Technical 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. Second notice (NAPD-Notice of Preliminary Decision)
   - English
   - Alternative Language (Spanish)
4. Application materials *
5. Draft permit *
6. Technical summary or fact sheet *

Portada de Paquete Técnico

Este archivo contiene los siguientes documentos:

1. Resumen de la solicitud (en lenguaje sencillo)
   - Inglés
   - Idioma alternativo (español)
2. Primer aviso (NORI, Aviso de Recepción de Solicitud e Intención de Obtener un Permiso)
   - Inglés
   - Idioma alternativo (español)
3. Segundo aviso (NAPD, Aviso de Decisión Preliminar)
   - Inglés
   - Idioma alternativo (español)
4. Materiales de la solicitud **
5. Proyecto de permiso **
6. Resumen técnico u hoja de datos **

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUMMARY OF APPLICATION IN PLAIN LANGUAGE FOR TPDES OR TLAP PERMIT APPLICATIONS

Summary of Application (in plain language) 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 of your facility and application as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. You may modify the template as necessary to accurately describe your 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 you 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. After filling in the information for your facility delete these instructions.

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.

SJWTX, Inc., dba Texas Water Company (CN602969396) operates Tapatio Springs WWTF (RN102362175), an activated sludge process plant using the extended aeration mode. The facility is located at approximately 0.2 miles southeast of the intersection of Tapatio Drive East and Blue Heron Boulevard (aka Resort Way), in Boerne, Kendall County, Texas 78006. The permittee requests renewed authorization to dispose of treated domestic wastewater effluent at a flow of 0.15 MGD via surface irrigation of 100 acres of golf course. Application rates shall not exceed a net application rate of 4.2 acre-feet per year per acre irrigated and shall not exceed a net application rate of 1.68 acre-feet per year per acre based on the permitted flow and the acreage of the disposal site. This permit will not authorize a discharge of pollutants into water in the state.

Discharges from the facility are expected to contain no pollutants beyond five-day biochemical oxygen demand (BOD_5) not to exceed single grab sample of 65 mg/L, total suspended solids (TSS) not to exceed single grab sample of 65 mg/L. Treated domestic wastewater effluent is treated by bar screens, two aeration basins, two final clarifiers, two sludge drying beds, an effluent lift station, an effluent holding pond, and a chlorine contact chamber.

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.

Texas Water Company (CN CN602969396) opera Tapatio Springs Instalación para el Tratamiento de Aguas Residuales RN102362175, una Planta de proceso de lodos activados utilizando el modo de aireación extendida. . La instalación está ubicada en aproximadamente 0,2 millas al sureste de la intersección de Tapatio Drive East y Blue Heron Boulevard (también conocido como Resort Way) , en Boerne, Condado de Kendall, Texas 78006. El titular del permiso solicita una autorización renovada para disponer de efluentes de aguas residuales domésticas tratadas a un flujo de 0,15 MGD mediante riego superficial de 100 acres de campo de golf. Las tasas de aplicación no excederán una tasa de aplicación neta de 4.2 acres-pie por año por acre regado y no excederán una tasa de aplicación neta de 1.68 acres-pie por año por acre según el flujo permitido y la superficie del sitio de eliminación. . *<<Para las solicitudes de TLAP incluya la siguiente oración, de lo contrario, elimine:>>* Este permiso no autorizará una descarga de contaminantes en el agua en el estado.

Se espera que las descargas de la instalación contengan sin contaminantes más allá de la demanda bioquímica de oxígeno (DBO5) de cinco días que no debe exceder una muestra única de 65 mg/L, el total de sólidos suspendidos (SST) no debe exceder una muestra única de 65 mg/L . Efluente de aguas residuales domésticas tratadas . está tratado por cribas de barras, dos balsas de aireación, dos clarificadores finales, dos lechos de secado de lodos, una estación de bombeo de efluentes, un estanque de retención de efluentes y una cámara de contacto de cloro. .

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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

PERMIT NO. WQ0012404001

APPLICATION. SJWTX, Inc., P.O. Box 1742, Canyon Lake, Texas 78133, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Land Application Permit (TLAP) No. WQ0012404001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 150,000 gallons per day via surface irrigation of 100 acres of golf course. The domestic wastewater facility and disposal area are located approximately 0.2 mile southeast of the intersection of Tapatio Drive East and Blue Heron Boulevard (aka Resort Way), near the city of Boerne, in Kendall County, Texas 78006. TCEQ received this application on February 28, 2025. The permit application will be available for viewing and copying at Patrick Heath Public Library, 451 North Main Street, Building 100, Boerne, in Kendall 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/tlap-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=-98.80694,29.774166&level=18

ALTERNATIVE LANGUAGE NOTICE. Alternative language notice in Spanish is available at: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications.
El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications.

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

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting on this application. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. TCEQ will hold a public meeting if the Executive Director determines that there is a significant degree of public

interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

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

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

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

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

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

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

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

AGENCY CONTACTS AND INFORMATION. All public comments and requests must be submitted either electronically at **https://www14.tceq.texas.gov/epic/eComment/**, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from SJWTX, Inc. at the address stated above or by calling Ms. Behnaz Jalili, Ph.D, P.E., Kimley-Horn and Associates, Inc., at 512-518-5596.

Issuance Date: March 21, 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
RENOVACION

PERMISO NO. WQ0012404001

SOLICITUD. SJWTX, Inc, P.O. Box 1742, Canyon Lake, Texas 78133 ha solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) para renovar el Permiso de Solicitud de Terrenos de Texas (TLAP) No. WQ0012404001 del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES) para autorizar la disposición de aguas residuales tratadas en un volumen que no exceda un caudal promedio diario de 150,000 galones por día mediante el riego superficial de 100 acres de un campo de golf. La planta de aguas residuales domésticas y el área de disposición final se encuentra aproximadamente a 0,2 millas al sureste de la intersección de Tapatio Drive East y Blue Heron Boulevard (también conocida como Resort Way), cerca de la ciudad de Boerne, en el condado de Kendall, Texas, 78006. La TCEQ recibió esta solicitud el 28 de febrero de 2025. La solicitud de permiso estará disponible para su consulta y copia en la biblioteca publica de Boerne (451 N Main St, Boerne, TX 78006) antes de la fecha de publicación de este aviso en el periódico. La solicitud, incluyendo cualquier actualización y los avisos asociados, están disponibles electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications. Este enlace a un mapa electrónico de la ubicación general del sitio o instalación se proporciona como cortesía pública y no forma parte de la solicitud ni del aviso. Para conocer la ubicación exacta, consulte la solicitud.
https://gisweb.tceq.texas.gov/LocationMapper/?marker=-98.80694,29.774166&level=18

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

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

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

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

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

LISTA DE CORREO. Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Ademas, puede pedir que la TCEQ ponga su nombre en una or mas de las listas 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 especifico. Si desea que se agrega su nombre en una de las listas designe cual lista(s) y envia por correo su pedido a la Oficina del Secretario Principal de la

TCEQ.

CONTACTOS E INFORMACIÓN A LA AGENCIA. Todos los comentarios públicos y solicitudes deben ser presentadas electrónicamente vía http://www14.tceq.texas.gov/epic/eComment/o por escrito dirigidos a la Comisión de Texas de Calidad Ambiental, Oficial de la Secretaría (Office of Chief Clerk), MC-105, P.O. Box 13087, Austin, Texas 78711-3087. 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. Para obtener más información acerca de esta solicitud de permiso o el proceso de permisos, llame al programa de educación pública de la TCEQ, gratis, al 1-800-687-4040. Si desea información en Español, puede llamar al 1-800-687-4040.

También se puede obtener información adicional del SJWTX, Inc. a la dirección indicada arriba o llamando a Behnaz Jalili, P.E. al +1 512-518-5596.

Fecha de emission: 21 de marzo de 2025

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

NOTICE OF APPLICATION AND PRELIMINARY DECISION FOR WATER QUALITY LAND APPLICATION PERMIT FOR MUNICIPAL WASTEWATER

RENEWAL

PERMIT NO. WQ0012404001

APPLICATION AND PRELIMINARY DECISION. SJWTX, Inc., P.O. Box 1742, Canyon Lake, Texas 78133, has applied to the Texas Commission on Environmental Quality (TCEQ) for a renewal of TCEQ Permit No. WQ0012404001 which authorizes the disposal of treated domestic wastewater at a daily average flow not to exceed 150,000 gallons per day via surface irrigation of 100 acres of golf course. This permit will not authorize the discharge of pollutants into water in the state. TCEQ received this application on February 28,2025.

The wastewater treatment facility and disposal site are located approximately 0.2 mile southeast of the intersection of Tapatio Drive East and Blue Heron Boulevard (aka Resort Way), near the City of Boerne, Kendall County, Texas 78006. The wastewater treatment facility and disposal site are located in the drainage basin of the Upper Cibolo Creek in Segment No. 1908 of the San Antonio River Basin. This link to an electronic map of the site or facility's general location is provided as a public courtesy and is not part of the application or notice. For the exact location, refer to the application.
https://gisweb.tceq.texas.gov/LocationMapper/?marker=-98.80694,29.774166&level=18

The TCEQ Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, Executive Director's preliminary decision, and draft permit are available for viewing and copying at Patrick Heath Public Library, 451 North Main Street, Building 100, City of Boerne, in Kendall County, Texas. The application, including any updates, and associated notices are available electronically at the following webpage:
https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications.

ALTERNATIVE LANGUAGE NOTICE. Alternative language notice in Spanish is available at https://www.tceq.texas.gov/permitting/wastewater/plain-language-summaries-and-public-notices. El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/plain-language-summaries-and-public-notices.

PUBLIC COMMENT / PUBLIC MEETING. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. TCEQ holds 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 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 a contested case hearing or reconsideration of the Executive Director's decision**. A contested case hearing is a legal proceeding similar to a civil trial in a state district court.

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

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

The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period. TCEQ may act on an application to renew a permit for discharge of wastewater without providing an opportunity for a contested case hearing if certain criteria are met.**

EXECUTIVE DIRECTOR ACTION. The Executive Director may issue final approval of the application unless a timely contested case hearing request or request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the Executive Director will not issue final approval of the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

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.

All written public comments and public meeting requests must be submitted to the Office of the Chief Clerk, MC 105, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, TX 78711-3087 or electronically at www.tceq.texas.gov/goto/comment **within 30 days from the date of newspaper publication of this notice.**

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

AGENCY CONTACTS AND INFORMATION. Public comments and requests must be submitted either electronically at www.tceq.texas.gov/goto/comment, 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. Any personal information you submit to the TCEQ will become part of the agency's record; this includes email addresses. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from SJWTX, Inc. at the address stated above or by calling Ms. Behnaz Jalili, Ph.D., P.E., Kimley-Horn and Associates, Inc., at 512-518-5596.

Issuance Date: June 30, 2025

Comisión De Calidad Ambiental Del Estado De Texas

AVISO DE SOLICITUD Y DECISIÓN PRELIMINAR PARA PERMISO PARA APLICACIÓN DE LA CALIDAD DEL AGUA EN TERRENOS PARA AGUAS RESIDUALES MUNICIPALES

RENOVACIÓN

PERMISO NO. WQ0012404001

SOLICITUD Y DECISIÓN PRELIMINAR. SJWTX, Inc., P.O. Box 1742, Canyon Lake, Texas 78133 ha solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) por una renovación del TCEQ permito No. WQ0012404001 para autorizar la eliminación de aguas residuales domésticas tratadas con un caudal medio diario que no supere los 150.000 galones por día mediante riego superficial de 100 acres de un campo de golf. Este permiso no autorizará una descarga de contaminantes a las aguas del estado. La TCEQ recibió esta solicitud el 28 de febrero, 2025.

La planta y el sitio de disposición están ubicadas en aproximadamente 0,2 millas al sureste de la intersección de Tapatio Drive East y Blue Heron Boulevard (también conocida como Resort Way), cerca de la ciudad de Boerne, en el condado de Kendall, Texas 78006. La planta y el sitio de disposición están ubicados en la cuenca de drenaje de el arroyo de Upper Cibolo en el Segmento No. 1908 de la Cuenca del Río San Antonio. 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=-98.80694,29.774166&level=18

El Director Ejecutivo de la TCEQ ha completado la revisión técnica de la solicitud y ha preparado un borrador del permiso. El borrador del permiso, si es aprobado, establecería las condiciones bajo las cuales la instalación debe operar. El Director Ejecutivo ha tomado una decisión preliminar que si este permiso es emitido, cumple con todos los requisitos normativos y legales. La solicitud del permiso, la decisión preliminar del Director Ejecutivo y el borrador del permiso están disponibles para leer y copiar en la Biblioteca Pública de Patrick Heath, 451 North Main Street, Edificio 100, Ciudad de Boerne, en el condado de Kendall, Texas. La solicitud (cualquier actualización y aviso inclusive) está disponible electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications.

AVISO DE IDIOMA ALTERNATIVO. El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/plain-language-summaries-and-public-notices.

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

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

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

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

ACCIÓN DEL DIRECTOR EJECUTIVO. El Director Ejecutivo puede emitir una aprobación final de la solicitud a menos que exista un pedido antes del plazo de vencimiento de una audiencia administrativa de lo contencioso o se ha presentado un pedido de reconsideración. Si un pedido ha llegado antes del plazo de vencimiento de la audiencia o el pedido de reconsideración ha sido presentado, el Director Ejecutivo no emitirá una aprobación final sobre el permiso y enviará la solicitud y el pedido a los Comisionados de la TECQ para consideración en una reunión programada de la Comisión.

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. Ademas, puede pedir que la TCEQ ponga su nombre en una or mas de las listas 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 especifico. Si desea que se agrega su nombre en una de las listas designe cual lista(s) y envia por correo su pedido a la Oficina del Secretario Principal de la TCEQ.

Todos los comentarios escritos del público y los pedidos una reunión deben ser presentados durante los 30 días después de la publicación del aviso a la Oficina del Secretario Principal, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 or por el internet a 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.

CONTACTOS E INFORMACIÓN DE LA AGENCIA. Los comentarios y solicitudes públicas deben enviarse electrónicamente a https://www14.tceq.texas.gov/epic/eComment/, o por escrito a Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Cualquier información personal que envíe a al TCEQ pasará a formar parte del registro de la agencia; esto incluye las direcciones de correo electrónico. Para obtener más información sobre esta solicitud de permiso o el proceso de permisos, llame al Programa de Educación Pública de la TCEQ, sin cargo, al 1-800-687-4040 o visite su sitio web en www.tceq.texas.gov/goto/pep. Si desea información en español, puede llamar al 1-800-687-4040.

También se puede obtener información adicional del SJWTX, Inc. a la dirección indicada arriba o llamando a Ms. Behnaz Jalili, Ph.D, P.E., Kimley-Horn and Associates, Inc., al 512-518-5596.

Fecha de emission: 30 de junio de 2025

PERMIT NO. WQ0012404001

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

This is a renewal of Permit No. WQ0012404001 issued on April 24, 2015.

PERMIT TO DISCHARGE WASTES
under provisions of Chapter 26
of the Texas Water Code

SJWTX, Inc.

whose mailing address is

P.O. Box 1742
Canyon Lake, Texas 78133

Nature of Business Producing Waste: Domestic wastewater treatment operation, SIC Code 4952.

General Description and Location of Waste Disposal System:

Description: The Tapatio Springs Wastewater Treatment Facility consists of an activated sludge process plant using the extended aeration mode. Treatment units include a bar screen, two aeration basins, two final clarifiers, two sludge drying beds, an effluent lift station, a holding pond, and a chlorine contact chamber. The permittee is authorized to dispose of treated domestic wastewater effluent at a daily average flow not to exceed 0.15 million gallons per day (MGD) via surface irrigation of 100 acres of golf course. The facility includes a storage pond with a total surface area of 4 acres and total capacity of 80 acre-feet for storage of treated effluent prior to irrigation. Application rates to the irrigated land shall not exceed an agronomic rate of 4.2 acre-feet per year per acre irrigated and shall not exceed a net application rate of 1.68 acre-feet per year per acre based on the permitted flow and the acreage of the disposal site

Location: The wastewater treatment facility and disposal site are located approximately 0.2 mile southeast of the intersection of Tapatio Drive East and Blue Heron Boulevard (aka Resort Way), near the City of Boerne, Kendall County, Texas 78006. (See Attachment A.)

Drainage Area: The wastewater treatment facility and disposal site are located in the drainage basin of the Upper Cibolo Creek in Segment No. 1908 of the San Antonio River Basin. No discharge of pollutants into water in the state is authorized by this permit.

This permit and the authorization contained herein shall expire at midnight, **ten years from the date of issuance**.

ISSUED DATE:

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Conditions of the Permit: No discharge of pollutants into water in the state is authorized.

A. Effluent Limitations

Character: Treated Domestic Sewage Effluent

Volume: Daily Average Flow – 0.15 MGD from the treatment system

Quality: The following effluent limitations are required:

	Effluent Concentrations (Not to Exceed)	
Parameter	Daily Average mg/l	Single Grab mg/l
Biochemical Oxygen Demand (5- day)	20	65
Total Suspended Solids	20	65

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.

The effluent shall be chlorinated in a chlorine contact chamber to a residual of 1.0 mg/l with a minimum detention time of 20 minutes.

B. Monitoring Requirements:

Parameter	Monitoring Frequency	Sample Type
Flow	Five/week	Instantaneous
Biochemical Oxygen Demand (5-day)	One/month	Grab
Total Suspended Solids	One/month	Grab
pH	One/month	Grab
Total Chlorine Residual	Five/week	Grab

The monitoring shall be done after the final treatment unit and prior to storage of the treated effluent. If the effluent is land applied directly from the treatment system, monitoring shall be done after the final treatment unit and prior to land application. These records shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the Commission for at least three years.

STANDARD PERMIT CONDITIONS

This permit is granted in accordance with the Texas Water Code and the rules and other Orders of the Commission and the laws of the State of Texas.

DEFINITIONS

All definitions in Section 26.001 of the Texas Water Code and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

    a. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

    b. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with a 1 million gallons per day or greater permitted flow.

    c. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

2. Concentration Measurements

    a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

        i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

        ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

    b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

    c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

3. Sample Type

   a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).

   b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term “sewage sludge” is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids which have not been classified as hazardous waste separated from wastewater by unit processes.

6. The term “biosolids” is defined as sewage sludge that has been tested or processed to meet Class A, Class AB, or Class B pathogen standards in 30 TAC Chapter 312 for beneficial use.

7. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING REQUIREMENTS

1. Monitoring Requirements

   Monitoring results shall be collected at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling in accordance with 30 TAC §§ 319.4 - 319.12.

   As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Texas Water Code, Chapters 26, 27, and 28, and Texas Health and Safety Code, Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record or other document submitted or required to be maintained under this permit, including monitoring reports, records or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

   a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge or biosolids use and disposal activities, which shall be retained for a period of at least five years, monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, and records of all data used to complete the application for this permit shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, or application. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;
ii. identity of individual who collected the sample or made the measurement.
iii. date and time of analysis;
iv. identity of the individual and laboratory who performed the analysis;
v. the technique or method of analysis; and
vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in determining compliance with permit requirements.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC § 305.125(9), any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. Unauthorized discharges as defined in Permit Condition 2(g).

      ii. Any unanticipated bypass which exceeds any effluent limitation in the permit.

   c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

   d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible.

8. In accordance with the procedures described in 30 TAC §§ 35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

   a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:

i. One hundred micrograms per liter (100 µg/L);
ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. Five hundred micrograms per liter (500 µg/L);
ii. One milligram per liter (1 mg/L) for antimony;
iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

PERMIT CONDITIONS

1. General

a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

i. Violation of any terms or conditions of this permit;
ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation which has a reasonable likelihood of adversely affecting human health or the environment.

e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and Texas Water Code Section 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Special Provisions section of this permit.

h. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§ 7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties).

3. Inspections and Entry

a. Inspection and entry shall be allowed as prescribed in the Texas Water Code Chapters 26, 27, and 28, and Texas Health and Safety Code Chapter 361.

b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to

public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in Texas Water Code Section 7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

      ii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

e. In accordance with the Texas Water Code § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

5. Permit Transfer

a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal which requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Property Rights

A permit does not convey any property rights of any sort, or any exclusive privilege.

8. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

9. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

10. Notice of Bankruptcy.

a. Each permittee shall notify the Executive Director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

i. the permittee;
ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or
iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee;
ii. the permit number(s);
iii. the bankruptcy court in which the petition for bankruptcy was filed; and
iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge or biosolids use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

   a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

   b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under Texas Water Code § 7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information specified as not confidential in 30 TAC § 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities which generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75 percent of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90 percent of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75 percent of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgement of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 219) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

   b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

   c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or

discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. Facilities which generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

    a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

    b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

    c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

    d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.

    e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

    f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:

        i. Volume of waste and date(s) generated from treatment process;
        ii. Volume of waste disposed of on-site or shipped off-site;

iii. Date(s) of disposal;
iv. Identity of hauler or transporter;
v. Location of disposal site; and
vi. Method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

11. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with Chapter 361 of the Texas Health and Safety Code.

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SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge or biosolids only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge or biosolids by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Biosolids. This provision does not authorize the permittee to land apply biosolids on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge or biosolids.

2. In all cases, if the person (permit holder) who prepares the sewage sludge or biosolids supplies the sewage sludge or biosolids to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge or biosolids to assure compliance with these regulations.

3. The land application of processed or unprocessed chemical toilet waste, grease trap waste, grit trap waste, milk solids, or similar non-hazardous municipal or industrial solid wastes, or any of the wastes listed in this provision combined with biosolids, WTP residuals or domestic septage is prohibited unless the grease trap waste is added at a fats, oil and grease (FOG) receiving facility as part of an anaerobic digestion process.

B. Testing Requirements

1. Sewage sludge or biosolids shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 13) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped, and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. The permittee shall submit the following information in an annual report to the TCEQ by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ's website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 13) and the Enforcement Division (MC 224).

2. Biosolids shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C. of this permit.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B biosolids pathogen requirements.

a. For sewage sludge to be classified as Class A biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge must be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(3)(A) for specific information;

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion; or

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%; or

Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information; or

Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB biosolids may be classified a Class A biosolids if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B biosolids criteria.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition to the Alternatives 1 – 3, the following site restrictions must be met if Class B biosolids are land applied:

i. Food crops with harvested parts that touch the biosolids /soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.

v. Domestic livestock shall not be allowed to graze on the land for 30 days after application of biosolids.

vi. Turf grown on land where biosolids are applied shall not be harvested for 1 year after application of the biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of biosolids.

viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of biosolids.

ix. Land application of biosolids shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 -

i. Sewage sludge shall be injected below the surface of the land.

ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the biosolids shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10-

i. Biosolids applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When biosolids that are incorporated into the soil is Class A or Class AB with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- once during the term of this permit
PCBs	- once during the term of this permit

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of biosolids (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk biosolids applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, sewage sludge or biosolids for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B BIOSOLIDS PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B biosolids pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk biosolids shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge or biosolids enters a wetland or other waters in the State.

2. Bulk sewage sludge not meeting Class A biosolids requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk biosolids shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk Class A or AB biosolids sold or given away. The information sheet shall contain the following information:

    a. The name and address of the person who prepared the Class A or AB biosolids that are sold or given away in a bag or other container for application to the land.

    b. A statement that application of the Class A or AB biosolids to the land is prohibited except in accordance with the instruction on the label or information sheet.

    c. The annual whole sludge application rate for the sewage sludge application rate for the biosolids that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk biosolids are applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk biosolids are proposed to be applied. The notice shall include:

    a. The location, by street address, and specific latitude and longitude, of each land application site.

    b. The approximate time period bulk biosolids will be applied to the site.

    c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk biosolids.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the biosolids disposal practice.

E. Record Keeping Requirements

The documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a biosolids material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative for a period

of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B biosolids, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk biosolids are applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk biosolids shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge or biosolids treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which sludge or biosolids are applied.

   c. The number of acres in each site on which bulk sludge or biosolids are applied.

   d. The date and time sludge or biosolids are applied to each site.

   e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

   f. The total amount of sludge applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall submit the following information in an annual report to the TCEQ by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ's website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 13) and the Enforcement Division (MC 224).

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge or biosolids in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge or biosolids disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge or biosolids of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B biosolids, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge or biosolids transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge or biosolids treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk biosolids are applied.

    c. The date and time bulk biosolids are applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk biosolids applied to each site.

    e. The amount of biosolids (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge or biosolids meet the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge or biosolids and supplies that sewage sludge or biosolids to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge or biosolids disposal practice.

D. Sewage sludge or biosolids shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

   Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 13) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

   The report shall contain test results, certification that unauthorized waste management has stopped, and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 13) and the Enforcement Division (MC 224), by September 30$_{th}$ of each year.

E. Sewage sludge or biosolids shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record Keeping Requirements

   The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall submit the following information in an annual report to the TCEQ by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ's website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 13) and the Enforcement Division (MC224).

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge or biosolids production in dry tons/year.

4. Amount of sludge or biosolids disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge or biosolids transported interstate in dry tons/year.

6. A certification that the sewage sludge or biosolids meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE OR BIOSOLIDS TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge or biosolids that is transported to another wastewater treatment facility or facility that further processes sludge or biosolids. These provisions are intended to allow transport of sludge or biosolids to facilities that have been authorized to accept sludge or biosolids. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge or biosolids, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge or biosolids may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge or biosolids transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge or biosolids transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge or biosolids.

2. For sludge or biosolids transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge or biosolids transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall submit the following information in an annual report to the TCEQ by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ's website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 13) and the Enforcement Division (MC 224).

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. the annual sludge or biosolids production;

3. the amount of sludge or biosolids transported;

4. the owner of each receiving facility;

5. the location of each receiving facility; and

6. the date(s) of disposal at each receiving facility.

SPECIAL PROVISIONS:

1. This permit is granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend this permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, if an area-wide system is developed; to require the delivery of the wastes authorized to be collected in, treated by, or discharged from the system, to an area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment, or disposal system.

2. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and in particular 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category D* facility must be operated by a chief operator or an operator holding a Class D* license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift which does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

   *A Class D Wastewater Treatment Operator license is not renewable for operators of a facility listed in 30 TAC Section 30.342(c) and must be upgraded to a Class C Wastewater Treatment Operator license or higher prior to the expiration date of the Class D license.

3. The permittee shall maintain and operate the treatment facility in order to achieve optimum efficiency of treatment capability. This shall include required monitoring of effluent flow and quality as well as appropriate grounds and building maintenance.

4. The permittee shall comply with buffer zone requirements of 30 TAC Section §309.13(c). A wastewater treatment plant unit, defined by 30 TAC Section §309.11(9), must be located a minimum horizontal distance of 250 feet from a private well and a minimum horizontal distance of 500 feet from a public water well site, spring, or other similar sources of public drinking water, as provided by §290.41(c)(1)(C) of this title. A land application field must be located at a minimum horizontal distance of 150 feet from a private well and a minimum horizontal distance of 500 feet from a public water well site, spring, or other similar sources of public drinking water.

   Two public water supply wells have been identified by the permittee as requiring 500 foot buffers. These are identified as 68-10-811 and 68-10-815.

5. A 100-foot buffer shall be maintained from the land application area and surface waters in

the state.

6. The existing storage pond shall be adequately managed and lined to control seepage in accordance with 30 TAC 217.203. At least once per month, the permittee shall inspect the pond sides and bottom (if visible) for signs of damage and leakage, and any pond leak detection systems that are in service. Leaking ponds shall be removed from service, or operated in a manner to prevent discharge, until repairs are made or replacement ponds are constructed. Records of inspections and repairs must be maintained onsite and made available to TCEQ personnel during site inspections.

7. The permittee shall obtain representative soil samples from the root zones of the land application area. Composite sampling techniques shall be used. Each composite sample shall represent no more than 80 acres with no fewer than 10 to 15 subsamples representing each composite sample. For analysis and reporting, subsamples shall be composited by like sampling depth, type of crop, and soil type. Soil types are soils that have like topsoil or plow layer textures. These soils shall be sampled individually from 0 to 6 inches, 6 to 18 inches and 18 to 30 inches below ground level. The permittee shall sample soils in December to February of each year. Soil samples shall be analyzed within 30 days of sample collection.

   Samples shall be analyzed annually according to the following table:

Parameter	**Method**	**Minimum Analytical Level (MAL)**	**Reporting units**
pH	2:1 (v/v) water to soil mixture		Reported to 0.1 pH units after calibration of pH meter
Electrical Conductivity	2:1 (v/v) water to soil mixture	0.01	dS/m (same as mmho/cm)
Nitrate-nitrogen	From a 1 N KCl soil extract	1	mg/kg (dry weight basis)
Total Kjeldahl Nitrogen (TKN)	For determination of Organic plus Ammonium Nitrogen. Procedures that use Mercury (Hg) are not acceptable.	20	mg/kg (dry weight basis)
Total Nitrogen	= TKN plus Nitrate-nitrogen		mg/kg (dry weight basis)
Plant-available: Phosphorus	Mehlich III with inductively coupled plasma	1 (P)	mg/kg (dry weight basis)

Plant-available: Potassium (K)	May be determined in the same Mehlich III extract with inductively coupled plasma	5 (K)	mg/kg (dry weight basis)
Amendment addition, e.g., gypsum			Report in *short tons/acre* in the year effected

A copy of this soil testing plan shall be provided to the analytical laboratory prior to sample analysis. The permittee shall submit the results of the annual soil sample analyses with copies of the laboratory reports and a map depicting the areas that have received wastewater within the permanent land application fields to the TCEQ Regional Office (MC Region 13) and the Compliance Monitoring Team (MC 224) of the Enforcement Division, no later than the end of September of each sampling year. If wastewater is not applied in a particular year, the permittee shall notify the same TCEQ offices and indicate that wastewater has not been applied on the approved land irrigation site(s) during that year.

8. Application rates to 100 acres of golf course shall not exceed an agronomic rate of 4.2 acre-feet per year per acre irrigated and shall not exceed a net application rate of 1.68 acre-feet per year per acre based on the permitted flow and the acreage of the disposal site. The permittee is responsible for providing equipment to determine application rates and maintaining accurate records of the volume of effluent applied. These records shall be made available for review by the Texas Commission on Environmental Quality and shall be maintained for at least three years.

9. Irrigation practices shall be designed and managed to prevent ponding of effluent or contamination of ground and surface waters and to prevent the occurrence of nuisance conditions in the area. To promote effluent and nutrient uptake by the crop, and to prevent pathways for effluent surfacing, grasses, the golf course, and other ground cover shall be established and well maintained in the irrigation area throughout the year. Tailwater control facilities shall be provided as necessary to prevent the discharge of any effluent from the irrigated land.

10. Effluent shall not be applied for irrigation during rainfall events or when the ground is frozen or saturated.

11. For any area where treated effluent is stored or where there exist hose bibs or faucets, the permittee shall erect adequate signs stating that the irrigation water is from a non-potable water supply. Signs shall consist of a red slash superimposed over the international symbol for drinking water accompanied by the message “DO NOT DRINK THE WATER” in both English and Spanish. All piping transporting the effluent shall be clearly marked with these same signs.

12. Spray fixtures for the irrigation system shall be of such design that they cannot be operated by unauthorized personnel.

13. Irrigation with effluent shall be accomplished only when the area specified is not in use.

14. The permittee shall maintain a long-term contract with the owner(s) of the land application

site which is authorized for use in this permit, or own the land authorized for land application of treated effluent.

15. Holding ponds shall conform to the Texas Commission on Environmental Quality "Design Criteria for Sewerage Systems" requirements for stabilization ponds with regard to construction and levee design, and a minimum of 2 feet of freeboard shall be maintained.

16. If the effluent is to be transferred to a holding pond or tank, re-chlorination prior to the effluent being delivered into the irrigation system will be required. A trace chlorine residual shall be maintained in the effluent at the point of irrigation application.

17. Permanent transmission lines shall be installed from the holding pond to each tract of land to be irrigated utilizing effluent from that pond.

18. Facilities for the retention or storage of treated or untreated wastewater shall be adequately lined to control seepage. The following methods of pond lining are acceptable:
    a. In-situ clay soils or placed and compacted clay soils meeting the following requirements:
        1. More than 30% passing a No. 200 mesh sieve
        2. Liquid limit greater than 30%
        3. Plasticity index greater than 15
        4. A minimum thickness of 2 feet
    b. Membrane lining with a minimum thickness of 20 mils, and an underdrain leak detection system.
    c. An alternate method of pond lining may be utilized with prior approval from the Executive Director.

    The permittee shall furnish certification by a Texas Licensed Professional Engineer that the completed pond lining meets the appropriate criteria above. The certification shall be sent to the TCEQ Regional Office (MC Region 13) and Water Quality Compliance Monitoring Team (MC-224) of the Enforcement Division.

19. Any new or modified wastewater pond shall be adequately lined to control seepage in accordance with 30 TAC §217.203 and 30 TAC 309.13(d) since the facility overlies the recharge zone of an aquifer. The Permittee shall submit the liner certification for a newly constructed or modified wastewater pond to the Water Quality Assessment Team (MC-150), the TCEQ Regional Office (MC-Region 13), and the TCEQ Compliance Monitoring Section (MC-224) within 30 days of completion and prior to use. The certification shall be signed and sealed by a Texas-licensed professional engineer and include a description of how the liner meets the requirements of 30 TAC §217.203 and 30 TAC §309.13(d) since the facility is located on the recharge zone of an aquifer.

20. The existing wastewater ponds shall be maintained and operated in a manner that prevents unauthorized discharge to water in the state and contamination of groundwater.

21. Facilities for the retention of treated or untreated wastewater shall be adequately managed

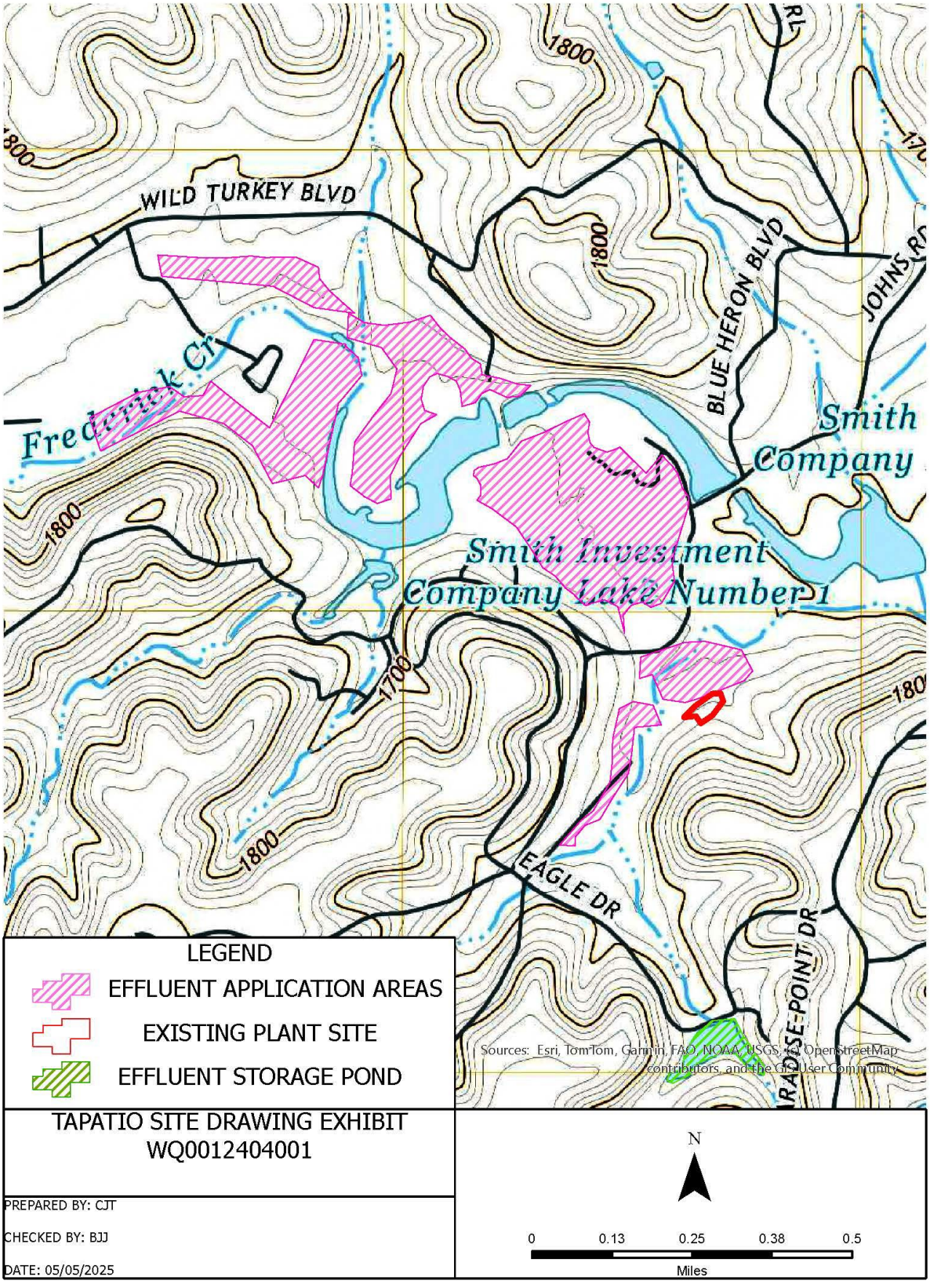
and lined to control seepage. At least once per month, the Permittee shall inspect the sides and bottom (if visible) of all wastewater ponds for signs of damage and leakage, and any pond leak detection systems that are in service. Leaking ponds shall be removed from service, or operated in a manner to prevent discharge, until repairs are made or replacement ponds are constructed. A record of the monthly inspections shall be maintained in a field log and kept onsite for TCEQ inspection.

22. Pond liner certifications and all liner construction and repair documentation shall be maintained by the Permittee for the life of the facility and be made available for TCEQ personnel for inspection and review.

23. The permittee shall use cultural practices to promote and maintain the health and propagation of the golf course and avoid plant lodging. The permittee shall harvest the crops (cut and remove it from the field) at least once during the year. Harvesting and mowing dates shall be recorded in a log book kept on site to be made available to TCEQ personnel upon request.

24. The physical condition of the land application fields shall be monitored on a weekly basis. Any area with problems such as surface runoff, surficial erosion, or stressed or damaged vegetation, etc., shall be recorded in a field log kept onsite. Corrective measures will be implemented within 24 hours of discovery.

Attachment A - Site Map
TCEQ Permit No. WQ0012404001
SJWTX, Inc.



TECHNICAL SUMMARY AND
EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

DESCRIPTION OF APPLICATION

Applicant:	SJWTX, Inc. TCEQ Permit No. WQ0012404001
Regulated Activity:	Domestic Wastewater Permit
Type of Application:	Renewal
Request:	Renewal with no changes
Authority:	Texas Water Code (TWC) § 26.027; 30 Texas Administrative Code (TAC) Chapters 305, 309, 312, 319, and 30; and Commission policies.

EXECUTIVE DIRECTOR RECOMMENDATION

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The draft permit includes an expiration date of **ten years from the date of issuance,** according to 30 TAC Section 305.127(1)(C)(ii)(III), Conditions to be Determined for Individual Permits.

REASON FOR PROJECT PROPOSED

SJWTX, Inc. has applied to the Texas Commission on Environmental Quality (TCEQ) for a renewal of Permit No. WQ0012404001 to authorize the disposal of treated domestic wastewater at a daily average flow not to exceed 0.15 million gallons per day (MGD) via surface irrigation of 100 acres of golf course. The facility includes a storage pond with a total surface area of 4 acres and total capacity of 80 acre-feet for storage of treated effluent prior to irrigation. The existing wastewater treatment facility serves single family residential and golf course resorts in the immediate area.

PROJECT DESCRIPTION AND LOCATION

The Tapatio Springs Wastewater Treatment Facility consists of an activated sludge process plant using the extended aeration mode. Treatment units include a bar screen, two aeration basins, two final clarifiers, two sludge drying beds, an effluent lift station, a holding pond, and a chlorine contact chamber. The facility is in operation.

Sludge generated from the treatment facility is hauled by a registered transporter and disposed of at a TCEQ-permitted land application site, Celoso AB, Permit No. WQ0004538000, in Waller County. The draft permit also authorizes the disposal of sludge at a TCEQ-authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge.

The wastewater treatment facility and disposal site are located approximately 0.2 mile southeast of the intersection of Tapatio Drive East and Blue Heron Boulevard (aka Resort Way), near the

City of Boerne, Kendall County, Texas 78006.

The wastewater treatment facility and disposal site are located in the drainage basin of the Upper Cibolo Creek in Segment No. 1908 of the San Antonio River Basin. No discharge of pollutants into water in the state is authorized by this permit.

SUMMARY OF EFFLUENT DATA

The following is a summary of the applicant's effluent monitoring data for the period April 2023 through April 2025. The average of Daily Average value is computed by averaging of all 30-day average values for the reporting period for each parameter: flow, five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

Parameter	Average of Daily Average
Flow, MGD	0.07
BOD_5, mg/l	5.3
TSS, mg/l	7.0
pH	7.6

DRAFT PERMIT CONDITIONS

The draft permit authorizes the disposal of treated domestic wastewater effluent at a daily average flow not to exceed 0.15 MGD via surface irrigation of 100 acres of golf course. The facility includes a storage pond with a total surface area of 4 acres and total capacity of 80 acre-feet for storage of treated effluent prior to irrigation. Application rates to the irrigated land shall not exceed an agronomic rate of 4.2 acre-feet per year per acre irrigated and shall not exceed a net application rate of 1.68 acre-feet per year per acre based on the permitted flow and the acreage of the disposal site

The effluent limitations in the draft permit, based on a daily average, are 20 mg/l biochemical oxygen demand (BOD_5) and 20 mg/l total suspended solids (TSS). The effluent shall contain a total chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes based on peak flow.

The draft permit includes Sludge Provisions according to the requirements of 30 TAC Chapter 312, Sludge Use, Disposal, and Transportation.

SUMMARY OF CHANGES FROM APPLICATION

None.

SUMMARY OF CHANGES FROM EXISTING PERMIT

Effluent limitations and monitoring requirements in the draft permit remain the same as the existing permit effluent limitations and monitoring requirements. The Sludge Provisions, Special Provisions, and Standard Provisions have been revised in the draft permit.

Special Provisions Nos. 7, 10, 12 and 19 in the existing permit have been updated.

Special Provision No. 8 in the existing permit has been removed since the facility is now operating in the Final phase.

Special Provisions Nos. 19, 20, 21, 22, 23 and 24 have been added to the draft permit based on recommendations from the Water Quality Assessment Team.

The draft permit includes all updates based on the 30 TAC 312 rule change effective April 23, 2020.

BASIS FOR DRAFT PERMIT

The following items were considered in developing the draft permit:

1. Application received on February 28,2025, and additional information received on March 17, 2025 and May 21, 2025.

2. Existing TCEQ permit: Permit No. WQ0012404001 issued on April 24, 2015.

3. Interoffice Memorandum from the Water Quality Assessment Team, Water Quality Assessment & Standards Section, Water Quality Division.

PROCEDURES FOR FINAL DECISION

When an application is declared administratively complete, the Chief Clerk sends a letter to the applicant advising the applicant to publish the Notice of Receipt of Application and Intent to Obtain Permit in the newspaper. In addition, the Chief Clerk instructs the applicant to place a copy of the application in a public place for review and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The Chief Clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent, along with the Executive Director’s preliminary decision, as contained in the technical summary or fact sheet, to the Chief Clerk. At that time, the Notice of Application and Preliminary Decision will be mailed to the same people and published in the same newspaper as the prior notice. This notice sets a deadline for making public comments. The applicant must place a copy of the Executive Director’s preliminary decision and draft permit in the public place with the application.

Any interested person may request a public meeting on the application until the deadline for filing public comments. A public meeting is intended for the taking of public comment and is not a contested case proceeding.

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director’s response to comments and final decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that if a person is not satisfied with the Executive

Director's response and decision, they can request a contested case hearing or file a request to reconsider the Executive Director's decision within 30 days after the notice is mailed.

The Executive Director will issue the permit unless a written hearing request or request for reconsideration is filed within 30 days after the Executive Director's response to comments and final decision is mailed. If a hearing request or request for reconsideration is filed, the Executive Director will not issue the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

If the Executive Director calls a public meeting or the Commission grants a contested case hearing as described above, the Commission will give notice of the date, time, and place of the meeting or hearing. If a hearing request or request for reconsideration is made, the Commission will consider all public comments in making its decision and shall either adopt the Executive Director's response to public comments or prepare its own response.

For additional information about this application, contact Paula Palmar at (512) 239-4561.

Paula Palmar — May 21, 2025

Paula Palmar — Date
Municipal Permits Team
Wastewater Permitting Section (MC 148)

Kimley»Horn

February 27, 2025

Texas Commission on Environmental Quality
Applications Review and Processing Team (MF 148)
Building F, Room 2101
12100 Park 35 Circle
Austin, Texas 78753

RE: ***WQ001204001 TLAP Permit Renewal Application***
KHA No. 069277508

Permittee: SJWTX, Inc., dba Texas Water Company
Project Name: Tapatio WWTP Permit Renewal
County(s): Kendall County

Dear Water Quality Team:
This letter serves to transmit the TLAP permit renewal application for the Tapatio Wastewater Treatment Plant.

The permit renewal application that follows contains the following forms and attachments:

- 10053 – Administrative Report 1.0
- Attachment A. Fee Voucher
- Attachment B. 10400 - Core Data Form
- Attachment C. Plain Language Summary
- Attachment D. Easement Agreements
- Attachment E. original USGS Map
- 10054 – Domestic Technical Report 1.0
- 10054 – Domestic Worksheet 3.0
· Attachment F. Process Flow Diagram
· Attachment G. Site Drawing
· Attachment H. Annual Cropping Plan
· Attachment I. Well Map
· Attachment J. Well Reports
· Attachment K. Groundwater Recharge Feature Report
· Attachment L. USDA Soil Map
· Attachment M. Soil Analyses
· Attachment N. TCEQ Letter of Conditional Construction Approval

Sincerely,
KIMLEY-HORN AND ASSOCIATES, INC.
Texas Firm No. F-928

Behnaz Jalili, P.E. (Texas License No. 152044)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the application.

APPLICANT NAME: SJWTX, Inc., dba Texas Water Company

PERMIT NUMBER (If new, leave blank): WQ00 12404001

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

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

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 ☐	$315.00 ☐
≥0.05 but <0.10 MGD	$550.00 ☐	$515.00 ☐
≥0.10 but <0.25 MGD	$850.00 ☐	$815.00 ☒
≥0.25 but <0.50 MGD	$1,250.00 ☐	$1,215.00 ☐
≥0.50 but <1.0 MGD	$1,650.00 ☐	$1,615.00 ☐
≥1.0 MGD	$2,050.00 ☐	$2,015.00 ☐

Minor Amendment (for any flow) $150.00 ☐

Payment Information:

Mailed Check/Money Order Number: Click to enter text.

Check/Money Order Amount: Click to enter text.

Name Printed on Check: Click to enter text.

EPAY Voucher Number: Click to enter text.

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 12404001

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

Expiration Date: March 1, 2025

Section 3. Facility Owner (Applicant) and Co-Applicant 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?

SJWTX, Inc., dba Texas Water Company

(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: 602969396

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: Williams, Aundrea

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?

N/A

(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: N/A

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: N/A Last Name, First Name: N/A

Title: N/A Credential: N/A

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

C. Core Data Form

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

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: Ms. Last Name, First Name: Jalili, Behnaz

Title: Project Engineer Credential: Ph.D, P.E.

Organization Name: Kimley-Horn and Associates, Inc.

Mailing Address: 5301 Southwest Parkway, Bldg 2, Suite 100 City, State, Zip Code: Austin, TX 78735

Phone No.: 512-518-5596 E-mail Address: behnaz.jalili@kimley-horn.com

Check one or both: ☒ Administrative Contact ☒ Technical Contact

B. Prefix: Mr. Last Name, First Name: Clements, Ian

Title: Project Engineer Credential: P.E.

Organization Name: Kimley-Horn & Associates

Mailing Address: 5301 Southwest Parkway, Bldg 2, Suite 100 City, State, Zip Code: Austin, TX 78735

Phone No.: 737-241-9266 E-mail Address: ian.clements@kimley-horn.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: Rodriguez, Ronnie

Title: Superintendent Wastewater Operations Credential: CWP

Organization Name: Texas Water Company

Mailing Address: PO Box 1742 City, State, Zip Code: Canyon Lake, TX 78133

Phone No.: 830-730-7240 E-mail Address: Ronnie.Rodriguez@txwaterco.com

B. Prefix: Mr. Last Name, First Name: Woods, Heath

Title: Director of Engineering Credential: CWP

Organization Name: Texas Water Company

Mailing Address: PO Box 1742 City, State, Zip Code: Canyon Lake, TX 78133

Phone No.: 830-312-4551 E-mail Address: heath.woods@txwaterco.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: Woods, Heath

Title: Director of Engineering Credential: P.E.

Organization Name: Texas Water Company

Mailing Address: PO Box 1742 City, State, Zip Code: Canyon Lake, TX 78133

Phone No.: 830-312-4551 E-mail Address: heath.woods@txwaterco.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: Rodriguez, Ronnie

Title: Superintendent Wastewater Operations Credential: CWP

Organization Name: Texas Water Company

Mailing Address: PO Box 1742 City, State, Zip Code: Austin, TX 78133

Phone No.: 830-730-7240 E-mail Address: Ronnie.Rodriguez@txwaterco.com

Section 8. Public Notice Information (Instructions Page 27)

A. Individual Publishing the Notices

Prefix: Ms. Last Name, First Name: Jalili, Behnaz

Title: Project Engineer Credential: Ph.D, P.E.

Organization Name: Kimley-Horn & Associates

Mailing Address: 5301 Southwest Parkway, Bldg 2, Suite 100 City, State, Zip Code: Austin, TX 78735

Phone No.: 512-518-5596 E-mail Address: behnaz.jalili@kimley-horn.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: Ms. Last Name, First Name: Jalili, Behnaz

Title: Project Engineer Credential: Ph.D, P.E.

Organization Name: Kimley-Horn & Associates, Inc.

Mailing Address: 5301 Southwest Parkway, Bldg 2, Suite 100 City, State, Zip Code: Austin, TX 78735

Phone No.: 512-518-5596 E-mail Address: behnaz.jalili@kimley-horn.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: Click to enter text.

Location within the building: Click to enter text.

Physical Address of Building: Click to enter text.

City: Click to enter text. County: Click to enter text.

Contact (Last Name, First Name): Click to enter text.

Phone No.: Click to enter text. 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? Spanish

F. Plain Language Summary Template

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

Attachment: Attachment C: Plain Language Summary

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: N/A

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** 102362175

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):

Tapatio Springs Wastewater Treatment Facility

C. Owner of treatment facility: SJWTX, Inc., dba Texas Water Company

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

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

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: Potranco Holdings LTD

Mailing Address: PO Box 2010 City, State, Zip Code: Boerne, Texas, 78006

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: Attachment D: Easement Agreement

E. Owner of effluent disposal site:

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: SJWTX, Inc., dba Texas Water Company

Mailing Address: PO Box 1742 City, State, Zip Code: Canyon Lake, TX 78133

Phone No.: 830-730-7240 E-mail Address: N/A

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:

Click to enter text.

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:

Click to enter text.

City nearest the outfall(s): Click to enter text.

County in which the outfalls(s) is/are located: Click to enter text.

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: Click to enter text.

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: Click to enter text.

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: Boerne

C. County in which the disposal site is located: Kendall County

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

Route is from the effluent pump station to the irrigation lake and from the irrigation lake to the irrigation area.

E. For **TLAPs**, please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: Master Lake, Smith Investment Co Lake#1 & 2, Fredrick Creek

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: WQ0012404001

Applicant: SJWTX, Inc., dba Texas Water Company

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): Aundrea Williams

Signatory title: President

Signature:_____ Date:_____

(Use blue ink)

Subscribed and Sworn to before me by the said_____

on this_____ day of_____, 20_____.

My commission expires on the_____ day of_____, 20_____.

_____

Notary Public *[SEAL]*

_____

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: Click to enter text.

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: Click to enter text.

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: Click to enter text.
3. Date of Check or Money Order: Click to enter text.
4. Name on Check or Money Order: Click to enter text.
5. APPLICATION INFORMATION

   Name of Project or Site: Click to enter text.

   Physical Address of Project or Site: Click to enter text.

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

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

ATTACHMENT A

Application Fee Payment Voucher

ATTACHMENT B

Core Data Form

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission (*If other is checked please describe in space provided.*)

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

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

2. Customer Reference Number (*if issued*)	Follow this link to search for CN or RN numbers in Central Registry**	**3. Regulated Entity Reference Number** (*if issued*)
CN 602969396		**RN 102362175**

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ New Customer ☐ Update to Customer Information ☒ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

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

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

SJWTX, Inc., dba Texas Water Company | Kendall West Utility LLC

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** (*if applicable*)
0800542934	12040132529	204013252	792282928

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☒ Other:

12. Number of Employees
☐ 0-20 ☒ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☒ **Yes** ☐ **No**

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

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:							
	PO Box 1742						
	City	Canyon Lake	**State**	TX	**ZIP**	78133	**ZIP + 4**

16. Country Mailing Information (*if outside USA*)	**17. E-Mail Address** (*if applicable*)
	Heath.Woods@txwaterco.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(830) 312-4551		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

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

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Tapatio Spring WWTP

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	Approximately 0.2 mile southeast of the intersection of Tapatio Drive East and Blue Heron Boulevard (aka Resort Way)							
	City	Borne	**State**	TX	**ZIP**	78006	**ZIP + 4**	
24. County	Kendall County							

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:	

26. Nearest City	**State**	**Nearest ZIP Code**

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).

27. Latitude (N) In Decimal:			**28. Longitude (W) In Decimal:**		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	46	27.1	98	48	25.6

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
4941	4952	22130	221320

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

Water & Wastewater Utility

34. Mailing Address:								
	PO Box 1742							
	City	**Canyon Lake**	**State**	**TX**	**ZIP**	**78133**	**ZIP + 4**	
35. E-Mail Address:	**Heath.Woods@txwaterco.com**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(830) 312-4551		( ) -

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

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

SECTION IV: Preparer Information

40. Name:	Behnaz Jalili	**41. Title:**	Project Manager

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 518-5596		( ) -	

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	SJWTX, Inc., dba Texas Water Company	**Job Title:**	President
Name *(In Print):*	Aundrea Williams	**Phone:**	( ) -
Signature:	Aundrea Williams	**Date:**	04/03/2025

TLAP Core Data Form and Lab Accreditation

Final Audit Report 2025-03-04

Created:	2025-03-04
By:	Valerie Wernert (Valerie.Wernert@txwaterco.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAqnLlugShqWv2_WVqKogRbVKmeb_Ywh3v

"TLAP Core Data Form and Lab Accreditation" History

Document created by Valerie Wernert (Valerie.Wernert@txwaterco.com)
2025-03-04 - 2:37:16 PM GMT

Document emailed to Aundrea Williams (Aundrea.Williams@txwaterco.com) for signature
2025-03-04 - 2:37:20 PM GMT

Email viewed by Aundrea Williams (Aundrea.Williams@txwaterco.com)
2025-03-04 - 2:59:41 PM GMT

Document e-signed by Aundrea Williams (Aundrea.Williams@txwaterco.com)
Signature Date: 2025-03-04 - 3:00:25 PM GMT - Time Source: server

Agreement completed.
2025-03-04 - 3:00:25 PM GMT

ATTACHMENT C

Plain Language Sumarry

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

SUMMARY OF APPLICATION IN PLAIN LANGUAGE FOR TPDES OR TLAP PERMIT APPLICATIONS

Summary of Application (in plain language) 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 of your facility and application as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. You may modify the template as necessary to accurately describe your 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 you 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. After filling in the information for your facility delete these instructions.

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.

SJWTX, Inc., dba Texas Water Company (CN602969396) operates Tapatio Springs WWTF (RN102362175), an activated sludge process plant using the extended aeration mode. The facility is located at approximately 0.2 miles southeast of the intersection of Tapatio Drive East and Blue Heron Boulevard (aka Resort Way), in Boerne, Kendall County, Texas 78006. The permittee requests renewed authorization to dispose of treated domestic wastewater effluent at a flow of 0.15 MGD via surface irrigation of 100 acres of golf course. Application rates shall not exceed a net application rate of 4.2 acre-feet per year per acre irrigated and shall not exceed a net application rate of 1.68 acre-feet per year per acre based on the permitted flow and the acreage of the disposal site. This permit will not authorize a discharge of pollutants into water in the state.

Discharges from the facility are expected to contain no pollutants beyond five-day biochemical oxygen demand (BOD_5) not to exceed single grab sample of 65 mg/L, total suspended solids (TSS) not to exceed single grab sample of 65 mg/L. Treated domestic wastewater effluent is treated by bar screens, two aeration basins, two final clarifiers, two sludge drying beds, an effluent lift station, an effluent holding pond, and a chlorine contact chamber.

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.

Texas Water Company (CN CN602969396) opera Tapatio Springs Instalación para el Tratamiento de Aguas Residuales RN102362175, una Planta de proceso de lodos activados utilizando el modo de aireación extendida. . La instalación está ubicada en aproximadamente 0,2 millas al sureste de la intersección de Tapatio Drive East y Blue Heron Boulevard (también conocido como Resort Way) , en Boerne, Condado de Kendall, Texas 78006. El titular del permiso solicita una autorización renovada para disponer de efluentes de aguas residuales domésticas tratadas a un flujo de 0,15 MGD mediante riego superficial de 100 acres de campo de golf. Las tasas de aplicación no excederán una tasa de aplicación neta de 4.2 acres-pie por año por acre regado y no excederán una tasa de aplicación neta de 1.68 acres-pie por año por acre según el flujo permitido y la superficie del sitio de eliminación. . *<<Para las solicitudes de TLAP incluya la siguiente oración, de lo contrario, elimine:>>* Este permiso no autorizará una descarga de contaminantes en el agua en el estado.

Se espera que las descargas de la instalación contengan sin contaminantes más allá de la demanda bioquímica de oxígeno (DBO5) de cinco días que no debe exceder una muestra única de 65 mg/L, el total de sólidos suspendidos (SST) no debe exceder una muestra única de 65 mg/L . Efluente de aguas residuales domésticas tratadas . está tratado por cribas de barras, dos balsas de aireación, dos clarificadores finales, dos lechos de secado de lodos, una estación de bombeo de efluentes, un estanque de retención de efluentes y una cámara de contacto de cloro. .

ATTACHMENT D

Easement Agreement

EASEMENT AGREEMENT FOR ACCESS

DATE: MAY 23RD, 2016

GRANTOR: Tapatio Property Owners, LLC, a foreign limited liability company

GRANTOR'S MAILING ADDRESS:

c/o Seis NV Vaqueros Tapatio, JV, LLC
36 Narrow Rocks Road
Westport, CT 06880

GRANTEE: Kendall West Utility, LLC, a Delaware limited liability company

GRANTEE' S MAILING ADDRESS:

P.O. Box 54
Boerne, Kendall County, Texas 78006

Dominant Estate Property:

A 0.680 acre tract of land out of the Manuel Alqueseba Survey No. 2, Kendall County, Texas being more particularly described in Exhibit "A-1" attached hereto for all purposes.

Easement Property:

A 0.903 acre tract of land out of the H. J. Moore Survey No.473 ½, Kendall County, Texas, being more particularly described in Exhibit "B" attached hereto for all purposes.

Easement Purpose: For providing free and uninterrupted pedestrian and vehicular ingress to and egress from the Dominant Estate Property , to and from Wild Turkey Boulevard via Resort Way, a private road .

Consideration: Good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by Grantor.

Reservations from Conveyance: Easements, rights of way and prescriptive rights, whether of record or not; and valid instruments, presently recorded in the county or counties in which the easement property is located, other than encumbrances and conveyances, that affect the Easement Property.

Exceptions to Warranty: None

Grant of Easement: Granter, for the Consideration and subject to the Reservations from Conveyance and Exceptions to Warranty, grants, sells, and conveys to Grantee and Grantee's heirs, successors, and assigns an easement over. on, and across the Easement Properly for the Easement Purpose and for the benefit of the Dominant Estate Property, together with all and singular the rights and appurtenances thereto in any way belonging (collectively, the "Easement"), to have and to hold the Easement to Grantee and Grantee's heirs, successors, and assigns forever. Grantor binds Grantor and Grantor's heirs, successors, and assigns to warrant and forever defend the title to the Easement in Grantee and Grantee's heirs, successors, and assigns against every person whomsoever lawfully claiming or to claim the Easement or any part thereof, except as to the Reservations from Conveyance and Exceptions to Warranty.

Terms and Conditions: The following terms and conditions apply to the Easement granted by this agreement:

1. *Character of Easement.* The Easement is appurtenant to and runs with all or any portion of the Dominant Estate Property, whether or not the Easement is referenced or described in any conveyance of all or such portion of the Dominant Estate Property. The Easement is nonexclusive and irrevocable. The Easement is for the benefit of Grantee and Grantee's heirs, successors, and assigns who at any time own the Dominant Estate Property or any interest in the Dominant Estate Property (as applicable, the "Holder").

2. *Duration of Easement.* The duration of the Easement is perpetual.

3. *Reservation of Rights.* Grantor reserves for Grantor and Grantor's heirs, successors, and assigns the right to continue to use and e1tjoy the surface of the Easement Property for all purposes that do not interfere with or interrupt the use or enjoyment of the Easement by Holder for the Easement Purposes. Grantor reserves for Grantor and Grantor's heirs, successors, and assigns the right to use all or part of the Easement in conjunction with Holder and the right to convey to others the right to use all or part of the Easement in conjunction with Holder, as long as such further conveyance is subject to the terms of this agreement and the other users agree to bear a proportionate part of the costs of improving and maintaining the Easement.

4. *Secondary Easement.* Holder has the right (the "Secondary Easement") to use as much of the surface of the property that is adjacent to the Easement Property ("Adjacent Property") as may be reasonably necessary to install and maintain a road reasonably suited for the Easement Purpose within the Easement Property. However, Holder must promptly restore the Adjacent Property to its previous physical condition if changed by use of the rights granted by this Secondary Easement.

5. *Improvement and Maintenance of Easement Property.* Improvement and maintenance of the Easement Property will be at the sole expense of Holder. Holder has the right to

eliminate any encroachments into the Easement Property. Holder must maintain the Easement Property in a neat and clean condition. Holder has the right to construct, install, maintain, replace, and remove a road with all culverts, bridges, drainage ditches, sewer facilities, and similar or related utilities and facilities under or across any portion of the Easement Property (collectively, the "Road Improvements"). All matters concerning the configuration, construction, installation, maintenance, replacement, and removal of the Road Improvements are at Holder's sole discretion, subject to performance of Holder's obligations under this agreement. Holder has the right to remove or relocate any fences within the Easement Property or along or near its boundary lines if reasonably necessary to construct, install, maintain, replace, or remove the Road Improvements or for the road to continue onto other lands or easements owned by Holder and adjacent to the Easement Property, subject to replacement of the fences to their original condition on the completion of the work. On written request by Holder, the owners of the Easement Property will execute or join in the execution of easements for sewer, drainage, or utility facilities under or across the Easement Property.

6. *Equitable Rights of Enforcement.* This Easement may be enforced by restraining orders and injunctions (temporary or permanent) prohibiting interference and commanding compliance. Restraining orders and injunctions will be obtainable on proof of the existence of interference or threatened interference, without the necessity of proof of inadequacy of legal remedies or irreparable harm, and will be obtainable only by the parties to or those benefited by this agreement; provided, however, that the act of obtaining an injunction or restraining order will not be deemed to be an election of remedies or a waiver of any other rights or remedies available at law or in equity.

7. *Attorney's Fees.* If either party retains an attorney to enforce this agreement, the party prevailing in litigation is entitled to recover reasonable attorney's fees and court and other costs.

8. *Binding Effect.* This agreement binds and inures to the benefit of the parties and their respective heirs, successors, and pe1mitted assigns.

9. *Choice of Law.* This agreement will be construed under the laws of the state of Texas, without regard to choice-of-law rules of any jurisdiction. Venue is in the county or counties in which the Easement Property is located.

10. *Counterparts.* This agreement may be executed in any number of counterparts with the same effect as if all signatory parties had signed the same document. All counterparts will be construed together and will constitute one and the same instrument.

11. *Waiver of Default.* It is not a waiver of or consent to default if the non-defaulting party fails to declare immediately a default or delays in taking any action. Pursuit of any remedies set forth in this agreement does not preclude pursuit of other remedies in this agreement or provided by law.

12. *Further Assurances.* Each signatory party agrees to execute and deliver any additional documents and instruments and to perform any additional acts necessary or appropriate to perform the terms, provisions, and conditions of this agreement and all transactions contemplated by this agreement.

13. *Indemnity.* Each party agrees to indemnify, defend, and hold harmless the other party from any loss, attorney's fees, expenses, or claims attributable to breach or default of any provision of this agreement by the indemnifying party.

14. *Entire Agreement.* This agreement and any exhibits constitute the entire agreement of the parties concerning the grant of the Easement by Grantor to Grantee. There are no representations, agreements, warranties, or promises that are not in this agreement and any exhibits.

15. *Legal Construction.* If any provlslOn in this agreement is for any reason unenforceable, to the extent the unenforceability does not destroy the basis of the bargain among the parties, the unenforceability will not affect any other provision hereof, and this agreement will be construed as if the unenforceable provision had never been a part of the agreement. Whenever context requires, the singular will include the plural and neuter include the masculine or feminine gender, and vice versa. Article and section headings in this agreement are for reference only and are not intended to restrict or define the text of any section. This agreement will not be construed more or less favorably between the parties by reason of authorship or origin of language.

16. *Notices.* Any notice required or permitted under this agreement must be in writing. Any notice required by this agreement will be deemed to be delivered (whether actually received or not) when deposited with the United States Postal Service, postage prepaid, certified mail, return receipt requested, and addressed to the intended recipient at the address shown in this agreement. Notice may also be given by regular mail, personal delivery, courier delivery, facsimile transmission, or other commercially reasonable means and will be effective when actually received. Any address for notice may be changed by written notice delivered as provided herein.

17. *Recitals.* Any recitals in this agreement are represented by the parties to be accurate, and constitute a part of the substantive agreement.

18. *Time.* Time is of the essence. Unless otherwise specified, all references to "days" mean calendar days. Business days exclude Saturdays, Sundays, and legal public holidays. If the date for performance of any obligation falls on a Saturday, Sunday, or legal public holiday, the date for performance will be the next following regular business day.

[SIGNATURES APPEAR ON THE FOLLOWING PAGES]

GRANTOR:

TAPATIO PROPERTY OWNER, LLC
1 Resort Way
Boerne, TX 78006

By: Seis NV Vaqueros Tapatio JV, LLC, a Delaware limited liability company, its sole member

By: _____

Name: Matthew Trevenen
Title: Authorized Signatory

THE STATE OF TEXAS §
§
COUNTY OF KENDALL §

On the 23rd day of May in the year 2016, before me, the undersigned, personally appeared Matt Trevenen personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individuals, or the person upon behalf of which the individuals acted, executed the instrument.

John Norwood
Notary Public - State of New York
No. 01NO6330497
Qualified in King County
My Commission Expires September 14, 2019

_____
Notary Public – State of New York

GRANTEE:

Kendall West Utility, LLC

By: _____
John-Mark Matkin, President

THE STATE OF TEXAS §
§
COUNTY OF KENDALL §

This instrument was acknowledged before me on the 23rd day of MAY, 2016 by **JOHN-MARK MATKIN,** President of **KENDALL WEST UTILITY, LLC** on behalf of said company.

SHARI WILLIAMS MARCELL
ID #126360261
My Commission Expires
January 18, 2020

_____
Notary Public in and for the State of Texas

AFTER RECORDING RETURN TO:

Kendall West Utility, LLC
P.O. Box 54
Boerne, Texas 78006
Attention: John-Mark Matkin

MATKIN-HOOVER
ENGINEERING & SURVEYING
8 Spencer Road, Suite 300, Boerne, Texas 78006
Phone: 830-249-0600 FAX: 830-249-0099

TRACT 31AE
FIELD NOTES FOR A 0.680 OF ONE ACRE TRACT OF LAND

BEING A 0.680 OF ONE ACRE TRACT OF LAND OUT OF THE MANUEL ALQUESEBA SURVEY NO. 2, ABSTRACT NO. 990, KENDALL COUNTY, TEXAS, SAID 0.680 OF ONE ACRE TRACT OF LAND BEING A PORTION OF A THE POTRANCO HOLDINGS, LTD., TRACT RECORDED IN VOLUME 1264, PAGE 838, OFFICIAL RECORDS OF KENDALL COUNTY, TEXAS, SAID 0.680 OF ONE ACRE TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a ½" rebar found having a coordinate value of N=13,829,234.24, E=2,029,790.06, at the northerly northwest corner of the Potranco Holdings, Ltd., tract, an angle point in the southeast boundary line of a called 55.089 acre tract recorded in Volume 1215, Page 1084, Official Records of Kendall County, Texas;

(1) **Thence, N 89°40'25" E,** along the north boundary line of the Potranco Holdings, Ltd., tract, the south boundary line of the called 55.089 acre tract, **a distance of 116.81 feet** to a calculated point for corner;

(2) **Thence,** departing the north boundary line of the Potranco Holdings, Ltd., tract, the south boundary line of the called 55.089 acre tract, the following courses and distances:

a. **N 37°06'35" W, 197.68 feet** to a calculated point for angle;

b. **S 55°31'27" W, 100.92 feet** to a calculated point for corner;

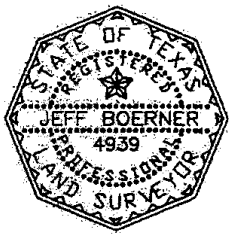
c. **N 34°47'56" W, 63.30 feet,** to a calculated point for interior corner;

d. **S 83°03'20" W, 87.06 feet,** to a calculated point for corner in the northwest boundary line of the Potranco Holdings, Ltd., tract, the southeast boundary line of the called 55.089 acre tract;

(3) **Thence, N 45°04'23" E,** along the northwest boundary line of the Potranco Holdings, Ltd., tract, the southeast boundary line of the called 55.089 acre tract, **a distance of 123.27 feet,** to a ½" rebar found for angle;

(4) **Thence, N 54°42'20" E,** continuing along the northwest boundary line of the Potranco Holdings, Ltd., tract, the southeast boundary line of the called 55.089 acre tract, a **distance of 148.17 feet,** to the **POINT OF BEGINNING** containing 0.680 of one acre of land, more or less.

Note: This description is based on an on the ground survey performed on 04-09-2012. The basis of bearings was established from the Texas State Plane Coordinate System, South Central Zone 4202. A survey plat with same date accompanies this description.



Jeff Boerner 04-13-2012
Registered Professional Land Surveyor
No. 4939 Job 12-4048

Doc # 00303619
Vol 1532 Pg 314

TRACT NO. 31AE & 31BE

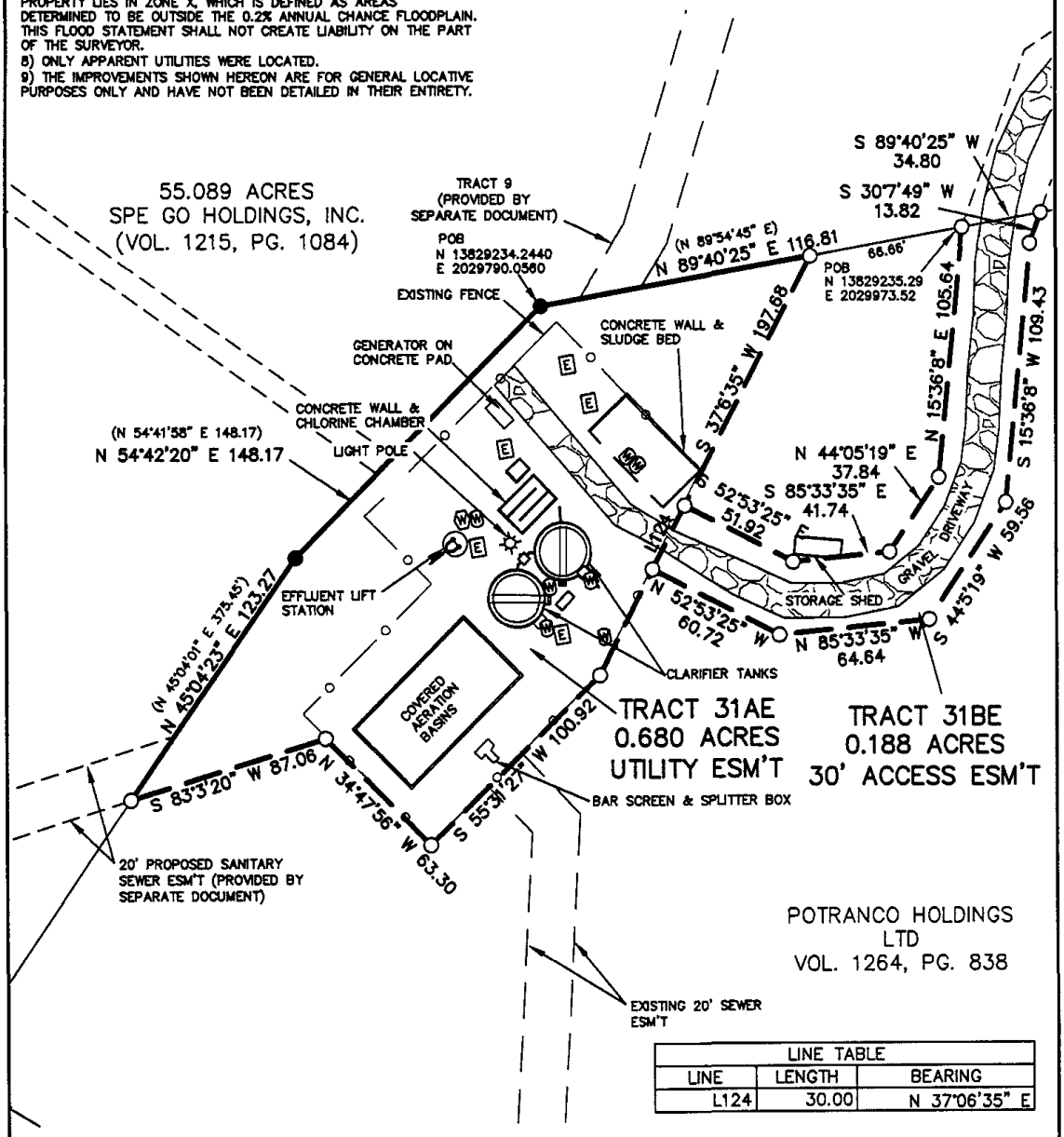
A PLAT CONTAINING TRACT 31E, A 0.680 ACRE TRACT, 0.188 ACRE TRACT BEING A 30' WIDE ACCESS EASEMENT, OUT OF THE MANUEL ALQUESEBA SURVEY NO. 2, ABSTRACT NO. 990, KENDALL COUNTY, TEXAS, SAID EASEMENTS ALSO BEING PART OF THE REMAINING PORTION OF THE POTRANCO HOLDINGS LTD TRACT RECORDED IN 1264, PAGE 838, OFFICIAL RECORDS, KENDALL COUNTY, TEXAS

SCALE: 1" = 60'

LEGEND

POB	POINT OF BEGINNING
E.P.	EDGE OF PAVEMENT
○	CALCULATED POINT
●	FOUND 1/2" REBAR
[E]	ELECTRIC BOX
∅	UTILITY POLE
∅→	UTILITY POLE WITH GUY WIRE
Ⓦ	WATER METER
Ⓦ	WATER VALVE
[T]	TELEPHONE PEDESTAL
——X——	WIRE FENCE
——O——	CHAIN-LINK FENCE
——OET——	ELECTRIC/TELEPHONE (OVERHEAD)
(CALLED)	PER VOL.1264, PG. 838

NOTES:
1) FIELD WORK PERFORMED ON: 03/07/2012
2) GRANTEE: KENDALL WEST UTILITY, LLC
3) ADDRESS: NA
4) BASIS OF BEARING: TEXAS STATE PLANE, SOUTH CENTRAL 4204
5) THIS SURVEY WAS DONE WITHOUT THE BENEFIT OF A CURRENT TITLE COMMITMENT, THEREFORE ALL SETBACKS, EASEMENTS AND ENCUMBRANCES MAY NOT BE SHOWN HEREON. THE SURVEYOR DID NOT COMPLETE AN ABSTRACT OF TITLE ON THE SUBJECT PROPERTY.
6) A METES AND BOUNDS DESCRIPTION WAS PREPARED BY A SEPARATE DOCUMENT.
7) ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR KENDALL COUNTY, TEXAS, MAP NUMBER 48259C0400F, EFFECTIVE DATE DECEMBER 17, 2010, THIS PROPERTY LIES IN ZONE X, WHICH IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.
8) ONLY APPARENT UTILITIES WERE LOCATED.
9) THE IMPROVEMENTS SHOWN HEREON ARE FOR GENERAL LOCATIVE PURPOSES ONLY AND HAVE NOT BEEN DETAILED IN THEIR ENTIRETY.



LINE TABLE		
LINE	LENGTH	BEARING
L124	30.00	N 37°06'35" E

STATE OF TEXAS
REGISTERED
JEFF BOERNER
4939
PROFESSIONAL
LAND SURVEYOR

I HEREBY CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND, AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PLAT CORRECTLY REPRESENTS THE FACTS FOUND AT THE TIME OF THIS SURVEY.

JEFF BOERNER DATE: 4/13/2012
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 4939
JOB NO. 12-4048

EXHIBIT "A-1" 3 OF 3 PAGE(S)
JOB NO. 12-4048 DATE: 03/09/2012

MATKINHOOVER
ENGINEERING & SURVEYING
P.O. BOX 81
1 SPENCER ROAD SUITE 100
BOERNE, TEXAS 78006
OFFICE: 830.249.0600 FAX:830.249.0099
TEXAS REGISTERED ENGINEERING FIRM F-12453
CIVIL ENGINEERS SURVEYORS LAND PLANNERS
CONSTRUCTION MANAGERS CONSULTANTS

MATKIN-HOOVER
ENGINEERING & SURVEYING
8 Spencer Road, Suite 300, Boerne, Texas 78006
Phone: 830-249-0600 FAX: 830-249-0099

TRACT 32E
FIELD NOTES FOR A 0.903 OF ONE ACRE TRACT OF LAND
VARIABLE WIDTH ACCESS EASEMENT

BEING A 0.903 OF ONE ACRE TRACT OF LAND OUT OF THE H.J. MOORE SURVEY NO. 473 1/2, ABSTRACT NO. 333, KENDALL COUNTY, TEXAS, BEING A PORTION OF A CALLED 55.089 ACRE TRACT RECORDED IN VOLUME 1215, PAGE 1084, OFFICIAL RECORDS OF KENDALL COUNTY, TEXAS, SAID 0.903 OF ONE ACRE TRACT OF LAND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a calculated point having a coordinate value of N=13,829,235.29, E=2,029,973.52, in the south boundary line of the called 55.089 acre tract, said point being **N 89°40'25" E, a distance of 183.47 feet** from a ½" rebar found at an angle point in the south boundary line of the called 55.089 acre tract;

(1) **Thence**, departing the south boundary line of the called 55.089 acre tract, the following courses and distances:

a. **N 30°07'49" E, 79.28 feet,** to a calculated point for angle;

b. **N 67°33'43" E, 69.88** feet, to a calculated point for angle;

c. **N 81°37'56" E, 136.89 feet,** to a calculated point for angle;

d. **N 41°02'36" E, 24.01 feet,** to a calculated point for angle;

e. **N 03°31'50" W, 87.21 feet,** to a calculated point for angle;

f. **N 11°00'34" W, 82.25 feet** to a calculated point for angle;

g. **N 02°09'44" W, 117.04 feet,** to a calculated point for angle;

h. **N 23°23'24" W, 176.25 feet,** to a calculated point for interior corner;

i. **S 75°41'12" W, 222.89 feet,** to a calculated point for angle;

j. **N 84°51'25" W, 290.52 feet,** to a calculated point for corner in the east right-of-way line of Resort Way, a 40 foot safety lane recorded n Volume 7, Pages 40-41, Plat Records of Kendall County, Texas, said point being in the arc of a curve to the left;

(2) **Thence,** along the east right-of-way line of Resort Way, curving to the left with a radius of 230.00 feet, a central angle of 07°30'53", an arc length of 30.17 feet, and a chord which bears **N 10°45'33" E, a distance of 30.14 feet** to a calculated point fort corner;

(3) **Thence,** departing the east right-of-way line of Resort Way, the following courses and distances:

a. **S 84°51'25" E, 282.43 feet,** to a calculated point for angle;

b. **N 75°41'12" E, 243.34 feet,** to a calculated point for corner;

c. **S 23°23'24" E, 207.45 feet,** to a calculated point for angle;

d. **S 02°09'44" E, 120.34 feet,** to a calculated point for angle;

e. **S 11°00'34" E, 81.89 feet,** to a calculated point for angle;

f. **S 03°31'50" E, 101.47 feet,** to a calculated point for angle;

g. **S 41°02'36" W, 47.40 feet,** to a calculated point for angle;

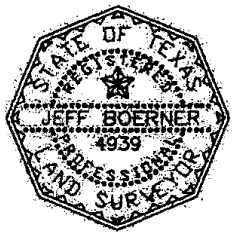
h. **S 81°37'56" W, 144.28 feet,** to a calculated point for angle;

i. **S 67°33'43" W, 56.56 feet,** to a calculated point for angle;

j. **S 29°45'25" W, 51.04 feet,** to a calculated point for corner in the south boundary line of the called 55.089 acre tract;

(4) **Thence, S 89°40'25" W,** along the south boundary line of the called 55.089 acre tract, a **distance of 34.80 feet** to the **POINT OF BEGINNING** containing 0.903 of one acre of land, more or less.

Note: This description is based on an on the ground survey performed on 03-10-2012. The basis of bearings was established from the Texas State Plane Coordinate System, South Central Zone 4204. A survey plat with same date accompanies this description.



Jeff Boerner 04-13-2012
Registered Professional Land Surveyor
No. 4939 Job # 12-4048

Doc # 00303619
VOL 1532 Pg 317

TRACT NO. 32E

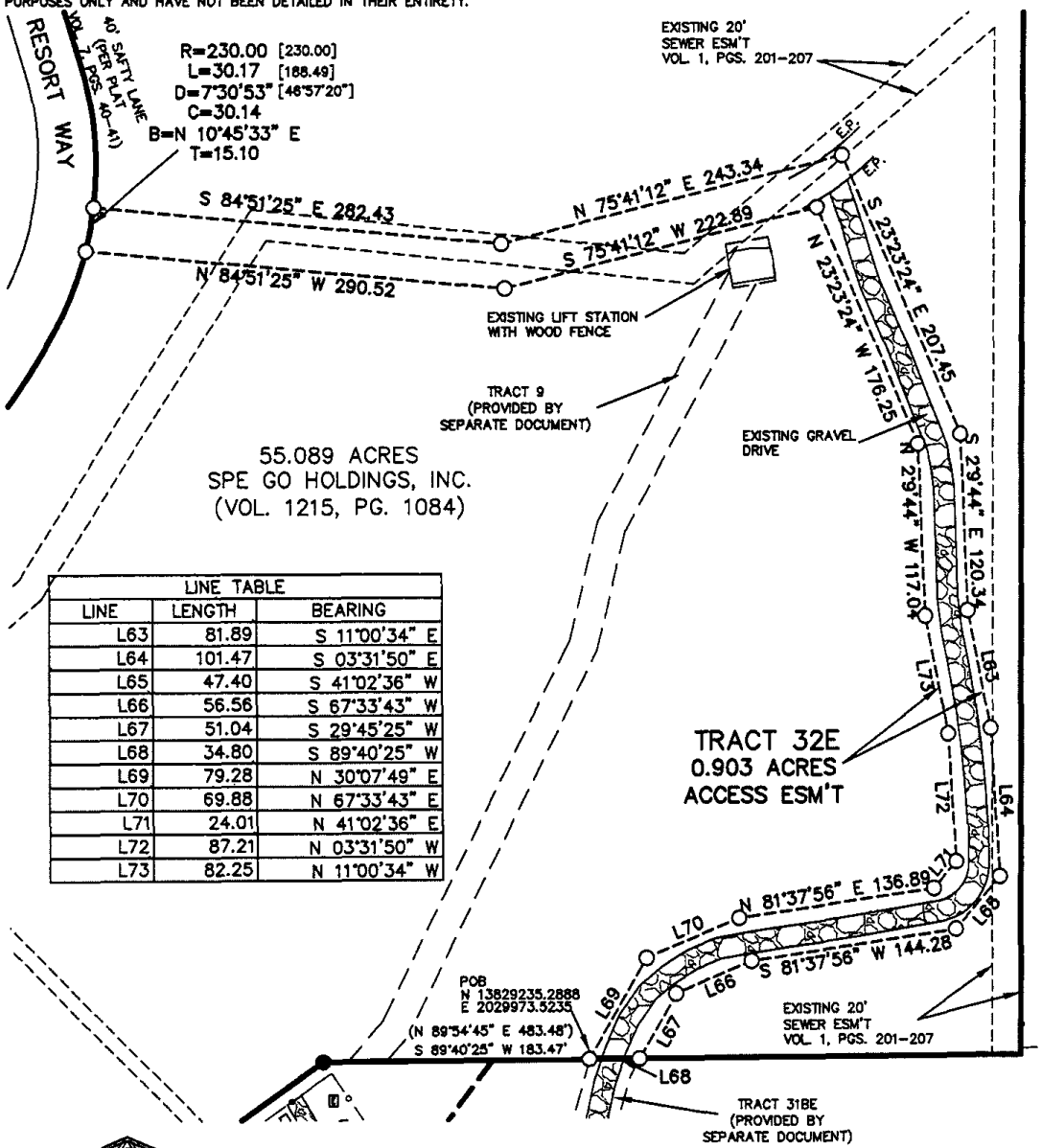
A PLAT CONTAINING TRACT 32E, A 0.903 ACRE TRACT, OUT OF THE H.J. MOORE SURVEY NO. 473 1/2, KENDALL COUNTY, TEXAS. SAID 0.903 OF AN ACRE EASEMENT ALSO BEING OUT OF THAT CERTAIN 55.089 ACRE TRACT RECORDED IN VOLUME 1215, PAGE 1084, KENDALL COUNTY OFFICIAL RECORDS

NOTES:
1) FIELD WORK PERFORMED ON: 03/07/2012
2) GRANTEE: KENDALL WEST UTILITY, LLC
3) ADDRESS: NA
4) BASIS OF BEARING: TEXAS STATE PLANE, SOUTH CENTRAL 4204
5) THIS SURVEY WAS DONE WITHOUT THE BENEFIT OF A CURRENT TITLE COMMITMENT, THEREFORE ALL SETBACKS, EASEMENTS AND ENCUMBRANCES MAY NOT BE SHOWN HEREON. THE SURVEYOR DID NOT COMPLETE AN ABSTRACT OF TITLE ON THE SUBJECT PROPERTY.
6) A METES AND BOUNDS DESCRIPTION WAS PREPARED BY A SEPARATE DOCUMENT.
7) ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR KENDALL COUNTY, TEXAS, MAP NUMBER 48259C0400F, EFFECTIVE DATE DECEMBER 17, 2010, THIS PROPERTY LIES IN ZONE X, WHICH IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.
8) ONLY APPARENT UTILITIES WERE LOCATED.
9) THE IMPROVEMENTS SHOWN HEREON ARE FOR GENERAL LOCATIVE PURPOSES ONLY AND HAVE NOT BEEN DETAILED IN THEIR ENTIRETY.

SCALE: 1" = 100'

LEGEND

POB	POINT OF BEGINNING
E.P.	EDGE OF PAVEMENT
○	CALCULATED POINT
●	FOUND 1/2" REBAR
[E]	ELECTRIC BOX
∅	UTILITY POLE
∅→	UTILITY POLE WITH GUY WIRE
Ⓦ	WATER METER
[W]	WATER VALVE
[T]	TELEPHONE PEDESTAL
—x—x—	WIRE FENCE
—o—o—o—	CHAIN-LINK FENCE
—OET—	ELECTRIC/TELEPHONE (OVERHEAD)
(CALLED)	PER VOL.1264, PG. 838
[CALLED]	PER VOL.1, PGS. 201-207



LINE TABLE		
LINE	LENGTH	BEARING
L63	81.89	S 11°00'34" E
L64	101.47	S 03°31'50" E
L65	47.40	S 41°02'36" W
L66	56.56	S 67°33'43" W
L67	51.04	S 29°45'25" W
L68	34.80	S 89°40'25" W
L69	79.28	N 30°07'49" E
L70	69.88	N 67°33'43" E
L71	24.01	N 41°02'36" E
L72	87.21	N 03°31'50" W
L73	82.25	N 11°00'34" W

STATE OF TEXAS
REGISTERED
JEFF BOERNER
4939
PROFESSIONAL
LAND SURVEYOR

I HEREBY CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND, AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PLAT CORRECTLY REPRESENTS THE FACTS FOUND AT THE TIME OF THIS SURVEY.

JEFF BOERNER DATE: 4/13/2012
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 4939
JOB NO. 12-4048

EXHIBIT "B" 3 OF 3 PAGE(S)
JOB NO. 12-4048 DATE: 03/09/2012

MATKINHOOVER
ENGINEERING & SURVEYING
P.O. BOX 54
2 SPENCER ROAD SUITE 100
BOERNE, TEXAS 78006
OFFICE: 830.249.0600 FAX: 830.249.0099
TEXAS REGISTERED ENGINEERING FIRM F-09517
CIVIL ENGINEERS SURVEYORS LAND PLANNERS
CONSTRUCTION MANAGERS CONSULTANTS

Filed & Recorded in:

KENDALL COUNTY
DARLENE HERRIN
COUNTY CLERK

07/18/2016 03:05PM

Document Number : 00303619
Total Fees : $70.00 pd

Receipt Number - 68021
By Deputy: Harriet P Seidensticker

This Document has been received by this Office for Recording into the Official Public Records.

We do hereby swear that we do not discriminate due to Race, Creed, Color, Sex or National Origin.

STATE OF TEXAS, COUNTY OF KENDALL
I hereby certify that this instrument was filed in File Number Sequence on the date and at the time stamped hereon and was duly recorded in the OFFICIAL RECORDS Records of Kendall County, Texas on

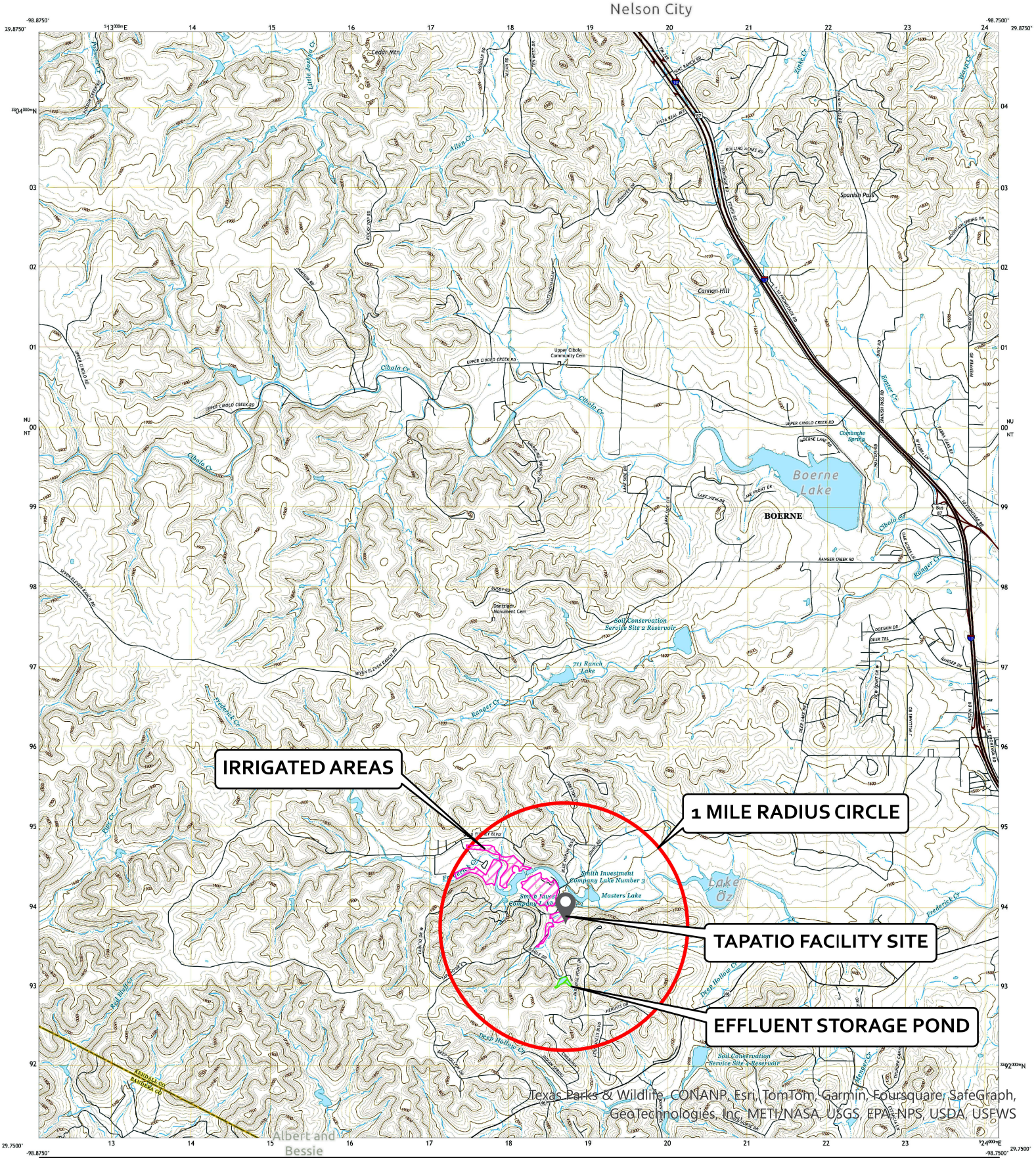
07/18/2016
DARLENE HERRIN, COUNTY CLERK
Kendall County, Texas

By: HPS Deputy

ATTACHMENT E

Original USGS Topographic Map

USGS science for a changing world
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
The National Map US Topo
RANGER CREEK QUADRANGLE
TEXAS
7.5-MINUTE SERIES



CLWSC TAPATIO ORIGINAL USGS MAP EXHIBIT
WQ0012404001

PREPARED BY: CJT

CHECKED BY: BJJ

DATE: 02/19/2025

1 OF 2

N

0 0.5 1 1.5 2 2.5 3 3.5 4

Miles

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.0

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): 0.15

2-Hr Peak Flow (MGD): 0.60

Estimated construction start date: N/A

Estimated waste disposal start date: N/A

B. Interim II Phase

Design Flow (MGD): N/A

2-Hr Peak Flow (MGD): N/A

Estimated construction start date: N/A

Estimated waste disposal start date: N/A

C. Final Phase

Design Flow (MGD): N/A

2-Hr Peak Flow (MGD): N/A

Estimated construction start date: N/A

Estimated waste disposal start date: N/A

D. Current Operating Phase

Provide the startup date of the facility: 1989

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 Tapatio Springs Wastewater Treatment Facility consists of an activated sludge process plant using the extended aeration mode. Treatment units include bar screens, two aeration basins, two final clarifiers, two sludge drying beds, an effluent lift station, an effluent holding pond and a chlorine contact chamber. The existing permit authorizes the disposal of treated domestic wastewater effluent at a flow not to exceed 0.15 million gallons per day via surface irrigation of 100 acres of golf course.

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)
Bar Screens	1	2’ x 2’ (L x W)
Aeration Basin	2	32’ x 32’ x 12’
Final Clarifier	2	9’ x 20’ (D x Dia)
Sludge Drying Bed	2	22’ x 22’ x 2’1”
Effluent Lift Station	1	17’ x 10’
Effluent Holding Pond	1	80 acre-feet (total capacity)
Chlorine Contact Chamber	1	20’ x 13’ x 5’

C. Process Flow Diagram

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

Attachment: Attachment F: Process Flow Diagram

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

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

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

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

- Latitude: 98°48'25.6"W
- Longitude: 29°46'27.1"N

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: Attachment G: Site Drawing

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

The existing Tapatio Springs WWTP serves single family residential and golf course resorts in the immediate area. See attachment I (Well Map) for more details.

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
		Choose an item.	
		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**.

N/A

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.

The current Tapatio Spring WWTP will decommissioned and demolished in the next year except for the influent lift station. We received the Transmittal letter and plan set approval by TCEQ on November 2024 for the new Tapatio Spring WWTP (see attachment N).

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: 1989

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**.

The original Transmittal Letter for the existing WWTP is not available in the Texas Water Company (TWC) records. The information presented here is a compilation of the records that are available. TWC has made attempts to locate the Transmittal Letter records in both the TWC and Kendel West Utilities records. It is believed that the records may not have been transferred from Kendel West Utilities to TWC during the exchange of plant ownership between the two entities and may not have been retained after ownership transfer.

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.

The WWTF treatment unit footprints and the WWTP property boundary haven't changed since the last permit. So, there has been no change to the buffer zone area and compliance with TCEQ requirements.

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*.

Permitee to provide annual soil analyses (no later than September) of the soil conditions across the land application area. Results to be submitted to TCEQ Regional Office (MC Region 13) and the Water Quality Compliance Monitoring Team (MC 224). Owner completes action on a regular basis to maintain compliance.

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_5 concentration of the sludge, and the design BOD_5 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_5 concentration of the septic waste, and the design BOD_5 concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

N/A

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). **W*ater 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
$CBOD_5$, 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					
E.coli (CFU/100ml) freshwater					
Entercocci (CFU/100ml) saltwater					
Total Dissolved Solids, mg/l					
Electrical Conductivity, µmohs/cm, †					
Oil & Grease, mg/l					
Alkalinity ($CaCO_3$)*, 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 ($CaCO_3$), mg/l					

Section 8. Facility Operator (Instructions Page 50)

Facility Operator Name: Ronnie Rodriguez, Henry Ackey

Facility Operator's License Classification and Level: A & C

Facility Operator's License Number: WW0070272, WW0055108

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>= 1 MGD
- ☐ Serves >= 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 (>= 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
Agricultural Land Application	Off-site Third-Party Handler or Preparer	Bulk	25 per year	Class B: PSRP Lime Stabilization	Option 7: Stabilized sludge is >=75% solids
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: Celoso AB

TCEQ permit or registration number: 720056

County where disposal site is located: Waller

E. Transportation method

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

Name of the hauler: Enriched Organics

Hauler registration number: 25589

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	☐ Yes	☒ No
Marketing and Distribution of sludge	☐ Yes	☒ No
Sludge Surface Disposal or Sludge Monofill	☐ Yes	☒ No
Temporary storage in sludge lagoons	☐ Yes	☒ 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 $1x10^{-7}$ 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: Aundrea Williams

Title: President

Signature: Aundrea Williams

Date: 04/03/2025

TLAP Core Data Form and Lab Accreditation

Final Audit Report 2025-03-04

Created:	2025-03-04
By:	Valerie Wernert (Valerie.Wernert@txwaterco.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAqnLlugShqWv2_WVqKogRbVKmeb_Ywh3v

"TLAP Core Data Form and Lab Accreditation" History

Document created by Valerie Wernert (Valerie.Wernert@txwaterco.com)
2025-03-04 - 2:37:16 PM GMT

Document emailed to Aundrea Williams (Aundrea.Williams@txwaterco.com) for signature
2025-03-04 - 2:37:20 PM GMT

Email viewed by Aundrea Williams (Aundrea.Williams@txwaterco.com)
2025-03-04 - 2:59:41 PM GMT

Document e-signed by Aundrea Williams (Aundrea.Williams@txwaterco.com)
Signature Date: 2025-03-04 - 3:00:25 PM GMT - Time Source: server

Agreement completed.
2025-03-04 - 3:00:25 PM GMT

DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND DISPOSAL OF EFFLUENT

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

Section 1. Type of Disposal System (Instructions Page 68)

Identify the method of land disposal:

- ☒ Surface application
- ☒ Irrigation
- ☐ Drip irrigation system
- ☐ Evaporation
- ☐ Subsurface application
- ☐ Subsurface soils absorption
- ☐ Subsurface area drip dispersal system
- ☐ Evapotranspiration beds
- ☐ Other (describe in detail): Click to enter text.

NOTE: All applicants without authorization or proposing new/amended subsurface disposal MUST complete and submit Worksheet 7.0.

For existing authorizations, provide Registration Number: Click to enter text.

Section 2. Land Application Site(s) (Instructions Page 68)

In table 3.0(1), provide the requested information for the land application sites. Include the agricultural or cover crop type (wheat, cotton, alfalfa, bermuda grass, native grasses, etc.), land use (golf course, hayland, pastureland, park, row crop, etc.), irrigation area, amount of effluent applied, and whether or not the public has access to the area. Specify the amount of land area and the amount of effluent that will be allotted to each agricultural or cover crop, if more than one crop will be used.

Table 3.0(1) – Land Application Site Crops

Crop Type & Land Use	Irrigation Area (acres)	Effluent Application (GPD)	Public Access? Y/N
Golf Course	100	1500	N

Section 3. Storage and Evaporation Lagoons/Ponds (Instructions Page 68)

Table 3.0(2) – Storage and Evaporation Ponds

Pond Number	Surface Area (acres)	Storage Volume (acre-feet)	Dimensions	Liner Type
1	4	80	N/A	N/A

Attach a copy of a liner certification that was prepared, signed, and sealed by a Texas licensed professional engineer for each pond.

Attachment: N/A

Section 4. Flood and Runoff Protection (Instructions Page 68)

Is the land application site within the 100-year frequency flood level?

☐ Yes ☒ No

If yes, describe how the site will be protected from inundation.

Click to enter text.

Provide the source used to determine the 100-year frequency flood level:

Click to enter text.

Provide a description of tailwater controls and rainfall run-on controls used for the land application site.

Click to enter text.

Section 5. Annual Cropping Plan (Instructions Page 68)

Attach an Annual Cropping Plan which includes a discussion of each of the following items. If not applicable, provide a detailed explanation indicating why. **Attachment**: Attachment H: Annual Cropping Plan

- Soils map with crops
- Cool and warm season plant species
- Crop yield goals
- Crop growing season
- Crop nutrient requirements
- Additional fertilizer requirements
- Minimum/maximum harvest height (for grass crops)
- Supplemental watering requirements
- Crop salt tolerances
- Harvesting method/number of harvests
- Justification for not removing existing vegetation to be irrigated

Section 6. Well and Map Information (Instructions Page 69)

Attach a USGS map with the following information shown and labeled. If not applicable, provide a detailed explanation indicating why. **Attachment**: Attachment I: USGS Well and Map Information Exhibit

- The boundaries of the land application site(s)
- Waste disposal or treatment facility site(s)
- On-site buildings
- Buffer zones
- Effluent storage and tailwater control facilities
- All water wells within 1-mile radius of the disposal site or property boundaries
- All springs and seeps onsite and within 500 feet of the property boundaries
- All surface waters in the state onsite and within 500 feet of the property boundaries
- All faults and sinkholes onsite and within 500 feet of the property

List and cross reference all water wells located within a half-mile radius of the disposal site or property boundaries shown on the USGS map in the following table. Attach additional pages as necessary to include all of the wells.

Table 3.0(3) – Water Well Data

Well ID	Well Use	Producing? Y/N	Open, cased, capped, or plugged?	Proposed Best Management Practice
6810802	Domestic	Y	Cased	Meets 150' setback requirements
6810803	Unused	N	Open	Meets 150' setback requirements
6810804	Domestic	N	Open	Meets 150' setback requirements
6810805	Stock	Y	Open	Meets 150' setback requirements

Well ID	Well Use	Producing? Y/N	Open, cased, capped, or plugged?	Proposed Best Management Practice
6810809	Public Supply	Y	Cased/Open.	Meets 150' setback requirements
6810810	Public Supply	Y	Cased/Open	Meets 150' setback requirements
6810811	Public Supply	Y	Cased/Open	Meets 150' setback requirements
6810812	Irrigation	Y	Cased/Open	Meets 150' setback requirements
6810814	N/A	N/A	Open	Meets 150' setback requirements
6810815	Public Supply	N/A	Cased	Meets 150' setback requirements
6810816	Industrial	N/A	Cased	Meets 150' setback requirements

If water quality data or well log information is available please include the information in an attachment listed by Well ID.

Attachment: Attachment J: Combined Well Data Reports

Section 7. Groundwater Quality (Instructions Page 69)

Attach a Groundwater Quality Technical Report which assesses the impact of the wastewater disposal system on groundwater. This report shall include an evaluation of the water wells (including the information in the well table provided in Item 6. above), the wastewater application rate, and pond liners. Indicate by a check mark that this report is provided.

Attachment: Attachment K: Ground Water Report

Are groundwater monitoring wells available onsite? ☐ Yes ☒ No

Do you plan to install ground water monitoring wells or lysimeters around the land application site? ☐ Yes ☒ No

If yes, provide the proposed location of the monitoring wells or lysimeters on a site map.

Attachment: Click to enter text.

Section 8. Soil Map and Soil Analyses (Instructions Page 70)

A. Soil map

Attach a USDA Soil Survey map that shows the area to be used for effluent disposal.

Attachment: Attachment L: USDA Soil Map

B. Soil analyses

Attach the laboratory results sheets from the soil analyses. **Note**: for renewal applications, the current annual soil analyses required by the permit are acceptable as long as the test date is less than one year prior to the submission of the application.

Attachment: Attachment M: Soil Analyses

List all USDA designated soil series on the proposed land application site. Attach additional pages as necessary.

Table 3.0(4) – Soil Data

Soil Series	Depth from Surface	Permeability	Available Water Capacity	Curve Number

Section 9. Effluent Monitoring Data (Instructions Page 71)

Is the facility in operation?

☒ Yes ☐ No

If no, this section is not applicable and the worksheet is complete.

If yes, provide the effluent monitoring data for the parameters regulated in the existing permit. If a parameter is not regulated in the existing permit, enter N/A.

Table 3.0(5) – Effluent Monitoring Data

Date	30 Day Avg Flow MGD	BOD5 mg/l	TSS mg/l	pH	Chlorine Residual mg/l	Acres irrigated

Date	30 Day Avg Flow MGD	BOD5 mg/l	TSS mg/l	pH	Chlorine Residual mg/l	Acres irrigated

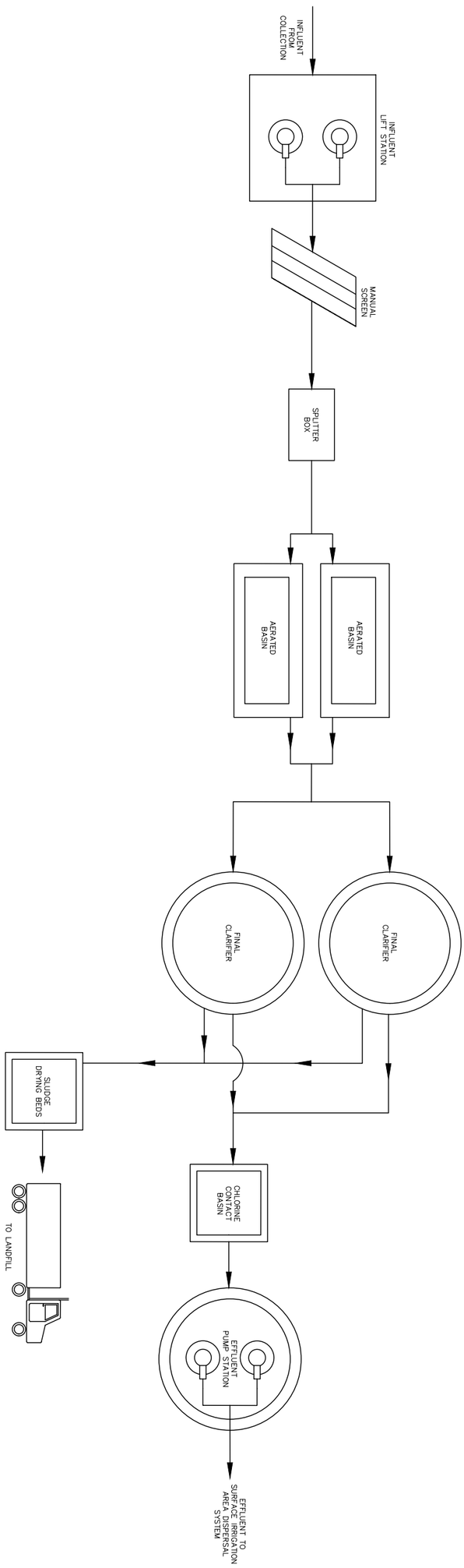
Provide a discussion of all persistent excursions above the permitted limits and any corrective actions taken.

Click to enter text.

ATTACHMENT F

Process Flow Diagram

\\kimley-horn.com\TS_SAU\SAU_WR\069277508_CLWSC-TAPATIO WWTP-PRELIM\DOCS\PERMITS\TCEQ\Exsiting TLAP Permit Renewal_PERMIT\01_Renewal_Application\Attachments\Process Flow Diagram\20250221 - Process Flow Diagram.dwg 2/21/2025 12:00 PM



DATE:	FEBRUARY 2025
DESIGN:	IMC
DRAWN:	BJ
CHECKED:	IMC
KHA NO.:	069406207

SHEET

PROCESS FLOW DIAGRAM

TAPATIO SPRINGS WWTF TLAP

THIS DOCUMENT IS INCOMPLETE AND IS RELEASED TEMPORARILY FOR INTERIM REVIEW ONLY. IT IS NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

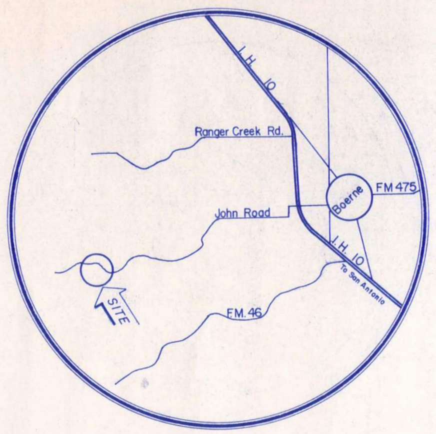
IAN CLEMENTS P.E.
SERIAL NO. 126771
DATE: SEPTEMBER 2024

Kimley»Horn
Firm No. F-928
5301 Southwest Pkwy, Bldg 3, Suite 100, Austin TX, 78735 P:512-646-2237

No.	Revision	By	Date

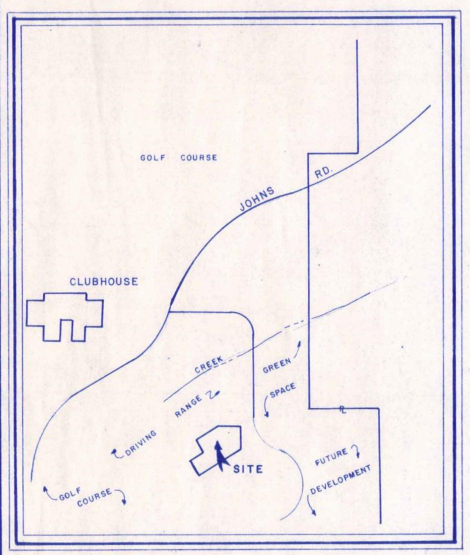
ATTACHMENT G

Site Drawing



LOCATION MAP

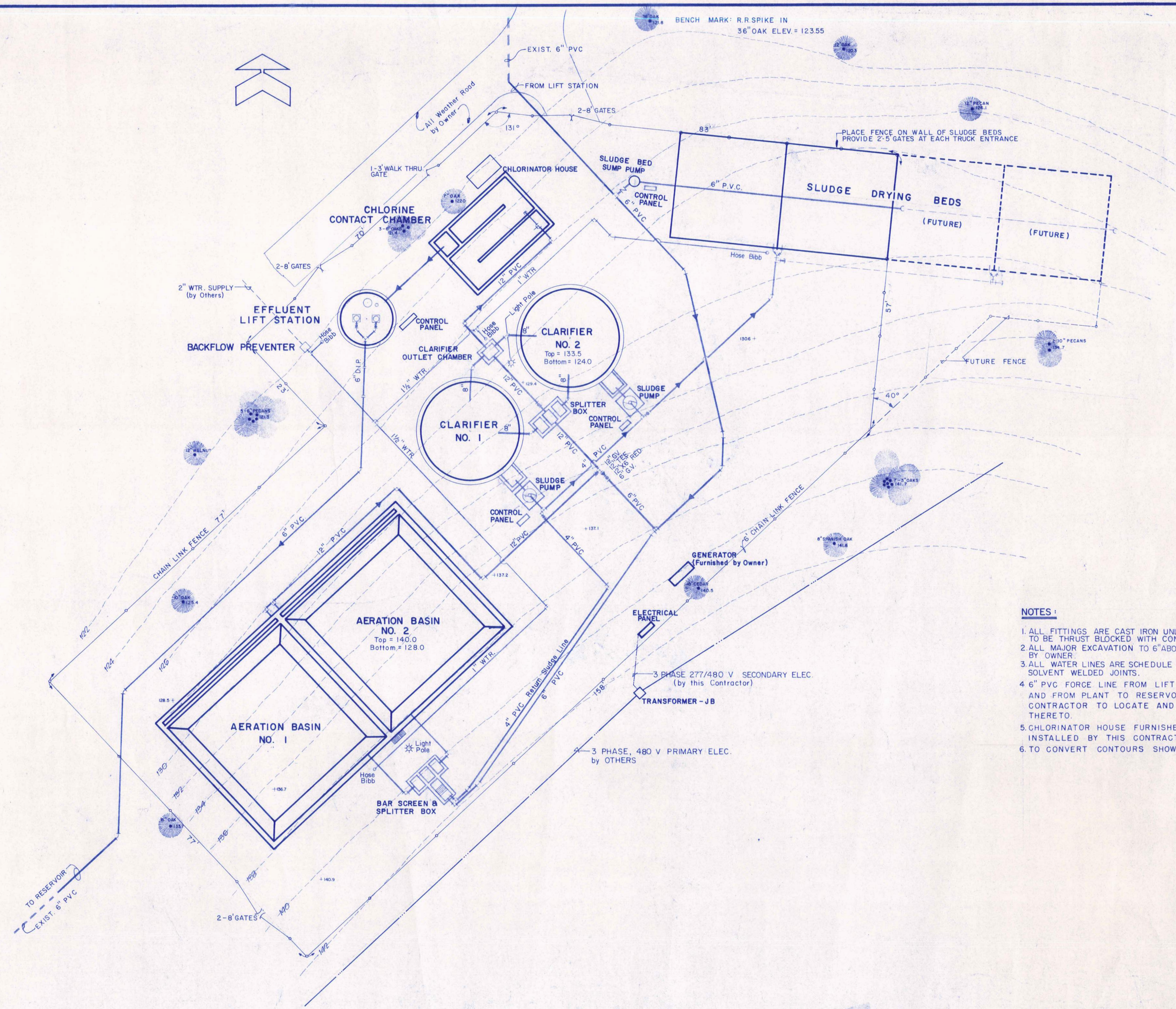
SITE: Approx. 5 Miles West of Boerne



SITE MAP

NO SCALE

NOTE: NO EXISTING OR PLANED RESIDENTIAL DEVELOPMENT IS LOCATED WITHIN 300 FT. OF THE TREATMENT PLANT


BENCH MARK: R.R.SPIKE IN 36" OAK ELEV.= 123.55
EXIST. 6" PVC
FROM LIFT STATION
2-8' GATES
All Weather Road by Owner
131°
1-3' WALK THRU GATE
CHLORINATOR HOUSE
SLUDGE BED SUMP PUMP
CONTROL PANEL
6" PVC
PLACE FENCE ON WALL OF SLUDGE BEDS PROVIDE 2-5 GATES AT EACH TRUCK ENTRANCE
83'
6" P.V.C.
SLUDGE DRYING BEDS
(FUTURE)
(FUTURE)
Hose Bibb
CHLORINE CONTACT CHAMBER
2-8' GATES
2" WTR. SUPPLY (by Others)
EFFLUENT LIFT STATION
CONTROL PANEL
BACKFLOW PREVENTER
Hose Bibb
Light Pole
12" PVC
1" WTR
CLARIFIER NO. 2
Top = 133.5
Bottom = 124.0
CLARIFIER OUTLET CHAMBER
1½" WTR
6" D.I.P.
SLUDGE PUMP
SPLITTER BOX
CONTROL PANEL
CLARIFIER NO. 1
FUTURE FENCE
57'
40°
SLUDGE PUMP
CONTROL PANEL
1½" WTR
CHAIN LINK FENCE 77'
6" PVC
12" PVC
6" CHAIN LINK FENCE
GENERATOR (Furnished by Owner)
AERATION BASIN NO. 2
Top = 140.0
Bottom = 128.0
AERATION BASIN NO. 1
1" WTR.
ELECTRICAL PANEL
4" PVC Return Sludge Line
6" PVC
3 PHASE 277/480 V SECONDARY ELEC. (by this Contractor)
TRANSFORMER - JB
Light Pole
Hose Bibb
BAR SCREEN & SPLITTER BOX
3 PHASE, 480 V PRIMARY ELEC. by OTHERS
TO RESERVOIR
EXIST. 6" PVC
2-8' GATES

NOTES:

1. ALL FITTINGS ARE CAST IRON UNLESS OTHERWISE NOTED; TO BE THRUST BLOCKED WITH CONCRETE.
2. ALL MAJOR EXCAVATION TO 6" ABOVE SUBGRADE AND SITE GRADING BY OWNER.
3. ALL WATER LINES ARE SCHEDULE 40 PVC WITH SOLVENT WELDED JOINTS.
4. 6" PVC FORCE LINE FROM LIFT STATION TO PLANT AND FROM PLANT TO RESERVOIR IS EXISTING. THIS CONTRACTOR TO LOCATE AND MAKE FINAL CONNECTIONS THERETO.
5. CHLORINATOR HOUSE FURNISHED BY OWNER, TO BE INSTALLED BY THIS CONTRACTOR.
6. TO CONVERT CONTOURS SHOWN TO MSL, ADD 1515 FEET.

SEE AS BUILT

REVISIONS	
DATE	BY
11/25/81	ERG

SCALE: 1" = 40'

DESIGNED BY: A.D.L.
DRAWN BY: E.R.G.
CHECKED BY: D.R.F.

D. R. FRAZOR & ASSOCIATES, INC.
CONSULTING ENGINEERS
SAN ANTONIO TEXAS

SITE PLAN
TAPATIO SPRINGS WASTEWATER FACILITIES
KENDALL COUNTY, TEXAS

SHEET 2 OF 12
DATE: OCT., 1981
PROJECT NO. 8189

ATTACHMENT H

Annual Cropping Plan

February 24, 2025

Annual Cropping Plan

Tapatio Springs WWTP

Boerne, Texas

The existing effluent application areas for this project consist of non-public access surface irrigation TLAP areas. The cropping and maintenance plan for the surface irrigation TLAP areas has consisted of the following: preparing the site and installing surface irrigation TLAP areas, vegetating the site, maintaining cool and warm season grasses, and harvesting the grasses as necessary. The surface irrigation TLAP areas were prepared by removing the existing herbaceous vegetation, grading the field areas to provide a uniform slope, importing and/or placing additional soil where necessary, installing the surface irrigation TLAP areas, and seeding the fields with Bermuda grass. The fields were overseeded with winter ryegrass during the cool season to ensure year-round uptake of water and nutrients. The Bermuda grass grows from March to October. The ryegrass grows from November to February. The fields are part of an active golf course and thus are mowed regularly throughout the year to maintain an appropriate vegetative height to ensure that the grasses are actively growing at all times. There are no specific crop yield goals at this time. Grass clippings are left on the dosing drain fields after mowing. Regular soil testing has shown that the soil is not adversely affected by leaving the clippings and that nutrient levels remain well below threshold levels.

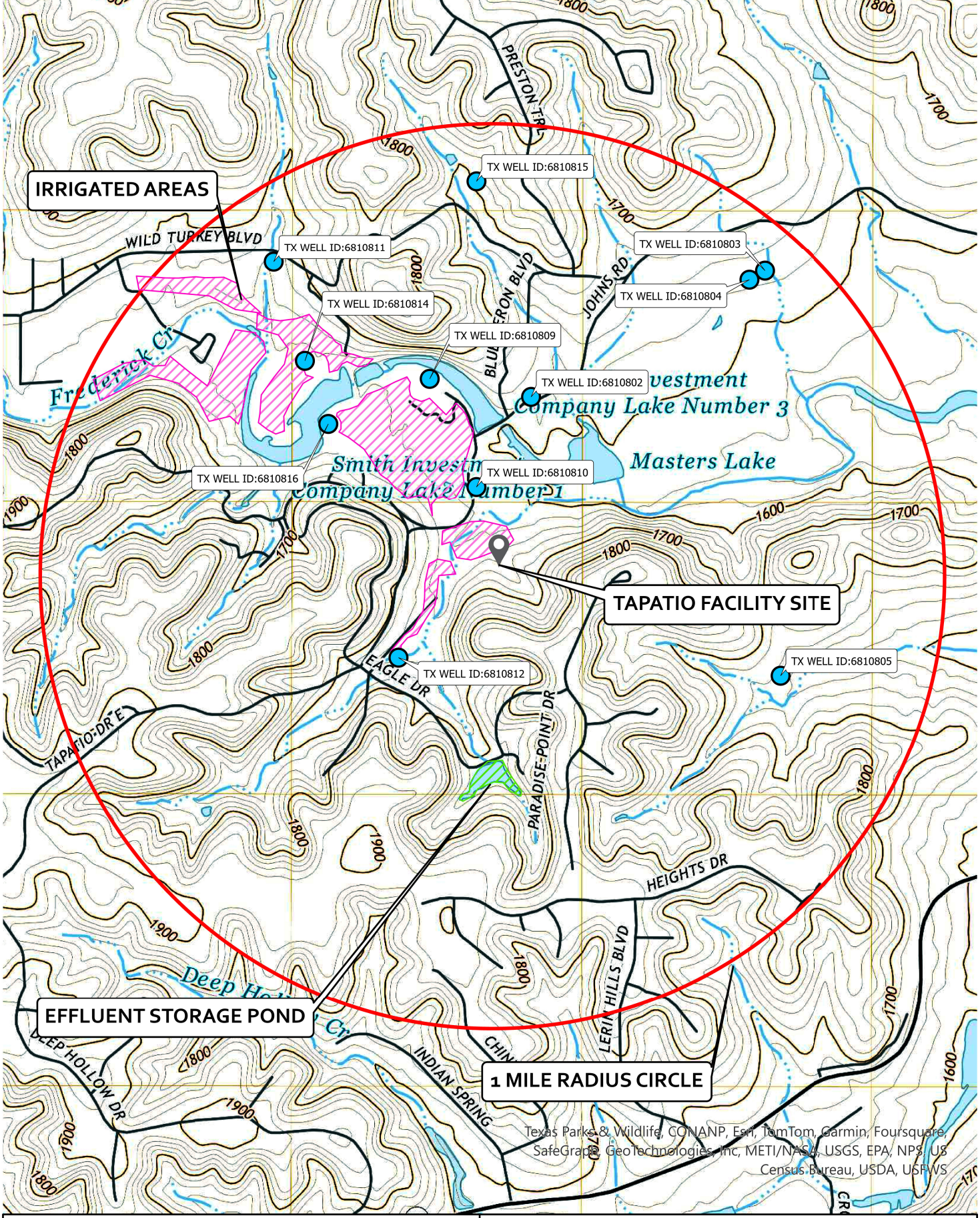
The grasses were fertilized for germination at the time of construction. Fertilization recommendations for the grasses to be used at this site are generally 100-150 lbs/acre of nitrogen. Turf grasses are very salt tolerant, and this site is not expected to develop salinity problems. The grass is only harvested to maintain vigorous growth in the fields. This is done at the discretion of the golf course maintenance superintendent.

Sincerely,

Ian Clements, PE
KIMLEY-HORN AND ASSOCIATES, INC.
Texas Firm No. 928

ATTACHMENT I

USGS Well and Map Information Exhibit



CLWSC TAPATIO WELL MAP EXHIBIT
WQ0012404001

PREPARED BY: CJT

CHECKED BY: BJJ

DATE: 02/19/2025

2 OF 2

N

0 0.13 0.25 0.38 0.5 0.63 0.75 0.88 1

Miles

ATTACHMENT J

Combined Well Data Reports

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-802

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6810802
County	Kendall
River Basin	San Antonio
Groundwater Management Area	9
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Cow Creek GCD
Latitude (decimal degrees)	29.779444
Latitude (degrees minutes seconds)	29° 46' 46" N
Longitude (decimal degrees)	-98.805278
Longitude (degrees minutes seconds)	098° 48' 19" W
Coordinate Source	+/- 5 Seconds
Aquifer Code	218GLRSL - Glen Rose Limestone, Lower Member
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1630
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	420
Well Depth Source	Owner
Drilling Start Date	
Drilling End Date	0/0/1963
Drilling Method	Cable Tool
Borehole Completion	Open Hole

Well Type	Withdrawal of Water
Well Use	Domestic
Water Level Observation	Miscellaneous Measurements
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	C.G. Hamill Estate
Driller	Haskins PumpCo
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	4/28/1994
Last Update Date	4/28/1994

Remarks	Reported very small supply.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
7	Blank	Steel			0	300
	Open Hole				300	420

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

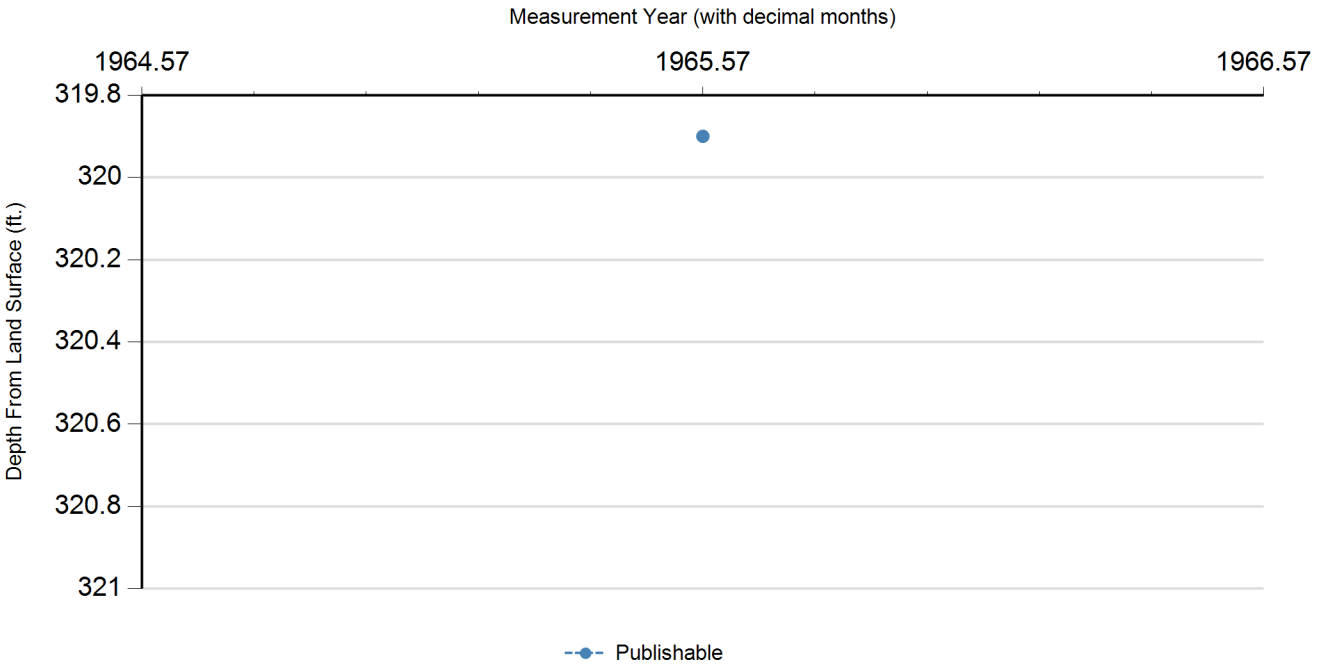
Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	7/29/1965		319.9		1310.1	1	U.S. Geological Survey	Steel Tape		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis - No Data Available

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-803

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6810803
County	Kendall
River Basin	San Antonio
Groundwater Management Area	9
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Cow Creek GCD
Latitude (decimal degrees)	29.783334
Latitude (degrees minutes seconds)	29° 47' 00" N
Longitude (decimal degrees)	-98.796945
Longitude (degrees minutes seconds)	098° 47' 49" W
Coordinate Source	+/- 5 Seconds
Aquifer Code	218GLRSU - Glen Rose Limestone, Upper Member
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1635
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	145
Well Depth Source	Person Other than Owner
Drilling Start Date	
Drilling End Date	0/0/1900
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Unused
Water Level Observation	Miscellaneous Measurements
Water Quality Available	Yes
Pump	None
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Julius Gombert
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	4/28/1994
Last Update Date	4/28/1994

Remarks	Reported very small supply.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
6	Blank				0	10
	Open Hole				10	145

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

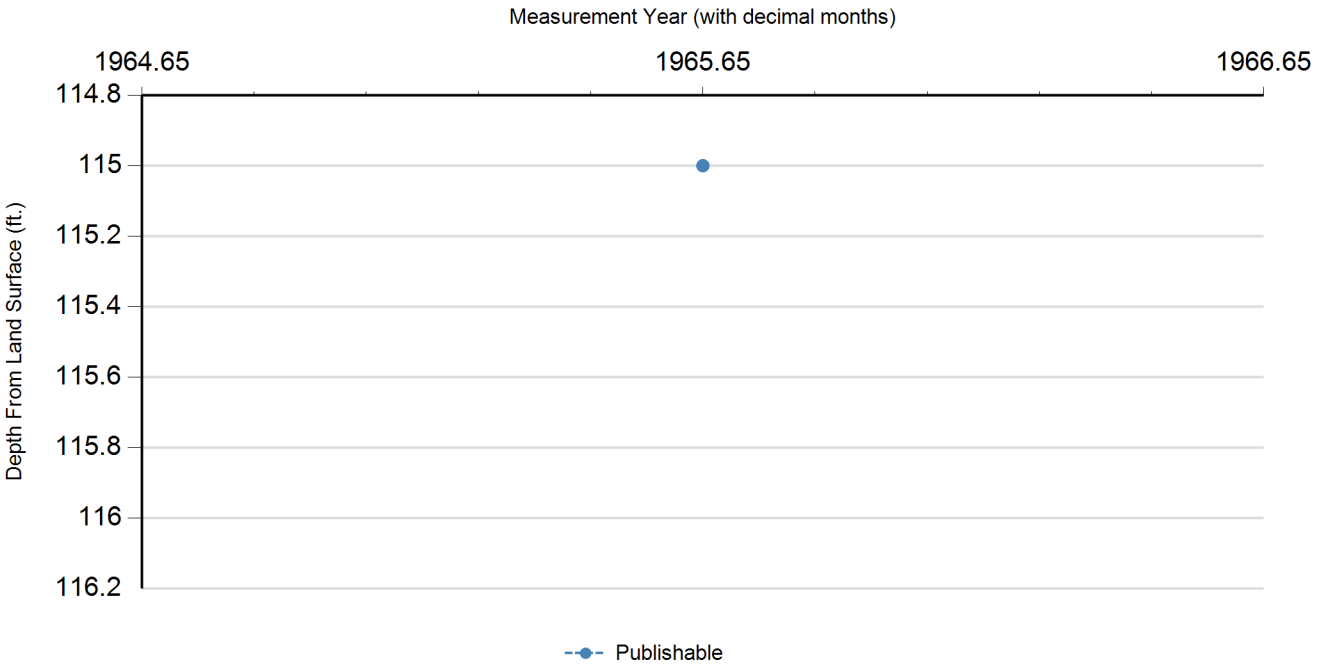
Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	7/0/1965		115		1520	1	Texas Water Development Board	Steel Tape		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis

Sample Date: 1/10/1940 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Well Owner or Operator

Sampled Aquifer: Glen Rose Limestone, Upper Member

Analyzed Lab: University of Texas **Reliability:** Reliability unknown or not available

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		285.25	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		348.1	mg/L	
00910	CALCIUM (MG/L)		196	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		14	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		2.4	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		871	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		93	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.03		
00932	SODIUM, CALCULATED, PERCENT		0	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		2	mg/L	
00945	SULFATE, TOTAL (MG/L AS SO4)		538	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		1016	mg/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-804

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6810804
County	Kendall
River Basin	San Antonio
Groundwater Management Area	9
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Cow Creek GCD
Latitude (decimal degrees)	29.783055
Latitude (degrees minutes seconds)	29° 46' 59" N
Longitude (decimal degrees)	-98.7975
Longitude (degrees minutes seconds)	098° 47' 51" W
Coordinate Source	+/- 1 Second
Aquifer Code	218GLRSU - Glen Rose Limestone, Upper Member
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1675
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	12
Well Depth Source	Owner
Drilling Start Date	
Drilling End Date	0/0/1945
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Domestic
Water Level Observation	Miscellaneous Measurements
Water Quality Available	No
Pump	Piston
Pump Depth (feet below land surface)	
Power Type	Windmill
Annular Seal Method	
Surface Completion	
Owner	J. Gombert
Driller	J. Gombert
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	4/28/1994
Last Update Date	4/28/1994

Remarks	Reported very small supply.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
40	Blank				0	5
	Open Hole				5	12

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

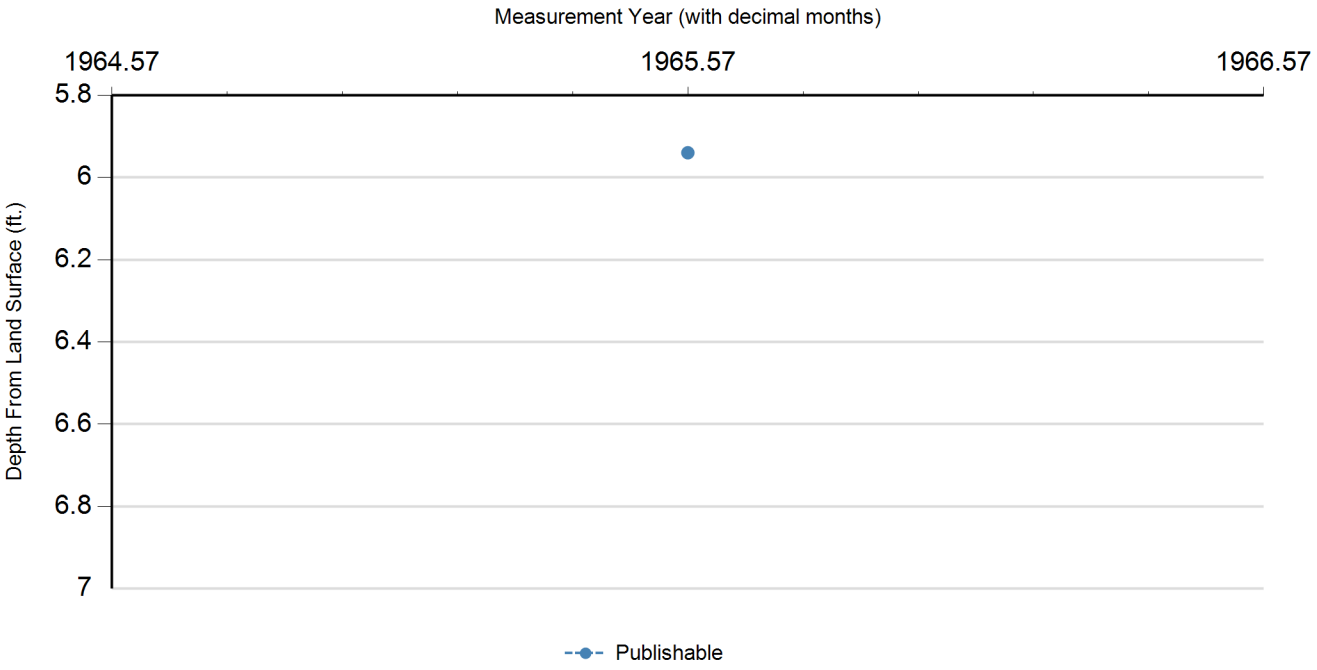
Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	7/29/1965		5.94		1669.06	1	U.S. Geological Survey	Steel Tape		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis - No Data Available

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-805

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6810805
County	Kendall
River Basin	San Antonio
Groundwater Management Area	9
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Cow Creek GCD
Latitude (decimal degrees)	29.770833
Latitude (degrees minutes seconds)	29° 46' 15" N
Longitude (decimal degrees)	-98.796389
Longitude (degrees minutes seconds)	098° 47' 47" W
Coordinate Source	+/- 1 Second
Aquifer Code	218GLRSU - Glen Rose Limestone, Upper Member
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1651
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	172
Well Depth Source	Memory of Owner
Drilling Start Date	
Drilling End Date	0/0/1964
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Stock
Water Level Observation	Miscellaneous Measurements
Water Quality Available	No
Pump	Piston
Pump Depth (feet below land surface)	
Power Type	Windmill
Annular Seal Method	
Surface Completion	
Owner	Mrs. V. Ottermann
Driller	L. Bergmann & Sons Water Well Drilling
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	4/28/1994
Last Update Date	4/28/1994

Remarks	Measured yield 19 GPM with 87 feet drawdown after pumping 1 hour in 1965. Specific capacity 0.22 GPM/ft. Cemented from 0 to 1 foot. Pump set at 120 feet.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
5	Blank				0	100
	Open Hole				100	172

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

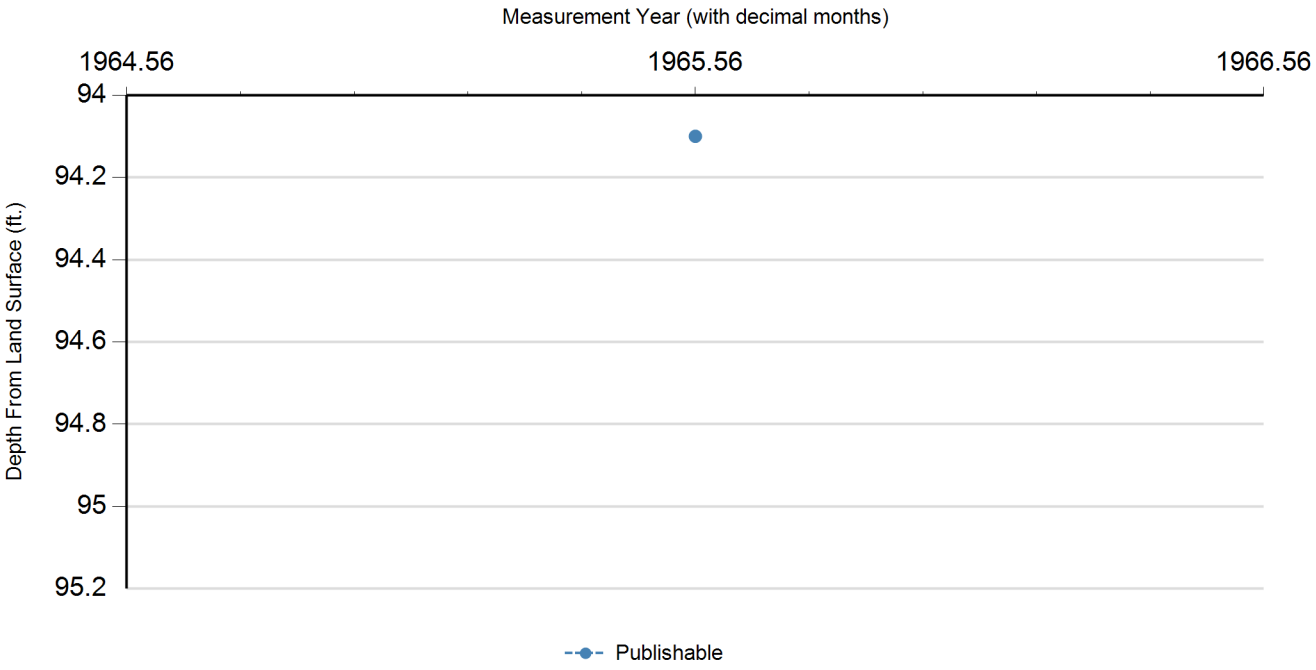
Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	7/23/1965		94.1		1556.9	1	U.S. Geological Survey	Steel Tape		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis - No Data Available

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-809

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6810809
County	Kendall
River Basin	San Antonio
Groundwater Management Area	9
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Cow Creek GCD
Latitude (decimal degrees)	29.78
Latitude (degrees minutes seconds)	29° 46' 48" N
Longitude (decimal degrees)	-98.808889
Longitude (degrees minutes seconds)	098° 48' 32" W
Coordinate Source	+/- 1 Second
Aquifer Code	218GPSH - Glen Rose (Lower), Pearsall (Hensell, Cow Creek), Sligo & Hosston Fms
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1828
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	1150
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	0/0/1980
Drilling Method	Air Rotary
Borehole Completion	Perforated or Slotted

Well Type	Withdrawal of Water
Well Use	Public Supply
Water Level Observation	Miscellaneous Measurements
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Tapatio Springs
Driller	Haskins Pump Service Inc.
Other Data Available	Caliper; Drillers Log; Electric Log; Gamma Ray; Gamma-Gamma
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	4/8/1996
Last Update Date	2/8/2013

Remarks	Owner's Cliff Dwellers well. Unused public supply well. Estimated yield 50 GPM in 1980. Cemented from 0 to 497 feet. Well #2 - capped. Logged to 1078 feet in 1980.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
7	Blank	Steel			0	520
7	Screen				520	700
7	Blank	Steel			700	783
	Open Hole				783	1150

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

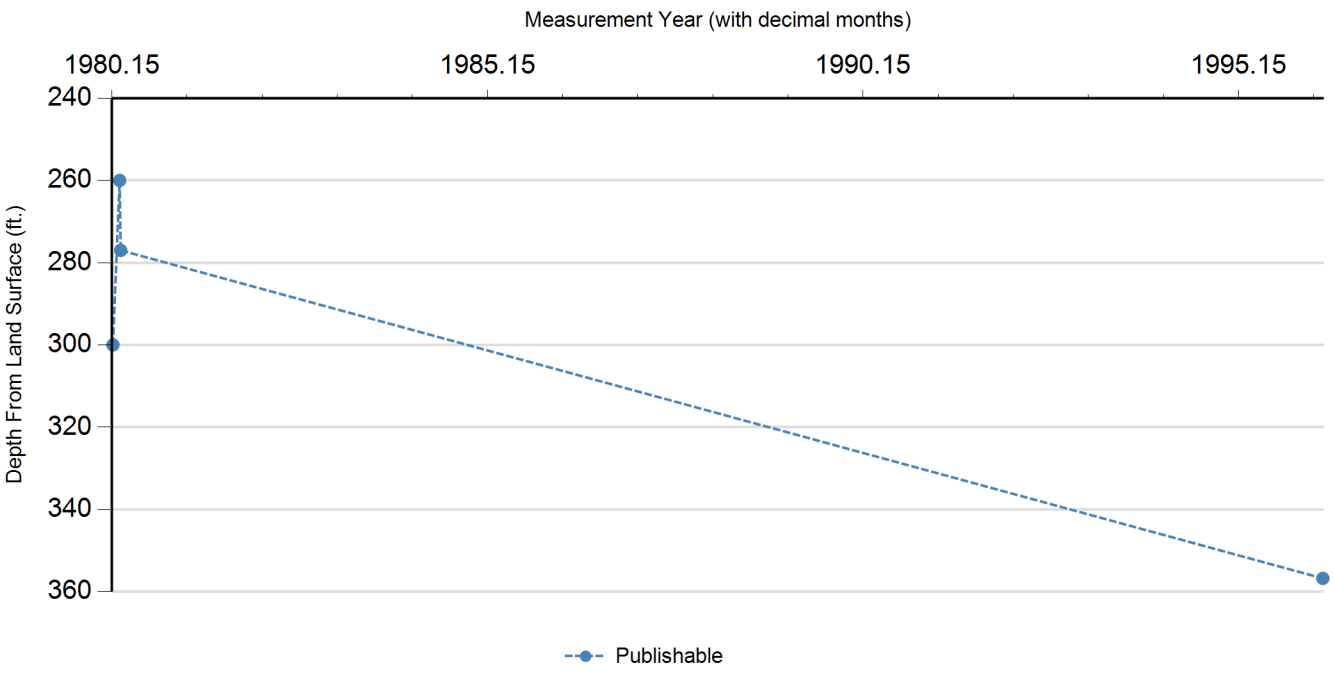
Packers - No Data

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-809

groundwater division

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	0/0/1980		300		1528	1	Registered Water Well Driller	Unknown		
P	4/2/1980		260	(40.00)	1568	1	Texas Water Development Board	Logging Sonde		
P	4/7/1980		277	17.00	1551	1	Texas Water Development Board	Logging Sonde		
P	4/8/1996		356.75	79.75	1471.25	1	Texas Water Development Board	Electric Line		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis - No Data Available

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-810

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6810810
County	Kendall
River Basin	San Antonio
Groundwater Management Area	9
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Cow Creek GCD
Latitude (decimal degrees)	29.776667
Latitude (degrees minutes seconds)	29° 46' 36" N
Longitude (decimal degrees)	-98.807223
Longitude (degrees minutes seconds)	098° 48' 26" W
Coordinate Source	+/- 1 Second
Aquifer Code	218GRCCU - Lower Glen Rose and Cow Creek Limestones
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1610
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	725
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	5/25/1981
Drilling Method	Air Rotary
Borehole Completion	Open Hole

Well Type	Withdrawal of Water
Well Use	Public Supply
Water Level Observation	Miscellaneous Measurements
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Tapatio Springs
Driller	Haskin Pump Service, Inc.
Other Data Available	Drillers Log; Gamma Ray
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	G1300033I
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	12/30/1998
Last Update Date	2/8/2013

Remarks	Owner's Hotel well. Estimated yield 90 GPM in 1981. Cemented from 0 to 337 feet.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
13	Blank	Steel			0	90
8	Blank	Steel			0	337
9	Open Hole				337	725

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-810

groundwater division

Water Level Measurements

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	5/25/1981		385		1225	1	Registered Water Well Driller	Unknown		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis - No Data Available

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-811

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6810811
County	Kendall
River Basin	San Antonio
Groundwater Management Area	9
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Cow Creek GCD
Latitude (decimal degrees)	29.783611
Latitude (degrees minutes seconds)	29° 47' 01" N
Longitude (decimal degrees)	-98.814445
Longitude (degrees minutes seconds)	098° 48' 52" W
Coordinate Source	+/- 1 Second
Aquifer Code	218GRCCU - Lower Glen Rose and Cow Creek Limestones
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1660
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	750
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	6/8/1992
Drilling Method	Air Rotary
Borehole Completion	Open Hole

Well Type	Withdrawal of Water
Well Use	Public Supply
Water Level Observation	Miscellaneous Measurements
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Tapatio Springs
Driller	Haskin Pump Service, Inc.
Other Data Available	Drillers Log
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	G1300033J
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	4/8/1996
Last Update Date	

Remarks	Owner's Wild Turkey #6 well. Cemented from 0 to 351 feet.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
9	Blank	Steel			0	351
10	Open Hole				361	750

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

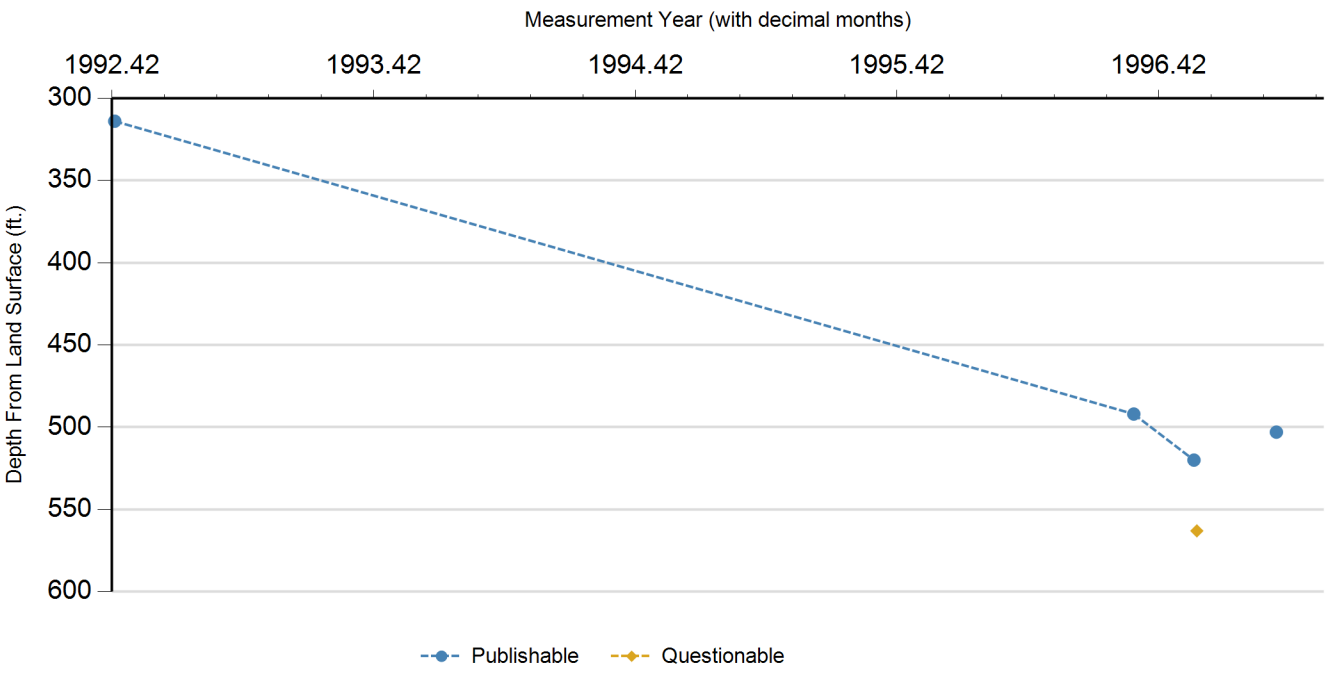
Packers - No Data

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 68-10-811

groundwater division

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	6/8/1992		314		1346	1	Registered Water Well Driller	Unknown		
P	4/29/1996		492	178.00	1168	1	Well Owner or Operator	Air Line		
P	7/23/1996		520	28.00	1140	1	Well Owner or Operator	Air Line		
Q	7/27/1996		563	43.00	1097	1	Well Owner or Operator	Air Line	2	
P	11/18/1996		503	(60.00)	1157	1	Municipal Water Agency or PWS Corporation	Air Line		
X	1/15/1997					1	Municipal Water Agency or PWS Corporation		32	

Code Descriptions

Status Code	Status Description
P	Publishable
Q	Questionable
X	No Measurement

Remark ID	Remark Description
2	Pumping-level measurement
32	Well temporarily inaccessible due to winterization or debris

Water Quality Analysis - No Data Available

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-812

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6810812
County	Kendall
River Basin	San Antonio
Groundwater Management Area	9
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Cow Creek GCD
Latitude (decimal degrees)	29.771389
Latitude (degrees minutes seconds)	29° 46' 17" N
Longitude (decimal degrees)	-98.810001
Longitude (degrees minutes seconds)	098° 48' 36" W
Coordinate Source	+/- 1 Second
Aquifer Code	218GRCCU - Lower Glen Rose and Cow Creek Limestones
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1660
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	715
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	5/27/1981
Drilling Method	Air Rotary
Borehole Completion	Open Hole

Well Type	Withdrawal of Water
Well Use	Irrigation
Water Level Observation	Miscellaneous Measurements
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Tapatio Springs
Driller	Haskins Pump Service Inc.
Other Data Available	Drillers Log
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	4/8/1996
Last Update Date	

Remarks	Owner's Executive #9 well. Reported yield 48 GPM in 1996. Cemented from from 0 to 337 feet.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
13	Blank	Steel			0	92
8	Blank	Steel			0	337
9	Open Hole				337	715

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	5/27/1981		390		1270	1	Registered Water Well Driller	Unknown		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis - No Data Available

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-814

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6810814
County	Kendall
River Basin	San Antonio
Groundwater Management Area	9
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Cow Creek GCD
Latitude (decimal degrees)	29.780555
Latitude (degrees minutes seconds)	29° 46' 50" N
Longitude (decimal degrees)	-98.813334
Longitude (degrees minutes seconds)	098° 48' 48" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218GLRS - Glen Rose Limestone
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1680
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	844
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	5/8/1984
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	
Water Level Observation	None
Water Quality Available	No
Pump	
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Tapatio Springs Country Club
Driller	Haskin Pump Service Inc.
Other Data Available	Drillers Log
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	3/9/2009
Last Update Date	3/11/2009

Remarks	Owner's well #5. GCD well #W0608. Originally drilled to 750 ft. Deepened to 844 ft.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
7	Blank				0	400

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-815

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6810815
County	Kendall
River Basin	San Antonio
Groundwater Management Area	9
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Cow Creek GCD
Latitude (decimal degrees)	29.786111
Latitude (degrees minutes seconds)	29° 47' 10" N
Longitude (decimal degrees)	-98.807223
Longitude (degrees minutes seconds)	098° 48' 26" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218GLRSL - Glen Rose Limestone, Lower Member
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1801
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	760
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	6/15/1998
Drilling Method	Air Rotary
Borehole Completion	Straight Wall

Well Type	Withdrawal of Water
Well Use	Public Supply
Water Level Observation	None
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	714
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Tapatio Springs
Driller	Louis Bergmann & Sons
Other Data Available	Drillers Log
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	G1300033K
Groundwater Conservation District Well Number	W2972
Owner Well Number	Wild Turkey #7
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	3/9/2009
Last Update Date	7/13/2016

Remarks	Cemented from 0 to 403 ft.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
8	Blank	Steel			0	403

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 68-10-816

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6810816
County	Kendall
River Basin	San Antonio
Groundwater Management Area	9
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Cow Creek GCD
Latitude (decimal degrees)	29.778611
Latitude (degrees minutes seconds)	29° 46' 43" N
Longitude (decimal degrees)	-98.812501
Longitude (degrees minutes seconds)	098° 48' 45" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218GLRS - Glen Rose Limestone
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1624
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	725
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	6/9/1983
Drilling Method	Air Rotary
Borehole Completion	Open Hole

Well Type	Withdrawal of Water
Well Use	Industrial
Water Level Observation	None
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	630
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Tapatio Springs
Driller	Haskin Pump Service Inc.
Other Data Available	Drillers Log
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	W5893
Owner Well Number	4
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	3/9/2009
Last Update Date	7/13/2016

Remarks	Cemented from 0 to 382 ft.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
7	Blank	Steel			0	382

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

ATTACHMENT K

Ground Water Report

Kimley»Horn

February 24, 2025

Recharge Feature Plan Update

Tapatio Springs WWTP

Boerne, Texas

This recharge feature plan has been prepared to identify existing wells on and surrounding the site, the absence of recharge features, and a lack of existing Critical Environmental Features (CEFs). The Wells Map included in this permit (Attachment I) identifies existing wells in the vicinity.

Over the course of various site visits and normal operation of the existing golf course, (which entirely contains the TLAP areas) no recharge features were found to be present on the site. These conditions have not changed since the original construction in the 1980s and are expected to continue. If features are encountered, we will ensure that appropriate setbacks are maintained. The current layout maintains appropriate buffers from existing creeks and existing/future wells.

As the surface irrigation TLAP areas site meet buffer zones as described above, there will be no impact on potential recharge features, wells, CEFs, creek beds, or other drainageways. There has been no development or substantial changes to the TLAP area since the time of the last permit renewal (April 2015). Therefore, it is our professional opinion that the existing TLAP surface irrigation areas are in compliance with the state and TCEQ requirements and are not adversely impacting recharge features, aquifers or waters of the state.

Sincerely,

Ian Clements, PE
KIMLEY-HORN AND ASSOCIATES, INC.
Texas Firm No. 928

ATTACHMENT L

USDA Soil Map

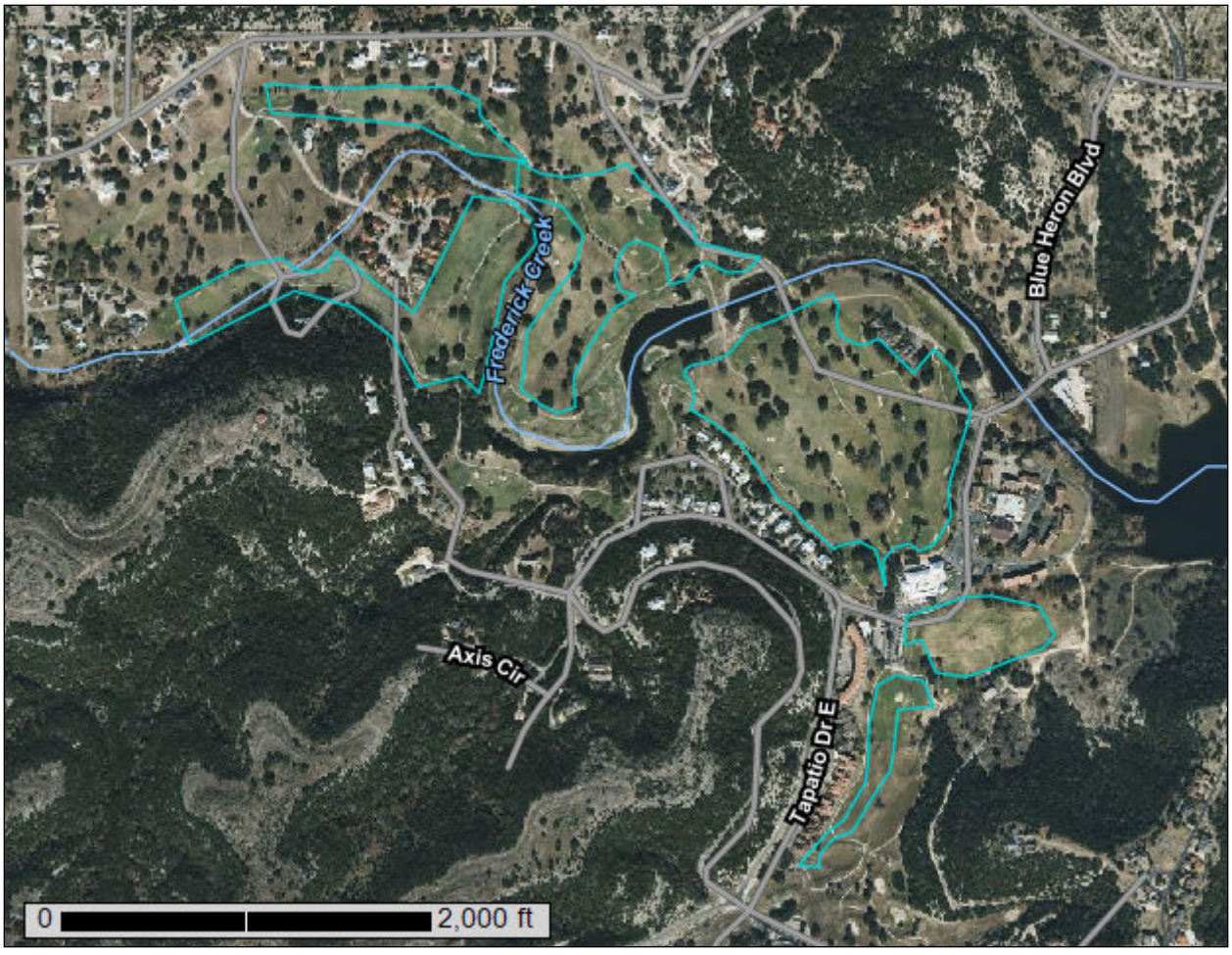
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Kendall County, Texas



February 20, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

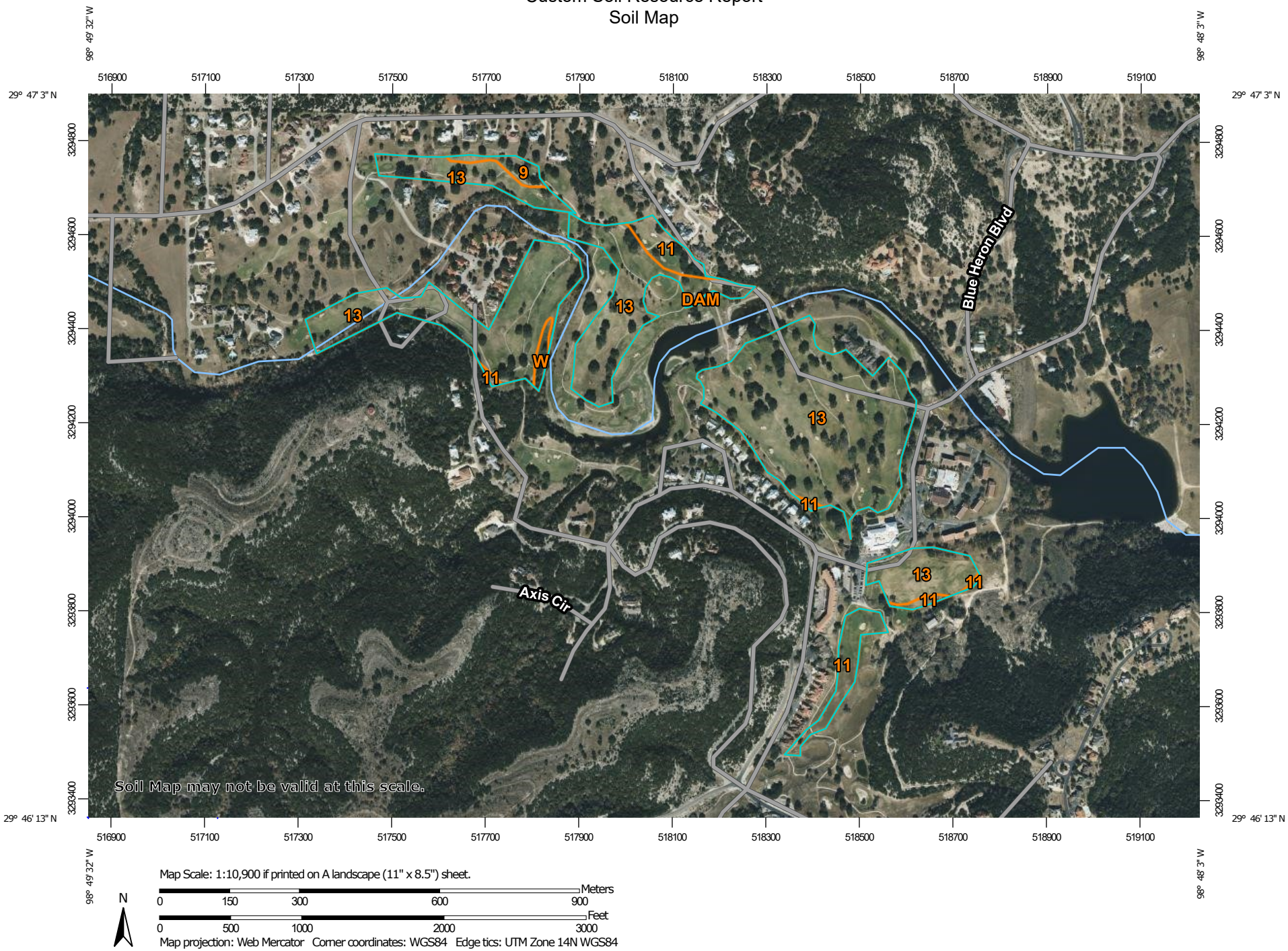
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:31,700.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kendall County, Texas
Survey Area Data: Version 21, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 15, 2020—Nov 16, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
9	Doss-Brackett association, 1 to 8 percent slopes	1.3	1.8%
11	Eckrant-Rock outcrop association, 8 to 30 percent slopes	6.3	8.6%
13	Krum silty clay, 3 to 5 percent slopes	65.6	88.7%
DAM	Dams	0.0	0.0%
W	Water	0.7	1.0%
Totals for Area of Interest		**74.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Kendall County, Texas

9—Doss-Brackett association, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 30gjs
Elevation: 1,050 to 2,000 feet
Mean annual precipitation: 33 to 37 inches
Mean annual air temperature: 65 to 67 degrees F
Frost-free period: 225 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Doss and similar soils: 48 percent
Brackett and similar soils: 28 percent
Minor components: 24 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Doss

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 9 inches: silty clay
Bk - 9 to 18 inches: silty clay
Crk - 18 to 41 inches: bedrock

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: 11 to 20 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 70 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Description of Brackett

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 6 inches: gravelly clay loam
Bk - 6 to 14 inches: clay loam
Cr - 14 to 60 inches: bedrock

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: 6 to 20 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 90 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Minor Components

Tarpley

Percent of map unit: 8 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R081CY361TX - Redland 29-35 PZ
Hydric soil rating: No

Eckrant

Percent of map unit: 8 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex

Ecological site: R081CY360TX - Low Stony Hill 29-35 PZ
Hydric soil rating: No

Krum

Percent of map unit: 8 percent
Landform: Ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

11—Eckrant-Rock outcrop association, 8 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2t0sb
Elevation: 750 to 2,400 feet
Mean annual precipitation: 28 to 37 inches
Mean annual air temperature: 64 to 68 degrees F
Frost-free period: 210 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Eckrant and similar soils: 65 percent
Rock outcrop: 27 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eckrant

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Typical profile

A1 - 0 to 7 inches: very cobbly clay
A2 - 7 to 12 inches: extremely cobbly clay
R - 12 to 80 inches: bedrock

Properties and qualities

Slope: 8 to 30 percent
Surface area covered with cobbles, stones or boulders: 2.3 percent
Depth to restrictive feature: 4 to 20 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R081CY363TX - Steep Rocky 29-35 PZ
Hydric soil rating: No

Description of Rock Outcrop

Setting
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Limestone

Typical profile
R - 0 to 80 inches: bedrock

Properties and qualities
Slope: 8 to 30 percent
Depth to restrictive feature: 0 to 2 inches to lithic bedrock
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 19.98 in/hr)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Brackett
Percent of map unit: 4 percent
Landform: Ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY362TX - Steep Adobe 29-35 PZ
Hydric soil rating: No

Kerrville
Percent of map unit: 2 percent
Landform: Ridges

Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY362TX - Steep Adobe 29-35 PZ
Hydric soil rating: No

Tarpley

Percent of map unit: 1 percent
Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY361TX - Redland 29-35 PZ
Hydric soil rating: No

Krum

Percent of map unit: 1 percent
Landform: Ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

13—Krum silty clay, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2t2j9
Elevation: 1,070 to 2,200 feet
Mean annual precipitation: 29 to 37 inches
Mean annual air temperature: 64 to 67 degrees F
Frost-free period: 230 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Krum and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Krum

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear

Parent material: Calcareous silty and clayey alluvium derived from limestone

Typical profile

A - 0 to 21 inches: silty clay
Bk - 21 to 43 inches: silty clay
Ck - 43 to 80 inches: silty clay

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 50 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Minor Components

Doss

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Brackett

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave

Hydric soil rating: No

DAM—Dams

Map Unit Composition

Dams: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dams

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

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Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the following National Soil Survey Handbook link: “National Soil Survey Handbook.”

ABC soil

A soil having an A, a B, and a C horizon.

Ablation till

Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

AC soil

A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil

The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil

Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil

A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone

A semiconical type of alluvial fan having very steep slopes. It is higher, narrower, and steeper than a fan and is composed of coarser and thicker layers of material deposited by a combination of alluvial episodes and (to a much lesser degree) landslides (debris flow). The coarsest materials tend to be concentrated at the apex of the cone.

Alluvial fan

A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

Alluvium

Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl

A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM)

The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions

Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon

A subsoil horizon characterized by an accumulation of illuvial clay.

Arroyo

The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in unconsolidated material. It is usually dry but can be transformed into a temporary watercourse or short-lived torrent after heavy rain within the watershed.

Aspect

The direction toward which a slope faces. Also called slope aspect.

Association, soil

A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity)

The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low: 0 to 3
Low: 3 to 6
Moderate: 6 to 9
High: 9 to 12
Very high: More than 12

Backslope

The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp

A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Badland

A landscape that is intricately dissected and characterized by a very fine drainage network with high drainage densities and short, steep slopes and narrow interfluves. Badlands develop on surfaces that have little or no vegetative cover overlying unconsolidated or poorly cemented materials (clays, silts, or sandstones) with, in some cases, soluble minerals, such as gypsum or halite.

Bajada

A broad, gently inclined alluvial piedmont slope extending from the base of a mountain range out into a basin and formed by the lateral coalescence of a series of alluvial fans. Typically, it has a broadly undulating transverse profile, parallel to the mountain front, resulting from the convexities of component fans. The term is generally restricted to constructional slopes of intermontane basins.

Basal area

The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation

The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope (geomorphology)

A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding plane

A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology)

from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedding system

A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock

The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography

A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace

A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum

Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout (map symbol)

A saucer-, cup-, or trough-shaped depression formed by wind erosion on a preexisting dune or other sand deposit, especially in an area of shifting sand or loose soil or where protective vegetation is disturbed or destroyed. The adjoining accumulation of sand derived from the depression, where recognizable, is commonly included. Blowouts are commonly small.

Borrow pit (map symbol)

An open excavation from which soil and underlying material have been removed, usually for construction purposes.

Bottom land

An informal term loosely applied to various portions of a flood plain.

Boulders

Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks

A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

Breast height

An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management

Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Butte

An isolated, generally flat-topped hill or mountain with relatively steep slopes and talus or precipitous cliffs and characterized by summit width that is less than the height of bounding escarpments; commonly topped by a caprock of resistant material and representing an erosion remnant carved from flat-lying rocks.

Cable yarding

A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil

A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Caliche

A general term for a prominent zone of secondary carbonate accumulation in surficial materials in warm, subhumid to arid areas. Caliche is formed by both geologic and pedologic processes. Finely crystalline calcium carbonate forms a nearly continuous surface-coating and void-filling medium in geologic (parent) materials. Cementation ranges from weak in nonindurated forms to very strong in indurated forms. Other minerals (e.g., carbonates, silicate, and sulfate) may occur as accessory cements. Most petrocalcic horizons and some calcic horizons are caliche.

California bearing ratio (CBR)

The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy

The leafy crown of trees or shrubs. (See Crown.)

Canyon

A long, deep, narrow valley with high, precipitous walls in an area of high local relief.

Capillary water

Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena

A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation

An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity

The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps

See Terracettes.

Cement rock

Shaly limestone used in the manufacture of cement.

Channery soil material

Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment

Control of unwanted vegetation through the use of chemicals.

Chiseling

Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Cirque

A steep-walled, semicircular or crescent-shaped, half-bowl-like recess or hollow, commonly situated at the head of a glaciated mountain valley or high on the side of a mountain. It was produced by the erosive activity of a mountain glacier. It commonly contains a small round lake (tarn).

Clay

As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions

See Redoximorphic features.

Clay film

A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Clay spot (map symbol)

A spot where the surface texture is silty clay or clay in areas where the surface layer of the soils in the surrounding map unit is sandy loam, loam, silt loam, or coarser.

Claypan

A dense, compact subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. The layer restricts the downward movement of water through the soil. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community

The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil

Sand or loamy sand.

Cobble (or cobblestone)

A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material

Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility)

See Linear extensibility.

Colluvium

Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

Complex slope

Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil

A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions

See Redoximorphic features.

Conglomerate

A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system

Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage

A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil

Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping

Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section

The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat)

A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Corrosion (geomorphology)

A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations)

Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop

A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management

Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system

Growing crops according to a planned system of rotation and management practices.

Cross-slope farming

Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown

The upper part of a tree or shrub, including the living branches and their foliage.

Cryoturbate

A mass of soil or other unconsolidated earthy material moved or disturbed by frost action. It is typically coarser than the underlying material.

Cuesta

An asymmetric ridge capped by resistant rock layers of slight or moderate dip (commonly less than 15 percent slopes); a type of homocline produced by differential erosion of interbedded resistant and weak rocks. A cuesta has a long, gentle slope on one side (dip slope) that roughly parallels the inclined beds; on the other side, it has a relatively short and steep or clifflike slope (scarp) that cuts through the tilted rocks.

Culmination of the mean annual increment (CMAI)

The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave

The walls of excavations tend to cave in or slough.

Decreasers

The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing

Postponing grazing or resting grazing land for a prescribed period.

Delta

A body of alluvium having a surface that is fan shaped and nearly flat; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer

A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depression, closed (map symbol)

A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and that does not have a natural outlet for surface drainage.

Depth, soil

Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Desert pavement

A natural, residual concentration or layer of wind-polished, closely packed gravel, boulders, and other rock fragments mantling a desert surface. It forms where wind action and sheetwash have removed all smaller particles or where rock fragments have migrated upward through sediments to the surface. It typically protects the finer grained underlying material from further erosion.

Diatomaceous earth

A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

Dip slope

A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace)

A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming

A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural)

Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface

Runoff, or surface flow of water, from an area.

Drainageway

A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw

A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

Drift

A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Drumlin

A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

Duff

A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune

A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Earthy fill

See Mine spoil.

Ecological site

An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation

The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation

A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian deposit

Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

Ephemeral stream

A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation

A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion

The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (accelerated)

Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion (geologic)

Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion pavement

A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface

A land surface shaped by the action of erosion, especially by running water.

Escarpment

A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Escarpment, bedrock (map symbol)

A relatively continuous and steep slope or cliff, produced by erosion or faulting, that breaks the general continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.

Escarpment, nonbedrock (map symbol)

A relatively continuous and steep slope or cliff, generally produced by erosion but in some places produced by faulting, that breaks the continuity of more gently sloping land surfaces. Exposed earthy material is nonsoil or very shallow soil.

Esker

A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left

behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

Extrusive rock

Igneous rock derived from deep-seated molten matter (magma) deposited and cooled on the earth's surface.

Fallow

Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan remnant

A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, that have been either dissected or partially buried.

Fertility, soil

The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat)

The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity

The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope

A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil

Sandy clay, silty clay, or clay.

Firebreak

An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom

An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material

Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone

A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain

The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms

A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay

A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step

An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial

Of or pertaining to rivers or streams; produced by stream or river action.

Foothills

A region of steeply sloping hills that fringes a mountain range or high-plateau escarpment. The hills have relief of as much as 1,000 feet (300 meters).

Footslope

The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb

Any herbaceous plant not a grass or a sedge.

Forest cover

All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type

A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan

A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil

The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai

Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Glaciofluvial deposits

Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits

Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

Gleyed soil

Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping

Growing crops in strips that grade toward a protected waterway.

Grassed waterway

A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel

Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravel pit (map symbol)

An open excavation from which soil and underlying material have been removed and used, without crushing, as a source of sand or gravel.

Gravelly soil material

Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Gravelly spot (map symbol)

A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area that has less than 15 percent rock fragments.

Green manure crop (agronomy)

A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water

Water filling all the unblocked pores of the material below the water table.

Gully (map symbol)

A small, steep-sided channel caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage whereas a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock

Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim

Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan

A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology)

A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat)

Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops

Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill

A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope

A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Horizon, soil

A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon: An organic layer of fresh and decaying plant residue.

L horizon: A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon: The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon: The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon: The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon: The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon: Soft, consolidated bedrock beneath the soil.

R layer: Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

M layer: A root-limiting subsoil layer consisting of nearly continuous, horizontally oriented, human-manufactured materials.

W layer: A layer of water within or beneath the soil.

Humus

The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups

Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties include depth to a seasonal high water table, the infiltration rate, and depth to a layer that significantly restricts the downward movement of water. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock

Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation

The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil

A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers

Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration

The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity

The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate

The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate

The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Very low: Less than 0.2
Low: 0.2 to 0.4
Moderately low: 0.4 to 0.75
Moderate: 0.75 to 1.25
Moderately high: 1.25 to 1.75
High: 1.75 to 2.5
Very high: More than 2.5

Interfluve

A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology)

A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream

A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders

On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions

See Redoximorphic features.

Irrigation

Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin: Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border: Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding: Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation: Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle): Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow: Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler: Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation: Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding: Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame

A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

Karst (topography)

A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

Knoll

A small, low, rounded hill rising above adjacent landforms.

Ksat

See Saturated hydraulic conductivity.

Lacustrine deposit

Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain

A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace

A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Landfill (map symbol)

An area of accumulated waste products of human habitation, either above or below natural ground level.

Landslide

A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones

Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Lava flow (map symbol)

A solidified, commonly lobate body of rock formed through lateral, surface outpouring of molten lava from a vent or fissure.

Leaching

The removal of soluble material from soil or other material by percolating water.

Levee (map symbol)

An embankment that confines or controls water, especially one built along the banks of a river to prevent overflow onto lowlands.

Linear extensibility

Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit

The moisture content at which the soil passes from a plastic to a liquid state.

Loam

Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess

Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength

The soil is not strong enough to support loads.

Low-residue crops

Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Marl

An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Marsh or swamp (map symbol)

A water-saturated, very poorly drained area that is intermittently or permanently covered by water. Sedges, cattails, and rushes are the dominant vegetation in marshes, and trees or shrubs are the dominant vegetation in swamps. Not used in map units where the named soils are poorly drained or very poorly drained.

Mass movement

A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses

See Redoximorphic features.

Meander belt

The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar

A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll

One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

Mechanical treatment

Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil

Very fine sandy loam, loam, silt loam, or silt.

Mesa

A broad, nearly flat topped and commonly isolated landmass bounded by steep slopes or precipitous cliffs and capped by layers of resistant, nearly horizontal rocky material. The summit width is characteristically greater than the height of the bounding escarpments.

Metamorphic rock

Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth’s crust. Nearly all such rocks are crystalline.

Mine or quarry (map symbol)

An open excavation from which soil and underlying material have been removed and in which bedrock is exposed. Also denotes surface openings to underground mines.

Mine spoil

An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil

Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage

Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area

A kind of map unit that has little or no natural soil and supports little or no vegetation.

Miscellaneous water (map symbol)

Small, constructed bodies of water that are used for industrial, sanitary, or mining applications and that contain water most of the year.

Moderately coarse textured soil

Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil

Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon

A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine

In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.

Morphology, soil

The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil

Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain

A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can

occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.

Muck

Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mucky peat

See Hemic soil material.

Mudstone

A blocky or massive, fine grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term for such material as clay, silt, claystone, siltstone, shale, and argillite and that should be used only when the amounts of clay and silt are not known or cannot be precisely identified.

Munsell notation

A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon

A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil

A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules

See Redoximorphic features.

Nose slope (geomorphology)

A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant

Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter

Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low: Less than 0.5 percent
Low: 0.5 to 1.0 percent
Moderately low: 1.0 to 2.0 percent
Moderate: 2.0 to 4.0 percent
High: 4.0 to 8.0 percent
Very high: More than 8.0 percent

Outwash

Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

Outwash plain

An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace

An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan

A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material

The unconsolidated organic and mineral material in which soil forms.

Peat

Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped

An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment

A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

Pedon

The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation

The movement of water through the soil.

Perennial water (map symbol)

Small, natural or constructed lakes, ponds, or pits that contain water most of the year.

Permafrost

Ground, soil, or rock that remains at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

pH value

A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil

A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping

Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting

Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit

The moisture content at which a soil changes from semisolid to plastic.

Plasticity index

The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau (geomorphology)

A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

Playa

The generally dry and nearly level lake plain that occupies the lowest parts of closed depressions, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff. Playa deposits are fine grained and may or may not have a high water table and saline conditions.

Plinthite

The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan

A compacted layer formed in the soil directly below the plowed layer.

Ponding

Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded

Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings

See Redoximorphic features.

Potential native plant community

See Climax plant community.

Potential rooting depth (effective rooting depth)

Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning

Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil

The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil

A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use

Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and

promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland

Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil

A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid: Less than 3.5
Extremely acid: 3.5 to 4.4
Very strongly acid: 4.5 to 5.0
Strongly acid: 5.1 to 5.5
Moderately acid: 5.6 to 6.0
Slightly acid: 6.1 to 6.5
Neutral: 6.6 to 7.3
Slightly alkaline: 7.4 to 7.8
Moderately alkaline: 7.9 to 8.4
Strongly alkaline: 8.5 to 9.0
Very strongly alkaline: 9.1 and higher

Red beds

Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations

See Redoximorphic features.

Redoximorphic depletions

See Redoximorphic features.

Redoximorphic features

Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
   A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
   B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
   C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
   A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
   B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).
3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix

See Redoximorphic features.

Regolith

All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief

The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material)

Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill

A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riser

The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut

A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments

Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop (map symbol)

An exposure of bedrock at the surface of the earth. Not used where the named soils of the surrounding map unit are shallow over bedrock or where “Rock outcrop” is a named component of the map unit.

Root zone

The part of the soil that can be penetrated by plant roots.

Runoff

The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil

A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Saline spot (map symbol)

An area where the surface layer has an electrical conductivity of 8 mmhos/cm more than the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has an electrical conductivity of 2 mmhos/cm or less.

Sand

As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone

Sedimentary rock containing dominantly sand-sized particles.

Sandy spot (map symbol)

A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils in the surrounding map unit is very fine sandy loam or finer.

Sapric soil material (muck)

The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (Ksat)

The ease with which pores of a saturated soil transmit water. Formally, the proportionality coefficient that expresses the relationship of the rate of water movement to hydraulic gradient in Darcy's Law, a law that describes the rate of water movement through porous media. Commonly abbreviated as "Ksat." Terms describing saturated hydraulic conductivity are:

Very high: 100 or more micrometers per second (14.17 or more inches per hour)

High: 10 to 100 micrometers per second (1.417 to 14.17 inches per hour)

Moderately high: 1 to 10 micrometers per second (0.1417 inch to 1.417 inches per hour)

Moderately low: 0.1 to 1 micrometer per second (0.01417 to 0.1417 inch per hour)

Low: 0.01 to 0.1 micrometer per second (0.001417 to 0.01417 inch per hour)

Very low: Less than 0.01 micrometer per second (less than 0.001417 inch per hour).

To convert inches per hour to micrometers per second, multiply inches per hour by 7.0572. To convert micrometers per second to inches per hour, multiply micrometers per second by 0.1417.

Saturation

Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification

The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock

A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum

A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil

A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Severely eroded spot (map symbol)

An area where, on the average, 75 percent or more of the original surface layer has been lost because of accelerated erosion. Not used in map units in which “severely eroded,” “very severely eroded,” or “gullied” is part of the map unit name.

Shale

Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion

The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Short, steep slope (map symbol)

A narrow area of soil having slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.

Shoulder

The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell

The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Shrub-coppice dune

A small, streamlined dune that forms around brush and clump vegetation.

Side slope (geomorphology)

A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica

A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio

The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt

As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone

An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils

Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole (map symbol)

A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

Site index

A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic)

Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slide or slip (map symbol)

A prominent landform scar or ridge caused by fairly recent mass movement or descent of earthy material resulting from failure of earth or rock under shear stress along one or several surfaces.

Slope

The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope alluvium

Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill

The slow filling of ponds, resulting from restricted water transmission in the soil.

Slow water movement

Restricted downward movement of water through the soil. See Saturated hydraulic conductivity.

Sodic (alkali) soil

A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodic spot (map symbol)

An area where the surface layer has a sodium adsorption ratio that is at least 10 more than that of the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has a sodium adsorption ratio of 5 or less.

Sodicity

The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Slight: Less than 13:1
Moderate: 13-30:1
Strong: More than 30:1

Sodium adsorption ratio (SAR)

A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock

Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil

A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates

Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand: 2.0 to 1.0
Coarse sand: 1.0 to 0.5
Medium sand: 0.5 to 0.25
Fine sand: 0.25 to 0.10
Very fine sand: 0.10 to 0.05
Silt: 0.05 to 0.002
Clay: Less than 0.002

Solum

The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Spoil area (map symbol)

A pile of earthy materials, either smoothed or uneven, resulting from human activity.

Stone line

In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones

Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony

Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stony spot (map symbol)

A spot where 0.01 to 0.1 percent of the soil surface is covered by rock fragments that are more than 10 inches in diameter in areas where the surrounding soil has no surface stones.

Strath terrace

A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace

One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping

Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil

The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are:

Platy: Flat and laminated

Prismatic: Vertically elongated and having flat tops

Columnar: Vertically elongated and having rounded tops

Angular blocky: Having faces that intersect at sharp angles (planes)

Subangular blocky: Having subrounded and planar faces (no sharp angles)

Granular: Small structural units with curved or very irregular faces

Structureless soil horizons are defined as follows:

Single grained: Entirely noncoherent (each grain by itself), as in loose sand

Massive: Occurring as a coherent mass

Stubble mulch

Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil

Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling

Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum

The part of the soil below the solum.

Subsurface layer

Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow

The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit

The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer

The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil

The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus

Rock fragments of any size or shape (commonly coarse and angular) derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose broken rock formed chiefly by falling, rolling, or sliding.

Taxadjuncts

Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine

An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation)

An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field

generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology)

A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes

Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil

The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer

Otherwise suitable soil material that is too thin for the specified use.

Till

Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain

An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil

The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope

The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil

The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements

Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread

The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Tuff

A generic term for any consolidated or cemented deposit that is 50 percent or more volcanic ash.

Upland

An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill

The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variegation

Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve

A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Very stony spot (map symbol)

A spot where 0.1 to 3.0 percent of the soil surface is covered by rock fragments that are more than 10 inches in diameter in areas where the surface of the surrounding soil is covered by less than 0.01 percent stones.

Water bars

Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering

All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Well graded

Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wet spot (map symbol)

A somewhat poorly drained to very poorly drained area that is at least two drainage classes wetter than the named soils in the surrounding map unit.

Wilting point (or permanent wilting point)

The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow

The uprooting and tipping over of trees by the wind.

ATTACHMENT M

Soil Analyses

ATTACHMENT N

TCEQ Letter of Conditional Construction Approval

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 7, 2025

Ms. Behnaz Jalili, Ph.D, P.E.
Project Engineer
Kimley-Horn and Associates, Inc.
5301 Southwest Parkway, Bldg 2, Suite 100
Austin, Texas 78735

RE: Application to Renew Permit No.: WQ0012404001
Applicant Name: SJWTX, Inc. (CN602969396)
Site Name: SJWTX Tapatio Springs WWTP (RN102362175)
Type of Application: Renewal without changes

VIA EMAIL

Dear Ms. Jalili:

We have received the application for the above referenced permit, and it is currently under review. Your attention to the following item(s) are requested before we can declare the application administratively complete. Please submit responses to the following items via email. In addition, please submit one original hard copy (including a cover letter) of the complete response.

1. Administrative Report 1.0

   Section 8, Item d: No public viewing location was provided. Please provide an updated Section 8, Item d with a public viewing location.

   Section 14: Section 14 of the Administrative Report must be signed and notarized by an authorized individual. The person whose name and title is used is an authorized individual please provide an updated Section 14 with their signature properly notarized

2. The following is a portion of the NORI which contains information relevant to your application. Please read it carefully and indicate if it contains any errors or omissions. The complete notice will be sent to you once the application is declared administratively complete.

   APPLICATION. SJWTX, Inc., P.O. Box 1742, Canyon Lake, Texas 78133, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Land Application Permit (TLAP) No. WQ0012404001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 150,000 gallons per day via: surface irrigation of 100 acres of golf course. The domestic wastewater facility and

disposal area are located at Approximately 0.2 miles southeast of the intersection of Tapatio Drive East and Blue Heron Boulevard (aka Resort Way), near the city of Borne, in Kendall County, Texas 78006TCEQ received this application on February 28, 2025. The permit application will be available for viewing and copying at Waiting on applicant response 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/tlap-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=-98.80694,29.774166&level=18

3. The application indicates that public notices in Spanish are required. After confirming the portion of the NORI above does not contain any errors or omissions, please use the attached template to translate the NORI into Spanish. Only the first and last paragraphs are unique to this application and require translation. Please provide the translated Spanish NORI in a Microsoft Word document.

Please submit the complete response, addressed to my attention by March 7, 2025. If you should have any questions, please do not hesitate to contact me by phone at (512) 239-3441 or by email at Brandon.Maldonado@tceq.texas.gov

Sincerely,

Brandon Maldonado
Applications Review and Processing Team (MC148)
Water Quality Division
Texas Commission of Environmental Quality

BM

Enclosure(s)

cc: Mr. Ian Clement, P.E., Project Engineer, Kimley-Horn and Associates, Inc., 5301 Southwest Parkway, Bldg 2, Suite 100, Austin, Texas 78735

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 21, 2025

Ms. Behnaz Jalili, Ph.D, P.E.
Project Engineer
Kimley-Horn and Associates, Inc.
5301 Southwest Parkway, Bldg 2, Suite 100
Austin, Texas 78735

RE: Declaration of Administrative Completeness
Applicant Name: SJWTX, Inc. (CN602969396)
Permit No.: WQ0012404001
Site Name: SJWTX Tapatio Springs WWTP (RN102362175)
Type of Application: Renewal without changes

Dear Ms. Jalili:

The executive director has declared the above referenced application, received on February 28, 2025 administratively complete on March 21, 2025.

You are now required to publish notice of your proposed activity and make a copy of the application available for public review. The following items are included to help you meet the regulatory requirements associated with this notice:

- Instructions for Public Notice
- Notice for Newspaper Publication
- Public Notice Verification Form
- Publisher's Affidavits

You must follow all the directions in the enclosed instructions. The most common mistakes are the unauthorized changing of notice, wording, or font. If you fail to follow these instructions, you may be required to republish the notices.

The following requirements are also described in the enclosed instructions. However, due to their importance, they are highlighted here as well.

1. Publish the enclosed notice within **30 calendar days** after your application is declared administratively complete. (See this letter's first paragraph for the declaration date.) **You may be required to publish the notice in more than one newspaper, including a newspaper published in an alternative language, to satisfy all of the notice requirements.**
2. On or before the date you publish notice, place a copy of your permit application in a public place in the county where the facility is or will be located. This copy must be accessible to the public for review and copying, must be updated to reflect changes to the application, and must remain in place throughout the comment period.
3. For each publication, submit proof of publication of the notice that shows the publication date and newspaper name to the Office of the Chief Clerk within **30 calendar days** after notice is published in the newspaper.

4. Return the original enclosed Public Notice Verification and the Publisher's Affidavits to the Office of the Chief Clerk within **30 calendar days** after the notice is published in the newspaper.

If you do not comply with **all** the requirements described in the instructions, further processing of your application may be suspended, or the agency may take other actions.

If you have any questions regarding publication requirements, please contact the Office of Legal Services at (512) 239-0600. If you have any questions regarding the content of the notice, please contact Brandon Maldonado at (512) 239-4331 or Brandon.Maldonado@tceq.texas.gov.

Sincerely,

J Bowers

Jennifer E. Bowers
Section Manager, Water Quality Division Support
Office of Water
Texas Commission of Environmental Quality

JEB/BM

Enclosures

Look Up a ZIP Code™

FAQs (https://www.usps.com/faqs.htm)

Go to

ZIP Code™ by Address

You entered:

5301 SOUTHWEST PARKWAY, BUILDING 2 SUITE 100
AUSTIN TX
78735

If more than one address matches the information provided, try narrowing your search by entering a street address and, if applicable, a unit number. **Edit and search again. (zip-code-lookup.htm?byaddress)**

5301 SOUTHWEST PKWY STE 100 STE 100
AUSTIN TX **78735-0114**

Look Up Another ZIP Code™

Edit and Search Again (/zip-code-lookup.htm?byaddress)

Look Up a ZIP Code™

Go to

ZIP Code™ by Address

You entered:

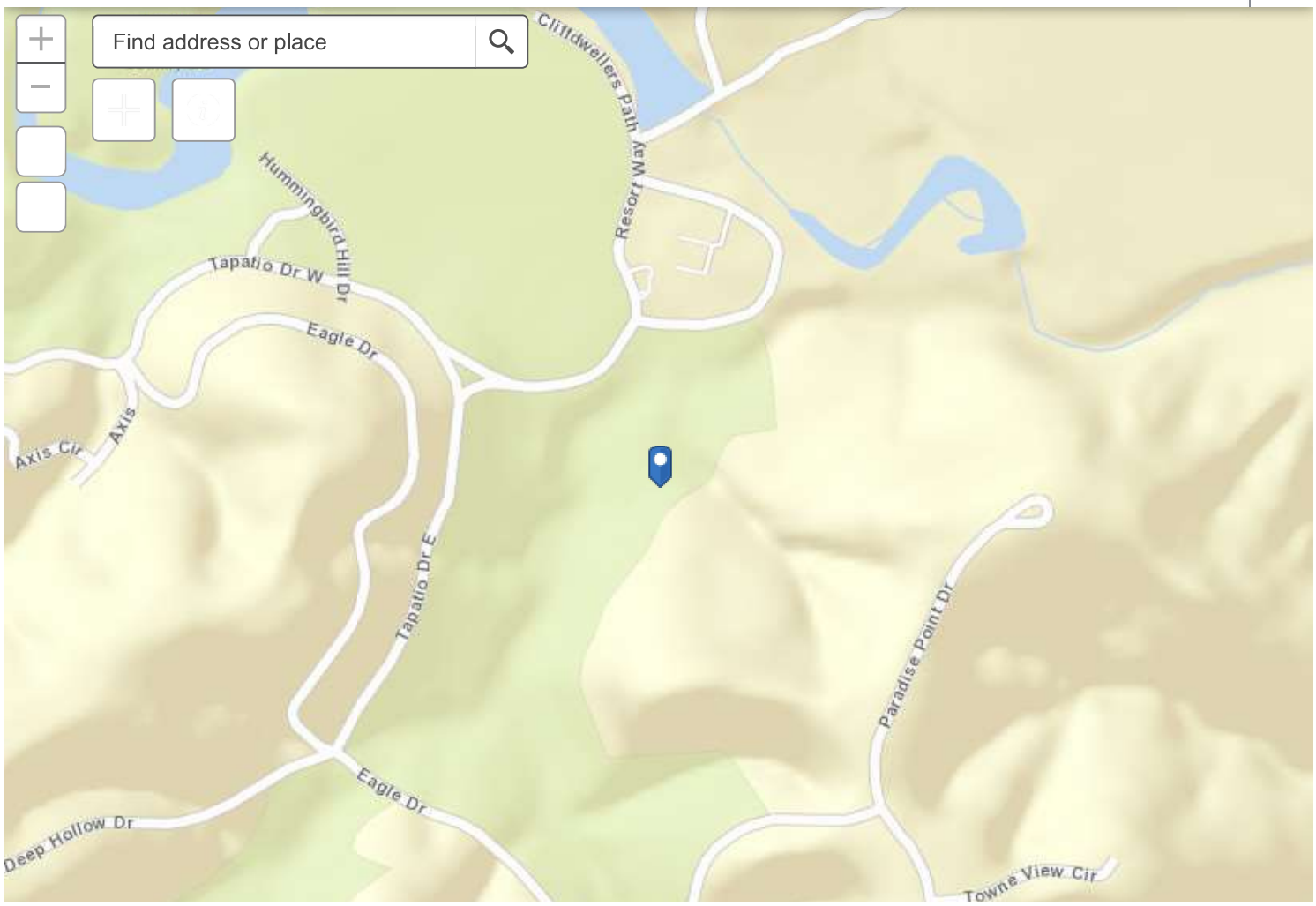
P.O. BOX 1742
CANYON LAKE TX
78133

If more than one address matches the information provided, try narrowing your search by entering a street address and, if applicable, a unit number. **Edit and search again. (zip-code-lookup.htm?byaddress)**

PO BOX 1742
CANYON LAKE TX **78133-0005**

Look Up Another ZIP Code™

Edit and Search Again (/zip-code-lookup.htm?byaddress)



600ft

-98.805 29.776 Degrees

Customer Name: SJTS INC
Account #: 23707944 Debtcollpath Stage: ATTGEN:REFENF Calls: NOTES

WDV	SC00198270	ADMIN PENALTY-JAN 2017		10-JAN-17	10-JAN-17	$36.98
WDV	SC00201068	ADMIN PENALTY-FEB 2017		10-FEB-17	10-FEB-17	$36.98
WDV	SC00203897	ADMIN PENALTY-MAR 2017		10-MAR-17	10-MAR-17	$36.98
WDV	SC00206041	ADMIN PENALTY-APR 2017		10-APR-17	10-APR-17	$36.98
WDV	SC00207863	ADMIN PENALTY-MAY 2017		10-MAY-17	10-MAY-17	$36.98
WDV	SC00209271	ADMIN PENALTY-JUN 2017		10-JUN-17	10-JUN-17	$36.98
WDV	SC00210454	ADMIN PENALTY-JUL 2017		10-JUL-17	10-JUL-17	$36.98
WDV	SC00211693	ADMIN PENALTY-AUG 2017		10-AUG-17	10-AUG-17	$36.98
WDV	SC00212681	ADMIN PENALTY-OCT 2017		10-OCT-17	10-OCT-17	$36.98
WDV	SC00213858	ADMIN PENALTY-NOV 2017		10-NOV-17	10-NOV-17	$36.98
WDV	SC00215433	ADMIN PENALTY-DEC 2017		10-DEC-17	10-DEC-17	$36.98
WDV	SC00217479	ADMIN PENALTY-JAN 2018		10-JAN-18	10-JAN-18	$36.98

Total of delinquent transactions (Account): $8710.52

Total of delinquent transactions (Customer): $8710.52

Customer Name: SKALITSKY, LESLIE
Account #: 23700480 Debtcollpath Stage: UNCOL:EXHAUST Calls:

WDV	WDVBFWD429	ADMIN PENALTY FWD	FY98	970258MSWE	30-SEP-04	31-OCT-04	$960.00
WDV	SC2602-001	LATE FEE FOR WDVBFWD429		970258MSWE	10-OCT-05	10-NOV-05	$4.80
WDV	SC2603-001	LATE FEE FOR WDVBFWD429		970258MSWE	10-NOV-05	10-DEC-05	$4.80
WDV	SC2604-001	LATE FEE FOR WDVBFWD429		970258MSWE	12-DEC-05	12-JAN-06	$4.80
WDV	SC2605-001	LATE FEE FOR WDVBFWD429		970258MSWE	10-JAN-06	10-FEB-06	$4.80

Total of delinquent transactions (Account): $979.20

Total of delinquent transactions (Customer): $979.20

Customer Name: SKEEN, JEREMY
Account #: 0809836H Debtcollpath Stage: AGENCY:REFERRED Calls:

WMS	WMS0047082	MUN TRAN SLDG FEE GALS	FY20	25796	31-JUL-20	31-AUG-20	$500.00
WMS	SC00261206	LATE FEE - SEP 2020			10-SEP-20	10-SEP-20	$25.00
WMS	SC00262089	LATE FEE - OCT 2020			10-OCT-20	10-OCT-20	$25.00
WMS	SC00263604	LATE FEE - NOV 2020			10-NOV-20	10-NOV-20	$2.87
WMS	WMS0047082	COLLECTION COST RECOVERY			04-DEC-20	04-DEC-20	$125.00
WMS	SC00265875	LATE FEE - DEC 2020			10-DEC-20	10-DEC-20	$2.87
WMS	SC00268334	LATE FEE - JAN 2021			10-JAN-21	10-JAN-21	$2.12
WMS	SC00270885	LATE FEE - FEB 2021			10-FEB-21	10-FEB-21	$2.12
WMS	SC00272731	LATE FEE - APR 2021			10-APR-21	10-APR-21	$2.12
WMS	SC00274268	LATE FEE - MAY 2021			10-MAY-21	10-MAY-21	$2.12
WMS	SC00275451	LATE FEE - JUN 2021			10-JUN-21	10-JUN-21	$2.12
WMS	SC00276343	LATE FEE - JUL 2021			10-JUL-21	10-JUL-21	$2.12
WMS	WMS0048811	MUN TRAN SLDG FEE GALS	FY21	25796	31-JUL-21	31-AUG-21	$500.00
WMS	SC00277117	LATE FEE - AUG 2021			10-AUG-21	10-AUG-21	$2.12
WMS	SC00278058	LATE FEE - SEP 2021			10-SEP-21	10-SEP-21	$27.12
WMS	SC00279575	LATE FEE - OCT 2021			10-OCT-21	10-OCT-21	$27.12
WMS	SC00281398	LATE FEE - NOV 2021			10-NOV-21	10-NOV-21	$4.24
WMS	WMS0048811	COLLECTION COST RECOVERY			03-DEC-21	03-DEC-21	$125.00
WMS	SC00283904	LATE FEE - DEC 2021			10-DEC-21	10-DEC-21	$4.24
WMS	SC00287371	LATE FEE - JAN 2022			10-JAN-22	10-JAN-22	$4.24
WMS	SC00290953	LATE FEE - FEB 2022			10-FEB-22	10-FEB-22	$4.24
WMS	SC00294785	LATE FEE - MAR 2022			10-MAR-22	10-MAR-22	$4.24
WMS	SC00298313	LATE FEE - APR 2022			10-APR-22	10-APR-22	$4.24
WMS	SC00301215	LATE FEE - MAY 2022			10-MAY-22	10-MAY-22	$4.24
WMS	SC00302976	LATE FEE - JUN 2022			10-JUN-22	10-JUN-22	$4.24
WMS	SC00304862	LATE FEE - JUL 2022			10-JUL-22	10-JUL-22	$4.24
WMS	SC00306551	LATE FEE - AUG 2022			10-AUG-22	10-AUG-22	$4.24
WMS	SC00308694	LATE FEE - SEP 2022			10-SEP-22	10-SEP-22	$4.24
WMS	SC00310725	LATE FEE - OCT 2022			10-OCT-22	10-OCT-22	$4.24
WMS	SC00312806	LATE FEE - NOV 2022			10-NOV-22	10-NOV-22	$4.24
WMS	SC00315359	LATE FEE - DEC 2022			10-DEC-22	10-DEC-22	$4.24
WMS	SC00319235	LATE FEE - JAN 2023			10-JAN-23	10-JAN-23	$8.50
WMS	SC00322406	LATE FEE - FEB 2023			10-FEB-23	10-FEB-23	$8.50
WMS	SC00325503	LATE FEE - MAR 2023			10-MAR-23	10-MAR-23	$8.50
WMS	SC00327729	LATE FEE - APR 2023			10-APR-23	10-APR-23	$8.50

Water Quality Receipt Report

MAR-06-25 09:00 PM

Paid In By: BAYSIDE, TOWN OF

Acct.Name	Fee	Endorse. #	Ref#2	PayTyp	Check#	Card#	Tran.Date	Rec.Amnt
WATER QUALITY PERMIT APPLICATION	WQP	M416486A	13892001	CK	2810		18-APR-24	-$500.00
NOTICE FEES WQP WATER QUALITY PMT	PTGQ	M416486B	13892001	CK	2810		18-APR-24	-$15.00

Paid In By: BC HUMBLE ENTERPRISES LLC

Acct.Name	Fee	Endorse. #	Ref#2	PayTyp	Check#	Card#	Tran.Date	Rec.Amnt
WATER QUALITY PERMIT APPLICATION	WQP	M400671A	14874001	CK	1299		27-SEP-23	-$100.00
NOTICE FEES WQP WATER QUALITY PMT	PTGQ	M400671B	14874001	CK	1299		27-SEP-23	-$50.00

Paid In By: BEACH ROAD MUD

Acct.Name	Fee	Endorse. #	Ref#2	PayTyp	Check#	Card#	Tran.Date	Rec.Amnt
WATER QUALITY PERMIT APPLICATION	WQP	M418332A	13563001	CK	1636		17-JUN-24	-$500.00
NOTICE FEES WQP WATER QUALITY PMT	PTGQ	M418332B	13563001	CK	1636		17-JUN-24	-$15.00

Paid In By: BEATRIZ SANTAMARIA

Acct.Name	Fee	Endorse. #	Ref#2	PayTyp	Check#	Card#	Tran.Date	Rec.Amnt
WATER QUALITY PERMIT APPLICATION	WQP	PI00855555	626625	IFCE	582EA0005 37294		16-MAR-23	-$300.00
NOTICE FEES WQP WATER QUALITY PMT	PTGQ	PI00855556	626626	IFCE	582EA0005 37294		16-MAR-23	-$15.00
WATER QUALITY PERMIT APPLICATION	WQP	PI00894835	653524	IFCE	582EA0005 61259		26-JUL-23	-$300.00
NOTICE FEES WQP WATER QUALITY PMT	PTGQ	PI00894836	653525	IFCE	582EA0005 61259		26-JUL-23	-$50.00

Paid In By: BEAUMONT, CITY OF

Acct.Name	Fee	Endorse. #	Ref#2	PayTyp	Check#	Card#	Tran.Date	Rec.Amnt
WATER QUALITY PERMIT APPLICATION	WQP	M540759A	46370001	CK	974065		27-SEP-24	-$2000.00
NOTICE FEES WQP WATER QUALITY PMT	PTGQ	M540759B	46370001	CK	974065		27-SEP-24	-$15.00

Paid In By: BEEVILL, CITY OF

Acct.Name	Fee	Endorse. #	Ref#2	PayTyp	Check#	Card#	Tran.Date	Rec.Amnt
NOTICE FEES WQP WATER QUALITY PMT	PTGQ	M554582B	10124002	CK	171332		27-FEB-25	-$15.00

Paid In By: BEEVILLE, CITY OF

Acct.Name	Fee	Endorse. #	Ref#2	PayTyp	Check#	Card#	Tran.Date	Rec.Amnt
WATER QUALITY PERMIT APPLICATION	WQP	M554582A	10124002	CK	171332		27-FEB-25	-$2000.00

Paid In By: BEHNAZ JALILI

Acct.Name	Fee	Endorse. #	Ref#2	PayTyp	Check#	Card#	Tran.Date	Rec.Amnt
WATER QUALITY PERMIT APPLICATION	WQP	PI01026180	754087	IFCE	582EA0006 56041		03-MAR-25	-$800.00
NOTICE FEES WQP WATER QUALITY PMT	PTGQ	PI01026179	754088	IFCE	582EA0006 56041		03-MAR-25	-$15.00

bing maps

Patrick Heath Public Library

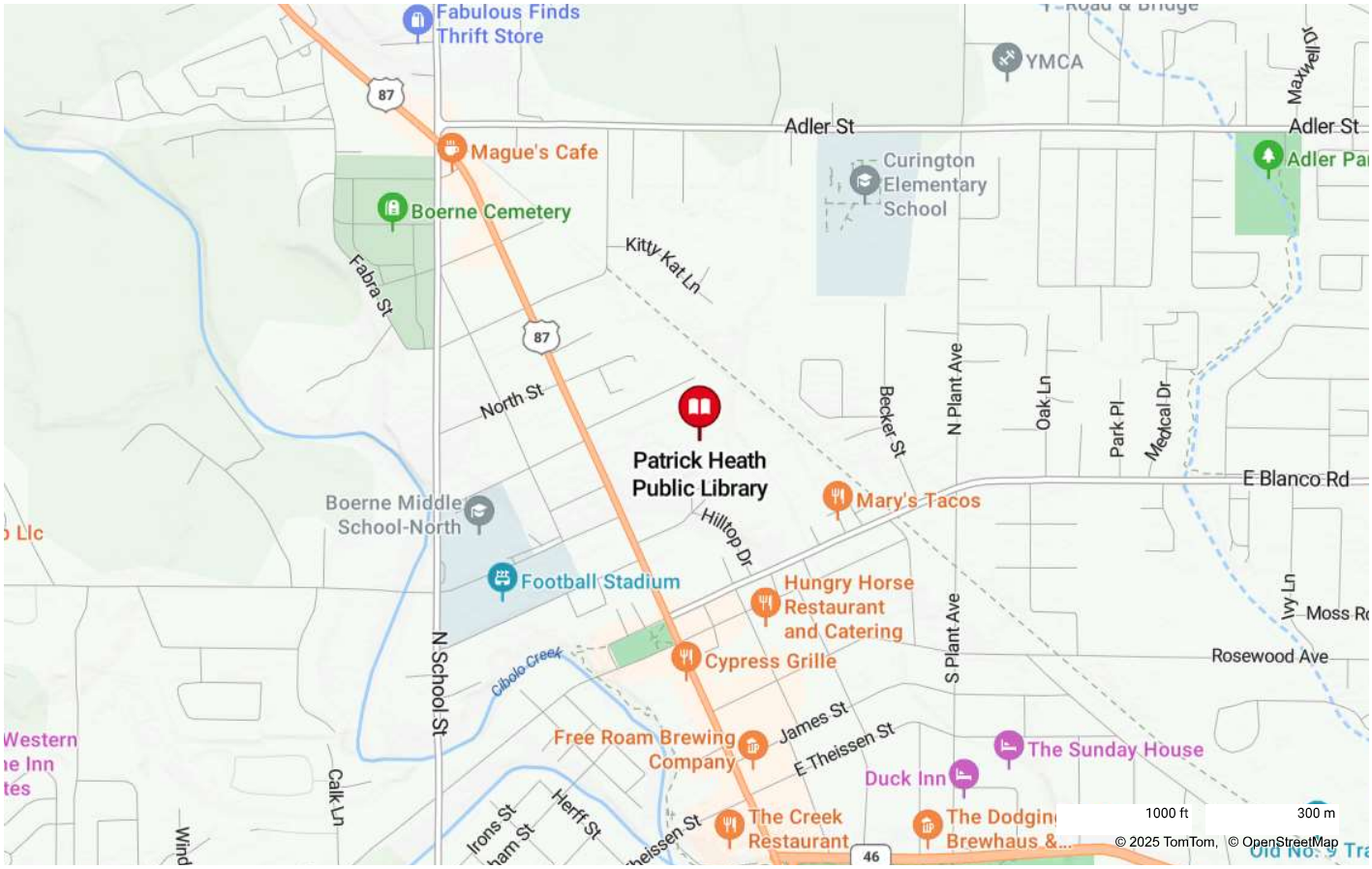
Address: 451 N. Main St. Building 100, Boerne, TX 78006

Phone: +1 830-249-3053

Website: http://www.boernelibrary.org/

Hours

Monday - Thursday	9:00 AM - 7:00 PM
Friday	9:00 AM - 6:00 PM
Saturday	10:00 AM - 4:00 PM



TEXAS SECRETARY of STATE
JANE NELSON

BUSINESS ORGANIZATIONS INQUIRY - VIEW ENTITY

Filing Number:	800542934	**Entity Type:**	Domestic For-Profit Corporation
Original Date of Filing:	September 9, 2005	**Entity Status:**	In existence
Formation Date:	N/A		
Tax ID:	12040132529	**FEIN:**	
Duration:	Perpetual		

Name: SJWTX, Inc.
Address: 110 W. TAYLOR ST.
SAN JOSE, CA 95110-2131 USA

REGISTERED AGENT | FILING HISTORY | NAMES | MANAGEMENT | ASSUMED NAMES | ASSOCIATED ENTITIES | INITIAL ADDRESS

Name	Address	Inactive Date
COGENCY GLOBAL INC.	1601 Elm Street, Suite 4360 Dallas, TX 75201 USA	

Order | Return to Search

Instructions:

- To place an order for additional information about a filing press the 'Order' button.

Comisión de Calidad Ambiental del Estado de Texas

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

PERMISO NO. WQ0012404001

SOLICITUD. SJWTX, Inc, P.O. Box 1742, Canyon Lake, Texas 78133 ha solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) para renovar el Permiso de Solicitud de Terrenos de Texas (TLAP) No. WQ0012404001 del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES) para autorizar la disposición de aguas residuales tratadas en un volumen que no exceda un caudal promedio diario de 150,000 galones por día mediante el riego superficial de 100 acres de un campo de golf. La planta de aguas residuales domésticas y el área de disposición final se encuentra aproximadamente a 0,2 millas al sureste de la intersección de Tapatio Drive East y Blue Heron Boulevard (también conocida como Resort Way), cerca de la ciudad de Borne, en el condado de Kendall, Texas, 78006. La TCEQ recibió esta solicitud el 28 de febrero de 2025. La solicitud de permiso estará disponible para su consulta y copia en la biblioteca publica de Boerne (451 N Main St, Boerne, TX 78006) antes de la fecha de publicación de este aviso en el periódico. La solicitud, incluyendo cualquier actualización y los avisos asociados, están disponibles electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications. Este enlace a un mapa electrónico de la ubicación general del sitio o instalación se proporciona como cortesía pública y no forma parte de la solicitud ni del aviso. Para conocer la ubicación exacta, consulte la solicitud.

https://gisweb.tceq.texas.gov/LocationMapper/?marker=-98.80694,29.774166&level=18

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

COMENTARIO PUBLICO / REUNION PUBLICA. Usted puede presentar comentarios públicos o pedir una reunión pública sobre esta solicitud. El propósito de una reunión pública es dar la oportunidad de presentar comentarios o hacer preguntas acerca de la solicitud. La TCEQ realiza una reunión pública si el Director Ejecutivo determina que hay un grado de interés público suficiente en la solicitud o si un legislador local lo pide. Una reunión

pública no es una audiencia administrativa de lo contencioso.

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

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

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

LISTA DE CORREO. Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Ademas, puede pedir que la TCEQ ponga su nombre en una or mas de las listas 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 especifico. Si desea que se agrega su nombre en una de las listas designe cual lista(s) y envia por correo su pedido a la Oficina del Secretario Principal de la TCEQ.

CONTACTOS E INFORMACIÓN A LA AGENCIA. Todos los comentarios públicos y solicitudes deben ser presentadas electrónicamente vía http://www14.tceq.texas.gov/epic/eComment/o por escrito dirigidos a la Comisión de Texas de Calidad Ambiental, Oficial de la Secretaría (Office of Chief Clerk), MC-105, P.O. Box 13087, Austin, Texas 78711-3087. 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. Para obtener más información acerca de esta solicitud de permiso o el proceso de permisos, llame al programa de educación pública de la TCEQ, gratis, al 1-800-687-4040. Si desea información en Español, puede llamar al 1-800-687-4040.

También se puede obtener información adicional del SJWTX, Inc. a la dirección indicada arriba o llamando a Behnaz Jalili, P.E. al +1 512-518-5596.

Fecha de emission:

Section 14. Signature Page (Instructions Page 34)

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

Permit Number: WQ0012404001

Applicant: SJWTX, Inc., dba Texas Water Company

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): Aundrea Williams

Signatory title: President

Signature: Aundrea Williams Date: 2/25/25

(Use blue ink)

Subscribed and Sworn to before me by the said_____

on this_____day of_____, 20_____.

My commission expires on the_____day of_____, 20_____.

_____

Notary Public *[SEAL]*

_____

County, Texas

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT **CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of SANTA CLARA)

On January 25, 2025 before me, KRISTAL CASTREJON ORTEGA, NOTARY PUBLIC,
Date *Here Insert Name and Title of the Officer*

personally appeared ANDREA NICOLE WILLIAMS
Name(s) of Signer(s)

,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

KRISTAL CASTREJON ORTEGA
Notary Public - California
Santa Clara County
Commission # 2451160
My Comm. Expires Jul 19, 2027

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____
Document Date: _____ Number of Pages: _____
Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

Signer's Name: _____
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

Kimley»Horn

March 17, 2025

Brandon Maldonado
Applications Review and Processing Team (MC 148)
Water Quality Division
Texas Commission on Environmental Quality
512-239-4331

Re: Application to Renew Permit No.: WQ0012404001
Applicant Name: SJWTX, Inc. (CN602969396)
Site Name: SJWTX Tapatio Springs WWTP (RN102362175)
Type of Application: Renewal without changes

Dear Brandon Maldonado,

Thank you for informing us of the additional information needed in your letter dated March 11, 2025. We are responding to each numbered item from your letter:

1. Administrative Report 1.0
   Section 8, Item d: No public viewing location was provided. Please provide an updated Section 8, Item d with a public viewing location.

   Response: *The public viewing location is the Boerne Public Library, located at 451 N Main St, Boerne, TX 78006.*

   Section 14: Section 14 of the Administrative Report must be signed and notarized by an authorized individual. The person whose name and title is used is an authorized

   Response: *We included the original notarized signature form in the original hard copy of the permit application, but it was not included in the digital version. I have attached the scanned notarized signature form here.*

2. The following is a portion of the NORI which contains information relevant to your application. Please read it carefully and indicate if it contains any errors or omissions. The complete notice will be sent to you once the application is declared administratively complete.

   APPLICATION. SJWTX, Inc., P.O. Box 1742, Canyon Lake, Texas 78133, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Land Application Permit (TLAP) No. WQ0012404001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 150,000 gallons per day via: surface irrigation of 100 acres of golf course. The domestic wastewater facility and disposal area are located at Approximately 0.2 miles southeast of the intersection of Tapatio Drive East and Blue Heron Boulevard (aka Resort Way), near the city of Borne, in Kendall County, Texas 78006TCEQ received this application on February 28, 2025. The

permit application will be available for viewing and copying at Waiting on applicant response 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/tlap-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=-98.80694,29.774166&level=18

Response: *We reviewed NORI and found no errors.*

3. The application indicates that public notices in Spanish are required. After confirming the portion of the NORI above does not contain any errors or omissions, please use the attached template to translate the NORI into Spanish. Only the first and last paragraphs are unique to this application and require translation. Please provide the translated Spanish NORI in a Microsoft Word document.

Response: *Please see attached "Municipal Discharge New Spanish NORI" in Microsoft Word format*

If you have any additional questions, please feel free to contact me at Behnaz.jalili@kimley-horn.com.

Very Truly Yours,

Behnaz Jalili

Behnaz Jalili, PhD, PE
KIMLEY-HORN AND ASSOCIATES, INC.

Attachments:

Notarized Signature Form
Municipal Discharge New Spanish NORI.doc

Brandon Maldonado

From: Jalili, Behnaz <Behnaz.Jalili@kimley-horn.com>
Sent: Monday, March 17, 2025 3:27 PM
To: Brandon Maldonado
Cc: Clements, Ian; Tabarrok, Connor
Subject: RE: Application to Renew Permit No. WQ0012404001 - Notice of Deficiency Letter
Attachments: 20250317_TCEQ-NOD Response.pdf; 03172025_Spanish_NOD.docx; 20250306-Tapatio TLAP-Signature Page.pdf

Good afternoon,

I hope you are doing well. I have attached the NOD response and the related attachments regarding the renewal permit application No. WQ0012404001.

Please CC' @Clements, Ian and @Tabarrok, Connor on future emails, as I will be out till April 28th.

Thank you,

Out of Office Alert:
I will be out of the office starting Wednesday, March 18, 2025.
I will be back in the office starting Monday, April 28, 2025.

Behnaz Jalili, Ph.D., P.E. (TX)
Kimley-Horn | 5301 Southwest Parkway, Building 2, Suite 100, Austin, TX 78735
Direct: **512 518 5596** | Mobile: **806 507 0323**
Connect with us: Twitter | LinkedIn | Facebook | Instagram | Kimley-Horn.com

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From: Brandon Maldonado <Brandon.Maldonado@tceq.texas.gov>
Sent: Friday, March 7, 2025 4:43 PM
To: Jalili, Behnaz <Behnaz.Jalili@kimley-horn.com>
Cc: Clements, Ian <Ian.Clements@kimley-horn.com>
Subject: FW: Application to Renew Permit No. WQ0012404001 - Notice of Deficiency Letter

Hello,

As stated in the NOD there should be an attached template for the Spanish NORI that was not attached. It should now be properly attached to this email.

From: Brandon Maldonado
Sent: Friday, March 7, 2025 4:41 PM
To: behnaz.jalili@kimley-horn.com
Cc: Clements, Ian <Ian.Clements@Kimley-Horn.com>
Subject: Application to Renew Permit No. WQ0012404001 - Notice of Deficiency Letter

Dear Ms. Jalili Behnaz

The attached Notice of Deficiency (NOD) letter sent on **March 7, 2025,** requests additional information needed to declare the application administratively complete. Please send complete response to my attention by **March 21, 2025.**

Please let me know if you have any questions.

Regards,

Brandon Maldonado
Texas Commission on Environmental Quality
Water Quality Division
512-239-4331
Brandon.Maldonado@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

The TCEQ is committed to accessibility.
To request a more accessible version of this report, please contact the TCEQ Help Desk at (512) 239-4357.

Compliance History Report

Compliance History Report for CN602969396, RN102362175, Rating Year 2024 which includes Compliance History (CH) components from September 1, 2019, through August 31, 2024.

Customer, Respondent, or Owner/Operator: CN602969396, SJWTX, Inc. **Classification:** SATISFACTORY **Rating:** 4.84

Regulated Entity: RN102362175, SJWTX TAPATIO SPRINGS WWTP **Classification:** HIGH **Rating:** 0.00

Complexity Points: 8 **Repeat Violator:** NO

CH Group: 08 - Sewage Treatment Facilities

Location: LOCATED APPROX 0.2 MI SE OF THE INTERX OF TAPATIO DR E & BLUE HERON BLVD IN KENDALL COUNTY KENDALL, TX, KENDALL COUNTY

TCEQ Region: REGION 13 - SAN ANTONIO

ID Number(s):
WASTEWATER PERMIT WQ0012404001

Compliance History Period: September 01, 2019 to August 31, 2024 **Rating Year:** 2024 **Rating Date:** 09/01/2024

Date Compliance History Report Prepared: April 02, 2025

Agency Decision Requiring Compliance History: Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.

Component Period Selected: February 28, 2020 to April 02, 2025

TCEQ Staff Member to Contact for Additional Information Regarding This Compliance History.

Name: PT **Phone:** (512) 239-3581

Site and Owner/Operator History:

1) Has the site been in existence and/or operation for the full five year compliance period? YES
2) Has there been a (known) change in ownership/operator of the site during the compliance period? YES
3) Who is the current owner/operator? SJWTX, Inc. OWNER since 4/21/2022
4) Who was/were the prior owner(s)/operator(s)? Kendall West Utility, LLC, OWNER, 7/31/2014 to 4/20/2022

Components (Multimedia) for the Site Are Listed in Sections A - J

A. Final Orders, court judgments, and consent decrees:
N/A

B. Criminal convictions:
N/A

C. Chronic excessive emissions events:
N/A

D. The approval dates of investigations (CCEDS Inv. Track. No.):
N/A

E. Written notices of violations (NOV) (CCEDS Inv. Track. No.):
A notice of violation represents a written allegation of a violation of a specific regulatory requirement from the commission to a regulated entity. A notice of violation is not a final enforcement action, nor proof that a violation has actually occurred.

N/A

F. Environmental audits:
N/A

G. Type of environmental management systems (EMSs):
N/A

H. Voluntary on-site compliance assessment dates:
N/A

I. Participation in a voluntary pollution reduction program:
N/A

J. Early compliance:
N/A

Sites Outside of Texas:
N/A

Senate Bill 709 (84th Legislative Session, 2015) amended the Texas Water Code by adding new Section 5.5553, which requires the Texas Commission on Environmental Quality (TCEQ) to provide written notice to you at least thirty (30) days prior to the TCEQ's issuance of draft permits for applications that are located in your district.

SJWTX, Inc., P.O. Box 1742, Canyon Lake, Texas 78133, has applied to the TCEQ to renew Texas Land Application Permit No. WQ0012404001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 150,000 gallons per day via surface irrigation of 100 acres of golf course. The domestic wastewater facility and disposal area are located approximately 0.2 mile southeast of the intersection of Tapatio Drive East and Blue Heron Boulevard (aka Resort Way), near the city of Borne, in Kendall County, Texas 78006. TCEQ received this application on February 28, 2025. The permit application will be available for viewing and copying at Patrick Heath Public Library, 451 North Main Street, Building 100, Boerne, in Kendall County, Texas. The application, including any updates, and associated notices are available electronically at the following webpage: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications. This link to an electronic map of the site or facility's general location is provided as a public courtesy and is not part of the application or notice. For the exact location, refer to the application. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-98.80694,29.774166&level=18

TCEQ is preparing the initial draft permit. At the time the draft permit is issued, the applicant will be required to publish notice in a newspaper of general circulation, and the TCEQ will provide a copy of the notice of draft permit to persons who have requested to be on a mailing list.

Questions regarding this application may be directed to Mr. Deba Dutta, P.E., by calling 512-239-4608.

Issuance Date: _____

TCEQ Interoffice Memorandum

To: Deba Dutta, Team Leader
Municipal Permits Team
From: Alan Barraza
Water Quality Assessment Team
Date: April 28, 2025
Subject: Agronomy Recommendations, SJWTX, Inc, dba Texas Water Company, Tapatio Springs WWTF, Renewal, Permit WQ0012404001, Kendall County

Based upon review of the permit application and an evaluation of soils and agronomy information, the WQA Team reviewing agronomist recommends the following:

1. Update Special Provision 7 to the following:

The permittee shall obtain representative soil samples from the root zones of the land application area. Composite sampling techniques shall be used. Each composite sample shall represent no more than 80 acres with no fewer than 10 to 15 subsamples representing each composite sample. For analysis and reporting, subsamples shall be composited by like sampling depth, type of crop, and soil type. Soil types are soils that have like topsoil or plow layer textures. These soils shall be sampled individually from 0 to 6 inches, 6 to 18 inches and 18 to 30 inches below ground level. The permittee shall sample soils in December to February of each year. Soil samples shall be analyzed within 30 days of sample collection.

Samples shall be analyzed annually according to the following table:

Parameter	**Method**	**Minimum Analytical Level (MAL)**	**Reporting units**
pH	2:1 (v/v) water to soil mixture		Reported to 0.1 pH units after calibration of pH meter
Electrical Conductivity	2:1 (v/v) water to soil mixture	0.01	dS/m (same as mmho/cm)
Nitrate-nitrogen	From a 1 N KCl soil extract	1	mg/kg (dry weight basis)
Total Kjeldahl Nitrogen (TKN)	For determination of Organic plus Ammonium Nitrogen. Procedures that use Mercury (Hg) are not acceptable.	20	mg/kg (dry weight basis)
Total Nitrogen	= TKN plus Nitrate-nitrogen		mg/kg (dry weight basis)
		1 (P)	mg/kg (dry weight basis)

Plant-available: Phosphorus	Mehlich III with inductively coupled plasma		
Plant-available: Potassium (K)	May be determined in the same Mehlich III extract with inductively coupled plasma	5 (K)	mg/kg (dry weight basis)
Amendment addition, e.g., gypsum			Report in *short tons/acre* in the year effected

A copy of this soil testing plan shall be provided to the analytical laboratory prior to sample analysis. The permittee shall submit the results of the annual soil sample analyses with copies of the laboratory reports and a map depicting the areas that have received wastewater within the permanent land application fields to the TCEQ Regional Office (MC Region 13) and the Compliance Monitoring Team (MC 224) of the Enforcement Division, no later than the end of September of each sampling year. If wastewater is not applied in a particular year, the permittee shall notify the same TCEQ offices and indicate that wastewater has not been applied on the approved land irrigation site(s) during that year.

2. Update Special Provision 10 to the following:

Irrigation practices shall be designed and managed as to prevent ponding of effluent or contamination of ground and surface waters and to prevent the occurrence of nuisance conditions in the area. To promote effluent and nutrient uptake by the crop, and to prevent pathways for effluent surfacing, grasses, the golf course, and other ground cover shall be established and well maintained in the irrigation area throughout the year. Tailwater control facilities shall be provided as necessary to prevent the discharge of any effluent from the irrigated land.

3. Update Special Provision 12 to the following:

For any area where treated effluent is stored or where there exist hose bibs or faucets, the permittee shall erect adequate signs stating that the irrigation water is from a non-potable water supply. Signs shall consist of a red slash superimposed over the international symbol for drinking water accompanied by the message "DO NOT DRINK THE WATER" in both English and Spanish. All piping transporting the effluent shall be clearly marked with these same signs.

4. Add the following Special Provision:

The permittee shall use cultural practices to promote and maintain the health and propagation of the golf course and avoid plant lodging. The permittee shall harvest the crops (cut and remove it from the field) at least once during the year. Harvesting and mowing dates shall be recorded in a log book kept on site to be made available to TCEQ personnel upon request.

5. Add the following Special Provision:

The physical condition of the land application fields shall be monitored on a weekly basis. Any area with problems such as surface runoff, surficial erosion, or stressed or

damaged vegetation, etc., shall be recorded in a field log kept onsite. Corrective measures will be implemented within 24 hours of discovery.

TCEQ Interoffice Memorandum

To: Deba Dutta, P.E., Leader, Municipal Permits Team

From: Andrew Gorton, P.G., Geologist, Water Quality Assessment Team

Date: March 24, 2025

Subject: Geology Compliance Review of Groundwater-Related Special Provisions, SJWTX, Inc., dba Texas Water Company - Tapatio WWTP, Renewal, Permit No. WQ0012404001, Kendall County

Based upon review of the existing permit language and an evaluation of the permit application, the WQA Team reviewing geologist recommends the following to the renewed permit:

Revise Special Provision 19 with the following changes (changes in bold, stricken lines should be removed)*:*

19. **For the existing wastewater ponds**: Facilities for the retention or storage of treated or untreated wastewater shall be adequately lined to control seepage. The following methods of pond lining are acceptable:

a. In-situ clay soils or placed and compacted clay soils meeting the following requirements:
   1. More than 30% passing a No. 200 mesh sieve
   2. Liquid limit greater than 30%
   3. Plasticity index greater than 15
   4. A minimum thickness of 2 feet
   ~~**5. Permeability equal to or less than 1x10-7 cm/sec (*)**~~
   ~~**6. Soil compaction will be 95% standard proctor at optimum moisture content (*)**~~

   ~~**(*) For new and/or modified ponds only.**~~

b. Membrane lining with a minimum thickness of 20 mils, and an underdrain leak detection system.

c. An alternate method of pond lining may be utilized with prior approval from the Executive Director.

   The permittee shall furnish certification by a Texas Licensed Professional Engineer that the completed pond lining meets the appropriate criteria above. The certification shall be sent to the TCEQ Regional Office (MC Region 13) and Water Quality Compliance Monitoring Team (MC-224) of the Enforcement Division.

Regarding wastewater pond liners, include the following as new Special Provisions (following the current Special Provision 19):

1. Any new or modified wastewater pond shall be adequately lined to control seepage in accordance with 30 TAC §217.203 **and** 30 TAC 309.13(d) since the facility overlies the recharge zone of an aquifer. The Permittee shall submit the liner certification for a newly-constructed or modified wastewater pond to the Water Quality Assessment Team (MC-150), the TCEQ Regional Office (MC-Region 13), and the TCEQ Compliance Monitoring Section (MC-224) within 30 days of completion and prior to use. The certification shall be signed and sealed by a Texas-licensed professional engineer and include a description of how the liner meets the requirements of 30 TAC §217.203 **and** 30 TAC §309.13(d) since the facility is located on the recharge zone of an aquifer.

2. The existing wastewater ponds shall be maintained and operated in a manner that prevents unauthorized discharge to water in the state and contamination of groundwater.

3. Facilities for the retention of treated or untreated wastewater shall be adequately managed and lined to control seepage. At least once per month, the Permittee shall inspect the sides and bottom (if visible) of all wastewater ponds for signs of damage and leakage, and any pond leak detection systems that are in service. Leaking ponds shall be removed from service, or operated in a manner to prevent discharge, until repairs are made or replacement ponds are constructed. A record of the monthly inspections shall be maintained in a field log and kept onsite for TCEQ inspection.

4. Pond liner certifications and all liner construction and repair documentation shall be maintained by the Permittee for the life of the facility and be made available for TCEQ personnel for inspection and review.

SJWTX, INC., DBA TEXAS WATER COMPANY – TAPATIO SPRINGS WWTF
PERMIT APPLICATION NO. WQ0012404001
APPLICATION FOR A PERMIT RENEWAL
Technical Completeness Review

Please address the following items:

GEOLOGY and GROUNDWATER

Did not do a pretech review due to workload.

SOILS AND AGRONOMY

1. Domestic Technical Report 1.0, Section 7 – Please complete Table 1.0(2) – Pollutant Analysis for Wastewater Treatment Facilities.

2. Domestic Worksheet 3.0, Section 2 – Please correct a typo in Table 3.0(1) for effluent application. The application sate 1500 GPD but the permitted flow is 150,000 GPD. Also golf course are public access.

3. Domestic Worksheet 3.0, Section 8.B – Please submit laboratory results sheets from the soil analyses. The current annual soil analyses required by the permit are acceptable as long as the test date is less than one year prior to the submission of the application.

4. Domestic Worksheet 3.0, Section 8: Please complete Table 3.0(4) – Soil Data at its entirety.

5. Domestic Worksheet 3.0, Section 9: Please complete Table 3.0(5) - Effluent Monitoring Data at its entirety for the parameters regulated in the existing permit.

Please feel free to contact Andrew Gorton, P.G. for geology and groundwater questions at (512) 239-4585 (or via email at Andrew.Gorton@tceq.texas.gov). For soils and agronomy questions, please contact Alan Barraza at (512) 239-4642 (or via email at Alan.Barraza@tceq.texas.gov).

Alan Barraza

From: Alan Barraza
Sent: Monday, March 31, 2025 3:37 PM
To: behnaz.jalili@kimley-horn.com; ian.clements@kimley-horn.com
Cc: Andrew Gorton
Subject: WQ0012404001 NOD
Attachments: 12404-001.nod.Mar2025.docx

Good afternoon,

The Water Quality Assessment (WQA) Team of the Texas Commission on Environmental Quality has completed a review of the permit application information and identified deficiencies (attached) that must be addressed before the WQA Team can continue with the technical review. The deficient item(s) will require your response in a timely, complete, and accurate manner.

An accurate and complete revised permit application is essential for making recommendations to the commission regarding whether this permit should be issued. Based on the information provided in the application, the executive director does not have sufficient information to make a recommendation. Therefore, you must send updated technically complete and accurate information within **14 days** (April 14, 2025) of the date of this email.

Any revisions can be sent electronically to me (WQA Team Agronomist) or Andrew Gorton, P.G. (WQA Team Geologist). If you have any questions, please feel free to contact either me or Andrew.

Thank you,

Alan Barraza
Agronomist | Water Quality Assessment
TCEQ | Water Quality Division | MC 150
Direct: 512-239-4642
Fax: 512-239-4420

12100 Park 35 Circle
Austin, TX 78753

SJWTX, INC., DBA TEXAS WATER COMPANY – TAPATIO SPRINGS WWTF
PERMIT APPLICATION NO. WQ0012404001
APPLICATION FOR A PERMIT RENEWAL
Technical Completeness Review

Please address the following items:

GEOLOGY and GROUNDWATER

SOILS AND AGRONOMY

1. Domestic Technical Report 1.0, Section 7 – Please complete Table 1.0(2) – Pollutant Analysis for Wastewater Treatment Facilities.

2. Domestic Worksheet 3.0, Section 2 – Please correct a typo in Table 3.0(1) for effluent application. The application sate 1500 GPD but the permitted flow is 150,000 GPD. Also golf course are public access.

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5. Domestic Worksheet 3.0, Section 9: Please complete Table 3.0(5) - Effluent Monitoring Data at its entirety for the parameters regulated in the existing permit.

Please feel free to contact Andrew Gorton, P.G. for geology and groundwater questions at (512) 239-4585 (or via email at Andrew.Gorton@tceq.texas.gov). For soils and agronomy questions, please contact Alan Barraza at (512) 239-4642 (or via email at Alan.Barraza@tceq.texas.gov).

Alan Barraza

From: Trahan, Kim <Kim.Trahan@kimley-horn.com>
Sent: Monday, April 14, 2025 4:02 PM
To: Alan Barraza; Andrew Gorton
Cc: Clements, Ian
Subject: RE: WQ0012404001 NOD
Attachments: TCEQ-NOD Response_Compiled_v2.pdf

Good afternoon,
Please see attached for a comment response, including any relevant attachments, to the Notice of Deficiency emailed on March 31, 2025. Feel free to reach out if you have any questions!

Thank you,

Kim Trahan, EIT
Kimley-Horn | 5301 Southwest Parkway, Building 2, Suite 100 Austin, TX 78735
Direct: 512-273-7312

From: Clements, Ian <Ian.Clements@kimley-horn.com>
Sent: Tuesday, April 1, 2025 12:04 PM
To: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Cc: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>; Trahan, Kim <Kim.Trahan@kimley-horn.com>; Jennifer Sanchez <Jennifer.Sanchez@txwaterco.com>; ronnie.rodriguez <ronnie.rodriguez@txwaterco.com>
Subject: RE: WQ0012404001 NOD

Alan,
Thank you for sending the NOD. We will work on addressing the comments and submitting the required information by April 14th.

Thank you,

Ian Clements, P.E. (TX)
Kimley-Horn | 5301 Southwest Parkway, Building 2, Suite 100, Austin, TX 78735
Direct: 737 241 9266 | Main: 512 646 2237

From: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Sent: Monday, March 31, 2025 4:37 PM
To: Jalili, Behnaz <Behnaz.Jalili@kimley-horn.com>; Clements, Ian <Ian.Clements@kimley-horn.com>
Cc: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Subject: WQ0012404001 NOD

Good afternoon,

The Water Quality Assessment (WQA) Team of the Texas Commission on Environmental Quality has completed a review of the permit application information and identified deficiencies (attached) that must be addressed before the WQA Team can continue with the technical review. The deficient item(s) will require your response in a timely, complete, and accurate manner.

An accurate and complete revised permit application is essential for making recommendations to the commission regarding whether this permit should be issued. Based on the information provided in the application, the executive director does not have sufficient information to make a recommendation. Therefore, you must send updated technically complete and accurate information within **14 days** (April 14, 2025) of the date of this email.

Any revisions can be sent electronically to me (WQA Team Agronomist) or Andrew Gorton, P.G. (WQA Team Geologist). If you have any questions, please feel free to contact either me or Andrew.

Thank you,

Alan Barraza
Agronomist | Water Quality Assessment
TCEQ | Water Quality Division | MC 150
Direct: 512-239-4642
Fax: 512-239-4420

12100 Park 35 Circle
Austin, TX 78753

Kimley»Horn

April 14, 2025

Alan Barraza
Water Quality Assessment (MC 150)
Water Quality Division
Texas Commission on Environmental Quality
512-239-4642

Re: Application to Renew Permit No.: WQ0012404001
Applicant Name: SJWTX, Inc. (CN602969396)
Site Name: SJWTX Tapatio Springs WWTP (RN102362175)
Type of Application: Renewal without changes

Dear Alan Barraza,

Thank you for informing us of the additional information needed in your email dated March 31, 2025. We are responding to each numbered item from your letter:

1. Domestic Technical Report 1.0, Section 7 - Please complete Table 1.0(2) – Pollutant Analysis for Wastewater Treatment Facilities.

   Response: *The table has been updated to include the results for Table 1.0(2). The lab results are also included as an attachment to this response.*

2. Domestic Worksheet 3.0, Section 2 – Please correct a typo in Table 3.0(1) for effluent application. The application sate 1500 GPD but the permitted flow is 150,000 GPD. Also golf course are public access.

   Response: *The table has been updated to reflect the correct information.*

3. Domestic Worksheet 3.0, Section 8.B – Please submit laboratory results sheets from the soil analyses. The current annual soil analyses required by the permit are acceptable as long as the test date is less than one year prior to the submission of the application.

   Response: *More recent soil samples are being collected and evaluated. The laboratory results sheets will be submitted as soon as they are available.*

4. Domestic Worksheet 3.0, Section 8: Please complete Table 3.0(4) – Soil Data at its entirety.

   Response: *This table will be completed when data from the soil analyses is received.*

Kimley»Horn

5. Domestic Worksheet 3.0, Section 9: Please complete Table 3.0(5) - Effluent Monitoring Data at its entirety for the parameters regulated in the existing permit.

   Response: *Portions of this table have been filled in. This table will be completed when more data is received.*

If you have any additional questions, please feel free to contact me at ian.clements@kimley-horn.com.

Very Truly Yours,

Ian Clements, P.E.
KIMLEY-HORN AND ASSOCIATES, INC.

Attachments:

Lab Results
Domestic Technical Report select pages

POLLUTION CONTROL SERVICES

Report of Sample Analysis

Client Information	Sample Information	Laboratory Information
Ronnie Rodriguez (WWTP) **The Texas Water Company** **PO Box 1472** **Canyon Lake, TX 78133**	**Project Name: Tapatio TCEQ Minor Permit** **Sample ID: Effluent** **Matrix: Non-Potable Water** **Date/Time Taken: 3/27/2025 1025**	**PCS Sample #: 796380** **Page 1 of 2** **Date/Time Received: 3/27/2025 12:00** **Report Date: 4/9/2025** **Approved by:** Chuck Wallgren, President

Test Description	Flag	Result	Units	RL	Analysis Date/Time	Method	Analyst
E. coli (MPN-18)		0	CFU/100ml	1	03/27/2025 14:15	9223 IDEXX Quanti-Tray	CLH
pH	I	7.1	S.U.	N/A	03/27/2025 13:50	SM 4500-H+ B	LCC
BOD5		<4	mg/L	3	03/27/2025 13:50	SM 5210 B	LCC
CBOD5		<4	mg/L	3	03/27/2025 13:50	SM 5210 B	LCC
Chloride_IC		411	mg/L	2	03/27/2025 15:51	EPA 300.0	JAS
Conductivity, Specific		1,982	µmhos/cm at 25° C	1	03/27/2025 16:03	SM 2510B	GQM
Nitrate-N_IC		7.2	mg/L	0.2	03/27/2025 15:51	EPA 300.0	JAS
Phosphorus, Total		3.55	mg/L	0.10	04/01/2025 04:40	SM 4500-P/B/E	JAS

Quality Assurance Summary

Test Description	Precision	Limit	LCL	MS	MSD	UCL	LCS	LCS Limit	Blank
E. coli (MPN-18)	N/A	N/A	N/A			N/A			
pH	N/A	N/A	N/A			N/A			
BOD5	<1	23	N/A	N/A	N/A	N/A	201	167 - 228	
CBOD5	<1	23	N/A	N/A	N/A	N/A	201	167 - 228	
Chloride_IC	1	10	95	97	96	102	92	85 - 115	
Conductivity, Specific	N/A	N/A	N/A			N/A			
Nitrate-N_IC	<1	20	70	102	101	130	98	85 - 115	
Phosphorus, Total	<1	10	91	96	97	103	101	85 - 115	

Quality Statement: All supporting quality data adhered to data quality objectives and test results meet the requirements of NELAC unless otherwise noted as flagged exceptions or in a case narrative attachment. Reports with full quality data deliverables are available on request.

I *Informational purposes only - pH outside hold time - pH Temperature: 22°C*

These analytical results relate only to the sample tested.
All data is reported on an 'As Is' basis unless designated as 'Dry Wt'.
RL = Reporting Limits
QC Data Reported in %, Except BOD in mg/L

www.pcslab.net
chuck@pcslab.net
1532 Universal City Blvd
Universal City, TX 78148-3318
Main: 210-340-0343
Fax: 210-658-7903

POLLUTION CONTROL SERVICES

Report of Sample Analysis

Client Information	Sample Information	Laboratory Information
Ronnie Rodriguez (WWTP) **The Texas Water Company** **PO Box 1472** **Canyon Lake, TX 78133**	**Project Name: Tapatio TCEQ Minor Permit** **Sample ID: Effluent** **Matrix: Non-Potable Water** **Date/Time Taken: 3/27/2025 1025**	**PCS Sample #: 796380 Page 2 of 2** **Date/Time Received: 3/27/2025 12:00** **Report Date: 4/9/2025**

Test Description	Result	Units	RL	Analysis Date/Time	Method	Analyst
Sulfate_IC	117	mg/L	2	03/27/2025 15:51	EPA 300.0	JAS
Total Dissolved Solids	1,084	mg/L	10	04/02/2025 13:15	SM 2540C	PML
Total Suspended Solids	5	mg/L	1	03/27/2025 16:45	SM 2540 D	PML
Ammonia-N (ISE)	0.2	mg/L	0.1	03/31/2025 11:00	SM 4500-NH3 D	CLH
Kjeldahl-N, Total	3	mg/L	1	04/07/2025 11:00	SM 4500-N B/C	PML

Quality Assurance Summary

Test Description	Precision	Limit	LCL	MS	MSD	UCL	LCS	LCS Limit	Blank
Sulfate_IC	<1	10	94	96	96	101	106	85 - 115	
Total Dissolved Solids	<1	10	N/A	N/A	N/A	N/A	106		
Total Suspended Solids	10	10	N/A			N/A			
Ammonia-N (ISE)	<1	10	80	87	86	120	91	85 - 115	
Kjeldahl-N, Total	2	10	90	99	97	109	106	85 - 115	<1

Quality Statement: All supporting quality data adhered to data quality objectives and test results meet the requirements of NELAC unless otherwise noted as flagged exceptions or in a case narrative attachment. Reports with full quality data deliverables are available on request.

These analytical results relate only to the sample tested.
All data is reported on an 'As Is' basis unless designated as 'Dry Wt'.
RL = Reporting Limits

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Fax: 210-658-7903

POLLUTION CONTROL SERVICES

Report of Sample Analysis

Client Information	Sample Information	Laboratory Information
Ronnie Rodriguez (WWTP) **The Texas Water Company** **PO Box 1472** **Canyon Lake, TX 78133**	**Project Name: Tapatio** **Sample ID: Influent** **Matrix: Non-Potable Water** **Date/Time Taken: 3/27/2025 1030**	**PCS Sample #: 796381 Page 1 of 1** **Date/Time Received: 3/27/2025 12:00** **Report Date: 4/1/2025** **Approved by:** Chuck Wallgren, President

Test Description	Flag	Result	Units	RL	Analysis Date/Time	Method	Analyst
pH	I	7.8	S.U.	N/A	03/27/2025 14:06	SM 4500-H+ B	LCC
BOD5		84	mg/L	3	03/27/2025 14:06	SM 5210 B	LCC
Total Suspended Solids		59	mg/L	1	03/27/2025 16:45	SM 2540 D	PML

Quality Assurance Summary

Test Description	Precision	Limit	LCL	MS	MSD	UCL	LCS	LCS Limit	Blank
pH	N/A	N/A	N/A			N/A			
BOD5	<1	23	N/A	N/A	N/A	N/A	201	167 - 228	
Total Suspended Solids	10	10	N/A			N/A			

Quality Statement: All supporting quality data adhered to data quality objectives and test results meet the requirements of NELAC unless otherwise noted as flagged exceptions or in a case narrative attachment. Reports with full quality data deliverables are available on request.

I Informational purposes only - pH outside hold time - pH Temperature: 22°C

These analytical results relate only to the sample tested.
All data is reported on an 'As Is' basis unless designated as 'Dry Wt'.
RL = Reporting Limits
QC Data Reported in %, Except BOD in mg/L

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POLLUTION CONTROL SERVICES

Chain of Custody Number: 796380

Stamp 1st sample and COC as same number

MULTIPLE SAMPLE ANALYSIS REQUEST AND CHAIN OF CUSTODY FORM

CUSTOMER INFORMATION

Name: CLWSC/TTWC

REPORT INFORMATION

Attention:

Phone:

Fax:

SAMPLE INFORMATION

Project Information: TAPATIO

Report "Soils" ☐ As Is ☐ Dry Wt.

Collected By: HENRY ACKEY

Instructions/Comments: ① TCEQ Minor Permit Renewal on Effluent -LMC

Client / Field Sample ID	Collected Date	Collected Time	Field Chlorine Residual mg/L	Composite or Grab	Matrix (DW-Drinking Water; NPW-Non-potable water; WW-Wastewater; LW-Liquid Waste)	Container Type	Container Number	Preservative	BOD	TSS	PH	CBOD, Cl, SO4, TDS, Spec Cond	NO3N, E.Coli	NH3N, TKN, TP, O-P			PCS Sample Number
EFFLUENT	Start: 3/27/25 End:	Start: 10:25 AM End:		☐C ☐G	☐DW ☐NPW ☐WW ☐Soil ☐Sludge ☐LW ☐Other	☐P ☐G ☐O		☐H_2SO_4 ☐HNO_3 ☐H_3PO_4 ☐NaOH ☐ICE ☐	X	X	X	X	X	X			796380 ☒S ☒B ☐N ☐HEM Other:
INFLUENT	Start: 3/27/25 End:	Start: 10:30 AM End:		☐C ☐G	☐DW ☐NPW ☐WW ☐Soil ☐Sludge ☐LW ☐Other	☐P ☐G ☐O		☐H_2SO_4 ☐HNO_3 ☐H_3PO_4 ☐NaOH ☐ICE ☐	X	X	X						796381 ☐S ☐B ☐N ☐HEM Other:
	Start: End:	Start: End:		☐C ☐G	☐DW ☐NPW ☐WW ☐Soil ☐Sludge ☐LW ☐Other	☐P ☐G ☐O		☐H_2SO_4 ☐HNO_3 ☐H_3PO_4 ☐NaOH ☐ICE ☐									☐S ☐B ☐N ☐HEM Other:
	Start: End:	Start: End:		☐C ☐G	☐DW ☐NPW ☐WW ☐Soil ☐Sludge ☐LW ☐Other	☐P ☐G ☐O		☐H_2SO_4 ☐HNO_3 ☐H_3PO_4 ☐NaOH ☐ICE ☐									☐S ☐B ☐N ☐HEM Other:
	Start: End:	Start: End:		☐C ☐G	☐DW ☐NPW ☐WW ☐Soil ☐Sludge ☐LW ☐Other	☐P ☐G ☐O		☐H_2SO_4 ☐HNO_3 ☐H_3PO_4 ☐NaOH ☐ICE ☐									☐S ☐B ☐N ☐HEM Other:
	Start: End:	Start: End:		☐C ☐G	☐DW ☐NPW ☐WW ☐Soil ☐Sludge ☐LW ☐Other	☐P ☐G ☐O		☐H_2SO_4 ☐HNO_3 ☐H_3PO_4 ☐NaOH ☐ICE ☐									☐S ☐B ☐N ☐HEM Other:
	Start: End:	Start: End:		☐C ☐G	☐DW ☐NPW ☐WW ☐Soil ☐Sludge ☐LW ☐Other	☐P ☐G ☐O		☐H_2SO_4 ☐HNO_3 ☐H_3PO_4 ☐NaOH ☐ICE ☐									☐S ☐B ☐N ☐HEM Other:
	Start: End:	Start: End:		☐C ☐G	☐DW ☐NPW ☐WW ☐Soil ☐Sludge ☐LW ☐Other	☐P ☐G ☐O		☐H_2SO_4 ☐HNO_3 ☐H_3PO_4 ☐NaOH ☐ICE ☐									☐S ☐B ☐N ☐HEM Other:

Required Turnaround: ☐ Routine (6-10 days) *EXPEDITE:* (See Surcharge Schedule) ☐ < 8 Hrs. ☐ < 16 Hrs. ☐ < 24 Hrs. ☐ 5 days ☐ Other: ______ *Rush Charges Authorized by:*

Sample Archive/Disposal: ☐ Laboratory Standard ☐ Hold for client pick up

Container Type: P = Plastic, G = Glass, O = Other ______ Carrier ID: ______

Relinquished By:	Henry J. Ackey	Date:	3/27/25	Time:	12:00	Received By:		Date:	Time:
Relinquished By:		Date:		Time:		Received By:	Jason Aguilar	Date: 3-27-25	Time: 1200

Rev. Multiple Sample COC_20180628

1532 Universal City Blvd., Ste. 100, Universal City, Texas 78148
P (210) 340-0343 or (800) 880-4616 - F (210) 658-7903

Login at www.pcslab.net

Pollution Control Services
Sample Log-In Checklist

PCS Sample No(s) 796380 796381 **COC No.** 796380

Client/Company Name: TTWC **Checklist Completed by:** JAA

Sample Delivery to Lab Via:
Client Drop Off ✓ Commercial Carrier: Bus ____ UPS ____ Lone Star ____ FedEx ____ USPS ____
PCS Field Services: Collection/Pick Up ____ Other: ____

Sample Kit/Coolers
Sample Kit/Cooler? Yes ✓ No ____ Sample Kit/Cooler: Intact? Yes ✓ No ____
Custody Seals on Sample Kit/Cooler: Not Present ✓ If Present, Intact ____ Broken ____
Sample Containers Intact; Unbroken and Not Leaking? Yes ✓ No ____
Custody Seals on Sample Bottles: Not Present ✓ If Present, Intact ____ Broken ____
COC Present with Shipment or Delivery or Completed at Drop Off? Yes ✓ No ____
Has COC sample date/time and other pertinent information been provided by client/sampler? Yes: ✓ No: ____
Has COC been properly Signed when Received/Relinquished? Yes ✓ No ____
Does COC agree with Sample Bottle Information, Bottle Types, Preservation, etc.? Yes ✓ No ____
All Samples Received before Hold Time Expiration? Yes ✓ No ____
Sufficient Sample Volumes for Analysis Requested? Yes ✓ No ____
Zero Headspace in VOA Vial? Yes ____ No ____

Sample Preservation:
* ***Cooling:*** **Not Required** _____ or **Required** ✓
If cooling required, record temperature of submitted samples Observed/Corrected 9 / 6 °C
Is Ice Present in Sample Kit/Cooler? ✓ Yes ____ No Samples received same day as collected? ✓ Yes ____ No
Lab Thermometer Make and Serial Number: Vaughan 1807009583 Other: ____

Acid Preserved Sample - If present, is pH <2? **Yes ____ No ____**** ____H_2SO_4 ____HNO_3 ____H_3PO_4
Base Preserved Sample - If present, is pH >12? Yes ____ No ____ ____NaOH
Other Preservation: ____ If Present, Meets Requirements? Yes ____ No ____
Sample Preservations Checked by: ____ Date ____ Time ____
pH paper used to check sample preservation (PCS log #): ____ (HEM pH checked at analysis).

Samples Preserved/Adjusted by Lab:	Lab #	Parameters Preserved	Preservative Used	Log #

Adjusted by Tech/Analyst: ____ Date : ____ Time: ____

Client Notification/ Documentation for "No" Responses Above/ Discrepancies/ RevisionComments
Person Notified: ____ Contacted by: ____
Notified Date: ____ Time: ____
Method of Contact: At Drop Off: ____ Phone ____ Left Voice Mail ____ E-Mail ____ Fax ____
Unable to Contact ____ Authorized Laboratory to Proceed : ____ (Lab Director)
Regarding / Comments: ____

Actions taken to correct problems/discrepancies: ____

Receiving qualifier needed (*requires client notification above*) Temp. ____ Holding Time ____ Initails: ____
Receiving qualifier entered into LIMS at login Initial/Date: ____
Revision Comments: ____

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

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
$CBOD_5$, mg/l	<4	<4	1	Grab	3/27/2025@ 10:25
Total Suspended Solids, mg/l	5	5	1	Grab	3/27/2025@ 10:25
Ammonia Nitrogen, mg/l	0.2	0.2	1	Grab	3/27/2025@ 10:25
Nitrate Nitrogen, mg/l	7.2	7.2	1	Grab	3/27/2025@ 10:25
Total Kjeldahl Nitrogen, mg/l	3	3	1	Grab	3/27/2025@ 10:25
Sulfate, mg/l	117	117	1	Grab	3/27/2025@ 10:25
Chloride, mg/l	411	411	1	Grab	3/27/2025@ 10:25
Total Phosphorus, mg/l	3.55	3.55	1	Grab	3/27/2025@ 10:25
pH, standard units	7.1	7.1	1	Grab	3/27/2025@ 10:25
Dissolved Oxygen*, mg/l	N/A	N/A	N/A	N/A	N/A
Chlorine Residual, mg/l					
E.coli (CFU/100ml) freshwater	0	0	1	Grab	3/27/2025@ 10:25
Entercocci (CFU/100ml) saltwater					
Total Dissolved Solids, mg/l	1,084	1,084	1	Grab	3/27/2025@ 10:25
Electrical Conductivity, µmohs/cm, †	1,982	1,982	1	Grab	3/27/2025@ 10:25
Oil & Grease, mg/l			1	Grab	3/27/2025@ 10:25
Alkalinity ($CaCO_3$)*, mg/l	N/A	N/A	N/A	N/A	N/A

*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 ($CaCO_3$), mg/l					

Section 8. Facility Operator (Instructions Page 50)

Facility Operator Name: Ronnie Rodriguez, Henry Ackey

Facility Operator's License Classification and Level: A & C

Facility Operator's License Number: WW0070272, WW0055108

DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND DISPOSAL OF EFFLUENT

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

Section 1. Type of Disposal System (Instructions Page 68)

Identify the method of land disposal:

- ☒ Surface application
- ☐ Subsurface application
- ☒ Irrigation
- ☐ Subsurface soils absorption
- ☐ Drip irrigation system
- ☐ Subsurface area drip dispersal system
- ☐ Evaporation
- ☐ Evapotranspiration beds
- ☐ Other (describe in detail): Click to enter text.

NOTE: All applicants without authorization or proposing new/amended subsurface disposal MUST complete and submit Worksheet 7.0.

For existing authorizations, provide Registration Number: Click to enter text.

Section 2. Land Application Site(s) (Instructions Page 68)

In table 3.0(1), provide the requested information for the land application sites. Include the agricultural or cover crop type (wheat, cotton, alfalfa, bermuda grass, native grasses, etc.), land use (golf course, hayland, pastureland, park, row crop, etc.), irrigation area, amount of effluent applied, and whether or not the public has access to the area. Specify the amount of land area and the amount of effluent that will be allotted to each agricultural or cover crop, if more than one crop will be used.

Table 3.0(1) – Land Application Site Crops

Crop Type & Land Use	Irrigation Area (acres)	Effluent Application (GPD)	Public Access? Y/N
Golf Course	100	150,000	Y

Table 3.0(4) – Soil Data

Soil Series	Depth from Surface	Permeability	Available Water Capacity	Curve Number

Section 9. Effluent Monitoring Data (Instructions Page 71)

Is the facility in operation?

☒ Yes ☐ No

If no, this section is not applicable and the worksheet is complete.

If yes, provide the effluent monitoring data for the parameters regulated in the existing permit. If a parameter is not regulated in the existing permit, enter N/A.

Table 3.0(5) – Effluent Monitoring Data

Date	30 Day Avg Flow MGD	BOD5 mg/l	TSS mg/l	pH	Chlorine Residual mg/l	Acres irrigated
3/7/2025		14	14	5.8		
3/14/2025		4	6	7.1		
3/20/2025		4	9	7.1		

Date	30 Day Avg Flow MGD	BOD5 mg/l	TSS mg/l	pH	Chlorine Residual mg/l	Acres irrigated

Provide a discussion of all persistent excursions above the permitted limits and any corrective actions taken.

Click to enter text.