc.)****</b>		
1. Return Scum		
Scum Pump (1)	=	20 scfm
RAS (1)	=	20 scfm
WAS (1)	=	20 scfm
Transfer (1)	=	20 scfm
2. Total Airlifts Air Requirement	=	80 scfm
<b>C. Total Air Required</b>		
	=	2,457 scfm
<b>D. 150% of Design Flow TCEQ 217.155 (b)(5)(c)(iii) for Air Piping</b>		
	=	3,685 scfm
<b>E. Proposed Number of Blowers</b>		
	=	3 # of blowers
<b>F Invdividual Blower Capacity @ Design Pressure/Largest Out of Service</b>		
	=	1,228 scfm
<b>G. Proposed Maximum Air Loss in Air Piping (Calculated Separately)</b>		
	=	1 psig
<b>H Design Pressure of Blower</b>		
	=	4.9 psig

VII. CHLORINE DOSAGE CALCULATIONS

<b>A. Chlorine Dosage Rate TCEQ 217.272 (b)</b>		
1. Calculated Chlorine Dosage Rate @ Design Flow Eq. K.1 TCEQ 217.272 (a)	=	8.0 mg/l
2. Calculated Chlorine Dosage Rate @ Peak Flow Eq. K.1 TCEQ 217.272 (a)	=	22 lbs/day
3. System Set-up (Vacuum or Manifold)	=	88 lbs/day
4. Minimum Ambient TemperatureTCEQ 217.275 (a) (1)	=	Vacuum
5. Max Withdrawal Rate for One 150-lb Cylinder TCEQ 217.274 (a) (1)	=	55 Degrees F
6. Max Withdrawal Rate for One Ton Cylinder TCEQ 217.274 (a) (1)	=	55 lbs/day
7. Required Number of 150-lb Cylinders Eq. K.3 TCEQ 217.273 (b)	=	440 lbs/day
8. Required Number of One Ton Cylinders Eq. K.3 TCEQ 217.273 (b)	=	2 # of cylinders
9. Method of Chlorine Storage ("ton" or "150's")	=	1 # of cylinders
10. Peak Withdrawal Rate	=	150-lb
		110 lbs/day

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT  
WWTP PROCESS SIZING CALCULATIONS  
PHASE III: 0.495 MGD  
10/31/24

I. DESIGN PARAMETERS

A. Influent Composition

1.	Influent BOD	=	300	mg/l
2.	Influent TSS	=	300	mg/l
3.	Influent NH3-N	=	75	mg/l

B. Hydraulic Considerations

1.	Design Flow after Expansion	=	0.495	MGD
2.	No. 1 Unit Change		344	gpm
3.	Hydraulic Peaking Factor for Design	=	4.00	Q
4.	Peak Hydraulic Flow	=	1.98	MGD
5.	No. 4 Unit Change		1,375	gpm

C. Influent Composition Mass Loading (based on Raw & Post Primary Split

1.	Mass BOD Loading	=	1,238	lb/day
2.	Mass TSS Loading	=	1,238	lb/day
3.	Mass NH3-N Loading	=	310	lb/day

D. Effluent Composition

1.	Effluent BOD	=	0	mg/l
2.	Effluent TSS	=	0	mg/l
3.	Effluent NH3-N	=	0	mg/l
4.	Effluent TKN	=	0	mg/l
5.	Phosphorous	=	0	mg/l



DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

II. ACTIVATED SLUDGE

A. Aeration Influent Composition

1.	Total Design Flow	=	0.50	MGD
2.	Total Influent BOD	=	1,238	lb/day
3.	Total Influent TSS	=	1,238	lb/day
4.	Total Influent NH3-N	=	310	lb/day

B. TCEQ Organic Loading Criteria

1.	Organic Loading (TCEQ 217.154)	=	35	lb BOD/1000 cu ft
2.	Organic Loading to Aeration	=	1,238	lb/day
3.	Aeration Basin Volume Required	=	35,385	cu. ft

C. Minimum Aeration Volume

1.	Min Aeration Volume Based on controlling criteria	=	35,385	cu. ft
2.	Equivalent Loading based on Min Volume	=	35.0	lb BOD/1000 cu ft

Solids Balance Method

1.	(delta X/delta t)	=	Excess Sludge Produced per Day	
		=	Xi1 + Xi2 + aSo + a*N - bXv - Xe	
		=	247.698 lbs/day + 396.3168 lbs/day + (0.6 lb VSS produced / lb BOD applied)(1238.49 lbs/day) + (0.12 lb/VSS produced / lb NH3-N applied)(309.6225 lbs/day) - (0.06 lb VSS destroyed / lb MLSS-day)(6586.4 lbs) + 0 lbs/day	
		=	1029	lb/day

Where:

	% of Fixed Influent TSS to Aeration Basin	=	20%	of TSS
	(Total Influent TSS to Aeration Basin)	=	1,238	lbs/day
Xi1	= Fixed Influent TSS to Aeration Basin	=	248	lbs/day
	% of Non-biodegradable Influent VSS	=	40%	of VSS
	(Volatile Influent TSS to Aeration Basin)	=	991	lbs/day
Xi2	= Non-biodegradable Influent VSS	=	396	lbs/day
a	= Synthesis Coefficient	=	0.60	lb VSS produced / lb BOD applied
So	= Influent BOD5	=	1,238	lbs/day
a*	= Nitrifier Synthesis Coefficient	=	0.12	lb/ VSS produced / lb NH3-N app
N	= Influent NH3-N	=	310	lbs/day
b	= Endogenous Coefficient	=	0.06	lb VSS destroyed / lb MLSS-day
Xv	= MLVSS in Aeration Basin	=	6,586	lbs
Xe	= Effluent TSS (based on effluent 5 mg/L)	=	0.0	lbs/day

Find MLSS in Aeration Basin for WWTP

Ratio of Volatile to Total Suspended Solids	=	0.8	MLVSS / MLSS
Design MLSS Concentration	=	3,000.0	mg/L
Estimated MLVSS Concentration	=	2,400.0	mg/L
Design Solid Retention Time (SRT)	=	8.0	days
MLSS in Aeration Basin	=	8,233	lbs
MLVSS in Aeraton Basin	=	6,586	lbs
Verify MLSS Assumption (SRT x delta X/delta T)	=	8,233	lbs

Fixed Influent TSS to Aeration Basin	=	248	lbs/day
Nonbiodegradable Influent VSS	=	396	lbs/day
Growth Due to Synthesis	=	743.094	lbs/day
Growth Due to Nitrifiers	=	37	lbs/day
Endogenous Destruction	=	395	lbs/day

DESIGN CALCULATIONS

KEENAN NORTH			
WASTEWATER TREATMENT PLANT			
Effluent TSS	=	0	lbs/day
Excess Sludge Produced per Day	=	1,029	lbs/day
Design F:M Ratio	=	0.15	lb BOD / lb SS
Maximum BOD5 Loading Rate	=	28.15	lbs BOD5 / 1000 cu. Ft.
Required Aeration Basin Volume	=	43,991.5	cu. Ft.
Hydraulic Retention Time	=	16.0	hours
2. Required Aeration Basin Volume per Solids Balance Method			
$8233\text{ lbs} / (8.34 \times 3000\text{ mg/L}) * 10^6 / 7.48$	=	43,991.5	cu. Ft.
D. Number of Aeration Basin Trains			
1. Number of Basins	=	4.0	# trains
2. Design per Flow Basin	=	0.124	MGD
E. Aeration Basin Sizing Calculations			
1. Minimum Total Volume Required	=	43,992	cu. ft
2. Assumed Side Water Depth of Aeration Basin	=	10.50	ft.
3. Minimum Total Surface Area Required	=	4,190	sq. ft
4. Minimum Total Surface Area Required per Train	=	1,047	sq. ft
F. Proposed Aeration Basin Configuration			
1. Proposed Basin Dimensions			
a. Width	=	12.0	ft.
b. Length	=	95.0	ft.
c. Proposed Length to Width Ratio	=	7.92	
2. Number of Aeration Basin Trains (from above)	=	4	# trains
3. Total Volume of Proposed Basins	=	47,880	cu. ft
4. Actual Aeration Basin Loading	=	26	lb BOD5 / 1000 cu. Ft.
5. Actual Hydraulic Retention Time	=	17	hours
6. Actual F:M Ratio	=	0.14	lb BOD / lb SS
7. Check of Proposed Total Basin Volume	=	OK	

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

III.	SECONDARY/FINAL CLARIFICATION			
A.	Number of Secondary/Final Clarifiers	=	2	
1.	Total Flow to Clarifiers	=	0.50	MGD
B.	Surface Area Design (TCEQ 217.154(c)(1))			
1.	Maximum Surface Loading @ Peak Flow	=	1,200	gpd/sq. ft
2.	Surface Area Required @ Peak Flow per Clarifier	=	825	sq. ft
C.	Hydraulic Detention Time Design (TCEQ 217.154(c))			
1.	Minimum Effective Detention Time @ Peak Flow	=	1.80	Hours
2.	Volume Required @ Peak Flow per Clarifier	=	9,926	cu. Ft.
3.	Surface Area Required @ Peak Flow (From Above) per Clarifier		825	sq. ft.
D.	Effluent Weir Design (TCEQ 217.152(c)(4-5))			
1.	Weir loading for plants 1.0 MGD or less	=	20,000	gpd/ft
2.	Weir loading for plants over 1.0 MGD	=	30,000	gpd/ft
3.	Controlling Criteria	=	20,000	gpd/ft
4.	Total Length of Weir Required @ Peak Flow per Clarifier	=	49.5	ft
E.	Clarifer Basin Check			
1.	Number of Clarifiers	=	2	# clarifiers
2.	Minimum Surface Area (From Above) per Clarifier	=	825	sq. ft.
3.	Minimums Volume Time (From Above) per Clarifier	=	9,926	cu. Ft.
4.	Minimum Weir Total Length (From Above) per Clarifier	=	49.5	ft
5.	Clarifier Size (Circular)	=	42	ft
6.	Surface Area Per Clarifier (Circular)	=	1,385	sq. ft.
7.	Total Surface Area	=	2,771	sq. ft.
8.	Surface Area Check	=	OK	
9.	Effective Side Water Depth	=	12.00	ft.
10.	Total Clarifer Volume	=	33,250	cu. Ft.
11.	Total Clarifer Hydraulic Detention Time (Using Prop. Surface Area)	=	3.0	Hours
12.	Hydraulic Detention Time Check	=	OK	
13.	Design Weir Width - Width of Launder Trough	=	1.0	ft
14.	Distance From Outer Concrete Wall	=	1.0	ft
15.	Thickness of Each Launder Trough Walls	=	0.00	ft
16.	Subsequent Outer Diameter of Effluent Weir	=	40.0	ft
17.	Weir Length per Clarifier	=	125.7	ft
18.	Weir Loading @ Peak Flow per Clarifier	=	7,878	gpd/ft
19.	Weir Length (Loading Rate) per Clarifier Check	=	OK	
F.	Return Activated Sludge Flow Rates			
1.	Lower Limit Underflow Rate (TCEQ 217.152)	=	200	gpd/sq ft
2.	Minimum Total RAS Flow Rate	=	385	gpm
3.	Upper Limit Underflow Rate (TCEQ 217.152)	=	400	gpd/sq ft
4.	Maximum Total RAS Flow Rate	=	770	gpm

DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

IV. DISINFECTION/ CHLORINE CONTACT BASIN

A.	1.	Minimum Effective Detention Time @ Peak Flow Ch. 217.281(b)(1)	=	20	minutes
	2.	Required Volume @ Peak Flow	=	27,500	Gallons
	3.	Unit Change	=	3,676	cu. Ft.
	4.	Proposed Basin Dimensions			
		Number of Proposed Basins	=	2	
		Length of Each Basin	=	15	
		Width of Each Basin	=	15.0	
		Side Water Depth of Each Basin	=	9	
	4.	Total Volume of Proposed Basin	=	4,050	cu. Ft
	5.	Check of Proposed Total Basin Volume	=	OK	mins
	6.	Hydraulic Detention Time at Design Flow	=	88.1	mins
	7.	Hydraulic Detention Time at Peak Flow	=	22.0	mins
	8.	CHECK	=	OK	
B. Chlorine Contact Basin Air					
	1.	Air Required (CCB Volume * 20 SCFM/1000 CF)	=	81.0	scfm

V. SOLIDS HANDLING

A.	Digester Sizing				
	1.	Percent Biodegradeable Volatile Solids in WAS, %	=	70%	
	2.	Percent Destruction, %	=	30%	
	3.	Digested Solids Production, lbs/day	=	978	lbs/day
	4.	Solids from Clarifier	=	1,238	lbs/day
	5.	Average Solids	=	1,108	lbs/day
	6.	Assumed Dig. Conc., mg/l	=	15,000	mg/L
	7.	Req'd. Retention Time, days (TCEQ 217.249 (t)(4)(b))	=	28	days
	8.	Req'd. Volume, cf	=	33,168	cu. ft
	9.	Volume to Loading Ratio. cf/lb BOD/day	=	26.8	cf/lb BOD/day
B.	Digester Design				
	1.	Proposed Digester Dimensions			
		Width of Each Digester	=	12	
		Length of Each Digester	=	95	
		Side Water Depth of Each Digester	=	10.5	
	2.	Number of Digesters	=	3	
	3.	Total Digester Volume	=	35,910	cu. ft
	3.	Actual Digester Storage Capacity	=	30	days
	3.	Digester Volume check	=	OK	
C. Digester Air					
	1.	Air Required (Digester Volume x 20scfm/1000cf)	=	718	scfm



DESIGN CALCULATIONS

KEENAN NORTH  
WASTEWATER TREATMENT PLANT

VI. AIRFLOW CALCULATIONS

<b>A. Aeration Air Requirements TCEQ 217.155 (b) (2) (c)</b>				
1.	Total Influent BOD <sub>5</sub>	=	1,238	lb/day
2.	Total Influent NH3-N	=	310	lb/day
3.	BOD5 Removal	=	1,238	lb/day
4.	Nh3-N Removal	=	310	lb/day
5.	Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	1.2	lbs O <sub>2</sub> /lb BOD <sub>5</sub>
6.	Oxygen Required for Carbonaceous Demand TCEQ 217.155 (a) (3)	=	4.3	lbs O <sub>2</sub> /lb NH3-N
7.	Oxygen Required per Pound of BOD	=	2.3	
8.	Depth of Submergence of Diffusers	=	9.00	ft
9.	Diffuser Type (Coarse or Fine)	=	Fine	
10.	Clean Water Transfer Efficiency of Fine Bubble Diffuser	=	1.50%	per ft of submergence
11.	Clean Water Transfer Efficiency @ Stated Depth	=	18.0%	
12.	Wastewater Transfer Efficiency Coefficient for Fine Bubble Diffusers	=	0.45	
13.	Wastewater Transfer Efficiency	=	8.1%	
14.	Manufacturer Proposed SOTE	=	30.0%	
15.	Maximum Clean Water Transfer Efficiency TCEQ 217.155 (b) (2) (A) (iii)	=	26.0%	
16.	Check if Over Regulated Maximum	=	OK	
17.	Density of Air @ 20 Deg C	=	0.075	
18.	Ratio of Oxygen to Air	=	0.230	
19.	Diffuser Submergence Correction Factor	=	1.690	
20.	Minimum Air Required for Mixing	=	547.200	scfm
21.	Air Required for Treatment	=	2,367	
22.	Manufacturer Proposed Air Required for Treatment	=	840	scfm
<b>B. Airlifts ****(Flowrates Must Be Verified Depending on Size, Submergence, etc.)****</b>				
1.	Return Scum			
	Scum Pump (1)	=	20	scfm
	RAS (1)	=	20	scfm
	WAS (1)	=	20	scfm
	Transfer (1)	=	20	scfm
2.	Total Airlifts Air Requirement	=	80	scfm
<b>C. Total Air Required</b>		=	3,246	scfm
<b>D. 150% of Design Flow TCEQ 217.155 (b)(5)(c)(iii) for Air Piping</b>		=	4,869	scfm
<b>E. Proposed Number of Blowers</b>		=	3	# of blowers
<b>F Invdividual Blower Capacity @ Design Pressure/Largest Out of Service</b>		=	1,623	scfm
<b>G. Proposed Maximum Air Loss in Air Piping (Calculated Separately)</b>		=	1	psig
<b>H Design Pressure of Blower</b>		=	4.9	psig

VII. CHLORINE DOSAGE CALCULATIONS

<b>A. Chlorine Dosage Rate TCEQ 217.272 (b)</b>		=	8.0	mg/l
1.	Calculated Chlorine Dosage Rate @ Design Flow Eq. K.1 TCEQ 217.272 (a)	=	33	lbs/day
2.	Calculated Chlorine Dosage Rate @ Peak Flow Eq. K.1 TCEQ 217.272 (a)	=	132	lbs/day
3.	System Set-up (Vacuum or Manifold)	=	Vacuum	
4.	Minimum Ambient TemperatureTCEQ 217.275 (a) (1)	=	55	Degrees F
5.	Max Withdrawal Rate for One 150-lb Cylinder TCEQ 217.274 (a) (1)	=	55	lbs/day
6.	Max Withdrawal Rate for One Ton Cylinder TCEQ 217.274 (a) (1)	=	440	lbs/day
7.	Required Number of 150-lb Cylinders Eq. K.3 TCEQ 217.273 (b)	=	3	# of cylinders
8.	Required Number of One Ton Cylinders Eq. K.3 TCEQ 217.273 (b)	=	1	# of cylinders
9.	Method of Chlorine Storage ("ton" or "150's")	=	150-lb	
10.	Peak Withdrawal Rate	=	165	lbs/day

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 18

### SOLIDS MANAGEMENT PLAN



A&S Engineers, Inc.

---

10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802

# SLUDGE MANAGEMENT PLAN OLD HOCKLEY

## Proposed Phase I – 0.500 MGD

### 1. Type of Treatment Process

#### AERATION BASINS

The proposed facility is a 0.495 million gallons per day (MGD) conventional activated sludge process utilizing an aeration basin. The following table shows the process design and sludge generation calculations for the design flow of this facility.

$$\text{BOD} = 300 \text{ mg/l} \times 8.34 \text{ lbs/gal} \times 0.495 \text{ MGD} = 1,240 \text{ lbs BOD per Day}$$

### 2. Dimensions and Capacities

#### AEROBIC DIGESTER

The treatment facility has two solids holding tank with maximum total volume of 35,910 cubic feet. The tanks are 12-feet W by 95-feet L with 10.5-foot side water depth.

The total Digester capacity of 35,910 cubic feet is greater than the required digester capacity based on 20 cubic feet per lb. of BOD times 1,240 lbs of BOD loading for the 0.495 MGD WWTP.

### 3. Sludge Generation Calculations

Sludge generation calculations showing the amount of solids generated at 100%, 75%, 50% and 25% of design flow are included in the following tables. These represent the solids that must be wasted from the activated sludge process and that must be stabilized in the aerobic digester.

Solids @ 100% Qavg lb/day	Solids @ 75% Qavg lb/day	Solids @ 50% Qavg lb/day	Solids @ 25% Qavg lb/day
1,240	930	620	310

### 4. Operating Range of Mixed Liquor Suspended Solids

It is anticipated that the MLSS for all phases will be approximately 2,400 mg/l on the average. The range for MLSS is anticipated to be between 2,000 and 4,000 mg/l during various stages of loading.

## 5. Solids Removal Procedures

### Conventional Aerated Mixed Liquor WWTP

The removal of waste activated sludge from the proposed conventional aerated mixed liquor activated sludge WWTP is achieved by wasting sludge from the clarifier and transferred by airlift pump to the aerobic digester. Additional thickening of sludge prior to transfer to the digester by periodically, (two or three times per week) having the air supply and mixing in the aerobic digester shut off allowing solids to settle to the bottom of the digester. The supernatant liquor is decanted by an adjustable decant airlift pump located in each digester and is returned to influent grinder pump station via the plant drain system. After sufficient digestion, sludge is hauled in liquid form by a licensed transporter. The liquid sludge is transported to registered site.

## 6. Quantity of Solids to be Removed and Solids Removal Schedule

The quantity of solids to be removed at various plant loadings are presented in the following table. The quantities shown in the tabulation are monthly quantities based upon the influent BOD of 300 mg/l and TSS of 300 mg/l. If the strength of the influent wastewater varies significantly, solids removal quantities will be different.

PHASE III	@100% Flow Capacity		@75% Flow Capacity		@50% Flow Capacity		@25% Flow Capacity	
0.495 MGD	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day
	2.5	12,375	2.5	9,281	2.5	6,187	2.5	3,093

### Sludge Age

The sludge age based on having 35,910 cubic feet (268,625 gallons) of total digester capacity, 2.5% solids and the above generated sludge volume is 21 days for 100% flow capacity, 29 days for 75% capacity, 42 days for 50% capacity and 86 days for 25% capacity.

## 7. Identification of Disposal Site

The disposal of sludge from the WWTP will be contracted to a sludge management and disposal contractor for either further treatment or disposal. The sludge will be hauled to either to treatment facility permitted to handle sludge or a registered land fill or a land application site. Solids documentation will be assured by measuring the volume of each sludge withdrawal and measuring the sludge solids concentrations. All required data will be included in the annual sludge report to the TCEQ.



# **SLUDGE MANAGEMENT PLAN OLD HOCKLEY**

## **Proposed Phase I – 0.165 MGD**

### **1. Type of Treatment Process**

#### **AERATION BASINS**

The proposed facility is a 0.165 million gallons per day (MGD) conventional activated sludge process utilizing an aeration basin. The following table shows the process design and sludge generation calculations for the design flow of this facility.

$$\text{BOD} = 300 \text{ mg/l} \times 8.34 \text{ lbs/gal} \times 0.165 \text{ MGD} = 413 \text{ lbs BOD per Day}$$

### **2. Dimensions and Capacities**

#### **AEROBIC DIGESTER**

The treatment facility has a solids holding tank with maximum total volume of 23,940 cubic feet. The tanks are 12-feet W by 95-feet L with 10.5 foot side water depth.

The total Digester capacity of 11,970 cubic feet is greater than the required digester capacity based on 20 cubic feet per lb. of BOD times 413 lbs of BOD loading for the 0.165 MGD WWTP.

### **3. Sludge Generation Calculations**

Sludge generation calculations showing the amount of solids generated at 100%, 75%, 50% and 25% of design flow are included in the following tables. These represent the solids that must be wasted from the activated sludge process and that must be stabilized in the aerobic digester.

Solids @ 100% Qavg lb/day	Solids @ 75% Qavg lb/day	Solids @ 50% Qavg lb/day	Solids @ 25% Qavg lb/day
413	310	207	103

### **4. Operating Range of Mixed Liquor Suspended Solids**

It is anticipated that the MLSS for all phases will be approximately 2,400 mg/l on the average. The range for MLSS is anticipated to be between 2,000 and 4,000 mg/l during various stages of loading.

## 5. Solids Removal Procedures

### Conventional Aerated Mixed Liquor WWTP

The removal of waste activated sludge from the proposed conventional aerated mixed liquor activated sludge WWTP is achieved by wasting sludge from the clarifier and transferred by airlift pump to the aerobic digester. Additional thickening of sludge prior to transfer to the digester by periodically, (two or three times per week) having the air supply and mixing in the aerobic digester shut off allowing solids to settle to the bottom of the digester. The supernatant liquor is decanted by an adjustable decant airlift pump located in each digester and is returned to influent grinder pump station via the plant drain system. After sufficient digestion, sludge is hauled in liquid form by a licensed transporter. The liquid sludge is transported to registered site.

## 6. Quantity of Solids to be Removed and Solids Removal Schedule

The quantity of solids to be removed at various plant loadings are presented in the following table. The quantities shown in the tabulation are monthly quantities based upon the influent BOD of 300 mg/l and TSS of 300 mg/l. If the strength of the influent wastewater varies significantly, solids removal quantities will be different.

PHASE I	@100% Flow Capacity		@75% Flow Capacity		@50% Flow Capacity		@25% Flow Capacity	
0.165 MGD	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day
	2.5	4,125	2.5	3,094	2.5	2,063	2.5	1,031

### Sludge Age

The sludge age based on having 23,940 cubic feet (179,083 gallons) of total digester capacity, 2.5% solids and the above generated sludge volume is 43 days for 100% flow capacity, 57 days for 75% capacity, 86 days for 50% capacity and 173 days for 25% capacity.

## 7. Identification of Disposal Site

The disposal of sludge from the WWTP will be contracted to a sludge management and disposal contractor for either further treatment or disposal. The sludge will be hauled to either to treatment facility permitted to handle sludge or a registered land fill or a land application site. Solids documentation will be assured by measuring the volume of each sludge withdrawal and measuring the sludge solids concentrations. All required data will be included in the annual sludge report to the TCEQ.

# **SLUDGE MANAGEMENT PLAN OLD HOCKLEY**

## **Proposed Phase I – 0.330 MGD**

### **1. Type of Treatment Process**

#### **AERATION BASINS**

The proposed facility is a 0.330 million gallons per day (MGD) conventional activated sludge process utilizing an aeration basin. The following table shows the process design and sludge generation calculations for the design flow of this facility.

$$\text{BOD} = 300 \text{ mg/l} \times 8.34 \text{ lbs/gal} \times 0.330 \text{ MGD} = 826 \text{ lbs BOD per Day}$$

### **2. Dimensions and Capacities**

#### **AEROBIC DIGESTER**

The treatment facility has two solids holding tank with maximum total volume of 35,910 cubic feet. The tanks are 12-feet W by 95-feet L with 10.5 foot side water depth.

The total Digester capacity of 26,208 cubic feet is greater than the required digester capacity based on 20 cubic feet per lb. of BOD times 826 lbs of BOD loading for the 0.330 MGD WWTP.

### **3. Sludge Generation Calculations**

Sludge generation calculations showing the amount of solids generated at 100%, 75%, 50% and 25% of design flow are included in the following tables. These represent the solids that must be wasted from the activated sludge process and that must be stabilized in the aerobic digester.

Solids @ 100% Qavg lb/day	Solids @ 75% Qavg lb/day	Solids @ 50% Qavg lb/day	Solids @ 25% Qavg lb/day
826	620	414	206

### **4. Operating Range of Mixed Liquor Suspended Solids**

It is anticipated that the MLSS for all phases will be approximately 2,400 mg/l on the average. The range for MLSS is anticipated to be between 2,000 and 4,000 mg/l during various stages of loading.

## 5. Solids Removal Procedures

### Conventional Aerated Mixed Liquor WWTP

The removal of waste activated sludge from the proposed conventional aerated mixed liquor activated sludge WWTP is achieved by wasting sludge from the clarifier and transferred by airlift pump to the aerobic digester. Additional thickening of sludge prior to transfer to the digester by periodically, (two or three times per week) having the air supply and mixing in the aerobic digester shut off allowing solids to settle to the bottom of the digester. The supernatant liquor is decanted by an adjustable decant airlift pump located in each digester and is returned to influent grinder pump station via the plant drain system. After sufficient digestion, sludge is hauled in liquid form by a licensed transporter. The liquid sludge is transported to registered site.

## 6. Quantity of Solids to be Removed and Solids Removal Schedule

The quantity of solids to be removed at various plant loadings are presented in the following table. The quantities shown in the tabulation are monthly quantities based upon the influent BOD of 300 mg/l and TSS of 300 mg/l. If the strength of the influent wastewater varies significantly, solids removal quantities will be different.

PHASE II	@100% Flow Capacity		@75% Flow Capacity		@50% Flow Capacity		@25% Flow Capacity	
0.330 MGD	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day	% Solids	Gal/Day
	2.5	8,250	2.5	6,187	2.5	4,125	2.5	2,062

### Sludge Age

The sludge age based on having 35,910 cubic feet (268,625 gallons) of total digester capacity, 2.5% solids and the above generated sludge volume is 32 days for 100% flow capacity, 43 days for 75% capacity, 64 days for 50% capacity and 130 days for 25% capacity.

## 7. Identification of Disposal Site

The disposal of sludge from the WWTP will be contracted to a sludge management and disposal contractor for either further treatment or disposal. The sludge will be hauled to either to treatment facility permitted to handle sludge or a registered land fill or a land application site. Solids documentation will be assured by measuring the volume of each sludge withdrawal and measuring the sludge solids concentrations. All required data will be included in the annual sludge report to the TCEQ.



Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 19

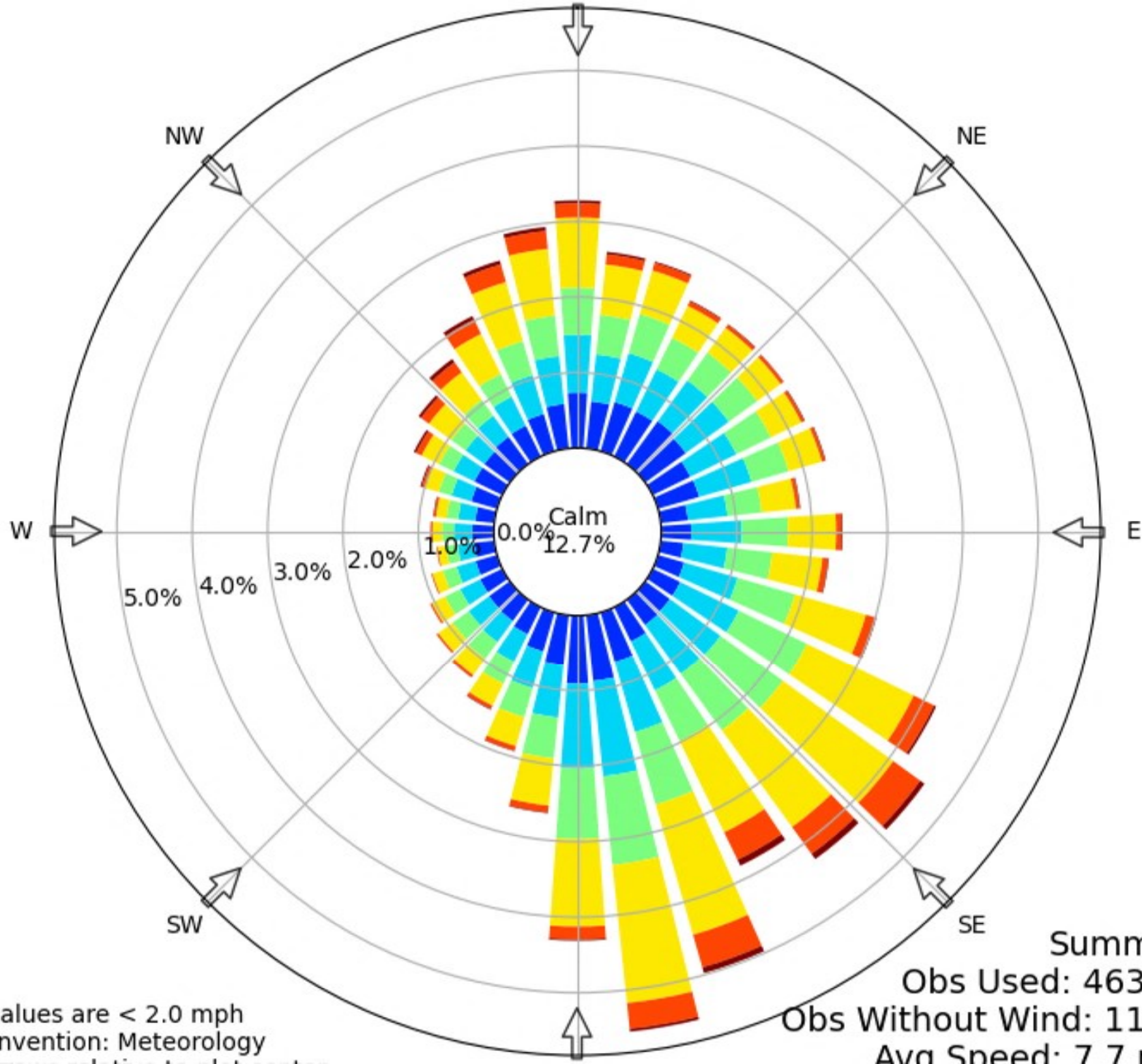
### WIND ROSE



A&S Engineers, Inc.

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10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802



Calm values are < 2.0 mph  
Bar Convention: Meteorology  
Flow arrow relative to plot center

Summary  
Obs Used: 463473  
Obs Without Wind: 11470  
Avg Speed: 7.7 mph

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 20

### CORE DATA FORM



A&S Engineers, Inc.

---

10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802



# TCEQ Core Data Form

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

## SECTION I: General Information

<b>1. Reason for Submission</b> (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)		<input type="checkbox"/> Other
<b>2. Customer Reference Number</b> (if issued)	<a href="#">Follow this link to search for CN or RN numbers in Central Registry**</a>	<b>3. Regulated Entity Reference Number</b> (if issued)
CN		RN

## SECTION II: Customer Information

<b>4. General Customer Information</b>		<b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy)					
<input checked="" type="checkbox"/> New Customer <input type="checkbox"/> Update to Customer Information <input type="checkbox"/> Change in Regulated Entity Ownership							
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)							
<i>The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).</i>							
<b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)				<i>If new Customer, enter previous Customer below:</i>			
Keenan North Development, Ltd.							
<b>7. TX SOS/CPA Filing Number</b>		<b>8. TX State Tax ID</b> (11 digits)		<b>9. Federal Tax ID</b> (9 digits)  99-2592231	<b>10. DUNS Number</b> (if applicable)		
<b>11. Type of Customer:</b>		<input type="checkbox"/> Corporation		<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input checked="" type="checkbox"/> Limited		
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Other:			
<b>12. Number of Employees</b>				<b>13. Independently Owned and Operated?</b>			
<input checked="" type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following							
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Owner & Operator <input type="checkbox"/> Other:							
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> VCP/BSA Applicant							
<b>15. Mailing Address:</b>	28408 Sweetgum Road, Suite B3						
	City	Magnolia	State	TX	ZIP	77354	ZIP + 4
<b>16. Country Mailing Information</b> (if outside USA)				<b>17. E-Mail Address</b> (if applicable)			
				OZAN_TWIST@HOTMAIL.COM			
<b>18. Telephone Number</b>			<b>19. Extension or Code</b>		<b>20. Fax Number</b> (if applicable)		



## SECTION III: Regulated Entity Information

<b>21. General Regulated Entity Information</b> <i>(If 'New Regulated Entity' is selected, a new permit application is also required.)</i>							
<input checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information							
<i>The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).</i>							
<b>22. Regulated Entity Name</b> <i>(Enter name of the site where the regulated action is taking place.)</i>							
Keenan North WWTP							
<b>23. Street Address of the Regulated Entity:</b>  <u>(No PO Boxes)</u>	TBD Keenan Cutoff Rd						
	<b>City</b>	Montgomery	<b>State</b>	TX	<b>ZIP</b>	77316	<b>ZIP + 4</b>
<b>24. County</b>	Montgomery						

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

<b>25. Description to Physical Location:</b>	Approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854 in Montgomery County.						
<b>26. Nearest City</b>				<b>State</b>		<b>Nearest ZIP Code</b>	
Montgomery				TX		77316	
<i>Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).</i>							
<b>27. Latitude (N) In Decimal:</b>			<b>28. Longitude (W) In Decimal:</b>				
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
30	19	56.4	95	39	45.7		
<b>29. Primary SIC Code</b>		<b>30. Secondary SIC Code</b>		<b>31. Primary NAICS Code</b>		<b>32. Secondary NAICS Code</b>	
(4 digits)		(4 digits)		(5 or 6 digits)		(5 or 6 digits)	
4952				221320			
<b>33. What is the Primary Business of this entity?</b> <i>(Do not repeat the SIC or NAICS description.)</i>							
Wastewater treatment plant							
<b>34. Mailing Address:</b>		28408 Sweetgum Road, Suite B3					
<b>City</b>	Magnolia	<b>State</b>	TX	<b>ZIP</b>	77354	<b>ZIP + 4</b>	
<b>35. E-Mail Address:</b>		OZAN_TWIST@HOTMAIL.COM					
<b>36. Telephone Number</b>			<b>37. Extension or Code</b>			<b>38. Fax Number</b> <i>(if applicable)</i>	
( 832 ) 375-9897						(   )   -	

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

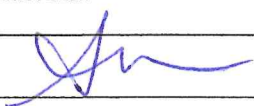
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input checked="" type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

## **SECTION IV: Preparer Information**

<b>40. Name:</b>	Eric Williams, PE			<b>41. Title:</b>	Project Manager
<b>42. Telephone Number</b>	<b>43. Ext./Code</b>	<b>44. Fax Number</b>	<b>45. E-Mail Address</b>		
( 713 ) 942-2700		( ) -	elw@as-engineers.com		

## **SECTION V: Authorized Signature**

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

<b>Company:</b>	Keenan North Development, Ltd.		<b>Job Title:</b>	President	
<b>Name (In Print):</b>	Ahmet Ozan			<b>Phone:</b>	( 832 ) 375- 9897
<b>Signature:</b>				<b>Date:</b>	11/04/2024

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 21

### PLAIN LANGUAGE SUMMARY



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**10377 Stella Link Road, Houston, TX 77025**  
**Ph: 713-942-2700 Fax: 713-942-2799**  
**Texas Engineering Registration No. F-000802**



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

### PLAIN LANGUAGE SUMMARY FOR TPDES OR TLAP PERMIT APPLICATIONS

#### Plain Language Summary Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

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

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

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

#### ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS DOMESTIC WASTEWATER/STORMWATER

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

Keenan North Development, Ltd. (CN TBD) proposes to operate Keenan North WWTP (RN TBD), a domestic wastewater treatment plant. The facility will be located at approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854, in Montgomery, Montgomery County, Texas 77355. Requesting to permit a WWTP to treat up to 0.495 MGD.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD5), total suspended solids (TSS), ammonia nitrogen (NH3-N). Domestic wastewater will be treated by a complete mix mode of activated sludge process, including screening, aeration, final clarification, and disinfection..



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

### AGUAS RESIDUALES DOMESTICAS /AGUAS PLUVIALES

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

Keenan North Development, Ltd. (CN TPD) propone operar Keenan North WWTP RN TBD, una planta de tratamiento de aguas residuales. La instalación estará ubicada en **aproximadamente 1 milla al noroeste de la intersección de Keenan Cutoff Rd y FM 2854**, en Montgomery, Condado de Montgomery, Texas 77355. La solicitud es para la instalacion de WWTP por 0.495 MGD.

Se espera que las descargas de la instalación contengan bioquímica de oxígeno carbonoso (CBOD5), solidos suspendidos totales (TSS), nitrógeno amoniacal (NH3-N). Las aguas residuales domésticas. **estará** tratado por un modo de mezcla completa del proceso de lodos activados, que incluye cribado, balsas de aireación, clarificadores, digestores aerobios y desinfección.

## INSTRUCTIONS

1. Enter the name of applicant in this section. The applicant name should match the name associated with the customer number.
2. Enter the Customer Number in this section. Each Individual or Organization is issued a unique 11-digit identification number called a CN (e.g. CN123456789).
3. Choose “operates” in this section for existing facility applications or choose “proposes to operate” for new facility applications.
4. Enter the name of the facility in this section. The facility name should match the name associated with the regulated entity number.
5. Enter the Regulated Entity number in this section. Each site location is issued a unique 11-digit identification number called an RN (e.g. RN123456789).
6. Choose the appropriate article (a or an) to complete the sentence.
7. Enter a description of the facility in this section. For example: steam electric generating facility, nitrogenous fertilizer manufacturing facility, etc.
8. Choose “is” for an existing facility or “will be” for a new facility.
9. Enter the location of the facility in this section.
10. Enter the City nearest the facility in this section.
11. Enter the County nearest the facility in this section.
12. Enter the zip code for the facility address in this section.
13. Enter a summary of the application request in this section. For example: renewal to discharge 25,000 gallons per day of treated domestic wastewater, new application to discharge process wastewater and stormwater on an intermittent and flow-variable basis, or major amendment to reduce monitoring frequency for pH, etc. If more than one outfall is included in the application, provide applicable information for each individual outfall.
14. List all pollutants expected in the discharge from this facility in this section. If applicable, refer to the pollutants from any federal numeric effluent limitations that apply to your facility.
15. Enter the discharge types from your facility in this section (e.g., stormwater, process wastewater, once through cooling water, etc.)
16. Choose the appropriate verb tense to complete the sentence.
17. Enter a description of the wastewater treatment used at your facility. Include a description of each process, starting with initial treatment and finishing with the outfall/point of disposal. Use additional lines for individual discharge types if necessary.

Questions or comments concerning this form may be directed to the Water Quality Division's Application Review and Processing Team by email at [WO-ARPTeam@tceq.texas.gov](mailto:WO-ARPTeam@tceq.texas.gov) or by phone at (512) 239-4671.

## Example

### Individual Industrial Wastewater Application

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

ABC Corporation (CN600000000) operates the Starr Power Station (RN10000000000), a two-unit gas-fired electric generating facility. Unit 1 has a generating capacity of 393 megawatts (MWs) and Unit 2 has a generating capacity of 528 MWs. The facility is located at 1356 Starr Street, near the City of Austin, Travis County, Texas 78753.

This application is for a renewal to discharge 870,000,000 gallons per day of once through cooling water, auxiliary cooling water, and also authorizes the following waste streams monitored inside the facility (internal outfalls) before it is mixed with the other wastewaters authorized for discharge via main Outfall 001, referred to as “previously monitored effluents” (low-volume wastewater, metal-cleaning waste, and stormwater (from diked oil storage area yards and storm drains)) via Outfall 001. Low-volume waste sources, metal-cleaning waste, and stormwater drains on a continuous and flow-variable basis via internal Outfall 101.

The discharge of once through cooling water via Outfall 001 and low-volume waste and metal-cleaning waste via Outfall 101 from this facility is subject to federal effluent limitation guidelines at 40 CFR Part 423. The pollutants expected from these discharges based on 40 CFR Part 423 are: free available chlorine, total residual chlorine, total suspended solids, oil and grease, total iron, total copper, and pH. Temperature is also expected from these discharges. Additional potential pollutants are included in the Industrial Wastewater Application Technical Report, Worksheet 2.0.

Cooling water and boiler make-up water are supplied by Lake Starr Reservoir. The City of Austin municipal water plant (CN600000000, PWS 00000) supplies the facility’s potable water and serves as an alternate source of boiler make-up water. Water from the Lake Starr Reservoir is withdrawn at the intake structure and treated with sodium hypochlorite to prevent biofouling and sodium bromide as a chlorine enhancer to improve efficacy and then passed through condensers and auxiliary equipment on a once-through basis to cool equipment and condense exhaust steam.

Low-volume wastewater from blowdown of boiler Units 1 and 2 and metal-cleaning wastes receive no treatment prior to discharge via Outfall 101. Plant floor and equipment drains and stormwater runoff from diked oil storage areas, yards, and storm drains are routed through an oil and water separator prior to discharge via Outfall 101. Domestic wastewater, blowdown, and backwash water from the service water filter, clarifier, and sand filter are routed to the Starr Creek Domestic Sewage Treatment Plant, TPDES Permit No. WQ0010000001, for treatment and disposal. Metal-cleaning waste from equipment cleaning is generally disposed of off-site.

Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 22

### PUBLIC INVOLVEMENT PLAN



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10377 Stella Link Road, Houston, TX 77025  
Ph: 713-942-2700 Fax: 713-942-2799  
Texas Engineering Registration No. F-000802





Texas Commission on Environmental Quality

## Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

### Section 1. Preliminary Screening

- ☒ New Permit or Registration Application  
☐ New Activity - modification, registration, amendment, facility, etc. (see instructions)

**If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.**

### Section 2. Secondary Screening

- ☒ Requires public notice,  
☐ Considered to have significant public interest, **and**  
☐ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

**If all the above boxes are not checked, a Public Involvement Plan is not necessary.  
Stop after Section 2 and submit the form.**

- ☐ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

### Section 3. Application Information

#### Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V  
Waste ☐ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire  
☐ Radioactive Material Licensing ☐ Underground Injection Control

#### Water Quality

- ☒ Texas Pollutant Discharge Elimination System (TPDES)  
☐ Texas Land Application Permit (TLAP)  
☐ State Only Concentrated Animal Feeding Operation (CAFO)  
☐ Water Treatment Plant Residuals Disposal Permit  
☐ Class B Biosolids Land Application Permit  
☐ Domestic Septage Land Application Registration

#### Water Rights New Permit

- ☐ New Appropriation of Water  
☐ New or existing reservoir

#### Amendment to an Existing Water Right

- ☐ Add a New Appropriation of Water  
☐ Add a New or Existing Reservoir  
☐ Major Amendment that could affect other water rights or the environment

### Section 4. Plain Language Summary

Provide a brief description of planned activities.

Keenan North Development, Ltd. (CN TBD) proposes to operate Keenan North WWTP (RN TBD), a domestic wastewater treatment plant. The facility will be located at approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854, in Montgomery, Montgomery County, Texas 77355. Requesting to permit a WWTP to treat up to 0.495 MGD. Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD5), total suspended solids (TSS), ammonia nitrogen (NH3-N). Domestic wastewater will be treated by a complete mix mode of activated sludge process, including screening, aeration, final clarification, and disinfection..

## Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

**Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.**

Montgomery

(City)

Montgomery

(County)

(Census Tract)

Please indicate which of these three is the level used for gathering the following information.

☐

City

☐

County

☐

Census Tract

- (a) Percent of people over 25 years of age who at least graduated from high school
- (b) Per capita income for population near the specified location
- (c) Percent of minority population and percent of population by race within the specified location
- (d) Percent of Linguistically Isolated Households by language within the specified location
- (e) Languages commonly spoken in area by percentage
- (f) Community and/or Stakeholder Groups
- (g) Historic public interest or involvement

## Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☐ Yes ☒ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☐ No

If Yes, please describe.

**If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.**

(c) Will you provide notice of this application in alternative languages?

☒ Yes ☐ No

**Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.**

If yes, how will you provide notice in alternative languages?

- ☒ Publish in alternative language newspaper
- ☐ Posted on Commissioner's Integrated Database Website
- ☐ Mailed by TCEQ's Office of the Chief Clerk
- ☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☒ Yes ☐ No

(e) If a public meeting is held, will a translator be provided if requested?

☒ Yes ☐ No

(f) Hard copies of the application will be available at the following (check all that apply):

- ☒ TCEQ Regional Office ☒ TCEQ Central Office
- ☒ Public Place (specify) Charles B. Stewart-West Branch Library

## Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☐ Yes ☐ No

What types of notice will be provided?

- ☐ Publish in alternative language newspaper
- ☐ Posted on Commissioner's Integrated Database Website
- ☐ Mailed by TCEQ's Office of the Chief Clerk
- ☐ Other (specify)



Domestic Wastewater Permit Application  
Keenan North Development, Ltd.  
TPDES Permit No. TBD  
NPDES Permit No. TBD  
A&S Project No. 540008.02

## EXHIBIT 23

SPIF



A&S Engineers, Inc.

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**10377 Stella Link Road, Houston, TX 77025**  
**Ph: 713-942-2700 Fax: 713-942-2799**  
**Texas Engineering Registration No. F-000802**

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

### FOR AGENCIES REVIEWING DOMESTIC OR INDUSTRIAL TPDES WASTEWATER PERMIT APPLICATIONS

#### TCEQ USE ONLY:

Application type: \_\_\_\_Renewal \_\_\_\_Major Amendment \_\_\_\_Minor Amendment \_\_\_\_New

County: \_\_\_\_\_ Segment Number: \_\_\_\_\_

Admin Complete Date: \_\_\_\_\_

Agency Receiving SPIF:

\_\_\_\_ Texas Historical Commission

\_\_\_\_ U.S. Fish and Wildlife

\_\_\_\_ Texas Parks and Wildlife Department

\_\_\_\_ U.S. Army Corps of Engineers

**This form applies to TPDES permit applications only.** (Instructions, Page 53)

Complete this form as a separate document. TCEQ will mail a copy to each agency as required by our agreement with EPA. If any of the items are not completely addressed or further information is needed, we will contact you to provide the information before issuing the permit. Address each item completely.

**Do not refer to your response to any item in the permit application form.** Provide each attachment for this form separately from the Administrative Report of the application. The application will not be declared administratively complete without this SPIF form being completed in its entirety including all attachments. Questions or comments concerning this form may be directed to the Water Quality Division's Application Review and Processing Team by email at [WQ-ARPTeam@tceq.texas.gov](mailto:WQ-ARPTeam@tceq.texas.gov) or by phone at (512) 239-4671.

The following applies to all applications:

1. Permittee: Keenan North Development, Ltd.

Permit No. WQ00 N/A

EPA ID No. TX N/A

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

**Approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854 in Montgomery County.**

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

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Louis Toumajian

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

Title: Project Coordinator II

Mailing Address: 10377 Stella Link Road

City, State, Zip Code: Houston, TX 77025-5445

Phone No.: 713-942-2700 Ext.:

Fax No.:

E-mail Address: lat@as-engineers.com

2. List the county in which the facility is located: Montgomery
3. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property.

N/A

4. Provide a description of the effluent discharge route. The discharge route must follow the flow of effluent from the point of discharge to the nearest major watercourse (from the point of discharge to a classified segment as defined in 30 TAC Chapter 307). If known, please identify the classified segment number.

**Approximately 1 mile northwest of the intersection of Keenan Cutoff Rd and FM 2854 in Montgomery County. Discharge into Mound Creek Tributary No. 54 then to Mound Creek, Lake Creek, then into the West Fork San Jacinto River, then to San Jacinto River**

5. Please provide a separate 7.5-minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. Please highlight the discharge route from the point of discharge for a distance of one mile downstream. (This map is required in addition to the map in the administrative report).

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

Does your project involve any of the following? Check all that apply.

- ☒ Proposed access roads, utility lines, construction easements
- ☐ Visual effects that could damage or detract from a historic property's integrity
- ☐ Vibration effects during construction or as a result of project design
- ☐ Additional phases of development that are planned for the future
- ☐ Sealing caves, fractures, sinkholes, other karst features

☐ Disturbance of vegetation or wetlands

1. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features):

Normal grading and drainage work as well as clearing and grubbing.

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

Existing land is wooded and vegetated.

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

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

Projected construction dates of Summer 2026

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

The property is currently vacant, to be developed into single family residence development