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

English Plain Language Summary

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 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.

Sapelo Liberty Hill LP, 1608 W 5th Street, Suite 240, Austin, TX 78703 applied to the Texas Commission on Environmental Quality (TCEQ) for a New (TLAP) Permit to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 95,400 gallons per day via public access surface spray irrigation system with a minimum of 26.5 acres.

The domestic wastewater treatment facility will be located approximately 0.54 miles west of the intersection of SH 183 and Agua Fria Rd in the city of Liberty Hill in Williamson County, Texas 78642. The permit application will be available for viewing and copying Liberty Hill Public Library, 355 Main St, Liberty Hill in Williamson County TX 78642.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD5), total suspended solids (TSS), ammonia nitrogen (NH3-N), and Escherichia coli. Domestic wastewater will be treated by an MBR, and the system will have a primary screen, equalization tank, multiple process trains consisting of anoxic, aeration, membrane zones, and sludge holding tanks. The facility will utilize chlorine or UV disinfection.

j & a WASTEWATER

Spanish Plain Language Summary

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 exige 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 federal. representaciones ejecutables de la solicitud de permiso.

Sapelo Liberty Hill LP, 1608 W 5th Street, Suite 240, Austin, TX 78703 solicitó a la Comisión de Calidad Ambiental de Texas (TCEQ) un nuevo permiso (TLAP) para autorizar la eliminación de aguas residuales tratadas en un volumen que no exceda el diario. Flujo promedio de 95,400 galones por día a través de un sistema de riego por aspersión superficial de acceso público con un mínimo de 26.5 acres.

La instalación de tratamiento de aguas residuales domésticas estará ubicada aproximadamente a 0.54 millas al oeste de la intersección de SH 183 y Agua Fria Rd en la ciudad de Liberty Hill en el condado de Williamson, Texas 78642. La solicitud de permiso estará disponible para ver y copiar en la Biblioteca Pública de Liberty Hill. 355 Main St, Liberty Hill en el condado de Williamson TX 78642.

Se espera que las descargas de la instalación contengan demanda bioquímica de oxígeno carbonoso (CBOD5) de cinco días, sólidos suspendidos totales (SST), nitrógeno amoniacal (NH3-N) y Escherichia coli. Las aguas residuales domésticas serán tratadas mediante un MBR y el sistema tendrá una pantalla primaria, un tanque de ecualización, múltiples trenes de proceso que constan de zonas anóxicas, de aireación, de membrana y tanques de retención de lodos. La instalación utilizará cloro o desinfección UV.

J&A WASTEWATER

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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

PROPOSED PERMIT NO. WQ0016683001

APPLICATION. Sapelo Liberty Hill, LP, 1608 West 5th Street, Unit 240, Austin, Texas 78703, has applied to the Texas Commission on Environmental Quality (TCEQ) for proposed Texas Land Application Permit (TLAP) No. WQ0016683001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 95,400 gallons per day via public access surface spray irrigation system with a minimum of 26.5 acres. The domestic wastewater treatment facility and disposal area will be located approximately 0.54 miles west of the intersection of Agua Fria Road and U.S. Highway 183, near the city of Liberty Hill, in Williamson County, Texas 78642. TCEQ received this application on December 10, 2024. The permit application will be available for viewing and copying at Liberty Hill Public Library, 355 Main Street, Liberty Hill, in Williamson 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=-97.8875,30.678888&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.**

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 Sapelo Liberty Hill, LP at the address stated above or by calling Mr. Ashraya Upadhyaya, JA Wastewater LLC, at 903-414-0307.

Issuance Date: February 12, 2025

Comisión de Calidad Ambiental del Estado de Texas

AVISO DE RECIBO DE LA SOLICITUD E
INTENCION DE OBTENER PERMISO PARA LA CALIDAD DEL AGUA

PERMISO PROPUESTO NO. WQ0016683001

SOLICITUD. Sapelo Liberty Hill, LP, 1608 West 5th Street, Unit 240, Austin, Texas 78703, ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) para el propuesto Permiso No. WQ0016683001 de disposición de aguas residuales para autorizar la disposición de aguas residuales tratadas en un volumen que no sobrepasa un flujo promedio diario de 95,400 galones por día por medio de acceso público sistema de riego por aspersión superficial con un mínimo de 26.5 acres. La planta de tratamiento de aguas domésticos residuales y el área de disposición estarán ubicados en aproximadamente 0,54 millas al oeste de la intersección de Agua Fria Road y U.S. Highway 183, cerca de la ciudad de Liberty Hill, en Williamson Condado, Texas 78642. La TCEQ recibió esta solicitud el día 10 de diciembre de 2024. La solicitud para el permiso estará disponible para leerla y copiarla en Liberty Hill Public Library, 355 Main Street, Liberty Hill, en el condado de Williamson, Texas antes de la fecha de publicación de este aviso en el periódico. La solicitud (cualquier actualización y aviso inclusive) está disponible electrónicamente en la siguiente página web: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications. Este enlace a un mapa electrónico de la ubicación general del sitio o de la instalación es proporcionado como una cortesía y no es parte de la solicitud o del aviso. Para la ubicación exacta, consulte la solicitud. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.8875,30.678888&level=18

AVISO DE IDIOMA ALTERNATIVO. El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications.

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

COMENTARIO PUBLICO / REUNION PUBLICA. Usted puede presentar comentarios públicos o pedir una reunión pública sobre esta solicitud. El propósito de una reunión pública es dar la oportunidad de presentar comentarios o hacer preguntas acerca de la solicitud. La TCEQ realiza una reunión pública si el Director Ejecutivo determina que hay un grado de interés

público suficiente en la solicitud o si un legislador local lo pide. Una reunión pública no es una audiencia administrativa de lo contencioso.

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

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

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

LISTA DE CORREO. Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. 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.

INFORMACIÓN DISPONIBLE EN LÍNEA. Para detalles sobre el estado de la solicitud, favor de visitar la Base de Datos Integrada de los Comisionados en www.tceq.texas.gov/goto/cid. Para buscar en la base de datos, utilizar el número de permiso para esta solicitud que aparece en la parte superior de este aviso.

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 Sapelo Liberty Hill, LP a la dirección indicada arriba o llamando a Ashraya Upadhyaya, JA Wastewater LLC, al 903-414-0307.

Fecha de emisión el 12 de febrero de 2025

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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

NEW

PERMIT NO. WQ0016683001

APPLICATION AND PRELIMINARY DECISION. Sapelo Liberty Hill, LP, 1608 West 5th Street, Unit 240, Austin, Texas 78703, has applied to the Texas Commission on Environmental Quality (TCEQ) for a new permit, TCEQ Permit No. WQ0016683001 to authorize the disposal of treated domestic wastewater at a daily average flow not to exceed 95,400 gallons per day via surface irrigation of 26.5 acres of public access land. This permit will not authorize a discharge of pollutants into water in the state. TCEQ received this application on December 10, 2024.

The wastewater treatment facility and disposal site will be located approximately 0.54 miles west of the intersection of Agua Fria Road and U.S. Highway 183, in Williamson County, Texas 78642. The wastewater treatment facility and disposal site will be located in the drainage basin of North Fork San Gabriel River in Segment No. 1251 of the Brazos 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=-97.8875,30.678888&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 Liberty Hill Public Library, 355 Main Street, Liberty Hill, in Williamson 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. **You may submit public comments or request a public meeting about this application.** 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.**

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 Sapelo Liberty Hill, LP at the address stated above or by calling Mr. Ashraya Upadhyaya, E.I.T., JA Wastewater LLC, at 903-414-0307.

Issuance Date October 17, 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

NUEVO

PERMISO NO. WQ0016683001

SOLICITUD Y DECISIÓN PRELIMINAR. Sapelo Liberty Hill, LP, 1608 West 5th Street, Unit 240, Austin, Texas 78703, ha solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) por un nuevo para autorizar la disposición de aguas residuales domésticas tratadas con un caudal diario promedio que no exceda los 95,400 galones por día mediante riego superficial de 26,5 acres de tierra de acceso público. Este permiso no autorizará una descarga de contaminantes a las aguas del estado. La TCEQ recibió esta solicitud el 10 de diciembre de 2024.

La planta y el sitio de disposición están ubicadas en aproximadamente 0,54 millas al oeste de la intersección de Agua Fria Road y la autopista estadounidense 183, en el condado de Williamson, Texas 78642. La planta y el sitio de disposición están ubicados en la cuenca de drenaje de Bifurcación Norte del Río San Gabriel en el Segmento No. 1251 de la Cuenca del Río Brazos. 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=-97.8875,30.678888&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 Biblioteca Pública de Liberty Hill, 355 Main Street, Liberty Hill, en el condado de Williamson, 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. 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.**

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 públicos escritos y las solicitudes de reuniones públicas deben enviarse a la Oficina del Secretario Jefe, MC 105, Comisión de Calidad Ambiental de Texas, P.O. Box 13087, Austin, TX 78711-3087 o electrónicamente a www.tceq.texas.gov/goto/comment **dentro de los 30 días a partir de la fecha de publicación de este aviso en el periódico.**

INFORMACIÓN DISPONIBLE EN LÍNEA. Para obtener más información sobre el estado de la solicitud, visite la Base de Datos Integrada de Comisionados en www.tceq.texas.gov/goto/cid. Busque en la base de datos utilizando el número de permiso de esta solicitud, que se encuentra en la parte superior de este aviso.

CONTACTOS E INFORMACIÓN DE LA AGENCIA. Los comentarios y solicitudes públicas deben enviarse electrónicamente a www.tceq.texas.gov/goto/comment, 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 la 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 TCEQ, línea gratuita, 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 Sapelo Liberty Hill, LP, a la dirección indicada arriba o llamando a Mr. Ashraya Upadhyaya, E.I.T., JA Wastewater LLC, al 903-414-0307.

Fecha de emisión 17 de octubre de 2025

Canady Tract
Wastewater Treatment Facility

TCEQ Application for New TLAP Permit

Submitted to
Texas Commission on Environmental Quality

November 2024

j & a WASTEWATER

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the application.

APPLICANT NAME: Sapelo Liberty Hill LP

PERMIT NUMBER (If new, leave blank): WQ00

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

	Y	N
Administrative Report 1.0	☒	☐
Administrative Report 1.1	☒	☐
SPIF	☐	☒
Core Data Form	☒	☐
Public Involvement Plan Form	☒	☐
Technical Report 1.0	☒	☐
Technical Report 1.1	☒	☐
Worksheet 2.0	☐	☒
Worksheet 2.1	☐	☒
Worksheet 3.0	☒	☐
Worksheet 3.1	☒	☐
Worksheet 3.2	☐	☒
Worksheet 3.3	☐	☒
Worksheet 4.0	☐	☒
Worksheet 5.0	☐	☒
Worksheet 6.0	☐	☒
Worksheet 7.0	☐	☒

	Y	N
Original USGS Map	☒	☐
Affected Landowners Map	☒	☐
Landowner Disk or Labels	☒	☐
Buffer Zone Map	☒	☐
Flow Diagram	☒	☐
Site Drawing	☒	☐
Original Photographs	☒	☐
Design Calculations	☒	☐
Solids Management Plan	☒	☐
Water Balance	☒	☐

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:

Check/Money Order Amount:

Name Printed on Check:

EPAY Voucher Number:

Copy of Payment Voucher enclosed? Yes ☒

Section 2. Type of Application (Instructions Page 26)

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

☐ Publicly-Owned Domestic Wastewater

☒ Privately-Owned Domestic Wastewater

☐ Conventional Wastewater Treatment

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

☐ Active ☒ Inactive

Your transaction is complete. Thank you for using TCEQ ePay.

Note: It may take up to 3 working days for this electronic payment to be processed and be reflected in the TCEQ ePay system. Print this receipt and the vouchers for your records. An email receipt has also been sent.

Transaction Information

Trace Number: 582EA000635773
Date: 11/22/2024 02:28 PM
Payment Method: CC - Authorization 0000142840
ePay Actor: JUSTIN REYNOLDS
Actor Email: justin.reynolds@sapelogroup.com
IP: 129.222.79.203
TCEQ Amount: $550.00
Texas.gov Price: $562.63*

* This service is provided by Texas.gov, the official website of Texas. The price of this service includes funds that support the ongoing operations and enhancements of Texas.gov, which is provided by a third party in partnership with the State.

Payment Contact Information

Name: JUSTIN REYNOLDS
Company: SAPELO LIBERTY HILL LP
Address: 1608 W 5TH STREET, AUSTIN, TX 78703
Phone: 512-470-9297

Cart Items

Click on the voucher number to see the voucher details.

Voucher	Fee Description	AR Number	Amount
732515	WW PERMIT - FACILITY WITH FLOW >= .05 & < .10 MGD - NEW AND MAJOR AMENDMENTS		$500.00
732516	30 TAC 305.53B WQ NOTIFICATION FEE		$50.00
		TCEQ Amount:	$550.00

ePay Again | Exit ePay

Note: It may take up to 3 working days for this electronic payment to be processed and be reflected in the TCEQ ePay system. Print this receipt for your records.

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:

f. **For existing permits**:

Permit Number: WQ00

EPA I.D. (TPDES only): TX

Expiration Date:

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?

Sapelo Liberty Hill LP

(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: None

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

Prefix: Mr. Last Name, First Name: Reynolds, Justin

Title: Manager Credential:

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?

(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:

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: _ Last Name, First Name:

Title: _ Credential:

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

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: Mr. Last Name, First Name: Upadhyaya, Ashraya

Title: Project Engineer Credential: E.I.T.

Organization Name: JA Wastewater LLC

Mailing Address: 5765 Fig Way City, State, Zip Code: Arvada, CO 80002

Phone No.: (903) 414-0307 E-mail Address: aupadhyaya@jawastewater.com

Check one or both: ☒ Administrative Contact ☒ Technical Contact

B. Prefix: Ms. Last Name, First Name: Miller, Jamie

Title: President Credential: P.E.

Organization Name: JA Wastewater LLC

Mailing Address: 5765 Fig Way City, State, Zip Code: Arvada, CO 80002

Phone No.: (970) 443-9096 E-mail Address: jmiller@jawastewater.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: Upadhyaya, Ashraya

Title: Project Engineer Credential: E.I.T.

Organization Name: JA Wastewater LLC

Mailing Address: 5765 Fig Way City, State, Zip Code: Arvada, CO 80002

Phone No.: (903) 414-0307 E-mail Address: aupadhyaya@jawastewater.com

B. Prefix: Mr. Last Name, First Name: Reynolds, Justin

Title: Manager Credential:

Organization Name: Sapelo Liberty Hill LP

Mailing Address: 1608 W 5th St, Ste 240 City, State, Zip Code: Austin TX 78703

Phone No.: (512) 470-9297 E-mail Address: justin.reynolds@sapelogroup.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: Reynolds, Justin

Title: Sapelo Liberty Hill LP Credential:

Organization Name: Sapelo Liberty Hill LP

Mailing Address: 1608 W 5th St, Ste 240 City, State, Zip Code: Austin TX 78703

Phone No.: (512) 470-9297 E-mail Address: justin.reynolds@sapelogroup.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: Reynolds, Justin

Title: Manager Credential:

Organization Name: Sapelo Liberty Hill LP

Mailing Address: 1608 W 5th St, Ste 240 City, State, Zip Code: Austin TX 78703

Phone No.: (512) 470-9297 E-mail Address: justin.reynolds@sapelogroup.com

Section 8. Public Notice Information (Instructions Page 27)

A. Individual Publishing the Notices

Prefix: Mr. Last Name, First Name: Upadhyaya, Ashraya

Title: Project Engineer Credential: E.I.T.

Organization Name: JA Wastewater LLC

Mailing Address: 5765 Fig Way City, State, Zip Code: Arvada CO 80002

Phone No.: (903) 414-0307 E-mail Address: aupadhyaya@jawastewater.com

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

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

☒ E-mail Address

☐ Fax

☐ Regular Mail

C. Contact permit to be listed in the Notices

Prefix: Mr. Last Name, First Name: Upadhyaya, Ashraya

Title: Project Engineer Credential: E.I.T.

Organization Name: JA Wastewater LLC

Mailing Address: 5765 Fig Way City, State, Zip Code: Arvada CO 80002

Phone No.: (903) 414-0307 E-mail Address: aupadhyaya@jawastewater.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: Liberty Hill Public Library

Location within the building: Circulation Desk

Physical Address of Building: 355 Main St

City: Liberty Hill County: Williamson

Contact (Last Name, First Name):

Phone No.: (512) 778-5822 Ext.: None

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: 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: Public Involvement Plan Form

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** None

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):

Canady Tract WWTF

C. Owner of treatment facility: Sapelo Liberty Hill LP

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

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

Prefix: Mr. Last Name, First Name: Reynolds, Justin

Title: Manager Credential:

Organization Name: Sapelo Liberty Hill LP

Mailing Address: 1608 W 5th St, Ste 240 City, State, Zip Code: Austin TX 78703

Phone No.: (512) 470-9297 E-mail Address: justin.reynolds@sapelogroup.com

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

Attachment:

E. Owner of effluent disposal site:

Prefix: Mr Last Name, First Name: Reynolds, Justin

Title: Manager Credential:

Organization Name: Sapelo Liberty Hill LP

Mailing Address: 1608 W 5th St, Ste 240 City, State, Zip Code: Austin TX 78703

Phone No.: (512) 470-9297 E-mail Address: justin.reynolds@sapelogroup.com

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

Attachment:

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

Prefix: _ Last Name, First Name:

Title: _ Credential:

Organization Name:

Mailing Address: _ City, State, Zip Code:

Phone No.: _ E-mail Address:

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

Attachment:

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:

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:

City nearest the outfall(s):

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

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:

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:

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:

The disposal area is located approximately 0.54 miles west of the intersection of SH 183 and Agua Fria Rd in the city of Liberty Hill in Williamson County, Texas 78642.

B. City nearest the disposal site: Liberty Hill

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

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

Treated effluent will be routed to the effluent disposal site via a pipe.

E. For **TLAPs**, please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: San Gabriel River

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.

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:

D. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

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

Account number:

Amount past due:

E. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

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

Enforcement order number:

Amount past due:

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:

Section 14. Signature Page (Instructions Page 34)

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

Permit Number:

Applicant: Sapelo Liberty Hill LP

Certification:

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

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

Signatory name (typed or printed): Justin Reynolds

Signatory title: Manager

Signature: _____ Date: 11/25/2024

(Use blue ink)

Subscribed and Sworn to before me by the said Justin Reynolds

on this 25th day of November, 2024.

My commission expires on the 5th day of June, 2027.

_____

Notary Public

[SEAL]

TODD HARRISON HILLIARD
Notary Public, State of Texas
Comm. Expires 06-05-2027
Notary ID 125463498

Travis, Texas

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: Williamson County Appraisal District Map

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):

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

English Plain Language Summary

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 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.

Sapelo Liberty Hill LP, 1608 W 5th Street, Suite 240, Austin, TX 78703 applied to the Texas Commission on Environmental Quality (TCEQ) for a New (TLAP) Permit to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 95,400 gallons per day via public access surface spray irrigation system with a minimum of 25.1 acres.

The domestic wastewater treatment facility will be located approximately 0.54 miles west of the intersection of SH 183 and Agua Fria Rd in the city of Liberty Hill in Williamson County, Texas 78642. The permit application will be available for viewing and copying Liberty Hill Public Library, 355 Main St, Liberty Hill in Williamson County TX 78642.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD5), total suspended solids (TSS), ammonia nitrogen (NH3-N), and Escherichia coli. Domestic wastewater will be treated by an MBR, and the system will have a primary screen, equalization tank, multiple process trains consisting of anoxic, aeration, membrane zones, and sludge holding tanks. The facility will utilize chlorine or UV disinfection.

j & a WASTEWATER

Spanish Plain Language Summary

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 exige 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 federal. representaciones ejecutables de la solicitud de permiso.

Sapelo Liberty Hill LP, 1608 W 5th Street, Suite 240, Austin, TX 78703 solicitó a la Comisión de Calidad Ambiental de Texas (TCEQ) un nuevo permiso (TLAP) para autorizar la eliminación de aguas residuales tratadas en un volumen que no exceda el diario. Flujo promedio de 95,400 galones por día a través de un sistema de riego por aspersión superficial de acceso público con un mínimo de 25.1 acres.

La instalación de tratamiento de aguas residuales domésticas estará ubicada aproximadamente a 0.54 millas al oeste de la intersección de SH 183 y Agua Fria Rd en la ciudad de Liberty Hill en el condado de Williamson, Texas 78642. La solicitud de permiso estará disponible para ver y copiar en la Biblioteca Pública de Liberty Hill. 355 Main St, Liberty Hill en el condado de Williamson TX 78642.

Se espera que las descargas de la instalación contengan demanda bioquímica de oxígeno carbonoso (CBOD5) de cinco días, sólidos suspendidos totales (SST), nitrógeno amoniacal (NH3-N) y Escherichia coli. Las aguas residuales domésticas serán tratadas mediante un MBR y el sistema tendrá una pantalla primaria, un tanque de ecualización, múltiples trenes de proceso que constan de zonas anóxicas, de aireación, de membrana y tanques de retención de lodos. La instalación utilizará cloro o desinfección UV.

J&A WASTEWATER

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 None		**RN None**

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:*

Sapelo Liberty Hill LP

7. TX SOS/CPA Filing Number	**8. TX State Tax ID** (11 digits)	**9. Federal Tax ID** (9 digits)	**10. DUNS Number** *(if applicable)*
0805462136	32094192104		

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:	1608 W 5th St						
	Ste 240						
	City	Austin	**State**	TX	**ZIP**	78703	**ZIP + 4**

16. Country Mailing Information *(if outside USA)*	**17. E-Mail Address** *(if applicable)*
	justin.reynolds@sapelogroup.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 470-9297	0	( ) -

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.)*

Canady Tract WWTF

23. Street Address of the Regulated Entity: ***(No PO Boxes)***								
	City	Liberty Hill	**State**	TX	**ZIP**	78642	**ZIP + 4**	
24. County	Williamson							

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

25. Description to Physical Location:	The WWTF is located approximately 0.54 miles west of the intersection of SH 183 and Agua Fria Rd		
26. Nearest City		**State**	**Nearest ZIP Code**
Liberty Hill		TX	78642

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:	30.6788 N		**28. Longitude (W) In Decimal:**	97.8876 W	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
30	40	43.84	-97	53	15.59

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)

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

Wastewater Treatment

34. Mailing Address:	**1608 W 5th St**							
	Ste 240							
	City	**Austin**	**State**	**TX**	**ZIP**	**78703**	**ZIP + 4**	
35. E-Mail Address:	**justin.reynolds@sapelogroup.com**							

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(512) 470-9297	**None**	**( ) -**

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:	Ashraya Upadhyahya		**41. Title:**	Project Engineer
42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**	
(903) 414-0307	None	( ) -	aupadhyahya@jawastewater.com	

SECTION V: Authorized Signature

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

Company:	Sapelo Liberty Hill LP	**Job Title:**	Manager
Name *(In Print):*	Justin Reynolds	**Phone:**	(512) 470- **9297**
Signature:		**Date:**	11/22/2024

Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

Section 1. Preliminary Screening

☒ New Permit or Registration Application

☐ New Activity – modification, registration, amendment, facility, etc. (see instructions)

If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.

Section 2. Secondary Screening

☒ Requires public notice,

☐ Considered to have significant public interest, **and**

☒ Located within any of the following geographical locations:

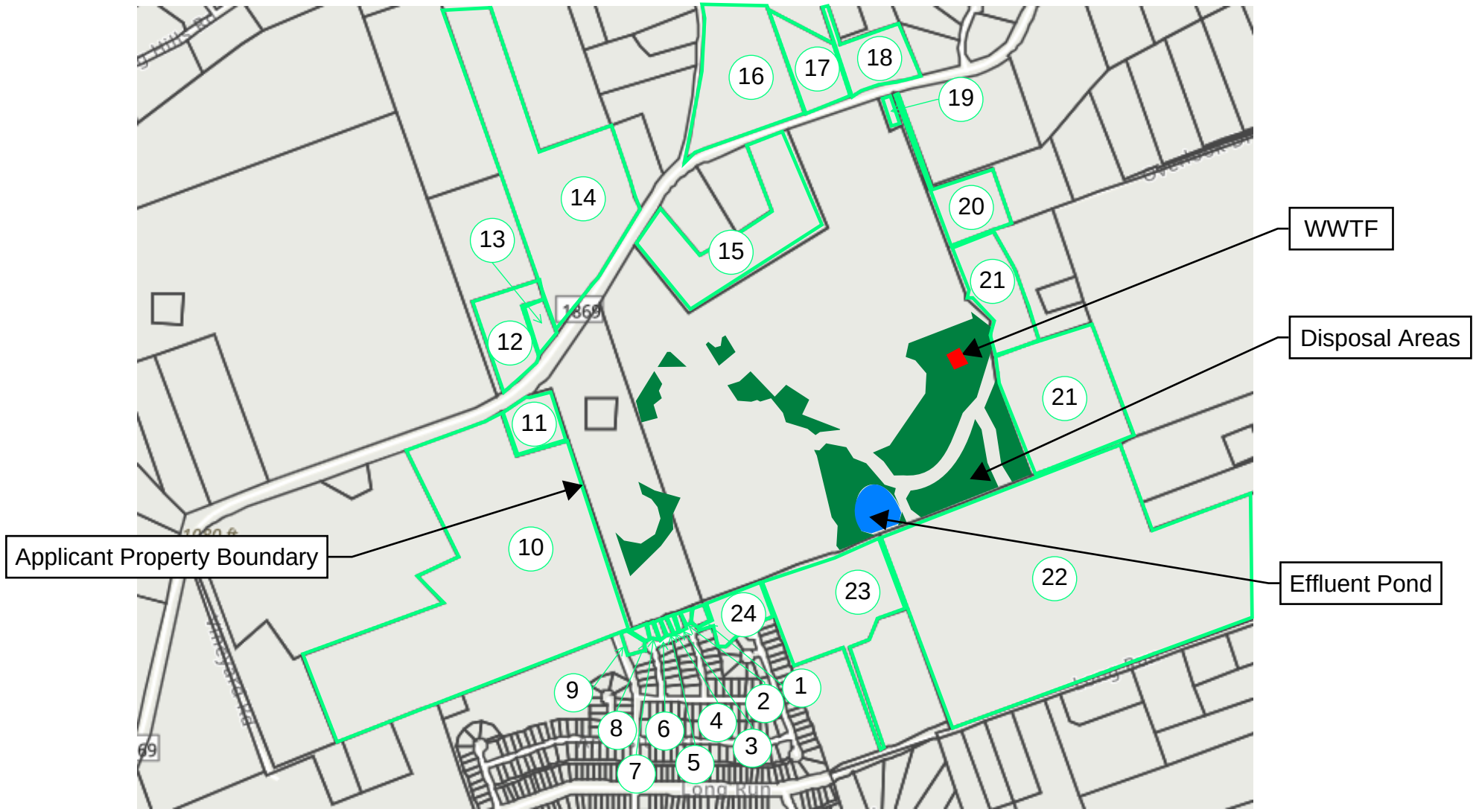
- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

If all the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2 and submit the form.

☒ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

This project is not considered to have significant public interest.

Canady Tract - Affected Landowner Map



AFFECTED LAND OWNER LIST

Address Source: Williamson Central Appraisal District Map (wcad.org) On September 5, 2024

Map Label	Property ID Number	Owner Name	Mailing Address
1	R624803	RUTLAND TAYLOR BRAMLETT & BRITTNEY ARMIDA	134 RAMPART LOOP LIBERTY HILL, TX 78642
2	R624804	GUDURI, KIRAN KUMAR	138 RAMPART LOOP LIBERTY HILL, TX 78642-2494
3	R624805	PURANDARE, SUJAY VIJAY & UNNATI MILIND GORE	142 RAMPART LOOP LIBERTY HILL, TX 78642-2494
4	R624806	GANDHI, DHRUVKUMAR VIMALKUMAR & STEFI DHRUVKUMAR	146 RAMPART LOOP LIBERTY HILL, TX 78642
5	R624807	MOECKEL, NATALIE B VALENTA & CALEB WAYNE	150 RAMPART LOOP LIBERTY HILL, TX 78642
6	R624808	GUERRA, ROSALIE TOLEDO & RENE ROBERTO JR	154 RAMPART LOOP LIBERTY HILL, TX 78642
7	R624809	NAG, NILANJAN & MOUPARNA DAS	158 RAMPART LOOP LIBERTY HILL, TX 78642-2494
8	R624810	ALAGUMALAI, RAJ K & AMUDHA R IRUDAYAM	162 RAMPART LOOP LIBERTY HILL, TX 78642
9	R624811	DASH, SOUMYARANJAN & SUBHALAXMI PAL	166 RAMPART LOOP LIBERTY HILL, TX 78642
10	R023137	LUKER, LLOYD B & JANIE R	PO BOX 1000 LIBERTY HILL, TX 78642-1000
11	R332901	LUKER, MARK	PO BOX 730 LIBERTY HILL, TX 78642-0730
12	R023150	HARRIS, THOMAS & RITA	1300 RANCH ROAD 1869 LIBERTY HILL, TX 78642-6248
13	R023151	WARRINER, RAYMOND LEE & RAYMOND II	9809 QUEENSLAND DR AUSTIN, TX 78729
14	R080965	)CK, RAYMOND J & CANDICE K TRUSTEES OF ESTOCK LIVING TI	984 INDIAN RDG LIBERTY HILL, TX 78642
15	R654750	CANADY, BRANDON & JESSICA	951 RANCH ROAD 1869 LIBERTY HILL, TX 78642-2312
16	R023148	STRAZZA, JOSEPH	850 RR 1869 LIBERTY HILL, TX 78642
17	R023154	PREECE, STEPHEN M & BARBARA R	PO BOX 748 CEDAR PARK, TX 78630-0748
18	R023152	PREECE, JIMMY L	750 RANCH ROAD 1869 LIBERTY HILL, TX 78642-6247
19	R385057	CHISHOLM TRAIL SPECIAL UTILITY DISTRICT	PO BOX 249 FLORENCE, TX 76527-0249
20	R415117	RIOS, MICHAEL RUEBEN	743 RANCH ROAD 1869 LIBERTY HILL, TX 78642-6247
21	R023143, R023142	WU, CHING-SHUENN & MEI-JANE	10608 BRADEL CV AUSTIN, TX 78726-1343
22	R022795	LIBERTY 1651 LLC	416 PALUXY DR IRVING, TX 75039
23	R516597	YARBOROUGH, JAMES KLEBERG & HILLARY JEAN	500 LONG RUN RD LIBERTY HILL, TX 78642
24	R607246	STONEWALL RANCH MUNICIPAL UTILITY DISTRICT	901 S MOPAC EXPY #STE 225 AUSTIN, TX 78746

j&a WASTEWATER

RUTLAND TAYLOR BRAMLETT & BRITTNEY ARMIDA
134 RAMPART LOOP
LIBERTY HILL TX 78642

GUDURI KIRAN KUMAR
138 RAMPART LOOP
LIBERTY HILL TX 78642-2494

PURANDARE SUJAY VIJAY & UNNATI MILIND GORE
142 RAMPART LOOP
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GANDHI DHRUVKUMAR VIMALKUMAR & STEFI DHRUVKUMAR
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LIBERTY HILL TX 78642

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LIBERTY HILL TX 78642

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LIBERTY HILL TX 78642-1000

LUKER MARK
PO BOX 730
LIBERTY HILL TX 78642-0730

HARRIS THOMAS & RITA
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WARRINER RAYMOND LEE & RAYMOND II
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CHISHOLM TRAIL SPECIAL UTILITY DISTRICT
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LIBERTY HILL TX 78642

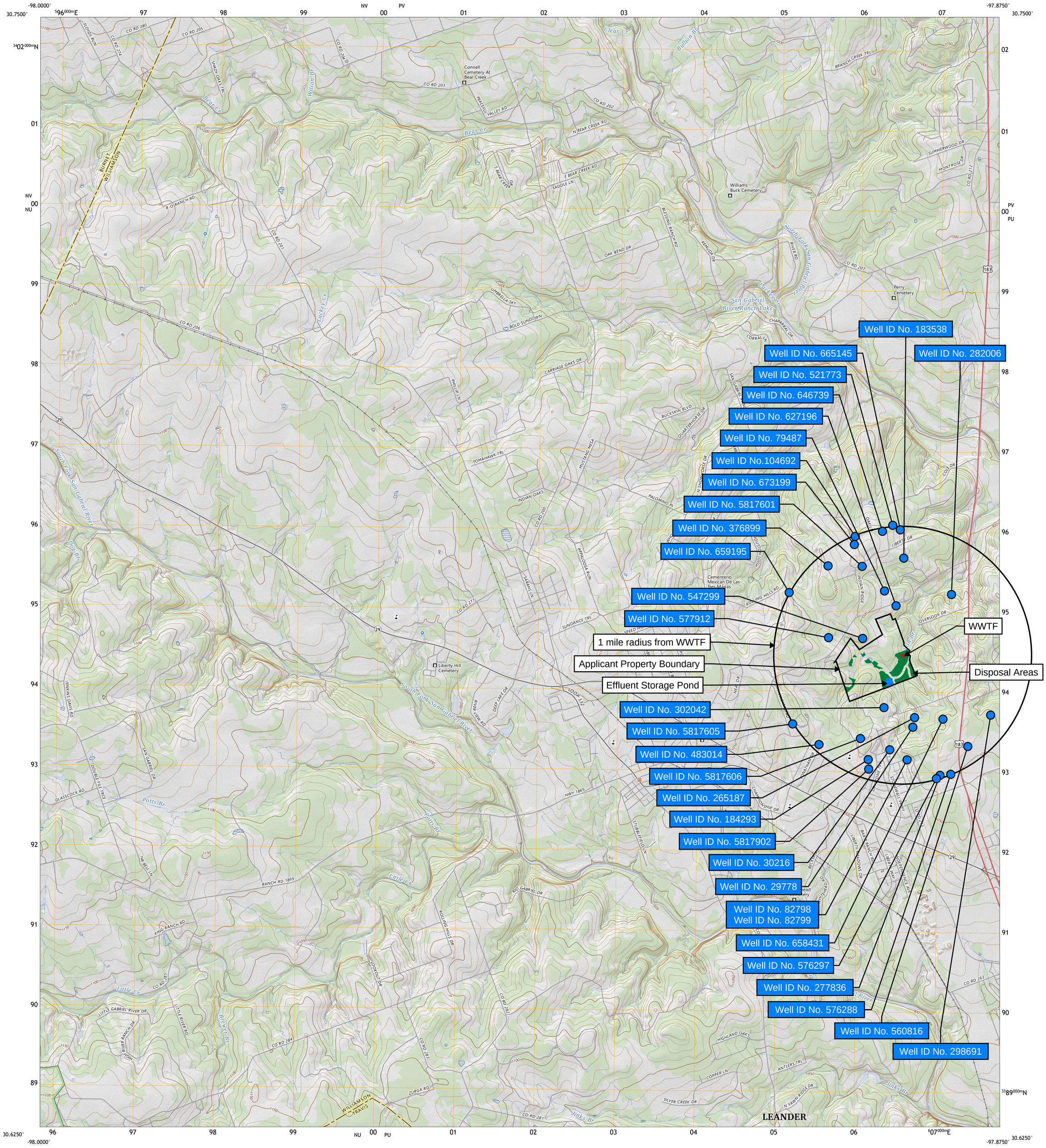
STONEWALL RANCH MUNICIPAL UTILITY DISTRICT
901 S MOPAC EXPY #STE 225
AUSTIN TX 78746

USGS
science for a changing world

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

Canady Tract WWTF - USGS Map

LIBERTY HILL QUADRANGLE
TEXAS
7.5-MINUTE TOPO



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

Data is provided by The National Map (TNM), is the best available at the time of map generation, and includes data content from supporting themes of Elevation, Hydrography, Geographic Names, Boundaries, Transportation, Structures, Land Cover, and Orthoimagery. Refer to associated Federal Geographic Data Committee (FGDC) Metadata for additional source data information.

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands. Temporal changes may have occurred since these data were collected and some data may no longer represent actual surface conditions.

Learn About The National Map: https://nationalmap.gov

MN
GN
3°35′
64 MILS
0°33′
10 MILS
UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
NV PV
NU PU
Grid Zone Designation 14R

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

USER DEFINED CONTENT

TEXAS

QUADRANGLE LOCATION

Joppa	Mahomet	Florence
Bertram	Liberty Hill	Leander NE
Travis Peak	Nameless	Leander

ADJOINING QUADRANGLES

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

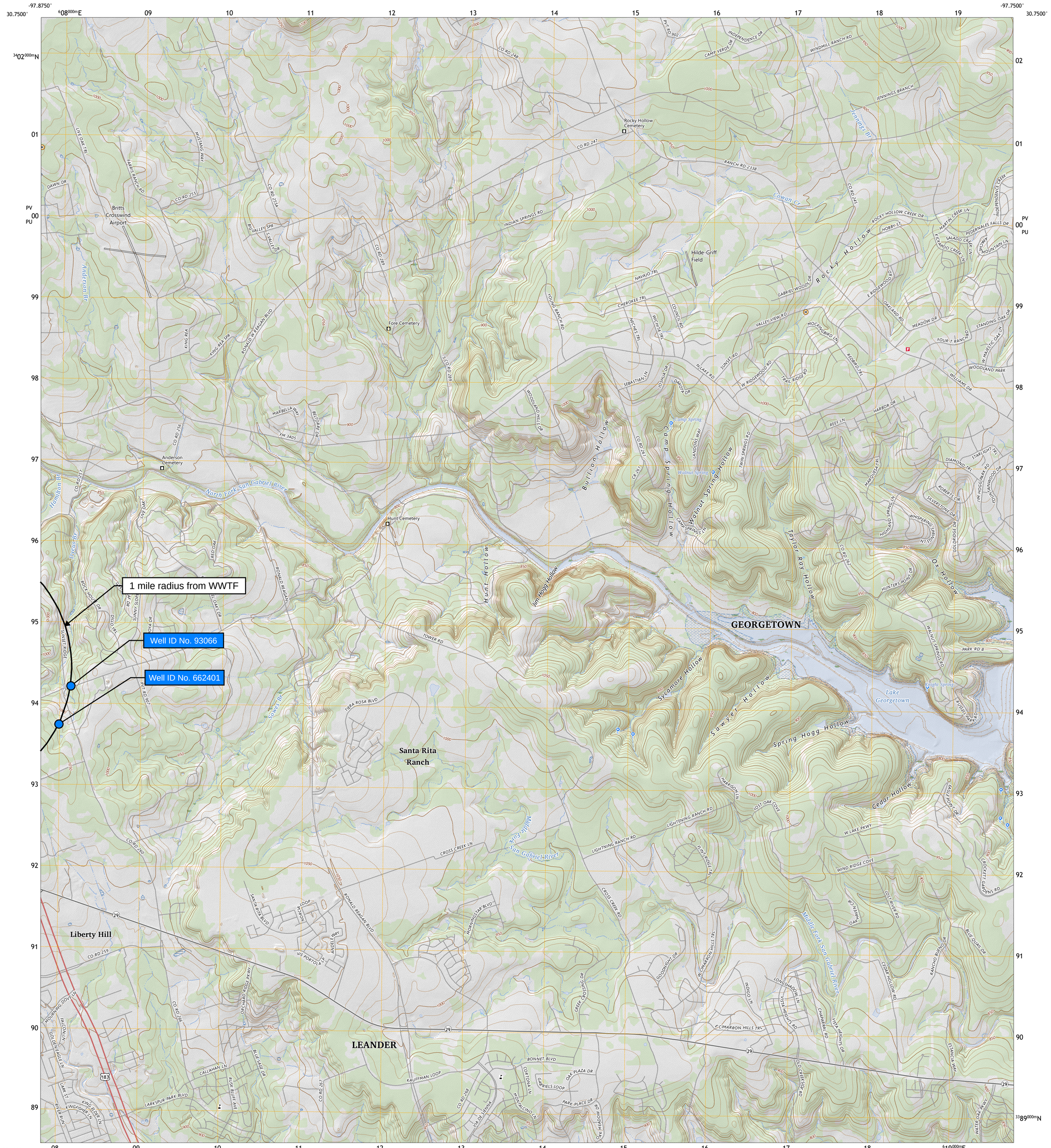
LIBERTY HILL, TX
2024

J&A WASTEWATER

Canady Tract WWTF - USGS Map

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

LEANDER NE QUADRANGLE
TEXAS - WILLIAMSON COUNTY
7.5-MINUTE TOPO

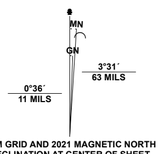


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North American Datum of 1983 (NAD83)
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This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands. Temporal changes may have occurred since these data were collected and some data may no longer represent actual surface conditions.

Learn About The National Map: https://nationalmap.gov



UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
PV
00
PU
Grid Zone Designation
14R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

USER DEFINED CONTENT



QUADRANGLE LOCATION

Mahomet	Florence	Cobbs Cavern
Liberty Hill	Leander NE	Georgetown
Nameless	Leander	Round Rock

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

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

LEANDER NE, TX
2024

J&A WASTEWATER

STATE OF TEXAS PLUGGING REPORT for Tracking #30216

Owner:	**Lennar Buffington Stonewall Ra**	Owner Well #:	**No Data**
Address:	**12301 Research Rd, Bldg 4, Suite 450 Austin, TX 78759**	Grid #:	**58-17-6**
Well Location:	**HWY 29 Liberty Hill, TX 78648**	Latitude:	**30° 40' 06" N**
		Longitude:	**097° 53' 23" W**
Well County:	**Williamson**	Elevation:	**No Data**

Well Type: **Withdrawal of Water**

Drilling Information

Company: **No Data** Date Drilled: **No Data**

Driller: **No Data** License Number: **No Data**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**5**		**600**

Plugging Information

Date Plugged: **2/10/2006** Plugger: **David McDearmon**

Plug Method: **Tremmie pipe bentonite from bottom to 2 feet from surface, cement top 2 feet**

Casing Left in Well:

No Data

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**20**	**2 bags cement**
20	**600**	**22 Benseal**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **David McDearmon**

12907 Lowden Rd
Manchaca, TX 78652

Driller Name: **David McDearmon** License Number: **2563**

Comments: **No Data**

STATE OF TEXAS PLUGGING REPORT for Tracking #82798

Owner:	**The Lookout Group**	Owner Well #:	**No Data**
Address:	**1001 Crystal Falls Pkwy. Leander, TX 78641**	Grid #:	**58-17-6**
Well Location:	**299 Limestone Rd. Liberty Hill, TX 78642**	Latitude:	**30° 40' 02" N**
		Longitude:	**097° 53' 15" W**
Well County:	**Williamson**	Elevation:	**No Data**

Well Type: **Withdrawal of Water**

Drilling Information

Company: **No Data** Date Drilled: **No Data**

Driller: **No Data** License Number: **No Data**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**4.5**		**500**

Plugging Information

Date Plugged: **8/8/2012** Plugger: **Jimmy Arnold**

Plug Method: **Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet**

Casing Left in Well:

Dia (in.)	*Top (ft.)*	*Bottom (ft.)*
4.5	**2**	**500**

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**2**	**1**
0	**500**	**1**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Tom Arnold Drilling**

2750 S AW Grimes Blvd.
Round Rock, TX 78664

Driller Name: **Jimmy Arnold** License Number: **4200**

Comments: **^EAD**

STATE OF TEXAS PLUGGING REPORT for Tracking #82799

Owner:	**The Lookout Group**	Owner Well #:	**No Data**
Address:	**1001 Crystal Falls Pkwy. Leander, TX 78641**	Grid #:	**58-17-6**
Well Location:	**299 Limestone Rd. Liberty Hill, TX 78642**	Latitude:	**30° 40' 02" N**
		Longitude:	**097° 53' 15" W**
Well County:	**Williamson**	Elevation:	**No Data**

Well Type: **Withdrawal of Water**

Drilling Information

Company: **No Data** Date Drilled: **No Data**

Driller: **No Data** License Number: **No Data**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**4.75**		**343**

Plugging Information

Date Plugged: **8/8/2012** Plugger: **Jimmy Arnold**

Plug Method: **Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet**

Casing Left in Well:

DIa (in.)	*Top (ft.)*	*Bottom (ft.)*
7	**2**	**40**

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**2**	**1**
2	**343**	**49**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Tom Arnold Drilling**

2750 S AW Grimes Blvd.
Round Rock, TX 78664

Driller Name: **Jimmy Arnold** License Number: **4200**

Comments: **^EAD**

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-601

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5817601
County	Williamson
River Basin	Brazos
Groundwater Management Area	8
Regional Water Planning Area	G - Brazos G
Groundwater Conservation District	GCD Does Not Exist
Latitude (decimal degrees)	30.69
Latitude (degrees minutes seconds)	30° 41' 24" N
Longitude (decimal degrees)	-97.893334
Longitude (degrees minutes seconds)	097° 53' 36" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218HNSL - Hensell Sand Member of Travis Peak Formation
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1025
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	492
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	5/0/1968
Drilling Method	Cable Tool
Borehole Completion	Open Hole

Well Type	Withdrawal of Water
Well Use	Irrigation
Water Level Observation	Historical
Water Quality Available	Yes
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Rick Hollar
Driller	Hunt Drlg. Co.
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	11/2/1994
Last Update Date	3/4/2020

Remarks	Observation well. Measured yield 50 GPM with 60 feet drawdown after pumping 14 hours. Specific capacity 2.5 GPM/ft. Pump set at 280 feet.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
7	Blank	Steel			0	455
	Open Hole				455	492

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

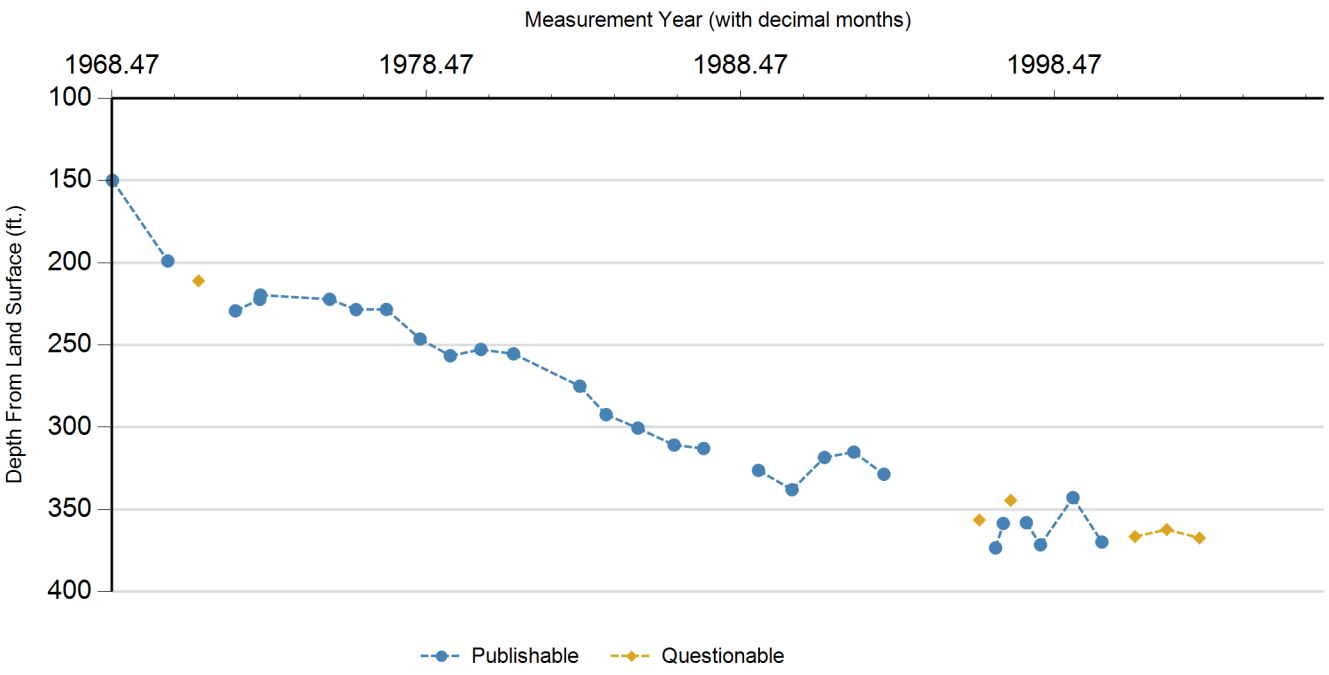
Borehole - No Data

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	5/0/1968		150		875	1	Registered Water Well Driller	Unknown		
P	4/2/1970		198.99	48.99	826.01	1	Texas Water Development Board	Steel Tape		
Q	3/25/1971		211.03	12.04	813.97	1	Texas Water Development Board	Steel Tape	4	
P	5/27/1972		229.27	18.24	795.73	1	Texas Water Development Board	Steel Tape		
P	3/6/1973		222.29	(6.98)	802.71	1	Texas Water Development Board	Steel Tape		
P	3/13/1973		219.67	(2.62)	805.33	1	Texas Water Development Board	Steel Tape		
P	5/27/1975		222.25	2.58	802.75	1	Texas Water Development Board	Steel Tape		
P	3/29/1976		228.52	6.27	796.48	1	Texas Water Development Board	Steel Tape		
P	3/16/1977		228.4	(0.12)	796.6	1	Texas Water Development Board	Steel Tape		
P	4/12/1978		246.35	17.95	778.65	1	Texas Water Development Board	Steel Tape		
P	3/28/1979		256.58	10.23	768.42	1	Texas Water Development Board	Steel Tape		
P	3/18/1980		252.76	(3.82)	772.24	1	Texas Water Development Board	Steel Tape		
P	4/3/1981		255.42	2.66	769.58	1	Texas Water Development Board	Steel Tape		
P	5/13/1983		275.06	19.64	749.94	1	Texas Water Development Board	Steel Tape		
P	3/13/1984		292.37	17.31	732.63	1	Texas Water Development Board	Steel Tape		
P	3/18/1985		300.53	8.16	724.47	1	Texas Water Development Board	Steel Tape		
P	5/13/1986		310.85	10.32	714.15	1	Texas Water Development Board	Steel Tape		
P	4/21/1987		312.93	2.08	712.07	1	Texas Water Development Board	Steel Tape		
X	2/26/1988					1	Texas Water Development Board		20	
P	1/18/1989		326.2		698.8	1	Texas Water Development Board	Steel Tape		
P	2/13/1990		338	11.80	687	1	Texas Water Development Board	Steel Tape		

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-601

groundwater division

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	2/25/1991		318.4	(19.60)	706.6	1	Texas Water Development Board	Steel Tape		
P	1/30/1992		315.1	(3.30)	709.9	1	Texas Water Development Board	Steel Tape		
P	1/15/1993		328.6	13.50	696.4	1	Texas Water Development Board	Steel Tape		
X	2/24/1994					1	Texas Water Development Board		20	
X	11/9/1994					1	Texas Water Development Board		20	
Q	1/29/1996		356.4		668.6	1	Texas Water Development Board	Steel Tape	10	
P	8/7/1996		373.35	16.95	651.65	1	Texas Water Development Board	Steel Tape		
P	11/6/1996		358.5	(14.85)	666.5	1	Texas Water Development Board	Steel Tape		
Q	1/28/1997		344.5	(14.00)	680.5	1	Texas Water Development Board	Steel Tape	10	
P	7/29/1997		358	13.50	667	1	Texas Water Development Board	Steel Tape		
P	1/8/1998		371.5	13.50	653.5	1	Texas Water Development Board	Steel Tape		
P	1/21/1999		342.8	(28.70)	682.2	1	Texas Water Development Board	Steel Tape		
P	12/27/1999		369.8	27.00	655.2	1	Texas Water Development Board	Steel Tape		
Q	1/12/2001		366.45	(3.35)	658.55	1	Texas Water Development Board	Steel Tape	10	
Q	1/16/2002		362.2	(4.25)	662.8	1	Texas Water Development Board	Steel Tape	10	
Q	1/31/2003		367.3	5.10	657.7	1	Texas Water Development Board	Steel Tape	10	
X	2/26/2004					1	Texas Water Development Board	Steel Tape	25	
X	1/28/2005					1	Texas Water Development Board	Steel Tape	25	
X	1/26/2006					1	Texas Water Development Board	Steel Tape	25	
X	1/8/2007					1	Texas Water Development Board	Steel Tape	25	

Code Descriptions

Status Code	Status Description
P	Publishable
Q	Questionable
X	No Measurement

Remark ID	Remark Description
4	Well pumped recently
10	Inconsistent or spotty tape mark due to wet or leaking casing
20	Unable to insert tape into well
25	Unable to measure due to wet or leaking casing

Water Quality Analysis

Sample Date: 5/27/1972 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hensell Sand Member of Travis Peak Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		302	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		368.54	mg/L	
00910	CALCIUM (MG/L)		67	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		119	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		3.5	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		422	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		62	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		1.5	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.6	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		31	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		12	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		3.07		
00932	SODIUM, CALCULATED, PERCENT		42	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		145	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1705	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		296	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		918	mg/L	

Water Quality Analysis

Sample Date: 3/18/1980 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hensell Sand Member of Travis Peak Formation

Analyzed Lab: Texas Department of Health **Reliability:** From well not sufficiently pumped; not filtered or preserved

Collection Remarks: faucet at pressure tank

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		340	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		414.92	mg/L	
00910	CALCIUM (MG/L)		79	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		100	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		4	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		530	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		81	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		0.6	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.9	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		34	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		9	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.46		
00932	SODIUM, CALCULATED, PERCENT		34	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		130	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1823	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		335	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		976	mg/L	

Water Quality Analysis

Sample Date: 5/13/1986 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hensell Sand Member of Travis Peak Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		332	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		405.15	mg/L	
00910	CALCIUM (MG/L)		71	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		101	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		3.5	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		452	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		67	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		0.58	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		8	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		22	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		10	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.68		
00932	SODIUM, CALCULATED, PERCENT		38	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		131	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1705	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		288	mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)		24	C	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		893	mg/L	

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

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Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-605

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5817605
County	Williamson
River Basin	Brazos
Groundwater Management Area	8
Regional Water Planning Area	G - Brazos G
Groundwater Conservation District	GCD Does Not Exist
Latitude (decimal degrees)	30.671111
Latitude (degrees minutes seconds)	30° 40' 16" N
Longitude (decimal degrees)	-97.903612
Longitude (degrees minutes seconds)	097° 54' 13" W
Coordinate Source	+/- 5 Seconds
Aquifer Code	218TRNT - Trinity Group
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1065
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	555
Well Depth Source	Geophysical Log
Drilling Start Date	
Drilling End Date	9/0/1978
Drilling Method	Air Rotary
Borehole Completion	Open Hole

Well Type	Withdrawal of Water
Well Use	Irrigation
Water Level Observation	None
Water Quality Available	Yes
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Garry Goerdel
Driller	Harrison Drlg.
Other Data Available	Caliper; Electric Log; Gamma Ray; Neutron
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	11/2/1994
Last Update Date	3/4/2020

Remarks	

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
6	Blank	Plastic (PVC)			0	31
	Open Hole				31	423

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

Sample Date: 2/19/1979 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Trinity Group

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		312	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		380.75	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		3800	ug/L	
00910	CALCIUM (MG/L)		94	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		116	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		3.8	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		538	mg/L as CACO3	
01045	IRON, TOTAL (UG/L AS FE)		260	ug/L	
00920	MAGNESIUM (MG/L)		74	mg/L	
01055	MANGANESE, TOTAL (UG/L AS MN)	<	20	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		2.2	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.7	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		26	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		12	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.55		
00932	SODIUM, CALCULATED, PERCENT		35	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		136	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1968	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		394	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		1045	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 58-17-605

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Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-606

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5817606
County	Williamson
River Basin	Brazos
Groundwater Management Area	8
Regional Water Planning Area	G - Brazos G
Groundwater Conservation District	GCD Does Not Exist
Latitude (decimal degrees)	30.669722
Latitude (degrees minutes seconds)	30° 40' 11" N
Longitude (decimal degrees)	-97.893889
Longitude (degrees minutes seconds)	097° 53' 38" W
Coordinate Source	+/- 1 Second
Aquifer Code	217HSTN - Hosston Formation
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1035
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	604
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	5/27/1973
Drilling Method	Cable Tool
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	Westwood Boys Ranch
Driller	Bonnet Drilling Co.
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	8/1/1988
Last Update Date	3/4/2020

Remarks	Owner's #2 well. Measured yield 25 GPM with 20 feet drawdown after pumping 2 hours in 1973. Pump set at 380 feet.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
6	Blank	Plastic (PVC)			0	260
6	Screen	Plastic (PVC)			260	300
6	Blank	Plastic (PVC)			300	523
6	Screen	Plastic (PVC)			523	563
6	Blank	Plastic (PVC)			563	585
7	Open Hole				585	604

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

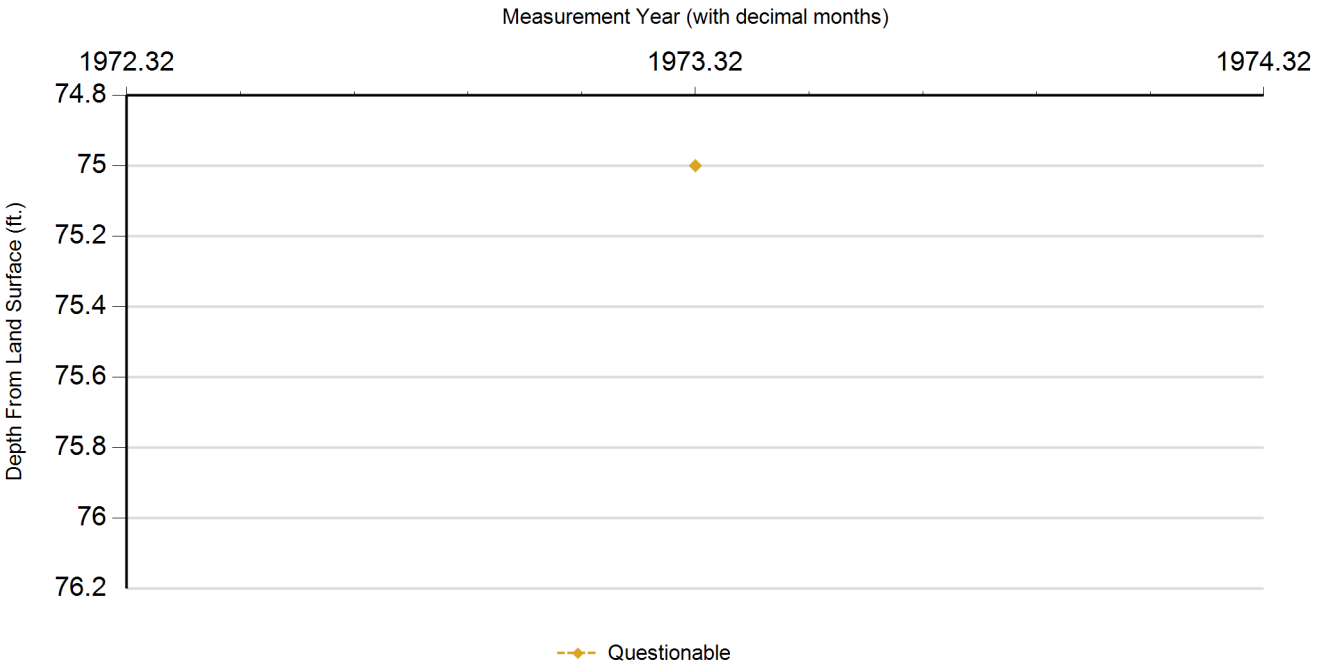
Borehole - No Data

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
Q	4/27/1973		75		960	1	Registered Water Well Driller	Unknown	17	

Code Descriptions

Status Code	Status Description
Q	Questionable

Remark ID	Remark Description
17	Measurement before well completion

Water Quality Analysis - No Data Available

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Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-902

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5817902
County	Williamson
River Basin	Brazos
Groundwater Management Area	8
Regional Water Planning Area	G - Brazos G
Groundwater Conservation District	GCD Does Not Exist
Latitude (decimal degrees)	30.6661111
Latitude (degrees minutes seconds)	30° 39' 58" N
Longitude (decimal degrees)	-97.8927778
Longitude (degrees minutes seconds)	097° 53' 34" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	217HSTN - Hosston Formation
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1045
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	740
Well Depth Source	Measured
Drilling Start Date	
Drilling End Date	10/20/1967
Drilling Method	Mud (Hydraulic) Rotary
Borehole Completion	Unknown

Well Type	Withdrawal of Water
Well Use	Unused
Water Level Observation	TWDB Current Site Visit
Water Quality Available	Yes
Pump	None
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	Unknown
Surface Completion	Unknown
Owner	Westwood Boys Ranch Meridell Achievement
Driller	Central Texas Drilling Company
Other Data Available	Drillers Log; Specific Capacity
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	1/8/2007
Last Update Date	3/4/2020

Remarks	Owner's #2 well. Unused public supply well. Measured yield 14.7 GPM with 20 feet drawdown after pumping 8 hours in 1967. Specific capacity .88 GPM/ft. Pump set at 525 feet.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
7	Blank	Steel			0	580
4	Blank	Steel			580	740

Well Tests - No Data

Lithology

Top Depth (ft.)	Bottom Depth (ft.)	Description
0	18	Caliche
18	42	Blue Shale
42	103	Limestone
103	140	Blue Shale & Clay
140	360	Limestone
360	370	Sand
370	530	Limestone & Shale
530	580	Sand & Limestone
580	610	Blue Clay & Shale
610	660	Blue & Red Clay
660	740	Sandstone

Annular Seal Range - No Data

Borehole

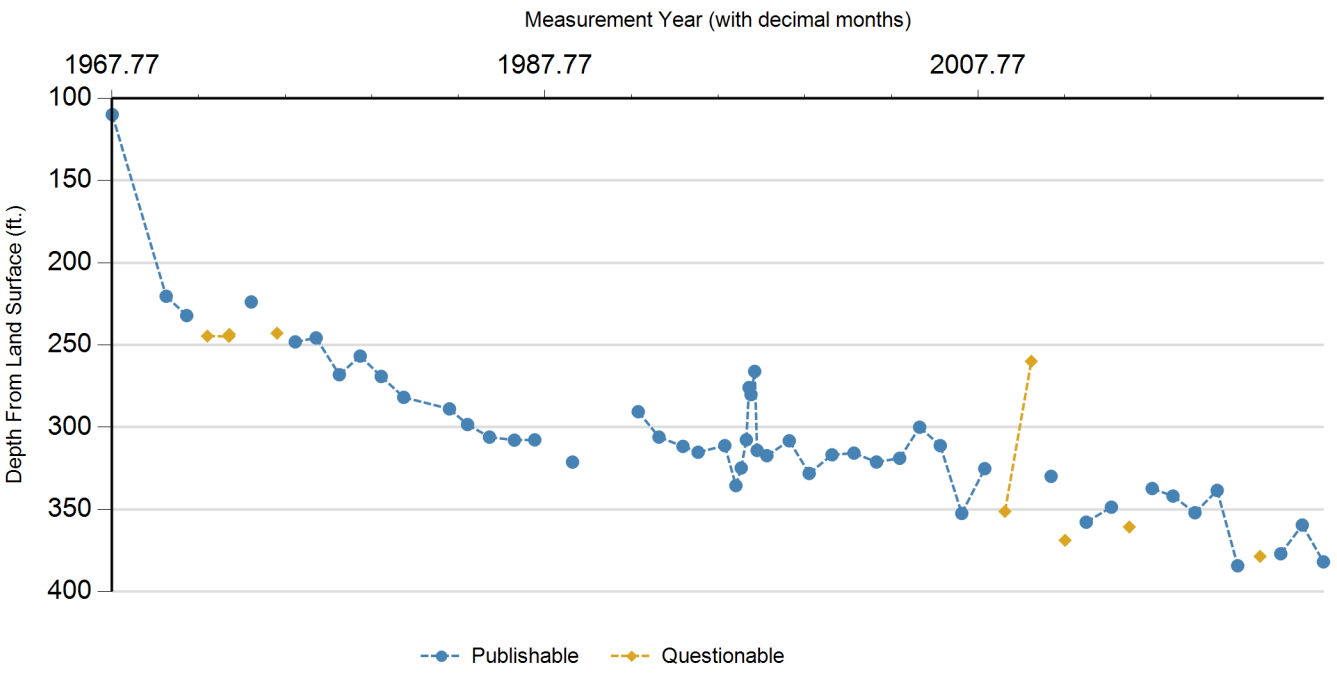
Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
8.75	0	740

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	10/20/1967		110		935	1	Registered Water Well Driller	Unknown		
P	4/14/1970		220.4	110.40	824.6	1	Texas Water Development Board	Electric Line		
P	3/25/1971		232.15	11.75	812.85	1	Texas Water Development Board	Steel Tape		
Q	3/8/1972		244.63	12.48	800.37	1	Texas Water Development Board	Steel Tape	4	
Q	3/6/1973		244.8	0.17	800.2	1	Texas Water Development Board	Steel Tape	4	
Q	3/13/1973		243.6	(1.20)	801.4	1	Texas Water Development Board	Steel Tape	4	
P	3/18/1974		223.85	(19.75)	821.15	1	Texas Water Development Board	Steel Tape		
Q	5/27/1975		242.85	19.00	802.15	1	Texas Water Development Board	Steel Tape	4	
P	3/29/1976		248.15	5.30	796.85	1	Texas Water Development Board	Steel Tape		
P	3/16/1977		245.72	(2.43)	799.28	1	Texas Water Development Board	Steel Tape		
P	4/12/1978		268.1	22.38	776.9	1	Texas Water Development Board	Steel Tape		
P	3/29/1979		256.75	(11.35)	788.25	1	Texas Water Development Board	Steel Tape		
P	3/18/1980		269.15	12.40	775.85	1	Texas Water Development Board	Steel Tape		
P	4/3/1981		281.85	12.70	763.15	1	Texas Water Development Board	Steel Tape		
P	5/13/1983		288.85	7.00	756.15	1	Texas Water Development Board	Steel Tape		
P	3/13/1984		298.37	9.52	746.63	1	Texas Water Development Board	Steel Tape		
P	3/18/1985		306	7.63	739	1	Texas Water Development Board	Steel Tape		
P	5/13/1986		307.85	1.85	737.15	1	Texas Water Development Board	Steel Tape		
P	4/21/1987		307.68	(0.17)	737.32	1	Texas Water Development Board	Steel Tape		
X	2/26/1988					1	Texas Water Development Board	Steel Tape	22	
P	1/18/1989		321.2		723.8	1	Texas Water Development Board	Steel Tape		

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-902

groundwater division

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
X	2/13/1990					1	Texas Water Development Board	Steel Tape	22	
X	2/11/1991					1	Texas Water Development Board	Steel Tape	22	
P	1/30/1992		290.55		754.45	1	Texas Water Development Board	Steel Tape		
P	1/15/1993		306	15.45	739	1	Texas Water Development Board	Steel Tape		
P	2/24/1994		311.65	5.65	733.35	1	Texas Water Development Board	Steel Tape		
P	11/9/1994		315.2	3.55	729.8	1	Texas Water Development Board	Steel Tape		
P	1/29/1996		311.2	(4.00)	733.8	1	Texas Water Development Board	Steel Tape		
P	8/7/1996		335.5	24.30	709.5	1	Texas Water Development Board	Steel Tape		
P	11/6/1996		324.8	(10.70)	720.2	1	Texas Water Development Board	Steel Tape		
P	1/27/1997		307.65	(17.15)	737.35	1	Texas Water Development Board	Steel Tape		
P	3/13/1997		275.9	(31.75)	769.1	1	Texas Water Development Board	Electric Line		
P	4/16/1997		280.16	4.26	764.84	1	Texas Water Development Board	Steel Tape		
P	6/18/1997		266.07	(14.09)	778.93	1	Texas Water Development Board	Steel Tape		
P	7/29/1997		314.11	48.04	730.89	1	Texas Water Development Board	Steel Tape		
P	1/8/1998		317.3	3.19	727.7	1	Texas Water Development Board	Steel Tape		
P	1/21/1999		308.25	(9.05)	736.75	1	Texas Water Development Board	Steel Tape		
P	12/27/1999		328.1	19.85	716.9	1	Texas Water Development Board	Steel Tape		
P	1/12/2001		316.75	(11.35)	728.25	1	Texas Water Development Board	Steel Tape		
P	1/16/2002		315.75	(1.00)	729.25	1	Texas Water Development Board	Steel Tape		
P	1/31/2003		321.15	5.40	723.85	1	Texas Water Development Board	Steel Tape		
P	2/27/2004		318.88	(2.27)	726.12	1	Texas Water Development Board	Steel Tape		
P	1/28/2005		300	(18.88)	745	1	Texas Water Development Board	Steel Tape		
P	1/11/2006		311.18	11.18	733.82	1	Texas Water Development Board	Steel Tape		
P	1/8/2007		352.4	41.22	692.6	1	Texas Water Development Board	Steel Tape		
P	1/31/2008		325.19	(27.21)	719.81	1	Texas Water Development Board	Steel Tape		
Q	1/6/2009		351.2	26.01	693.8	1	Texas Water Development Board	Steel Tape	10	
Q	3/26/2010		259.94	(91.26)	785.06	1	Texas Water Development Board	Steel Tape	10	
P	2/24/2011		329.85	69.91	715.15	1	Texas Water Development Board	Steel Tape		
Q	10/20/2011		368.72	38.87	676.28	1	Texas Water Development Board	Steel Tape	10	
P	10/11/2012		357.71	(11.01)	687.29	1	Texas Water Development Board	Steel Tape		
P	12/11/2013		348.58	(9.13)	696.42	1	Texas Water Development Board	Steel Tape		
Q	10/8/2014		360.64	12.06	684.36	1	Texas Water Development Board	Steel Tape	10	
P	10/28/2015	1220	337.26	(23.38)	707.74	1	Texas Water Development Board	Steel Tape		
P	10/13/2016	1000	341.85	4.59	703.15	1	Texas Water Development Board	Electric Line		
P	10/19/2017	1350	352	10.15	693	1	Texas Water Development Board	Electric Line		
P	10/29/2018	1245	338.4	(13.60)	706.6	1	Texas Water Development Board	Electric Line		
P	10/9/2019	1050	384.2	45.80	660.8	1	Texas Water Development Board	Electric Line		
Q	10/23/2020	1000	378.49	(5.71)	666.51	1	Texas Water Development Board	Electric Line	15	Eline hung frequently and right near water level.

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	10/5/2021	1029	376.91	(1.58)	668.09	1	Texas Water Development Board	Electric Line		Tape hangs at 200 and water level a lot
P	10/3/2022	1234	359.48	(17.43)	685.52	1	Texas Water Development Board	Electric Line		Eline hangs a lot
P	9/25/2023	1156	381.82	22.34	663.18	1	Texas Water Development Board	Electric Line		

Code Descriptions

Status Code	Status Description
P	Publishable
Q	Questionable
X	No Measurement

Remark ID	Remark Description
4	Well pumped recently
10	Inconsistent or spotty tape mark due to wet or leaking casing
15	Tape may not have fallen free in well during measurement
22	Unable to measure because tape hangs before reaching water level

Water Quality Analysis

Sample Date: 5/27/1972 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hosston Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		347.8	mg/L	
00910	CALCIUM (MG/L)		49	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		111	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.9	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		250	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		31	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.4	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.5	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		14	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0.7		
00955	SILICA, DISSOLVED (MG/L AS SI02)		18	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		3		
00932	SODIUM, CALCULATED, PERCENT		48	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		109	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1064	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		53	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		557	mg/L	

Water Quality Analysis

Sample Date: 10/23/1973 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hosston Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		287	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		350.24	mg/L	
00910	CALCIUM (MG/L)		52	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		114	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		1	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		248	mg/L as CACO3	
01045	IRON, TOTAL (UG/L AS FE)		1300	ug/L	
00920	MAGNESIUM (MG/L)		29	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.4	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.8	SU	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0.76		
00955	SILICA, DISSOLVED (MG/L AS SI02)		16	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		3.2		
00932	SODIUM, CALCULATED, PERCENT		50	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		116	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1104	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		64	mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)		23	C	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		564	mg/L	

Water Quality Analysis

Sample Date: 8/1/1974 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hosston Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		307	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		374.65	mg/L	
00910	CALCIUM (MG/L)		74	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		102	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		2.2	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		377	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		47	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		1.5	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.8	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		14	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		13	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.19		
00932	SODIUM, CALCULATED, PERCENT		36	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		98	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1332	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		155	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		690	mg/L	

Water Quality Analysis

Sample Date: 3/18/1980 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hosston Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		293	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		357.56	mg/L	
00910	CALCIUM (MG/L)		85	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		278	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		3.3	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		495	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		69	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		0.5	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.9	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		31	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		9	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		4.41		
00932	SODIUM, CALCULATED, PERCENT		49	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		226	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		2320	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		333	mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)		16	C	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		1210	mg/L	

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

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

STATE OF TEXAS WELL REPORT for Tracking #29778

Owner:	**Larry Dayhoff**	Owner Well #:	**No Data**
Address:	**1497 North Hwy 183 Leander, TX 78641**	Grid #:	**58-17-6**
Well Location:	**1497 North Hwy 183 Leander, TX 78641**	Latitude:	**30° 40' 16" N**
		Longitude:	**097° 53' 12" W**
Well County:	**Williamson**	Elevation:	**887 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **11/15/2003** Drilling End Date: **11/19/2003**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
7.875	**0**	**20**
7	**20**	**360**
6.75	**360**	**600**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**30**	**9**

Seal Method: **Gravity**

Sealed By: **ADC**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **344 ft.** below land surface on **2003-11-21** Measurement Method: **Unknown**

Packers: **Neoprene/Burlap 30, 120 & 440**

Type of Pump: **Submersible** Pump Depth (ft.): **500**

Well Tests: **Estimated** **Yield: 30 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
440-600	**trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Associated Drilling Company**

P.O. Box 1060
Manchaca, TX 78652

Driller Name: **Byron Benoit** License Number: **1955**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**topsoil**
1	**20**	**caliche-tan sandstone**
20	**52**	**broken gray lime**
52	**58**	**Void-Lost returns**
58	**200**	**Lime**
200	**260**	**Broken lime**
260	**360**	**lime with shale**
360	**420**	**sandstone**
420	**480**	**broken sandstone**
480	**500**	**sandstone**
500	**560**	**broken sandstone**
560	**600**	**clay with shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4.5	**New**	**Plastic**	**-2 to 600 SDR 17**
perf. from 440-600			

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #79487

Owner:	**Shawn Preece**	Owner Well #:	**No Data**
Address:	**PO Box 1238** **Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**CR 1869** **Liberty Hill, TX 78642**	Latitude:	**30° 41' 13" N**
		Longitude:	**097° 53' 26" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **12/5/2005** Drilling End Date: **12/6/2005**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9.75	**0**	**20**
6	**20**	**520**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**5**

Seal Method: **mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed**

Water Level: **No Data**

Packers: **Rubber 40'**
Rubber 440'

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 50 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**Good**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Hill Country Water Well**

PO Box 220
Briggs, TX 78608

Driller Name: **Joe E McDearmon** License Number: **2334**

Comments: **Verbal Warning issued late filing 8/13/09**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**16**	**cal**
16	**25**	**gry lime**
25	**35**	**cal**
35	**90**	**gry lime**
90	**95**	**gry shale**
95	**115**	**gry lime**
115	**117**	**gry shale**
117	**180**	**gry lime**
180	**185**	**bro shale**
185	**260**	**bro lime**
260	**365**	**gry lime**
365	**370**	**sand water**
370	**385**	**gry shale**
385	**395**	**gry shale**
395	**445**	**sandstone**
445	**450**	**trinty sand water**
450	**465**	**sand stone**
465	**470**	**trinty sandwater**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
6	**New**	**Plastic**	**0-520 sdr-17**

470	**490**	**sandstone**
490	**500**	**trinty sand water**
500	**520**	**sandstone**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #93066

Owner:	**OMAR GALLE**	Owner Well #:	**No Data**
Address:	**1401 CR 258 LIBERTY HILL, TX 78642**	Grid #:	**58-18-4**
Well Location:	**1401 CR 258 LIBERTY HILL, TX 78642**	Latitude:	**30° 40' 37" N**
		Longitude:	**097° 52' 13" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **8/19/2006** Drilling End Date: **8/21/2006**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**25**
6	**25**	**563**

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**25**	**5 CEMENT**

Seal Method: **GRAVITY FEED**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **VISUAL**

Surface Completion: **Surface Sleeve Installed**

Water Level: **383 ft.** below land surface on **2006-08-21** Measurement Method: **Unknown**

Packers: **RUBBER 470'**

Type of Pump: **No Data**

Well Tests: **Estimated** **Yield: 40 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
470	**GOOD**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HARRISON WELL SERVICE, INC**

P.O. BOX 986
LAMPASAS, TX 76550

Driller Name: **JUAN MUNOZ** License Number: **54176**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**25**	**OVERBURDEN**
25	**390**	**GRAY SHALE**
390	**392**	**SAND/LIMESTONE MIX**
392	**452**	**GREEN SHALE**
452	**470**	**SANDSTONE/OIL SPOTS**
470	**490**	**SAND (WATER)**
490	**500**	**SAND/LIMESTONE MIX**
500	**508**	**SAND (WATER)**
508	**523**	**BROWN LIMESTONE**
523	**531**	**SAND/LIMESTONE MIX**
531	**555**	**SANDSTONE**
555	**563**	**BLACK SHALE**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
6" NEW SCH 40 PVC 0-25
4 1/2" NEW SDR 17 PVC 3-563
SLOTTED 503-563

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #104692

Owner:	**Wayne Christi**	Owner Well #:	**No Data**
Address:	**601 Oak Lane Liberty Hill, TX 78642**	Grid #:	**58-17-6**
		Latitude:	**30° 41' 36" N**
Well Location:	**601 Oak Lane Liberty Hill, TX 78642**	Longitude:	**097° 53' 41" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **8/7/2003** Drilling End Date: **8/14/2003**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**18**
6.5	**18**	**505**

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**18**	**6**

Seal Method: **Hand Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **155**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Tape Measure**

Surface Completion: **Surface Sleeve Installed**

Water Level: **359 ft.** below land surface on **2003-08-14** Measurement Method: **Unknown**

Packers: **Shale Catcher 445**

Type of Pump: **Submersible** Pump Depth (ft.): **440**

Well Tests: **Estimated** **Yield: 50 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Tom Arnold Drilling**

1147 CR 170
Round Rock, TX 78664

Driller Name: **Tommy D. Arnold** License Number: **2096**

Comments: **Logged by DT$**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil**
1	**8**	**Brown Limestone**
8	**19**	**Yellow Limestone**
19	**51**	**Gray Limestone**
51	**60**	**Brown Limestone**
60	**66**	**Blue Limestone**
66	**168**	**Gray Limestone**
168	**178**	**Blue Limestone and Shale**
178	**200**	**Brown Limestone**
200	**324**	**Gray Limestone**
324	**347**	**Blue Shale**
347	**360**	**Brown Limestone**
360	**365**	**Gray Sandstone and Shale**
365	**368**	**Blue Shale**
368	**405**	**Gray Sandstone**
405	**475**	**Gray and White Sand and Sandstone**
475	**480**	**Gray Sandstone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
6	**N**	**Plastic**	**0/18**
4 1/2	**N**	**Plastic**	**0/505**
Perf.			**445/485**

480	**492**	**Gray Limestone**
492	**505**	**Green Limestone**

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P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #183538

Owner:	**Kathy Adams**	Owner Well #:	**No Data**
Address:	**480 Liberty Drive Liberty Hill, TX 78642**	Grid #:	**58-17-6**
		Latitude:	**30° 41' 27" N**
Well Location:	**480 Liberty Drive Liberty Hill, TX 78642**	Longitude:	**097° 53' 17" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **9/16/2004** Drilling End Date: **9/19/2004**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**25**
6	**25**	**483**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**25**	**6**

Seal Method: **Gravity Feed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Visual**

Surface Completion: **Surface Sleeve Installed**

Water Level: **335 ft.** below land surface on **2004-09-19** Measurement Method: **Unknown**

Packers: **Rubber 45',400'**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 30 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**Good**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Harrison Drilling**

P. O. Box 986
Lampasas, TX 76550

Driller Name: **Juan Munoz** License Number: **54176**

Comments: **$dfs**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**25**	**Overburden**
25	**180**	**Gray Shale**
180	**182**	**Hard Limestone**
182	**194**	**Sandstone**
194	**364**	**Gray Shale**
364	**434**	**Hard Limestone**
434	**453**	**Sand (water)**
453	**483**	**Hard White Limestone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
6 New Sch40 PVC 0 25
4.5 New SDR 17 PVC 3 483
Perforated 423 483

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #184293

Owner:	**Buffington Capital Holdings**	Owner Well #:	**StonewallRanch3**
Address:	**3600 Capital of Tx Hwy, B170 Austin, TX 78746**	Grid #:	**58-17-6**
Well Location:	**Stonewall Ranch-Phase 3 Liberty Hill, TX 78642**	Latitude:	**30° 40' 02" N**
		Longitude:	**097° 53' 34" W**
Well County:	**Williamson**	Elevation:	**1001 ft. above sea level**

Type of Work: **New Well** Proposed Use: **Irrigation**

Drilling Start Date: **5/13/2009** Drilling End Date: **5/27/2009**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8**	**0**	**600**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**100**	**16PORTLD2HP6BEN**
350	**360**	**1BENSEAL**

Seal Method: **Pressure Grout**

Sealed By: **Driller**

Distance to Property Line (ft.): **45'**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Measured**

Surface Completion: **Surface Slab Installed**

Water Level: **422 ft.** below land surface on **2009-05-22** Measurement Method: **Unknown**

Packers: **6MIL POLY 100'**
6MIL POLY 280'
6MIL POLY/SHALE PACKER 360'

Type of Pump: **Submersible** Pump Depth (ft.): **500**

Well Tests: **Jetted** **Yield: 20+ GPM**

Water Quality:

Strata Depth (ft.)	Water Type
500'-600'	**Good**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Whisenant & Lyle Water Services Inc**

P.O. Box 525
Dripping Springs, TX 78620

Driller Name: **Martin D. Lingle** License Number: **54813**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**1/2**	**topsoil**
1/2	**5**	**brown clay**
5	**8**	**white limestone clay**
8	**15**	**white limestone hard**
15	**180**	**grey limestone**
180	**240**	**white sandstone**
240	**263**	**grey white sandstone**
263	**266**	**grey clay**
266	**307**	**white limestone**
307	**309**	**brown clay**
309	**392**	**grey white limestone**
392	**460**	**grey limestone hard**
460	**500**	**grey white blue shale hard**
500	**590**	**grey white brown limestone fractured**
590	**600**	**grey light clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4.5	**N**	**PVC-SDR17IB**	**+2'-500'**
4.5	**N**	**PVC-17SLOTTED.085**	**500'-600'**

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #265187

Owner:	**Frank Acosta**	Owner Well #:	**No Data**
Address:	**P.O. Box 369 Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**381 Lone Run Liberty Hill, TX 78642**	Latitude:	**30° 40' 19" N**
		Longitude:	**097° 53' 11" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **8/3/2011** Drilling End Date: **8/3/2011**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**30**
6	**30**	**565**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**30**	**6**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **3 Packers, PVC & Burlap, 30,460,480**

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 20-30 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
50	**Hensell**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Western Water Wells**

500 Southland Dr.
Burnet, TX 78611

Driller Name: **Frank Glass** License Number: **1313**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil**
1	**16**	**Caliche & Lime**
16	**65**	**Blue Lime**
65	**170**	**Gray Lime**
170	**200**	**Brown Lime**
200	**440**	**Gray Lime & stripes Shale & Clay**
440	**480**	**Hensell Sand & Clay**
480	**560**	**Hensell Sand**
560	**565**	**White Lime**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
5" OD, New, Plastic, +2'-565', 17, 60' of Screen			

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P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #277836

Owner:	**Lawrence Gabel**	Owner Well #:	**1**
Address:	**987 HWY 183** **Liberty Hill, TX 78642**	Grid #:	**58-17-9**
Well Location:	**987 HWY 183** **LIBERTY HILL, TX 78642**	Latitude:	**30° 39' 55" N**
		Longitude:	**097° 52' 59" W**
Well County:	**Williamson**	Elevation:	**1068 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **12/3/2011** Drilling End Date: **12/5/2011**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9.75	**0**	**20**
7.25	**20**	**100**
6.25	**120**	**620**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**120**	**18**

Seal Method: **PRESSURE CEMENTED**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **469 ft.** below land surface on **2011-12-05** Measurement Method: **Unknown**

Packers: **RUBBER 120'**
RUBBER 500'

Type of Pump: **OWNER WAITING TO INSTALL PUMP**

Well Tests: **Jetted** **Yield: 45 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
459	**TRINITY**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HILL COUNTRY WATER WELL**

POBOX 220
BRIGGS, TX 78608

Driller Name: **JOE MCDEARMON** License Number: **2334**

Comments: **PUMP INSTALLATION AT A LATER DATE PER OWNERS INSTRUCTION.**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**6**	**WHITE LIME**
6	**18**	**CALICHE**
18	**180**	**GRAY LIME**
180	**260**	**BROWN LIME**
260	**380**	**GRAY LIME**
380	**440**	**BROWN LIME**
440	**445**	**GRAY SHALE**
445	**510**	**SANDSTONE**
510	**512**	**SAND DRY**
512	**550**	**SANDSTONE**
550	**570**	**TRINITY SAND**
570	**585**	**SANDSTONE**
585	**590**	**TRINITY SAND**
590	**605**	**SANDSTONE**
605	**610**	**TRINITY SAND**
610	**620**	**SANDSTONE**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4.5	**NEW**	**PLASTIC**	**0'/620**
4.5	**NEW**	**SCREEN**	**560' .032**
4.5	**NEW**	**SCREEN**	**580' .032**
4.5	**NEW**	**SCREEN**	**620' .032**

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #282006

Owner:	**Larry Smith**	Owner Well #:	**No Data**
Address:	**281 CR 1869 Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**281 CR 1869 LIberty Hill, TX 78642**	Latitude:	**30° 41' 12" N**
		Longitude:	**097° 52' 53" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **7/11/2011** Drilling End Date: **7/19/2011**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**20**
6.5	**20**	**505**

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**7**

Seal Method: **Hand Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **176**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Tape Measure**

Surface Completion: **Surface Sleeve Installed**

Water Level: **326 ft.** below land surface on **2011-07-12** Measurement Method: **Unknown**

Packers: **Shale Trap 405', 385', and 20'**

Type of Pump: **Submersible** Pump Depth (ft.): **440**

Well Tests: **Estimated** **Yield: 50 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Tom Arnold Drilling**

2750 S A. W. Grimes Blvd.
Round Rock, TX 78664

Driller Name: **Not Given** License Number: **2096**

Comments: **^EAD**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**topsoil**
2	**16**	**yellow shale & gravel**
16	**19**	**yellow limestone**
19	**26**	**blue limestone & shale**
26	**150**	**gray limestone**
150	**166**	**brown limestone**
166	**254**	**gray limestone**
254	**260**	**gray limestone & shale**
260	**320**	**gray limestone**
320	**330**	**blue limestone & shale**
330	**390**	**gray sandstone & sand**
390	**404**	**green limestone & shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4 1/2" N Plastic 0'-505'
Perf. 405'-445'

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STATE OF TEXAS WELL REPORT for Tracking #298691

Owner:	**liberty hill isd**	Owner Well #:	**978**
Address:	**p.o. box 68 liberty hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**16500 w.s.h 29 liberyhill, TX 78642**	Latitude:	**30° 40' 21" N**
		Longitude:	**097° 52' 35" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Closed-Loop Geothermal**

Drilling Start Date: **4/5/2012** Drilling End Date: **8/12/2012**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
4.75	**0**	**250**

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
14	**250**	**Gravel**	**3/8**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**14**	**5 bags hole plu**
14	**250**	**pea gravel 6 wh**

Seal Method: **pourd with water**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Unknown**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Plug Information:

Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
14 to 0 hole plug		

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **Unknown**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **central north const.**

5970 lindsey lane
allen, TX 75002

Driller Name: **Tracy Niles** License Number: **3139**

Comments: **hard drilling with fractures**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**top soil**
2	**250**	**hard limestone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
One inch polly pipe coil 0 to 250			

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STATE OF TEXAS WELL REPORT for Tracking #302042

Owner:	**Alex Dossey**	Owner Well #:	**No Data**
Address:	**500 Long Run Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**500 Long Run Liberty Hill, TX 78642**	Latitude:	**30° 40' 24" N**
		Longitude:	**097° 53' 26" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **9/18/2012** Drilling End Date: **9/18/2012**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**20**
6.5	**20**	**565**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**4 of Portland**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Landowner**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **Burlap/Neoprene 440', 430', 100', 20'**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 35 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
440-537	**M.Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**

P.O. Box 867
Marble Falls, TX 78654

Driller Name: **Michael G. Becker** License Number: **54516**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**11**	**Tan Limestone**
11	**440**	**Gran/Tan Limestone **Oil Stain @ 408**
440	**456**	**Gray/Tan Sandstone **H2O**
456	**485**	**Green Sandstone**
485	**522**	**Sand & Tan Limestone **H2O**
522	**524**	**Green Clay**
524	**537**	**Tan Limestone **H2O**
537	**565**	**Gray/Tan Limestone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4.5'' (5'' OD) New PVC +2' to 485' SDR17
4.5'' (5'' OD) New Slotted PVC 485' to 545' .035
4.5'' (5'' OD) New PVC 545' to 565' SDR17

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STATE OF TEXAS WELL REPORT for Tracking #376899

Owner:	**Running W Land Co. S. Watson**	Owner Well #:	**No Data**
Address:	**777 Oak Lane Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**777 Oak Lane Liberty Hill, TX 78642**	Latitude:	**30° 41' 24" N**
		Longitude:	**097° 53' 54" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Stock**

Drilling Start Date: **8/14/2014** Drilling End Date: **8/14/2014**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**50**
6.25	**50**	**625**

Drilling Method: **Air Rotary**

Borehole Completion: **cased; Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
1	**50**	**6cmt 2gel**

Seal Method: **hand poured**

Sealed By: **ADC**

Distance to Property Line (ft.): **75+**

Distance to Septic Field or other concentrated contamination (ft.): **300+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **owner**

Surface Completion: **Surface Sleeve Installed**

Water Level: **413 ft.** below land surface on **2014-08-14** Measurement Method: **Unknown**

Packers: **burlap,plastic,rubber @ 485,465,50**

Type of Pump: **Submersible** Pump Depth (ft.): **0**

Well Tests: **Jetted** **Yield: 10-12 GPM**

Plug Information:

Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
n/a		

Water Quality:

Strata Depth (ft.)	Water Type
505-570	**Glen Rose**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Associated Drilling Inc.**

PO Box 673
Dripping Springs, TX 78620

Driller Name: **James Benoit** License Number: **4064**

Comments: **Bud Dobson**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**20**	**white limestone**
20	**505**	**gray lime few strips of shale**
505	**570**	**tan and white limestone**
570	**615**	**gray and white limestone**
615	**625**	**gray shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
5 od new sdr17 pvc -3 to 545
5 od new sdr17 pvc (.032) screen 545 to 605
5 od new sdr17 pvc 605 to 625

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STATE OF TEXAS WELL REPORT for Tracking #483014

Owner:	**Bailey and Colt Hamilton**	Owner Well #:	**No Data**
Address:	**11797 HWY 183 Florence, TX 76527**	Grid #:	**58-17-6**
Well Location:	**11797 HWY 183 Florence, TX 76527**	Latitude:	**30° 40' 08.4" N**
		Longitude:	**097° 53' 58.74" W**
Well County:	**Williamson**	Elevation:	**1136 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **5/9/2018** Drilling End Date: **5/9/2018**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**50**
6.25	**50**	**610**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
-1	**50**	**7 Cement 2 Benseal Bags/Sacks**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **+100**

Distance to Septic Field or other concentrated contamination (ft.): **Unknown**

Distance to Septic Tank (ft.): **Unknown**

Method of Verification: **Well drilled first by owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **Burlap at 50 ft.**
Burlap & Plastic at 490 ft.
Burlap & Plastic at 510 ft.

Type of Pump: **Submersible**

Well Tests: **Estimated** **Yield: 15-20 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
515 - 570	**Mid Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Associated Drilling Co.**

PO Box 673
Dripping Springs, TX 78620

Driller Name: **James Benoit**

License Number: **4064**

Apprentice Number: **4064**

Comments: **Drilled for J&J Well Service**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**Topsoil**
2	**15**	**Tan Lime**
15	**135**	**Blue Lime**
135	**145**	**Grey Sand**
145	**485**	**Blue Lime**
485	**490**	**Grey Lime and Clay**
490	**515**	**Tan Limestone**
515	**545**	**Tan White Limestone, H2O**
545	**570**	**Tan and Grey Limestone**
570	**595**	**Blue White limestone**
595	**610**	**Grey Limestone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**-3**	**530**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.020**	**530**	**590**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**590**	**610**

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STATE OF TEXAS WELL REPORT for Tracking #521773

Owner:	**Michael Ferguson**	Owner Well #:	**No Data**
Address:	**1003 Suffolk Cedar park, TX 78613**	Grid #:	**58-17-6**
Well Location:	**850 Cole Dr. Liberty Hill, TX 78642**	Latitude:	**30° 41' 42" N**
		Longitude:	**097° 53' 22" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **5/13/2019** Drilling End Date: **5/15/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**19**
6.5	**19**	**570**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**Cement 4 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **na**

Distance to Septic Field or other concentrated contamination (ft.): **140**

Distance to Septic Tank (ft.): **na**

Method of Verification: **Tape Measure**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **380 ft.** below land surface on **2019-05-15**

Packers: **Shale trap at 50 ft.**
Shale trap at 250 ft.
Shale trap at 450 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **460**

Well Tests: **Estimated** **Yield: 50 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **TOM ARNOLD DRILLING**

2750 SOUTH A. W. GRIMES BLVD
ROUND ROCK, TX 78664

Driller Name: **Tommy Arnold** License Number: **2096**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Topsoil & loose rock**
1	**18**	**Yellow Limestone**
18	**67**	**Blue Limestone**
67	**171**	**Gray Limestone**
171	**180**	**Brown Limestone**
180	**214**	**Gray Limestone**
214	**232**	**Brown Limestone**
232	**350**	**Gray Limestone**
350	**430**	**Gray Sandstone**
430	**435**	**Gray Sand**
435	**450**	**Brown Limestone**
450	**468**	**Gray Sand & Sandstone**
468	**512**	**Green & Gray Sandstone**
512	**530**	**Gray sandstone**
530	**570**	**Gray Limestone & Shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**		**0**	**570**
	Screen		**0.032**	**450**	**490**

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STATE OF TEXAS WELL REPORT for Tracking #547299

Owner:	**TERRY JOHNSON**	Owner Well #:	**No Data**
Address:	**101 LONGHORN DR. BERTRAM, TX 78605**	Grid #:	**58-17-6**
Well Location:	**1001 RR 1869 LIBERTY HILL, TX 78642**	Latitude:	**30° 40' 53" N**
		Longitude:	**097° 53' 36" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **4/17/2020** Drilling End Date: **4/18/2020**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**19**
6.5	**19**	**530**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**Cement 7 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Variance Number: **NA**

Distance to Property Line (ft.): **NA**

Distance to Septic Field or other concentrated contamination (ft.): **200**

Distance to Septic Tank (ft.): **NA**

Method of Verification: **TAPE MEASURE**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **393 ft.** below land surface on **2020-04-18**

Packers: **SHALE TRAP at 20 ft.**
SHALE TRAP at 360 ft.
SHALE TRAP at 470 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **500**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **TOM ARNOLD DRILLING**

2750 SOUTH A. W. GRIMES BLVD
ROUND ROCK, TX 78664

Driller Name: **TOM ARNOLD** License Number: **2096**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**TOPSOIL & LOOSE ROCK**
1	**21**	**YELLOW LINMESTONE**
21	**31**	**BLUE LIMESTONE**
31	**136**	**GRAY LIMESTONE**
136	**148**	**BROWN LIMESTONE**
148	**210**	**GRAY LIMESTONE**
210	**219**	**BLUE LIMESTONE & SHALE**
219	**313**	**GRAY LIMESTONE**
313	**319**	**BLUE LIMESTONE & SHALE**
319	**387**	**GRAY LIMESTONE**
387	**391**	**BLUE LIMESTONE & SHALE**
391	**415**	**GRAY LIMESTONE**
415	**420**	**GRAY SAND**
420	**470**	**GRAY SANDSTONE & SAND STRIPS**
470	**480**	**GRAY SAND**
480	**488**	**WHITE SANDSTONE**
488	**501**	**GRAY SAND**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**		**0**	**530**
	Perforated or Slotted		**0.032**	**470**	**530**

501	**514**	**GRAY SANDSTONE & SAND**
514	**530**	**GRAY LIMESTONE**

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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #560816

Owner:	**Green Water Site Works**	Owner Well #:	**No Data**
Address:	**506 West Drive Leander, TX 78641**	Grid #:	**58-17-6**
Well Location:	**640 Whitaker Florence, TX**	Latitude:	**30° 40' 07" N**
		Longitude:	**097° 52' 46" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **9/17/2020** Drilling End Date: **9/18/2020**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**19**
6.5	**19**	**630**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**Cement 6 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **157**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Tape**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **424 ft.** below land surface on **2020-09-17**

Packers: **Shale Trap at 20 ft.**
Shale Trap at 350 ft.
Shale Trap at 550 ft.
Shale Trap at 570 ft.

Type of Pump: **No Data**

Well Tests: **Estimated** **Yield: 40 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **TOM ARNOLD DRILLING**

2750 SOUTH A. W. GRIMES BLVD
ROUND ROCK, TX 78664

Driller Name: **Tommy Arnold** License Number: **2096**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil & Loose Rock**
1	**21**	**Yellow Limestone**
21	**41**	**Tan LImestone**
41	**44**	**Blue Limestone**
44	**170**	**Gray LImestone**
170	**189**	**Brown LImestone**
189	**380**	**Gray Limestone**
380	**440**	**Gray LImestone**
440	**451**	**Brown Limestone**
451	**460**	**Blue LimeStone & Shale**
460	**551**	**Gray Sandstone**
551	**570**	**Gray Sandstone & Sand Strips**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**		**0**	**570**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**0.032**	**570**	**630**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #576288

Owner:	**MBS Family LP**	Owner Well #:	**No Data**
Address:	**4500 Williams Dr, 212-423 Georgetown , TX 78633**	Grid #:	**58-17-9**
Well Location:	**951 Highway 183 Liberty Hill, TX 78633**	Latitude:	**30° 39' 54.8" N**
		Longitude:	**097° 52' 54.84" W**
Well County:	**Williamson**	Elevation:	**1051 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **5/17/2021** Drilling End Date: **5/18/2021**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**620**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 8**
40	**50**	**Bentonite 3**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **58**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **50+**

Method of Verification: **No Data**

Surface Completion: **Pitless Adapter Used**

Water Level: **No Data**

Packers: **Rubber at 50 ft.**
Rubber at 55 ft.
Rubber at 495 ft.
Rubber at 500 ft.

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 5 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Rd.
Dripping Springs, TX 78620

Driller Name: **Michael Scott** License Number: **59719**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**10**	**tan limestone**
10	**240**	**grey limestone**
240	**510**	**grey / tan limestone**
510	**615**	**grey / tan sandstone wb 5+ gpm at 1100 tds**
615	**620**	**grey clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**20**
5	**Blank**	**New Plastic (PVC)**	**sch-80**	**20**	**560**
5	**Perforated or Slotted**	**New Plastic (PVC)**	**sch-80**	**560**	**620**

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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #576297

Owner:	**MBS Family LP**	Owner Well #:	**No Data**
Address:	**4500 Williams Dr. Suite 212-423 Georgetown , TX 78633**	Grid #:	**58-17-9**
Well Location:	**951 Highway 183 Liberty Hill, TX 78633**	Latitude:	**30° 39' 52.99" N**
		Longitude:	**097° 52' 59.38" W**
Well County:	**Williamson**	Elevation:	**1055 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Industrial**

Drilling Start Date: **5/19/2021** Drilling End Date: **5/24/2021**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**620**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**10**	**Cement 4**
10	**100**	**Bentonite 9**

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **12**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **100+**

Method of Verification: **No Data**

Surface Completion: **Pitless Adapter Used**

Water Level: **No Data**

Packers: **Rubber at 100 ft.**
Rubber at 105 ft.
Rubber at 495 ft.
Rubber at 500 ft.

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 10 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Rd.
Dripping Springs, TX 78620

Driller Name: **Michael Scott** License Number: **59719**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**20**	**tan limestone**
20	**270**	**grey limestone**
270	**520**	**grey / tan limestone**
520	**610**	**grey sandstone mix wb 10 gpm 1213 tds**
610	**620**	**grey clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**100**
5	**Blank**	**New Plastic (PVC)**	**sch-80**	**100**	**540**
5	**Perforated or Slotted**	**New Plastic (PVC)**	**sch-80**	**540**	**600**
5	**Blank**	**New Plastic (PVC)**	**sch-80**	**600**	**620**

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STATE OF TEXAS WELL REPORT for Tracking #577912

Owner:	**Zeb Miller Homes**	Owner Well #:	**No Data**
Address:	**1354 RM 1869 Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**1354 RM 1869 Liberty Hill, TX 78642**	Latitude:	**30° 40' 53.77" N**
		Longitude:	**097° 53' 53.07" W**
Well County:	**Williamson**	Elevation:	**1032 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **4/23/2021** Drilling End Date: **4/24/2021**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
11.75	**0**	**20**
6.75	**20**	**540**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 6 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data** on **2021-04-24**

Packers: **Rubber at 40 ft.**
Rubber at 480 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **500**

Well Tests: **Jetted** **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HILL COUNTRY WATER WELL**

POBOX 220
BRIGGS, TX 78608

Driller Name: **Joe McDearmon** License Number: **2334**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil**
1	**14**	**Caliche**
14	**385**	**Grey Lime**
385	**400**	**Dry Sands**
400	**420**	**Grey Lime**
420	**450**	**Tan**
450	**460**	**Dry Sands**
460	**465**	**Oil Spots**
465	**485**	**Sandstone**
485	**525**	**Trinity Sands**
525	**535**	**Sandstone**
535	**540**	**Grey Lime**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**0**	**480**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**480**	**500**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**500**	**520**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**520**	**540**

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STATE OF TEXAS WELL REPORT for Tracking #627196

Owner:	**Alex Thornton**	Owner Well #:	**No Data**
Address:	**748 RR 1869 Liberty Hill, TX 78642**	Grid #:	**58-17-6**
		Latitude:	**30° 41' 07.01" N**
Well Location:	**748 RR 1869 Liberty Hill, TX 78642**	Longitude:	**097° 53' 20.9" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **10/25/2022** Drilling End Date: **10/26/2022**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**20**
6.25	**20**	**520**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**Cement 5 Bags/Sacks**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **100+**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **380 ft.** below land surface on **2022-11-10**

Packers: **Rubber at 40 ft.**
Rubber at 340 ft.
Rubber at 420 ft.
Rubber at 440 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **460**

Well Tests: **Estimated** **Yield: 50+ GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **B & B Water Well Service, Inc**

PO Box 232
Bertram, TX 78605

Driller Name: **Joshua Dickinson** License Number: **54204**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**TOPSOIL**
5	**20**	**CALICHE**
20	**80**	**BLUE/GREY LIMESTONE**
80	**180**	**GREY LIMESTONE**
180	**300**	**TAN/GREY LIMESTONE**
300	**320**	**GREY LIMESTONE**
320	**340**	**DARK GREY LIMESTONE (H20)**
340	**360**	**GREY LIMESTONE W/SHALE**
360	**380**	**TAN/DARK GREY LIMESTONE**
380	**420**	**GREY LIMESTONE W/SHALE**
420	**460**	**SANDSTONE/ BLUE SANDS (H20)**
460	**480**	**SAND**
480	**520**	**LIGHT GREY LIMESTONE /GREEN**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**0**	**460**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**SDR17**	**460**	**520**

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STATE OF TEXAS WELL REPORT for Tracking #646739

Owner:	**Lance Jones**	Owner Well #:	**No Data**
Address:	**756 Oak Ln. Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**756 Oak Ln. Liberty Hill, TX 78642**	Latitude:	**30° 41' 38.51" N**
		Longitude:	**097° 53' 27.1" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **8/14/2023** Drilling End Date: **8/14/2023**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.75	**0**	**20**
6.25	**20**	**510**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
-1	**30**	**4 cement, 1 Benseal Bags/Sacks**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **+100**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **413 ft.** below land surface on **2023-08-14** Measurement Method: **Sonic/Radar**

Packers: **Burlap & PVC 390', 370'**
Burlap 30'

Type of Pump: **Submersible**

Well Tests: **Estimated** **Yield: 10-13 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
413 - 510	**Hensel**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Western Water Wells**

500 Southland Drive
Burnet, TX 78611

Driller Name: **James Benoit** License Number: **4064**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**white chalk**
5	**355**	**blue lime some clay**
355	**400**	**gray lime & clay**
400	**440**	**tan limestone some sand**
440	**480**	**tan gray limestone**
480	**500**	**white limestone**
500	**510**	**blue clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**-3**	**430**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**430**	**490**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**490**	**510**

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STATE OF TEXAS WELL REPORT for Tracking #658431

Owner:	**Maria Magallon**	Owner Well #:	**No Data**
Address:	**201 Long Run Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**201 Long Run Liberty Hill, TX 78642**	Latitude:	**30° 40' 18.73" N**
		Longitude:	**097° 52' 57.68" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **1/10/2024** Drilling End Date: **1/10/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.75	**0**	**20**
6.25	**20**	**610**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
-1	**30**	**4 cement, 1 Benseal Bags/Sacks**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **+75**

Distance to Septic Field or other concentrated contamination (ft.): **+100**

Distance to Septic Tank (ft.): **+50**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **485 ft.** below land surface on **2024-01-10** Measurement Method: **Sonic/Radar**

Packers: **Burlap & PVC 490', 470'**
Burlap 30'

Type of Pump: **Submersible**

Well Tests: **Estimated** **Yield: 10-13 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
485 - 610	**Hensel**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Associated Drilling Inc**

PO BOX 673
Dripping Springs, TX 78620

Driller Name: **James Benoit** License Number: **4064**

Comments: **Drilled for A&W Water Well Service.**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**10**	**white chalk**
10	**410**	**blue lime**
410	**450**	**gray lime & clay**
450	**490**	**tan lime**
490	**515**	**tan white limestone**
515	**560**	**white limestone some sand**
560	**590**	**tan limestone**
590	**610**	**gray limestone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**-3**	**530**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.020**	**530**	**590**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**590**	**610**

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P.O. Box 12157
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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #659195

Owner:	**Clint Riding**	Owner Well #:	**No Data**
Address:	**775 Rolling Hills Liberty Hill , TX 78642**	Grid #:	**58-17-6**
Well Location:	**775 Rolling Hills Liberty Hill, TX 78642**	Latitude:	**30° 41' 12.7" N**
		Longitude:	**097° 54' 12.53" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **2/16/2023** Drilling End Date: **2/18/2023**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**100**
6.75	**100**	**540**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**120**	**Bentonite 15 Bags/Sacks**

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **10 FT**

Distance to Septic Field or other concentrated contamination (ft.): **Wasn't Avalible**

Distance to Septic Tank (ft.): **NOT THEIR**

Method of Verification: **Tape**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **420 ft.** below land surface on **2023-02-22** Measurement Method: **Sonic/Radar**

Packers: **Plastic at 120 ft.**
Plastic at 400 ft.
Plastic at 440 ft.
Plastic at 460 ft.

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 30+ gpm GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **B & B Water Well Service, Inc**

PO Box 232
Bertram, TX 78605

Driller Name: **JOSUA DICKINSON** License Number: **54204**

Apprentice Name: **JOSHUA DYLAN DICKINSON**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil**
1	**30**	**Caliche**
30	**100**	**Blue Lime**
100	**280**	**Grey Lime**
280	**300**	**Brown / Grey Lime**
300	**400**	**Grey / Clay Strips**
400	**520**	**Sand Stone /Trinity Sand's / Layers**
520	**540**	**Sand Stone / Grey Clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR 17**	**0**	**460**
4.5	**Screen**	**New Plastic (PVC)**	**SDR 17 0.032**	**460**	**540**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #662401

Owner:	**Liberty Hill High School**	Owner Well #:	**No Data**
Address:	**Sunset Ridge Dr &, Co Rd 258 Williamson, TX 78642**	Grid #:	**58-18-4**
Well Location:	**Sunset Ridge Dr &, Co Rd 258 Williamson, TX 78642**	Latitude:	**30° 40' 22" N**
		Longitude:	**097° 52' 18" W**
Well County:	**Williamson**	Elevation:	**998 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Irrigation**

Drilling Start Date: **2/29/2024** Drilling End Date: **3/4/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**640**

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
100	**490**	**Gravel**	**3/8**
510	**640**	**Gravel**	**3/8**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**10**	**Cement 5**
10	**100**	**Bentonite 12**
490	**510**	**Bentonite 3**

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **35**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **100**

Method of Verification: **No Data**

Surface Completion: **Pitless Adapter Used**

Water Level: **462 ft.** below land surface on **2024-03-15** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **Submersible** Pump Depth (ft.): **600**

Well Tests: **Jetted** **Yield: 20-30 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Rd.
Dripping Springs, TX 78620

Driller Name: **Michael Scott** License Number: **59719**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**topsoil**
1	**5**	**caliche**
5	**25**	**tan limestone**
25	**250**	**grey limestone**
250	**490**	**grey limestone / tan strips**
490	**640**	**Partial / no returns**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
5	**Blank**	**New Plastic (PVC)**		**0**	**600**
5	**Screen**	**New Plastic (PVC)**		**600**	**640**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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STATE OF TEXAS WELL REPORT for Tracking #665145

Owner:	**Linda Cole**	Owner Well #:	**No Data**
Address:	**801 Cole Dr. Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**801 Cole Dr. Liberty Hill, TX 78642**	Latitude:	**30° 41' 39.67" N**
		Longitude:	**097° 53' 19.86" W**
Well County:	**Williamson**	Elevation:	**988 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **3/14/2024** Drilling End Date: **3/15/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
11.75	**0**	**20**
6.75	**20**	**520**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 7 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **200**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Tape**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **274 ft.** below land surface, and **15 GPM** artesian flow on **2024-03-15**

Packers: **Rubber at 40 ft.**
Rubber at 400 ft.
Rubber at 420 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **480**

Well Tests: **Jetted** **Yield: 15 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
420 - 520	**Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Hill Country Water Well**

2740 COUNTY ROAD 210
Briggs, TX 78608

Driller Name: **Bradley Cowan** License Number: **61014**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil**
1	**6**	**White Limestone**
6	**360**	**Gray Limestone**
360	**520**	**Lost Circulation**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**0**	**420**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**420**	**440**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**440**	**460**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**460**	**480**
4.5	**Blank**	**New Plastic (PVC)**	**SD17 0.032**	**480**	**520**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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STATE OF TEXAS WELL REPORT for Tracking #673199

Owner:	**Mike Vague**	Owner Well #:	**No Data**
Address:	**605 Oak Lane Liberty Hill, TX 78642**	Grid #:	**58-17-6**
		Latitude:	**30° 41' 33.43" N**
Well Location:	**605 Oak Lane Liberty Hill, TX 78642**	Longitude:	**097° 53' 40.27" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **6/11/2024** Drilling End Date: **6/11/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.75	**0**	**100**
6.25	**100**	**530**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
-1	**100**	**6 cement, 4 Benseal Bags/Sacks**

Seal Method: **Pressure Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **30**

Distance to Septic Field or other concentrated contamination (ft.): **+100**

Distance to Septic Tank (ft.): **+100**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **425 ft.** below land surface on **2024-06-11** Measurement Method: **Sonic/Radar**

Packers: **Burlap & PVC 430', 410'**
Burlap & Rubber 100'

Type of Pump: **Submersible**

Well Tests: **Estimated** **Yield: 10-15 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
425 - 530	**Hensel**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Western Water Wells**

500 Southland Drive
Burnet, TX 78611

Driller Name: **James Benoit** License Number: **4064**

Comments: **Drilled for A&W Water Well Service.**

Report Amended on 7/22/2024 by Request #42840

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**10**	**tan lime**
10	**365**	**blue lime**
365	**410**	**white limestone & blue clay**
410	**445**	**tan white limestone**
445	**460**	**tan limestone some sand**
460	**490**	**white limestone**
490	**510**	**gray limestone**
510	**530**	**blue clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**-3**	**450**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17**	**450**	**510**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**510**	**530**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Austin, TX 78711
(512) 334-5540

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): 0.0477

2-Hr Peak Flow (MGD): 0.1908

Estimated construction start date: January 2026

Estimated waste disposal start date: July 2026

B. Interim II Phase

Design Flow (MGD):

2-Hr Peak Flow (MGD):

Estimated construction start date:

Estimated waste disposal start date:

C. Final Phase

Design Flow (MGD): 0.0954

2-Hr Peak Flow (MGD): 0.3816

Estimated construction start date: January 2027

Estimated waste disposal start date: July 2027

D. Current Operating Phase

Provide the startup date of the facility:

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**.

See Treatment Unit Sizing and Process Description

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)
See Treatment Unit Sizing and Process Description		

C. Process Flow Diagram

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

Attachment: 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: 30°40'36.8"N
- Longitude: 97°53'18.2"W

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: Site Drawing

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

The facility will serve Canady Tract Development, a new subdivision in Williamson County, Texas.

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

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**.

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.

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:

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**.

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 buffer zone will be met by ownership.

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*.

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.

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.

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.

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 _ or TXRNE

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:

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.

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.

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.

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.

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.

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.

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.

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: To be determined

Facility Operator's License Classification and Level: To be determined

Facility Operator's License Number: To be determined

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:

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

If "Other" is selected for Management Practice, please explain (e.g. monofill or transport to another WWTP): Monofill – transported to processing facility for disposal

D. Disposal site

Disposal site name: To be determined

TCEQ permit or registration number: To be determined

County where disposal site is located: To be determined

E. Transportation method

Method of transportation (truck, train, pipe, other): To be determined

Name of the hauler: To be determined

Hauler registration number: To be determined

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:
- USDA Natural Resources Conservation Service Soil Map:

  Attachment:
- Federal Emergency Management Map:

  Attachment:
- Site map:

  Attachment:

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:

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:

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:

Total Kjeldahl Nitrogen, mg/kg:

Total Nitrogen (=nitrate nitrogen + TKN), mg/kg:

Phosphorus, mg/kg:

Potassium, mg/kg:

pH, standard units:

Ammonia Nitrogen mg/kg:

Arsenic:

Cadmium:

Chromium:

Copper:

Lead:

Mercury:

Molybdenum:

Nickel:

Selenium:

Zinc:

Total PCBs:

Provide the following information:

Volume and frequency of sludge to the lagoon(s):

Total dry tons stored in the lagoons(s) per 365-day period:

Total dry tons stored in the lagoons(s) over the life of the unit:

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.

D. Site development plan

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

Attach the following documents to the application.

- Plan view and cross-section of the sludge lagoon(s)

  Attachment:
- Copy of the closure plan

  Attachment:
- Copy of deed recordation for the site

  Attachment:
- Size of the sludge lagoon(s) in surface acres and capacity in cubic feet and gallons

  Attachment:
- Description of the method of controlling infiltration of groundwater and surface water from entering the site

  Attachment:
- Procedures to prevent the occurrence of nuisance conditions

  Attachment:

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:

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:

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:

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:

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: Justin Reynolds

Title: Manager

Signature: _____

Date: 11/22/2024

DOMESTIC WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.1

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

Section 1. Justification for Permit (Instructions Page 57)

A. Justification of permit need

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

The Canady Tract WWTF will serve approximately 477 units at 200 gpd/unit. This will generate 95,400 gallons per day of domestic strength wastewater at full build-out. This is in line with other communities in the general vicinity that uses similar flow generation. There are no facilities within 3 miles that have capacity and/or it is not economically feasible to convey the sewer there.

B. Regionalization of facilities

For additional guidance, please review TCEQ's Regionalization Policy for Wastewater Treatment[1].

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

1. *Municipally incorporated areas*

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

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

☐ Yes ☒ No ☐ Not Applicable

If yes, within the city limits of:

If yes, attach correspondence from the city.

Attachment:

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

Attachment:

2. *Utility CCN areas*

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

☐ Yes ☒ No

[1] https://www.tceq.texas.gov/permitting/wastewater/tceq-regionalization-for-wastewater

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

Attachment:

3. Nearby WWTPs or collection systems

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

☒ Yes ☐ No

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

Attachment: Nearby Facilities

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

Attachment:

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

Attachment:

Section 2. Proposed Organic Loading (Instructions Page 59)

Is this facility in operation?

☐ Yes ☒ No

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

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

A. Current organic loading

Facility Design Flow (flow being requested in application):

Average Influent Organic Strength or BOD_5 Concentration in mg/l:

Average Influent Loading (lbs/day = total average flow X average BOD_5 conc. X 8.34):

Provide the source of the average organic strength or BOD_5 concentration.

B. Proposed organic loading

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

Table 1.1(1) – Design Organic Loading

Source	Total Average Flow (MGD)	Influent BOD5 Concentration (mg/l)
Municipality		
Subdivision	0.0954	350
Trailer park – transient		
Mobile home park		
School with cafeteria and showers		
School with cafeteria, no showers		
Recreational park, overnight use		
Recreational park, day use		
Office building or factory		
Motel		
Restaurant		
Hospital		
Nursing home		
Other		
TOTAL FLOW from all sources	0.0954	
AVERAGE BOD_5 from all sources		350

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

A. Existing/Interim I Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: 20

Total Suspended Solids, mg/l: 20

Ammonia Nitrogen, mg/l:

Total Phosphorus, mg/l:

Dissolved Oxygen, mg/l: >2

Other:

B. Interim II Phase Design Effluent Quality

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

Total Suspended Solids, mg/l:

Ammonia Nitrogen, mg/l:

Total Phosphorus, mg/l:

Dissolved Oxygen, mg/l:

Other:

C. Final Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: 20

Total Suspended Solids, mg/l: 20

Ammonia Nitrogen, mg/l:

Total Phosphorus, mg/l:

Dissolved Oxygen, mg/l: >2

Other:

D. Disinfection Method

Identify the proposed method of disinfection.

☒ Chlorine: 1-4 mg/l after 20 minutes detention time at peak flow

Dechlorination process: **OR**

☒ Ultraviolet Light: 10 seconds contact time at peak flow

☐ Other:

Section 4. Design Calculations (Instructions Page 59)

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

Attachment: Design Calculations

Section 5. Facility Site (Instructions Page 60)

A. 100-year floodplain

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

☒ Yes ☐ No

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

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

FEMA NFHL Viewer: 48491C0245F

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

☐ Yes ☒ No

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

☐ Yes ☒ No

If yes, provide the permit number:

If no, provide the approximate date you anticipate submitting your application to the Corps:

B. Wind rose

Attach a wind rose: Windrose

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

A. Beneficial use authorization

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

☐ Yes ☒ No

If yes, attach the completed **Application for Permit for Beneficial Land Use of Sewage Sludge (TCEQ Form No. 10451)**:

B. Sludge processing authorization

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

☐ Sludge Composting

☐ Marketing and Distribution of sludge

☐ Sludge Surface Disposal or Sludge Monofill

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

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

Attach a solids management plan to the application.

Attachment: Solids Management Plan

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

- Treatment units and processes dimensions and capacities

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

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

DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 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
- ☐ Other (describe in detail):
- ☐ Subsurface application
- ☐ Subsurface soils absorption
- ☐ Subsurface area drip dispersal system
- ☐ Evapotranspiration beds

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

For existing authorizations, provide Registration Number:

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
Bermuda Grass and Rye Grass (Phase 1)	12.55	47,700	Y
Bermuda Grass and Rye Grass (Final Phase)	25.1	95,400	Y

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	2	15.43	See Site Drawing	Synthetic membrane or clay liner

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

Attachment: Liner Certification

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.

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

FEMA NFHL Viewer: 48491C0245F

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

The land application will be graded to protect it from rainfall runoff and protected from inundation by swales and other constructed landforms to direct water away from the land application site.

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**: 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**: USGS TLAP Map

- 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
See Well ID Attachment				

Well ID	Well Use	Producing? Y/N	Open, cased, capped, or plugged?	Proposed Best Management Practice

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

Attachment: Well ID Attachment

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: Groundwater Quality 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:

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: USDA Soils 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: Soil Report

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
See Soil Report				

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.

DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.1: SURFACE LAND DISPOSAL OF EFFLUENT

The following is required for new and major amendment permit applications. Renewal and minor amendment permit applications may be asked for this worksheet on a case by case basis.

Section 1. Surface Disposal (Instructions Page 72)

Complete the item that applies for the method of disposal being used.

A. Irrigation

Area under irrigation, in acres: 25.1

Design application frequency:

hours/day 0.33(20 min/d) **And** days/week 7

Land grade (slope):

average percent (%): 3-5

maximum percent (%): 3-8

Design application rate in acre-feet/acre/year: 4.25

Design total nitrogen loading rate, in lbs N/acre/year: 347

Soil conductivity (mmhos/cm): See Soil Report

Method of application: Spray Irrigation

Attach a separate engineering report with the water balance and storage volume calculations, method of application, irrigation efficiency, and nitrogen balance.

Attachment: Water Balance and 3.1 Surface Land Disposal Engineering Report

B. Evaporation ponds

Daily average effluent flow into ponds, in gallons per day:

Attach a separate engineering report with the water balance and storage volume calculations.

Attachment:

C. Evapotranspiration beds

Number of beds:

Area of bed(s), in acres:

Depth of bed(s), in feet:

Void ratio of soil in the beds:

Storage volume within the beds, in acre-feet:

Attach a separate engineering report with the water balance and storage volume calculations, and a description of the lining.

Attachment:

D. Overland flow

Area used for application, in acres:

Slopes for application area, percent (%):

Design application rate, in gpm/foot of slope width:

Slope length, in feet:

Design BOD_5 loading rate, in lbs BOD_5/acre/day:

Design application frequency:

hours/day: _ **And** days/week:

Attach a separate engineering report with the method of application and design requirements according to *30 TAC Chapter 217*.

Attachment:

Section 2. Edwards Aquifer (Instructions Page 73)

Is the facility subject to *30 TAC Chapter 213*, Edwards Aquifer Rules?

☒ Yes ☐ No

If **yes**, is the facility located on the Edwards Aquifer Recharge Zone?

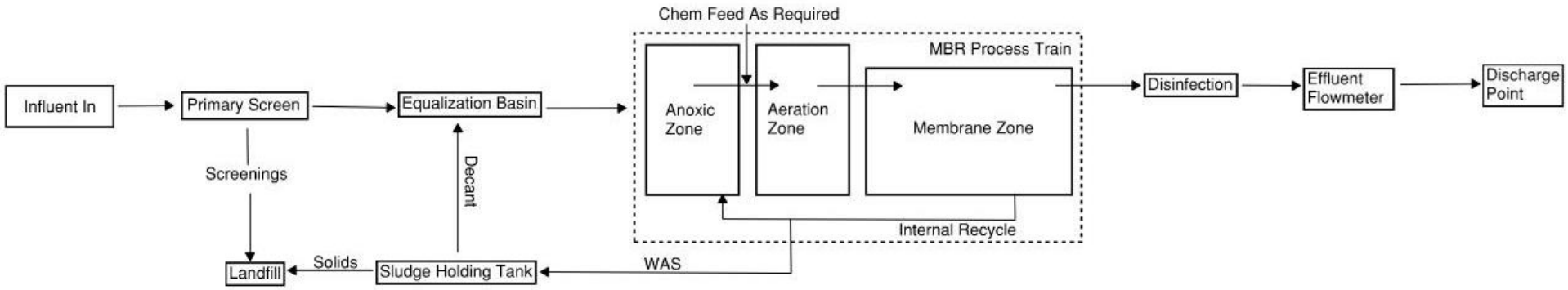
☐ Yes ☒ No

If yes, attach a geological report addressing potential recharge features.

Attachment:

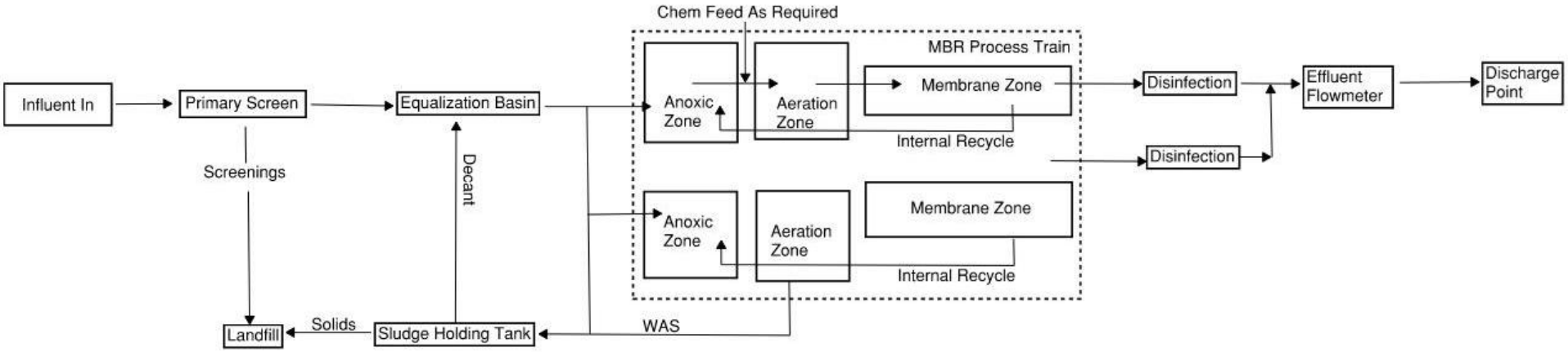
Canady Tract WWTF - Process Description

Phase 1 – 47,700 gpd



Canady Tract WWTF - Process Description

Final Phase – 95,400 gpd



Canady Tract WWTF – Treatment Unit Sizing and Process Description

Treatment Process Description

Canady Tract WWTF will be an MBR system consisting of several process trains. The system will have a primary screen, equalization tanks, multiple process trains consisting of anoxic, aeration, membrane zones, and sludge holding tanks. The facility will utilize UV or Chlorine disinfection. The design will be in accordance with Texas Administrative Code Title 30, Part 1: Texas Commission on Environmental Quality (TCEQ) Chapter 217 (Design Criteria for Domestic Wastewater Systems).

Treatment Unit Sizing

Phase 1 – 47,700 GPD

Headworks with Screening	
Equalization Tank	(1) 12’ x 12’ x 10’ SWD = 10,771 gal
Sludge Holding Tank	(1) 10’ dia x 17’ SWD = 9,982 gal
Process Units (MBR)	(2) 30’ x 10’ x 8’ SWD = 35,904 gal
Chlorine Contact Chamber	(1) 8’ x 8’ x 6’ SWD = 2,872 gal

Final Phase – 94,500 GPD

Headworks with Screening	
Equalization Tank	(2) 12’ x 12’ x 10’ SWD = 21,542 gal
Sludge Holding Tank	(2) 10’ dia x 17’ SWD = 19,964 gal
Process Units (MBR)	(3) 30’ x 10’ x 8’ SWD = 53,856 gal
Chlorine Contact Chamber	(2) 8’ x 8’ x 6’ = 5,745 gal

Canady Tract WWTF - Design Calculations

Phase 1

Flow	47,000	gpd
2 hr peak	188,000	gpd

Equalization Sizing Minimum
2.5Q for 2 hours 9,792 gal

Chlorine Sizing Minimum
4Q for 20 min 2,611 gal

Using 2% Flow for WAS Rate
WAS Rate 940 gpd

Sludge Storage Days 10 days
Sludge Holding Minimum 9400 gal

Final Phase

Flow	95,400	gpd
2 hr peak	381,600	gpd

Equalization Sizing Minimum
2.5Q for 2 hours 19,875 gal

Chlorine Sizing Minimum
4Q for 20 min 5,300 gal

Using 2% Flow for WAS Rate
WAS Rate 1908 gpd

Sludge Storage Days 10 days
Sludge Holding Minimum 19080 gal

Bioreactor Calculation

1. Design Calculation

1.1 Influent (m3/day)

Items	unit	m3/day	gal/day
	Average	360	95,400
	Design Flow	360	95,400

(gal/day)

1.2 Factors

Items			
	HRT	19.0	hr
	SRT	25.0	day
	C/N	4.7	
	C/P	29.6	
	Temp	20.0	℃
	Sludge return	250	%

1.3 Influent Quality

Items	BOD (mg/L)	COD_{Mn} (mg/L)	SS (mg/L)	T-N (mg/L)	T-P (mg/L)	E.coli. (Count/mL)	Remarks
Water quality	350.0	525.0	300.0	70.0	9.0	55000	

1.4 Influent and Effluent Water Quality

Items	BOD (mg/L)	COD_{Mn} (mg/L)	SS (mg/L)	T-N (mg/L)	T-P (mg/L)	E.coli. (Count/mL)	
Influent quality	350.0	525.0	300.0	70.0	9.0	55,000	
Effluent quality	5.0	10.0	5.0	20.0	1.0	1.26	

1.5 Bioreactor Volume

Items	Width (mW)	Length (mL)	Depth (mHe)	Height (mH)	tank (#)	Volume (m^3)	HRT (hr)
Anoxic	2.4	12.0	2.2	2.3	2	124.1	7.9
Oxic	2.4	12.0	2.1	2.3	2	118.4	7.5
MBR	2.4	12.0	2.0	2.3	1	56.4	3.6
Total						363.8	19.0

Note: If biorector volume sizes are above the volume calcauted by 30-40%, it will be okay.

1.6 Sludge Production

Items	Sludge (m^3/day)	Water contents (%)
	6.0	99.2

1.7 Air Requirement

Items		
	Oxic reactor (m^3/min)	3.11
	MBR (m^3/min)	12.0

2 MASS BALANCE

(Q = 360 m³/day) 95,400 GPD

Temp. : 20 °C
68 F

Influent		
Q	360	
BOD	350.0	132.5
COD	525.0	198.7
SS	300.0	113.6
T-N	70.0	26.5
T-P	9.0	3.4
E.Coli	55,000	Count/ml

EQ Tank		
Q	360	
BOD	315.0	119.2
COD	472.5	178.8
SS	210.0	79.5
T-N	66.5	25.2
T-P	8.6	3.2
E.Coli	55000	Count/ml

Bioreactors		
Q	360	
BOD	315.0	119.2
COD	472.5	178.8
SS	210.0	79.5
T-N	66.5	25.2
T-P	8.6	3.2
E.Coli	55,000	Count/ml

Factors	
MLSS	5,800
	5,800
	8,000
F/M	0.06
TEMP.	20
SRT	42.6
MLVSS	0.69
FLUX	0.4

Effluent		
Q	360	
BOD	5.0	1.9
COD	10.0	3.7
SS	5.0	1.9
T-N	20.0	7.5
T-P	1.0	0.4
E.Coli	1	Count/ml

Reuse		
Q	360	
BOD	5.0	1.9
COD	10.0	3.7
SS	5.0	1.9
T-N	20.0	7.5
T-P	1.0	0.4
E.Coli	1	Count/ml

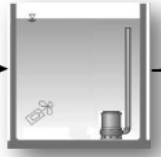


Influent



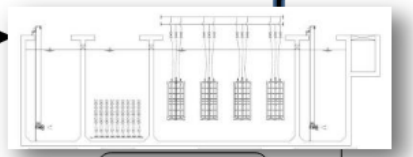
Drum Screen

Drum Screen	
BOD	10%
COD	10%
SS	30%
T-N	5%
T-P	5%



EQ Tank

Aerated EQ



Bioreactors + Membrane

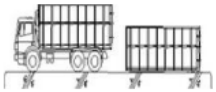
Sludge Return = 2.5 Q

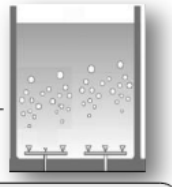


Effluent

Sludge		
Q	6.0	
BOD	4,567	27.4
COD	3,928	23.6
SS	8,000	48.0
T-N	664	4.0
T-P	478	2.9

Bioreactors	
BOD	98.4
COD	97.9
SS	97.6
T-N	69.9
T-P	88.3
E.Coli	100.0





Sludge Tank

Legend
Sewage
Sludge

Unit	
Q	m³/d
Con.	mg/L
Load	kg/day

Canady Tract WWTF - Design Calculations

Items	Ranges			Design Values	Unit
Anoxic/Oxic MLSS (X_{TSR})	4,000	~	9,500	5,800	mg/L
Oxic MLSS (X_{OX})	6,000	~	12,000	8,000	mg/L
MLVSS/MLSS(X_V)	MLVSS	/	MLSS	0.7	
F/M ration	0.01	~	0.30	0.06	kgBOD/kgMLVSS-d
Sludge return (X_{r1})	50	~	400	250	%
Sludge retention time (SRT)	15	~	50	35.6	day
Bio reactor temperature	10	~	30	20	℃
Bio reactor pH	6.8	~	7.2	7.0	
Dissolved Oxygen concentration (DO)	2.0	~	5.0	2.0	mg/L
Y(net), Sludge yield	0.30	~	0.60	0.47	$mgVSS/mgBOD_{rem}$
b, Sludge decay coefficient	0.05	~	0.30	0.15	day^{-1}
μ_{Nm}, Max nitrifier production	0.30	~	0.60	0.47	day^{-1}
Y_N(net), Nitrifier yield	0.10	~	0.30	0.20	$mgVSS/mgNH_4N_{rem}$
K_o, O_2 Half saturation coefficient	0.40	~	0.60	0.50	O_2 mg/L
K_N, NH_4-N Half saturation coefficient	0.20	~	5.00	0.74	NH_4-N mg/L
Membrane Flux	Design			0.40	$m^3/m^2 \cdot d$
				16.7	LMH
				9.8	GFD
SNR, Specific Nitrification Rate	Oxic			2.70	$mgNH_4N/gMLVSS \cdot hr$
SDNR, Specific denitrification Rate				2.70	$mgNO_3N/gMLVSS \cdot hr$
SPUR				1.24	mg P/gMLSS·hr
BOD/P_{rel}				12.0	P releasing
$BOD/No_x\text{-}N_{rem}$				2.86	Denitrification
N/VSS, Nitrogen % in Biomass	5.00	~	12.0	12.0	%
P/VSS, Phosphofus % in Biomass	1.00	~	7.50	5.8	P uptaking (%)

Canady Tract WWTF – Solids Management Plan

The permit application includes three phases of flows as described below:

- Phase 1 = 0.0477 MGD
- Final Phase = 0.0954 MGD

Estimated solids generation is based on the below listed criteria:

- Average Influent BOD = 350 mg/L
- Design Influent BOD = 350 mg/L
- Solids Generated = 0.98 Pound Solids per Pound of BOD applied
- Calculations are based on the average influent BOD, as stipulated in Chapter 217.250 for firm dewatering capacity.

(a) Operating range for the mixed liquor suspended solids in the treatment process based on design flow and projected actual flow at the facility.

Phase #	Operating Range (mg/L)
Phase 1	8,000 – 12,000
Final Phase	8,000 – 12,000

(b) Description of the procedure and method of solids removal from both wastewater and sludge treatment processes.

The sludge wasting pumps will convey sludge from the treatment basins to the sludge holding basin in final phase. The sludge wasting pumps will be operated manually by the operator. The sludge holding basins/tanks will be pumped as a semi-liquid onto a transport truck where it will be taken to a permitted landfill.

(c) Quantity of solids to be removed from the process and schedule for removal of solids designed to maintain an appropriate solids inventory.

Solids will be removed from the sludge holding basin on a 10-day rotation during final phase. Canady Tract WWTF currently does not plan to process waste activated sludge from other wastewater treatment plants in liquid or cake form through its sludge processing facilities.

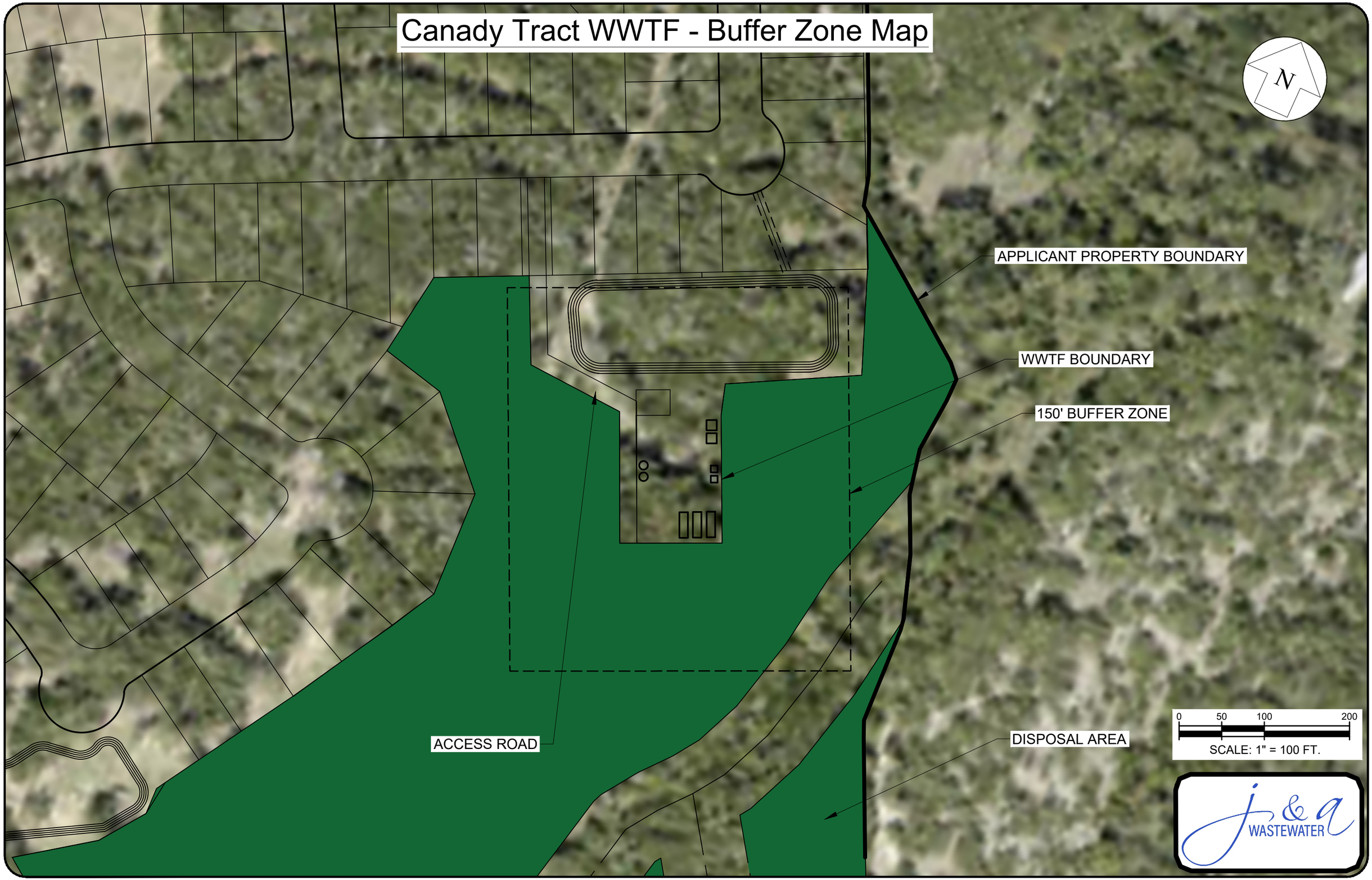
<u>Solids Generated at 100, 75, 50, and 25 percent Design Flow:</u>

Phase 1: 0.0477 MGD
100% Flow: Solids Generation = (350 mg/l)(0.0477MGD)(8.34 lb/mg)(0.98) = 136 lb/day
75% Flow: Solids Generation = (350 mg/l)(0.0358MGD)(8.34 lb/mg)(0.98) = 102 lb/day
50% Flow: Solids Generation = (350 mg/l)(0.0239MGD)(8.34 lb/mg)(0.98) = 68 lb/day
25% Flow: Solids Generation = (350 mg/l)(0.0119MGD)(8.34 lb/mg)(0.98) = 34 lb/day

Final Phase: 0.0954 MGD
100% Flow: Solids Generation = (350 mg/l)(0.0954MGD)(8.34 lb/mg)(0.98) = 273 lb/day
75% Flow: Solids Generation = (350 mg/l)(0.0716MGD)(8.34 lb/mg)(0.98) = 205 lb/day
50% Flow: Solids Generation = (350 mg/l)(0.0477MGD)(8.34 lb/mg)(0.98) = 136 lb/day
25% Flow: Solids Generation = (350 mg/l)(0.0239MGD)(8.34 lb/mg)(0.98) = 68 lb/day

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Canady Tract WWTF - Buffer Zone Map



Canady Tract WWTF - Disposal Phasing Map

DISPOSAL PHASING

PHASE 1 12.55 ACRES

FINAL PHASE 25.7 ACRES

NOTE: A MINIMUM OF 25.1 ACRES WILL BE IRRIGATED PER WATER BALANCE CALCULATIONS

N

APPLICANT PROPERTY BOUNDARY

DISPOSAL AREA

WWTF BOUNDARY

150' BUFFER ZONE

DISPOSAL AREA

DISPOSAL AREAS

DISPOSAL AREA

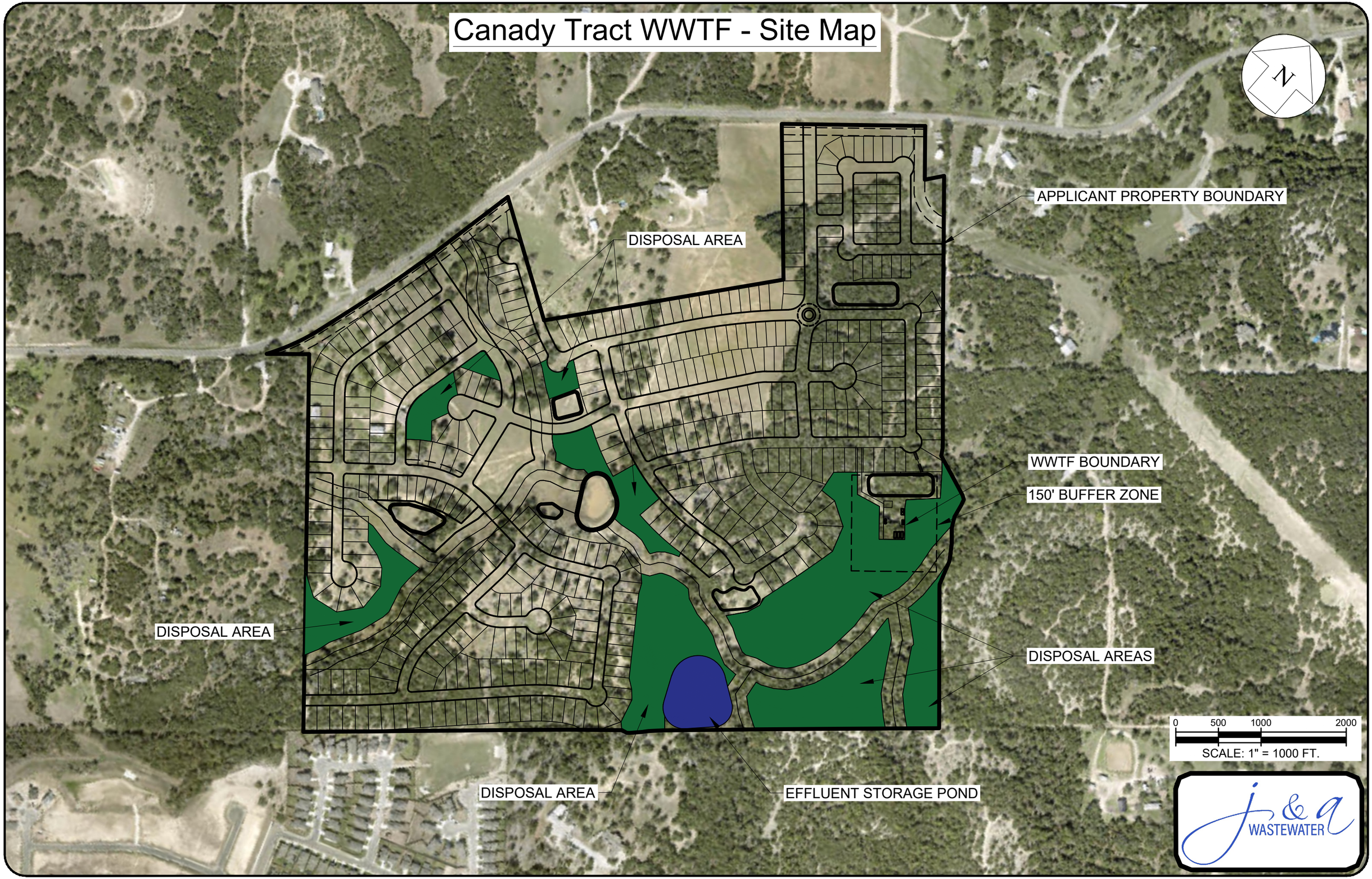
EFFLUENT STORAGE POND

0 500 1000 2000

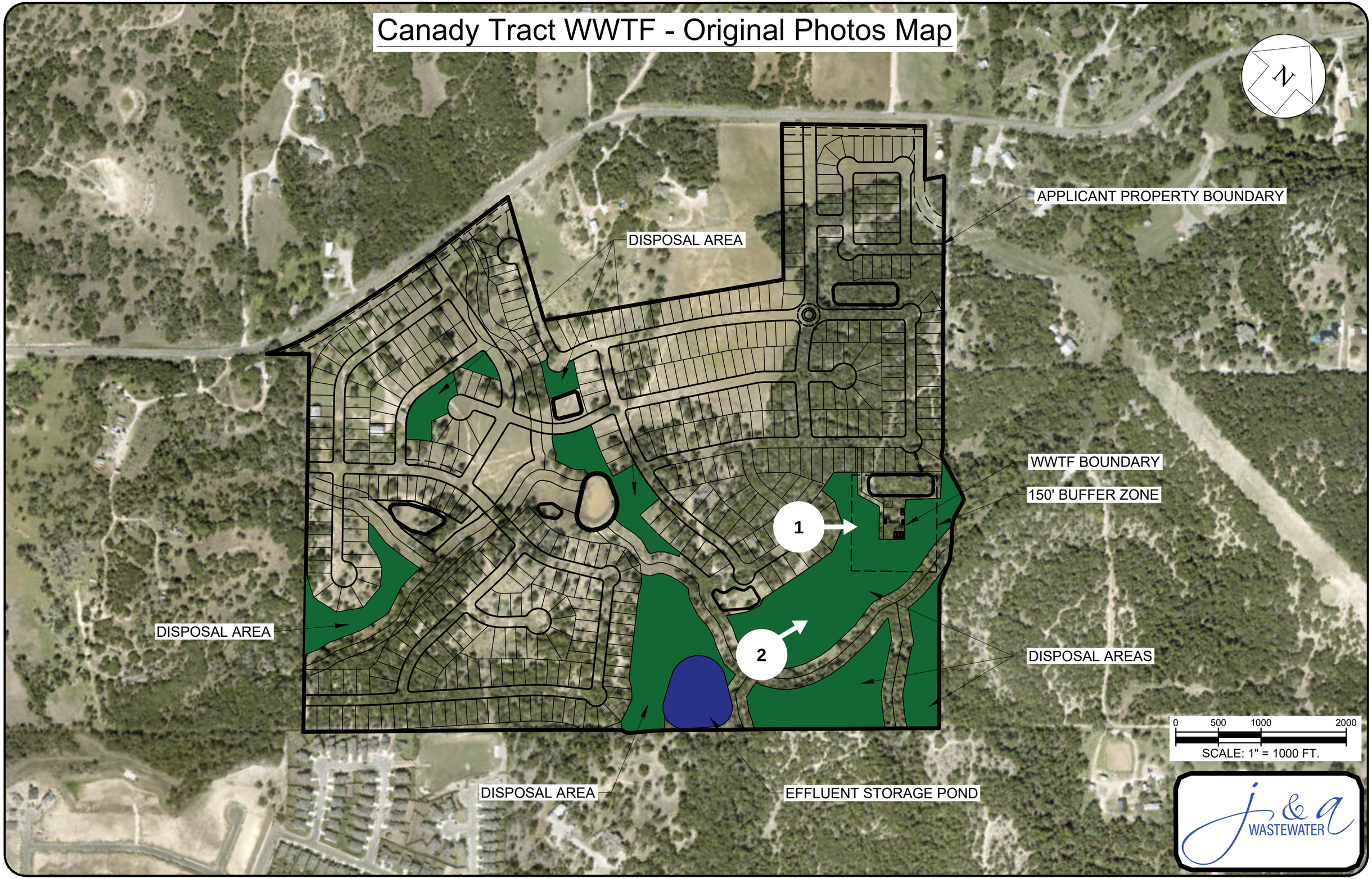
SCALE: 1" = 1000 FT.

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Canady Tract WWTF - Site Map

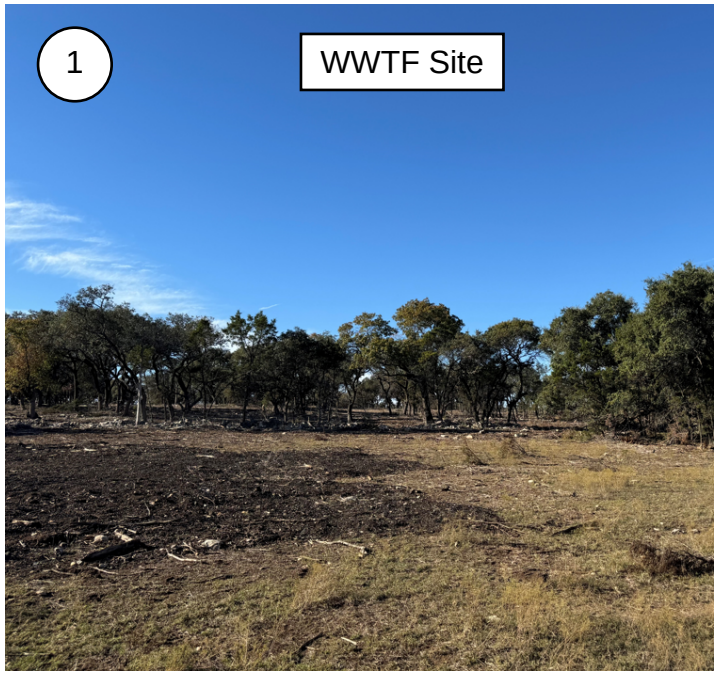


Canady Tract WWTF - Original Photos Map

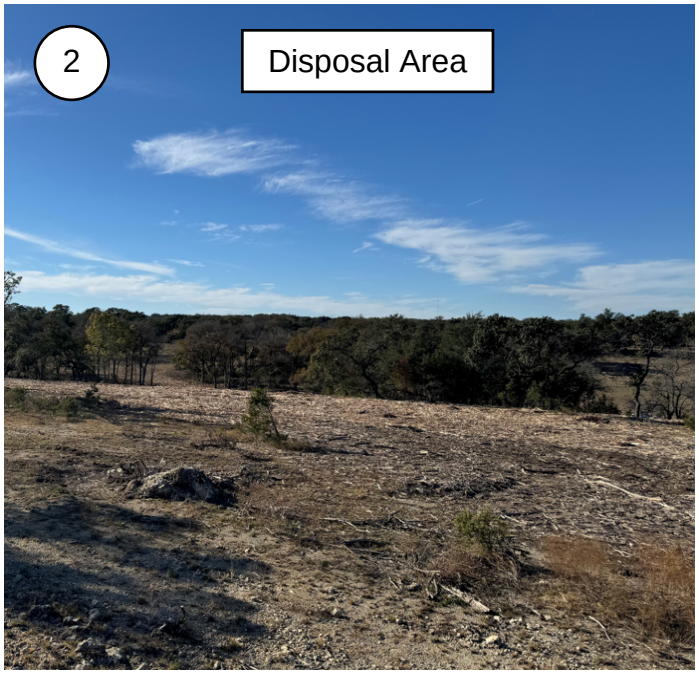


Canady Tract WWTF - Original Photos

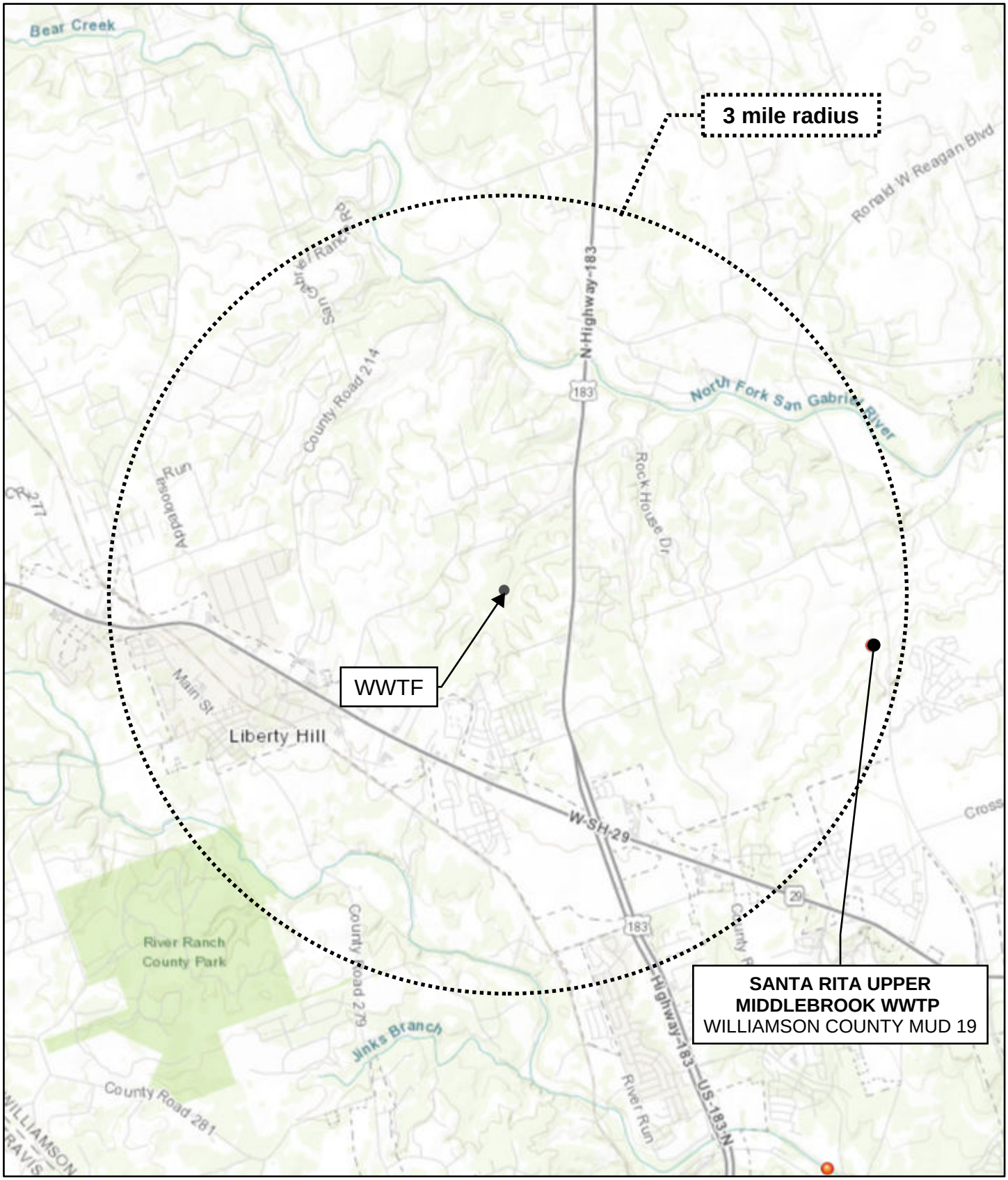
1 WWTF Site



2 Disposal Area



Canady Tract WWTF - Nearby Facilities



11/12/2024, 11:24:45 AM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

Wastewater Outfalls

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County of Williamson, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA, TCEQ

Web AppBuilder for ArcGIS
County of Williamson, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA | TCEQ |

December 2024

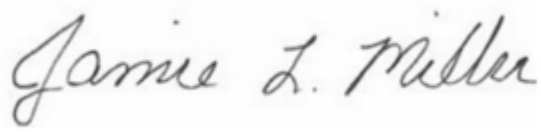
926 Main St
Liberty Hill, TX 78642

Subject: Santa Rita Upper Middlebrook WWTP

To Whom it May Concern,

Sapelo Liberty Hill LP is applying for a TLAP permit and is located within three miles of the Santa Rita Upper Middlebrook WWTP. It is our understanding that the Santa Rita Upper Middlebrook WWTP may not have the capacity and doesn't have the infrastructure (collection system) to accept waste from the new proposed subdivision. Please confirm in writing at your earliest convenience.

Sincerely,



Jamie L. Miller, P.E.
President
JA Wastewater
5765 Fig Way
Arvada, CO 80002
Firm Number F-23372

December 2024

Jamie L. Miller P.E.
J&A Wastewater
5765 Fig Way
Arvada, CO 80002

Subject: Liner Certification for Canady Tract WWTF

To Whom it May Concern,

The proposed liner for the storage pond for the Canady Tract WWTF will be required to be designed to meet the liner requirements of 30 TAC Chapters 309 and 217. The liner system will consist of either a synthetic membrane, or a clay liner.

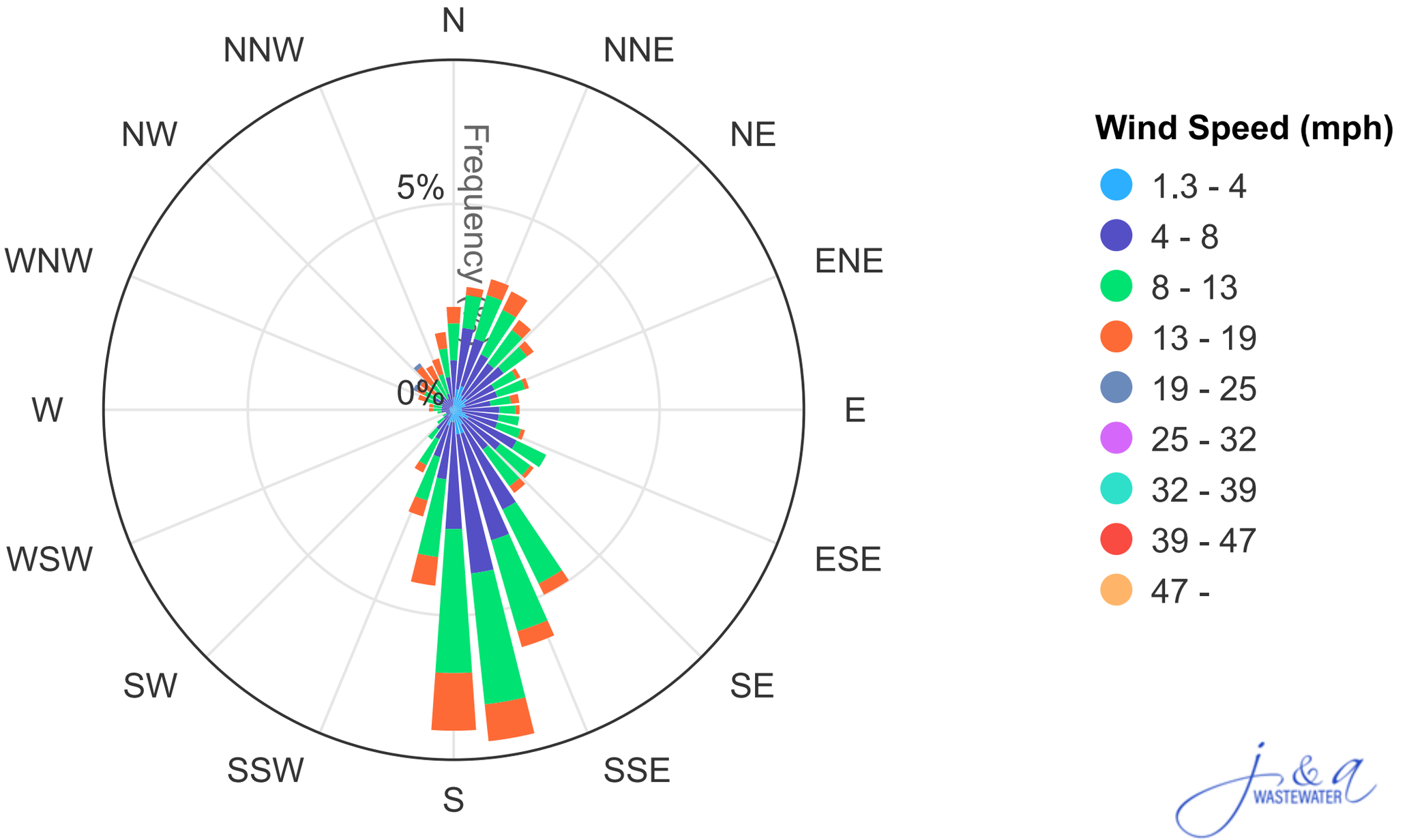
Sincerely,

Jamie L. Miller, P.E.
President
Firm Number F-23372



BURNET MUNICIPAL AP (TX) Wind Rose

November 01, 2023 - November 01, 2024
Sub-Interval: January 1 - December 31, 0 - 24



Canady Tract WWTF – Annual Cropping Plan

a. Soils map depicting the location of the crops proposed or currently being grown. These locations should be identified by field and crop on the soils map.

A USDA Soils Map has been provided with the permit application.

b. All types of crops and acreage irrigated for each crop, including warm and cool season crops.

The 25.1-acre area will be seeded with Bermuda and Rye grasses.

c. Crop yield goals or estimates.

Yield estimate: Bermuda grass will produce about 1 ton per acre with no applied fertilizer. Rye produces 2 to 3 tons per acres.

d. Growing seasons for each crop including months the field is left fallow (no crops).

Growing season for Bermuda grass is from May through October. The growing season for Rye grass is November through March, the fields are never left fallow.

e. Nutrient requirements for each crop, including additional fertilizer requirements for each crop, proposed additional fertilizer applications for each crop, and methods of fertilizer application for each crop, based on annual soil sampling and analysis.

The proposed design total nitrogen loading rate is 0.95 lb/acre/day or 347 lb/acre/year. Bermuda grass can utilize large amounts of nitrogen, with excellent yield response at 400 lbs/ acre/ year. (See Nutrient Demand High in Bermudagrass by Darst, et al. 1996). To most effectively use nitrogen, other nutrients are required such as phosphorus and potassium. These nutrient levels will be monitored through annual soil analysis and supplemented if required. Additional fertilizer is not anticipated but a manual spreader would be used if needed.

f. Provide the minimum and maximum harvest height for the crop (e.g. mowing height of grasses).

Minimum mowing height will be such that the grass is not scorched, approximately 3”. The maximum growing height will be determined by the operator, 18” is anticipated maximum height prior to mowing.

g. Supplemental watering requirements for each crop.

No supplemental watering is anticipated.

h. Salt tolerances of each crop.

Bermuda grass is highly salt tolerant, Rye grass is considered to be intermediate in salt tolerance.

i. Describe the harvesting method and the proposed number of harvests for each crop.

The irrigation fields will be regularly mowed with clippings hauled off.

j. If the proposed crop is existing native vegetation that will not be harvested, include a justification that the non-removal of crops will not lead to a buildup in nutrients. If the proposed system is drip irrigation with a proposal to use the existing forested vegetation as a crop, then provide a vegetation survey by a certified arborist describing at a minimum: (1) the number of mature ashe juniper (Juniperus ashei) and oaks (Quercus viginiana) trees per acre, (2) the

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number of other trees per acre, (3) percent of overstory canopy cover, (4) the extent of open spaces, and (5) areas with forbs and grasses expressed as percent of the land of each application site. A mature tree is one with a minimum height of 14 feet.

Varies

Canady Tract WWTF – Groundwater Quality Report

Background

The Canady Tract WWTF will serve a new development that generates 95,400 gpd at full buildout. The treated effluent will be disposed of via spray irrigation of 25.1 acres at full buildout.

Aquifer

The nearby aquifer codes are:

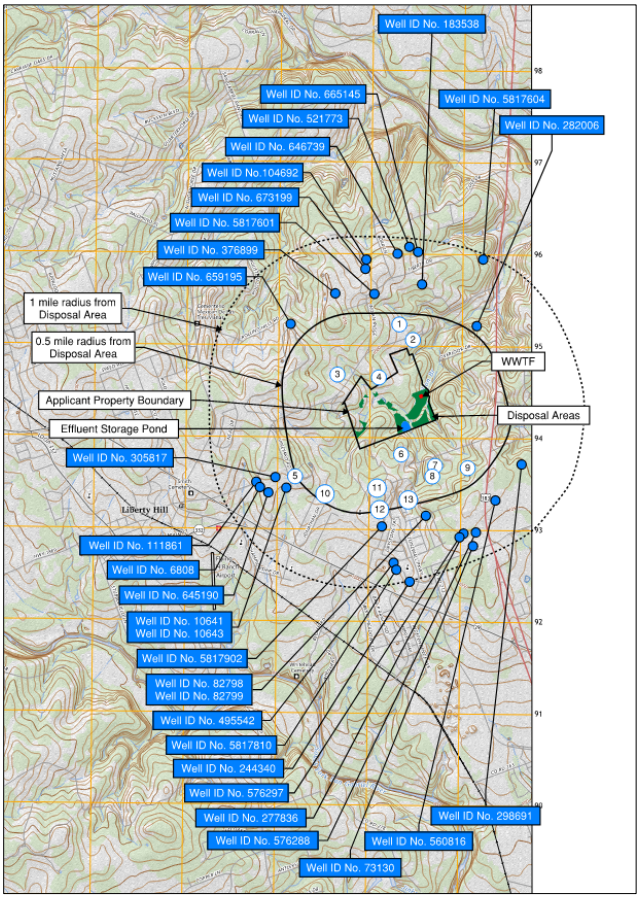
- 218HNSL - Hensell Sand Member of Travis Peak Formation
- 217HSTN - Hosston Formation

Nearby Well Information

A USGS map showing all wells within 1 mile of the property boundaries has been included with the application. A well reference list with well attributes such as the well ID number, well depth, well status, and proposed management practice is provided with this application. There are no wells located within 500’ of the disposal areas. The well logs for the wells on the reference list are included with this application. There are no monitoring wells available, and therefore no groundwater quality baseline data has been established. Below is a portion of the USGS map depicting the WWTF site, effluent disposal areas, 0.5 mi and 1-mile radius from the property boundaries, and well locations.

Impact on Local Groundwater Resources

The wastewater effluent is used to irrigate publicly accessible fields. The effluent applied to the land has a maximum application rate of 0.087 gal/sqft/day to ensure the effluent is taken up by the crop root systems and that potential contaminants do not migrate below the root zone. The treated effluent will be stored in a pond with a liner certified by a Texas Professional Engineer prior to being conveyed to the disposal areas.



Canady Tract WWTF - Water Balance

Phase 1 (47,700 GPD)

1	2	3	4	5	6	7	8		9	10	11
	Avg Rain	Avg Runoff	Avg Infiltrated Rainfall	Evapo transpiration	Required Leaching	Total Water Needs	Effluent Req'd in Root Zone	Avg Evaporation	Evap from Reservoir	Effluent Applied to Land	Consumption from Reservoir
JAN	2.46	0.86	1.60	1.30	0.00	1.30	0.00	2.20	0.35	0.00	0.35
FEB	1.95	0.53	1.42	2.30	0.35	2.65	1.24	2.31	0.37	1.45	1.82
MAR	2.88	1.16	1.72	5.70	1.59	7.29	5.57	3.38	0.54	6.56	7.10
APR	2.63	0.98	1.65	5.41	1.50	6.91	5.26	4.19	0.67	6.19	6.86
MAY	4.31	2.30	2.01	6.12	1.64	7.76	5.75	4.62	0.74	6.77	7.51
JUN	2.96	1.22	1.74	6.48	1.90	8.38	6.64	6.11	0.97	7.81	8.78
JUL	2.21	0.69	1.52	6.66	2.06	8.72	7.20	6.94	1.11	8.47	9.58
AUG	2.36	0.79	1.57	4.59	1.21	5.80	4.23	7.02	1.12	4.98	6.10
SEP	3.13	1.35	1.78	5.13	1.34	6.47	4.69	5.31	0.85	5.51	6.36
OCT	4.20	2.21	1.99	4.05	0.82	4.87	2.88	4.03	0.64	3.39	4.03
NOV	2.81	1.11	1.70	1.60	0.00	1.60	0.00	2.84	0.45	0.00	0.45
DEC	2.25	0.72	1.53	1.30	0.00	1.30	0.00	2.11	0.34	0.00	0.34
TOTAL	**34.15**	**13.93**	**20.22**	**50.64**	**12.42**	**63.06**	**43.47**	**51.06**	**8.14**	**51.14**	**59.27**

12	13	14a	14b	15	16	17	18a		18b	19	20
	Effluent Applied to Land (in)	Mean Rainfall Distribution (%)	Rainfall (Max) (in)	Runoff (Max) (in)	Infiltrated Rainfall (in)	Total Avail H_2O (in)	% Distribution of Mean	Min Annual Net Evap Proportionally Distributed (in)	Net Evaporation (min) (in)	Storage (in-ac/ac)	Accumulated Storage (in-ac/ac)
JAN	4.258	7.2	3.74	1.83	1.91	6.17	4.31	1.75	0.28	3.98	11.87
FEB	4.258	5.7	2.96	1.22	1.74	6.00	4.52	1.84	0.29	2.89	14.76
MAR	4.258	8.4	4.38	2.36	2.02	6.28	6.62	2.69	0.43	-2.37	12.38
APR	4.258	7.7	4.00	2.04	1.96	6.22	8.21	3.34	0.53	-2.11	10.28
MAY	4.258	12.6	6.55	4.28	2.27	6.53	9.05	3.68	0.59	-2.79	7.48
JUN	4.258	8.7	4.50	2.46	2.04	6.30	11.97	4.87	0.78	-3.97	3.51
JUL	4.258	6.5	3.36	1.52	1.83	6.09	13.59	5.53	0.88	-4.72	-1.21
AUG	4.258	6.9	3.59	1.70	1.88	6.14	13.75	5.59	0.89	-1.24	-2.46
SEP	4.258	9.2	4.76	2.68	2.07	6.33	10.40	4.23	0.67	-1.59	-4.04
OCT	4.258	12.3	6.38	4.13	2.25	6.51	7.89	3.21	0.51	0.66	-3.38
NOV	4.258	8.2	4.27	2.27	2.00	6.26	5.56	2.26	0.36	3.90	3.90
DEC	4.258	6.6	3.42	1.57	1.85	6.10	4.13	1.68	0.27	3.99	7.89
TOTAL	**51.09**	**100.00**	**51.88**	**28.05**	**23.83**	**74.92**	**100.00**	**40.68**	**6.48**		

Hydro Group:	D	Effluent Quantity:	47,700 gpd
Curve Number (N):	80	Pond Size:	2 acres
S = 1000/N - 10:	2.500	Disposal area:	12.55 acres
C_E:	2	Ratio:	0.1594
C_1:	7		
irrigation efficiency:	0.85	Max Year Annual Rainfall:	51.88 in
		Min Year Annual Evaporation:	40.68 in
Required Capacity:	15.43 acre-ft		
	5.03 MG		
	5028440 gal		
app rate:	0.087 gal/sqft/day		
	4.257439249 ac-ft/ac/yr		

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Canady Tract WWTF - Water Balance

Phase 1 (95,400 GPD)

1	2	3	4	5	6	7	8		9	10	11
	Avg Rain	Avg Runoff	Avg Infiltrated Rainfall	Evapo transpiration	Required Leaching	Total Water Needs	Effluent Req'd in Root Zone	Avg Evaporation	Evap from Reservoir	Effluent Applied to Land	Consumption from Reservoir
JAN	2.46	0.86	1.60	1.30	0.00	1.30	0.00	2.20	0.18	0.00	0.18
FEB	1.95	0.53	1.42	2.30	0.35	2.65	1.24	2.31	0.18	1.45	1.64
MAR	2.88	1.16	1.72	5.70	1.59	7.29	5.57	3.38	0.27	6.56	6.83
APR	2.63	0.98	1.65	5.41	1.50	6.91	5.26	4.19	0.33	6.19	6.53
MAY	4.31	2.30	2.01	6.12	1.64	7.76	5.75	4.62	0.37	6.77	7.14
JUN	2.96	1.22	1.74	6.48	1.90	8.38	6.64	6.11	0.49	7.81	8.29
JUL	2.21	0.69	1.52	6.66	2.06	8.72	7.20	6.94	0.55	8.47	9.03
AUG	2.36	0.79	1.57	4.59	1.21	5.80	4.23	7.02	0.56	4.98	5.54
SEP	3.13	1.35	1.78	5.13	1.34	6.47	4.69	5.31	0.42	5.51	5.94
OCT	4.20	2.21	1.99	4.05	0.82	4.87	2.88	4.03	0.32	3.39	3.71
NOV	2.81	1.11	1.70	1.60	0.00	1.60	0.00	2.84	0.23	0.00	0.23
DEC	2.25	0.72	1.53	1.30	0.00	1.30	0.00	2.11	0.17	0.00	0.17
TOTAL	**34.15**	**13.93**	**20.22**	**50.64**	**12.42**	**63.06**	**43.47**	**51.06**	**4.07**	**51.14**	**55.21**

12	13	14a	14b	15	16	17	18a		18b	19	20
	Effluent Applied to Land (in)	Mean Rainfall Distribution (%)	Rainfall (Max) (in)	Runoff (Max) (in)	Infiltrated Rainfall (in)	Total Avail H_2O (in)	% Distribution of Mean	Min Annual Net Evap Proportionally Distributed (in)	Net Evaporation (min) (in)	Storage (in-ac/ac)	Accumulated Storage (in-ac/ac)
JAN	4.258	7.2	3.74	1.83	1.91	6.17	4.31	1.75	0.14	4.12	12.32
FEB	4.258	5.7	2.96	1.22	1.74	6.00	4.52	1.84	0.15	3.04	15.36
MAR	4.258	8.4	4.38	2.36	2.02	6.28	6.62	2.69	0.21	-2.16	13.20
APR	4.258	7.7	4.00	2.04	1.96	6.22	8.21	3.34	0.27	-1.84	11.36
MAY	4.258	12.6	6.55	4.28	2.27	6.53	9.05	3.68	0.29	-2.50	8.86
JUN	4.258	8.7	4.50	2.46	2.04	6.30	11.97	4.87	0.39	-3.59	5.27
JUL	4.258	6.5	3.36	1.52	1.83	6.09	13.59	5.53	0.44	-4.28	0.99
AUG	4.258	6.9	3.59	1.70	1.88	6.14	13.75	5.59	0.45	-0.80	0.19
SEP	4.258	9.2	4.76	2.68	2.07	6.33	10.40	4.23	0.34	-1.25	-1.06
OCT	4.258	12.3	6.38	4.13	2.25	6.51	7.89	3.21	0.26	0.92	-0.14
NOV	4.258	8.2	4.27	2.27	2.00	6.26	5.56	2.26	0.18	4.08	4.08
DEC	4.258	6.6	3.42	1.57	1.85	6.10	4.13	1.68	0.13	4.12	8.20
TOTAL	**51.09**	**100.00**	**51.88**	**28.05**	**23.83**	**74.92**	**100.00**	**40.68**	**3.24**		

Hydro Group:	D	Effluent Quantity:	95,400 gpd
Curve Number (N):	80	Pond Size:	2 acres
S = 1000/N - 10:	2.500	Disposal area:	25.1 acres
C_E:	2	Ratio:	0.0797
C_1:	7		
irrigation efficiency:	0.85	Max Year Annual Rainfall:	51.88 in
		Min Year Annual Evaporation:	40.68 in
Required Capacity:	32.12 acre-ft		
	10.47 MG		
	10466169 gal		
app rate:	0.087 gal/sqft/day		
	4.257439249 ac-ft/ac/yr		

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Canady Tract WWTF – Domestic Worksheet 3.1
Surface Land Disposal of Effluent Engineering Report

Water balance and storage volume calculations have been completed for final phase. The effluent storage pond required for full buildout is 2 acres. At full buildout of 95,400 gpd, 25.1 acres area disposal is required. The following is a summary providing references/sources for the data used to develop the tables. Also enclosed are the irrigation efficiency assumptions, summary of the application rates per month per acre, nitrogen loading, and water balance. The clarifications are below, water balance with storage volume calculations is presented separately as their own attachments titled “Water Balance”.

Water Balance Table Column	**Assumptions and References/Sources**
Column 2: Average Rainfall	Data obtained from Texas Water Development Board Quadrangle 710; https://waterdatafortexas.org/lake-evaporation-rainfall; years 1998 – 2023.
Column 3: Average Runoff	Curve number (CN) was obtained from SCS Technical Release No. 55. A curve number of 80 was used, considering lawns and parks in fair condition (grass cover between 50% to 75%) in soils that fall into hydro groups D.
Column 4: Average Infiltrated Rainfall	Obtained by subtracting average runoff from average rainfall.
Column 5: Evapotranspiration	Data obtained from Texas Board of Water Engineers, Bulletin 6019 (Consumptive Use of Water by Major Crops in Texas). Average monthly and annual consumptive use, Table 5 – Area 7C for Warm Season (May – Oct), Kc of 0.9 used for Bermuda Grass. Table 8 – Area 7C for Cool Season (Nov-March), used for small grain, Ryegrass. Assuming 50% Warm and 50% Cool Season, an average evapotranspiration value from Table 5 and Table 8 used for April.
Column 6: Required Leaching	Ce (electrical conductivity) was based on a close by groundwater well, a value of 2 mmhos/cm was used. Cl (allowable conductivity of soil) = 7 based on 30 TAC 309.20, Table 3, Rye grass and Bermuda grass.
Column 7: Total Water Needs	Obtained by adding evapotranspiration and required leaching.
Column 8: Effluent Needed in Root Zone	Obtained by subtracting average infiltrated rainfall from total water needs (assume zero if value is less than zero).
Column 9: Net Evaporation from Reservoir Surface	Data obtained from Texas Water Development Board Quadrangle 710; https://waterdatafortexas.org/lake-evaporation-rainfall; years 1998 – 2023.
Column 10: Effluent Applied to Land	Obtained by dividing the effluent needed in root zone by the irrigation efficiency, K, assumed to be 0.85 or 85%
Column 11: Consumption from Reservoir	Obtained by adding net evaporation and effluent applied to land.
Column 13: Effluent Received for Application or Storage	Based on full buildout flows of 95,400 gpd and 25.1 acres of TLAP disposal area.
Column 14: Rainfall (Maximum)	Data on maximum rainfall year in the past 25 years was obtained from Texas Water Development Board Quadrangle 710

	Precipitation (inches) from 1998 to 2023, 51.88 inches in 2004. The total was distributed proportionally to monthly average rainfall.
Column 15: Runoff (Maximum)	Calculated as shown above for Column 3 using maximum rainfall numbers from Column 14.
Column 16: Infiltrated Rainfall	Obtained by subtracting maximum runoff (Column 15) from maximum rainfall (Column 14).
Column 17: Available Water	Obtained by adding effluent received (Column 13) and infiltrated rainfall (Column 16).
Column 18b: Lowest Annual Net Evaporation	Data on minimum net evaporation year in the past 25 years was obtained from Texas Water Development Board Quadrangle 710, Monthly Evaporation (inches) from 1998 to 2023: 40.68 inches in 2021. The total was distributed proportionally to monthly average evaporation.
Column 19: Storage	Obtained by subtracting lowest annual net evaporation (Column 18b) from effluent received (Column 13), then subtracting total water needs (Column 7) – infiltrated rainfall (Column 16) divided by k (irrigation efficiency of 0.85). If total water needs (Column 7) – infiltrated rainfall (Column 16) divided by k (irrigation efficiency of 0.85) is < 0, then storage = Column 13 – Column 18b).
Column 20: Accumulated Storage	Summation beginning with the first consecutive month of possible values from Column 19.

Irrigation Efficiency

Based on Howell 2003, average irrigation efficiency for spray irrigation in a field environment ranges from 85 to 90 percent. Therefore, an efficiency of 85 percent was assumed for water balance and storage calculations.

Nitrogen Balance

It is anticipated that total nitrogen in the effluent will be ≤30 mg/L. Loading will be as follows:

30 mg/L x 95,400 g/day x 3.78 L/g / 453,592 lbs/mg x 365 day/year =

8,705.40 lbs/year spread across 25.1 acres = 347 lbs/acre/year

Bermuda grass is able to utilize large amounts of nitrogen, with excellent yield response at around 400 pounds per acre per year. (See: Nutrient Demand High In Bermudagrass by Darst, et al. 1996).

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

Canady Tract WWTF - TLAP Map

LIBERTY HILL QUADRANGLE
TEXAS
7.5-MINUTE TOPO

Well ID No. 183538
Well ID No. 665145
Well ID No. 521773
Well ID No. 646739
Well ID No.104692
Well ID No. 673199
Well ID No. 5817601
Well ID No. 376899
Well ID No. 659195
Well ID No. 5817604
Well ID No. 282006
1 mile radius from Disposal Area
0.5 mile radius from Disposal Area
Applicant Property Boundary
Effluent Storage Pond
Well ID No. 305817
WWTF
Disposal Areas
Well ID No. 111861
Well ID No. 6808
Well ID No. 645190
Well ID No. 10641
Well ID No. 10643
Well ID No. 5817902
Well ID No. 82798
Well ID No. 82799
Well ID No. 495542
Well ID No. 5817810
Well ID No. 244340
Well ID No. 576297
Well ID No. 277836
Well ID No. 576288
Well ID No. 298691
Well ID No. 560816
Well ID No. 73130

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

Data is provided by The National Map (TNM), is the best available at the time of map generation, and includes data content from supporting themes of Elevation, Hydrography, Geographic Names, Boundaries, Transportation, Structures, Land Cover, and Orthoimagery. Refer to associated Federal Geographic Data Committee (FGDC) Metadata for additional source data information.

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands. Temporal changes may have occurred since these data were collected and some data may no longer represent actual surface conditions.

Learn About The National Map: https://nationalmap.gov

UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
NV PV
NU PU
Grid Zone Designation 14R

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

USER DEFINED CONTENT

QUADRANGLE LOCATION

Joppa	Mahomet	Florence
Bertram	Liberty Hill	Leander NE
Travis Peak	Nameless	Leander

ADJOINING QUADRANGLES

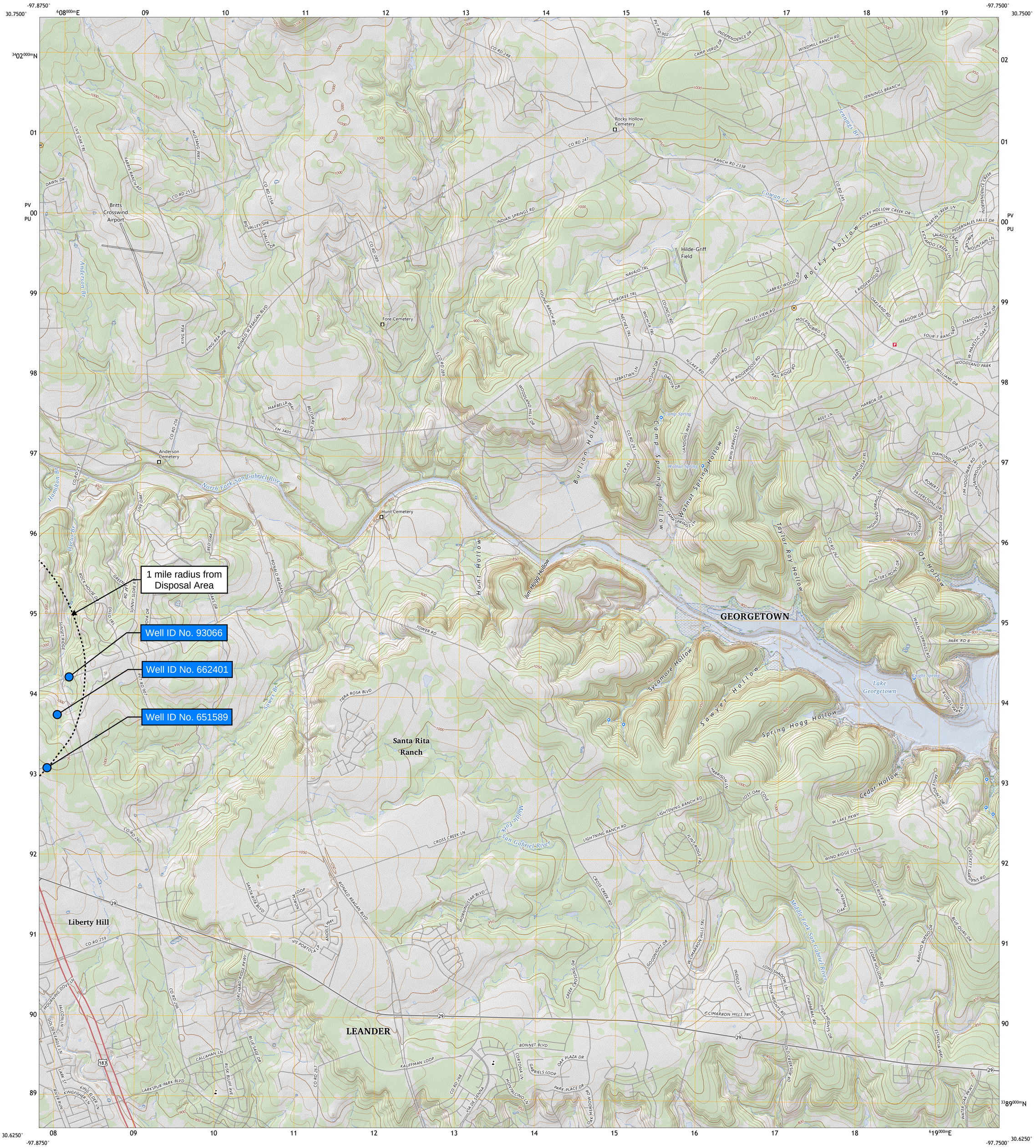
ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

LIBERTY HILL, TX
2024

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

Canady Tract WWTF - TLAP Map

LEANDER NE QUADRANGLE
TEXAS - WILLIAMSON COUNTY
7.5-MINUTE TOPO



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

Data is provided by The National Map (TNM), is the best available at the time of map generation, and includes data content from supporting themes of Elevation, Hydrography, Geographic Names, Boundaries, Transportation, Structures, Land Cover, and Orthoimagery. Refer to associated Federal Geographic Data Committee (FGDC) Metadata for additional source data information.

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Learn About The National Map: https://nationalmap.gov

MN
GN
3°31'
63 MILS
0°36'
11 MILS

UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
PV
00
PU
Grid Zone Designation 14R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

USER DEFINED CONTENT

TEXAS

QUADRANGLE LOCATION

Mahomet	Florence	Cobbs Cavern
Liberty Hill	Leander NE	Georgetown
Nameless	Leander	Round Rock

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

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

LEANDER NE, TX
2024

J&A WASTEWATER

Canady Tract WWTF - USGS Well ID Attachment						
Map Reference Number	Well ID #	Well Use	Producing Y/N	Open, cased, capped, or Plugged?	Proposed Best Management Practice	Well Log Included? Y/N
1	79487	Domestic	Y	Cased	Buffer requirement will be met	Y
2	627196	Domestic	Y	Cased	Buffer requirement will be met	Y
3	577912	Domestic	Y	Cased	Buffer requirement will be met	Y
4	547299	Domestic	Y	Cased	Buffer requirement will be met	Y
5	5817605	Irrigation	Y	Cased	Buffer requirement will be met	Y
6	302042	Domestic	Y	Cased	Buffer requirement will be met	Y
7	265187	Domestic	Y	Cased	Buffer requirement will be met	Y
8	29448	Domestic	Y	Cased	Buffer requirement will be met	Y
9	658431	Domestic	Y	Cased	Buffer requirement will be met	Y
10	483014	Domestic	Y	Cased	Buffer requirement will be met	Y
11	5817606	Public Supply	Y	Cased	Buffer requirement will be met	Y
12	184293	Irrigation	Y	Cased	Buffer requirement will be met	Y
13	30216	Withdrawal of Water	N	Plugged	Buffer requirement will be met	Y

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STATE OF TEXAS WELL REPORT for Tracking #79487

Owner:	**Shawn Preece**	Owner Well #:	**No Data**
Address:	**PO Box 1238** **Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**CR 1869** **Liberty Hill, TX 78642**	Latitude:	**30° 41' 13" N**
		Longitude:	**097° 53' 26" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **12/5/2005** Drilling End Date: **12/6/2005**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9.75	**0**	**20**
6	**20**	**520**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**5**

Seal Method: **mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed**

Water Level: **No Data**

Packers: **Rubber 40'**
Rubber 440'

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 50 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**Good**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Hill Country Water Well**

PO Box 220
Briggs, TX 78608

Driller Name: **Joe E McDearmon** License Number: **2334**

Comments: **Verbal Warning issued late filing 8/13/09**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**16**	**cal**
16	**25**	**gry lime**
25	**35**	**cal**
35	**90**	**gry lime**
90	**95**	**gry shale**
95	**115**	**gry lime**
115	**117**	**gry shale**
117	**180**	**gry lime**
180	**185**	**bro shale**
185	**260**	**bro lime**
260	**365**	**gry lime**
365	**370**	**sand water**
370	**385**	**gry shale**
385	**395**	**gry shale**
395	**445**	**sandstone**
445	**450**	**trinty sand water**
450	**465**	**sand stone**
465	**470**	**trinty sandwater**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
6	**New**	**Plastic**	**0-520 sdr-17**

470	**490**	**sandstone**
490	**500**	**trinty sand water**
500	**520**	**sandstone**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #627196

Owner:	**Alex Thornton**	Owner Well #:	**No Data**
Address:	**748 RR 1869 Liberty Hill, TX 78642**	Grid #:	**58-17-6**
		Latitude:	**30° 41' 07.01" N**
Well Location:	**748 RR 1869 Liberty Hill, TX 78642**	Longitude:	**097° 53' 20.9" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **10/25/2022** Drilling End Date: **10/26/2022**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**20**
6.25	**20**	**520**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**Cement 5 Bags/Sacks**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **100+**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **380 ft.** below land surface on **2022-11-10**

Packers: **Rubber at 40 ft.**
Rubber at 340 ft.
Rubber at 420 ft.
Rubber at 440 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **460**

Well Tests: **Estimated** **Yield: 50+ GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **B & B Water Well Service, Inc**

PO Box 232
Bertram, TX 78605

Driller Name: **Joshua Dickinson** License Number: **54204**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**TOPSOIL**
5	**20**	**CALICHE**
20	**80**	**BLUE/GREY LIMESTONE**
80	**180**	**GREY LIMESTONE**
180	**300**	**TAN/GREY LIMESTONE**
300	**320**	**GREY LIMESTONE**
320	**340**	**DARK GREY LIMESTONE (H20)**
340	**360**	**GREY LIMESTONE W/SHALE**
360	**380**	**TAN/DARK GREY LIMESTONE**
380	**420**	**GREY LIMESTONE W/SHALE**
420	**460**	**SANDSTONE/ BLUE SANDS (H20)**
460	**480**	**SAND**
480	**520**	**LIGHT GREY LIMESTONE /GREEN**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**0**	**460**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**SDR17**	**460**	**520**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #577912

Owner:	**Zeb Miller Homes**	Owner Well #:	**No Data**
Address:	**1354 RM 1869 Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**1354 RM 1869 Liberty Hill, TX 78642**	Latitude:	**30° 40' 53.77" N**
		Longitude:	**097° 53' 53.07" W**
Well County:	**Williamson**	Elevation:	**1032 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **4/23/2021** Drilling End Date: **4/24/2021**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
11.75	**0**	**20**
6.75	**20**	**540**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 6 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data** on **2021-04-24**

Packers: **Rubber at 40 ft.**
Rubber at 480 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **500**

Well Tests: **Jetted** **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HILL COUNTRY WATER WELL**

POBOX 220
BRIGGS, TX 78608

Driller Name: **Joe McDearmon** License Number: **2334**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil**
1	**14**	**Caliche**
14	**385**	**Grey Lime**
385	**400**	**Dry Sands**
400	**420**	**Grey Lime**
420	**450**	**Tan**
450	**460**	**Dry Sands**
460	**465**	**Oil Spots**
465	**485**	**Sandstone**
485	**525**	**Trinity Sands**
525	**535**	**Sandstone**
535	**540**	**Grey Lime**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**0**	**480**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**480**	**500**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**500**	**520**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**520**	**540**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #547299

Owner:	**TERRY JOHNSON**	Owner Well #:	**No Data**
Address:	**101 LONGHORN DR. BERTRAM, TX 78605**	Grid #:	**58-17-6**
Well Location:	**1001 RR 1869 LIBERTY HILL, TX 78642**	Latitude:	**30° 40' 53" N**
		Longitude:	**097° 53' 36" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **4/17/2020** Drilling End Date: **4/18/2020**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**19**
6.5	**19**	**530**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**Cement 7 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Variance Number: **NA**

Distance to Property Line (ft.): **NA**

Distance to Septic Field or other concentrated contamination (ft.): **200**

Distance to Septic Tank (ft.): **NA**

Method of Verification: **TAPE MEASURE**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **393 ft.** below land surface on **2020-04-18**

Packers: **SHALE TRAP at 20 ft.**
SHALE TRAP at 360 ft.
SHALE TRAP at 470 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **500**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **TOM ARNOLD DRILLING**

2750 SOUTH A. W. GRIMES BLVD
ROUND ROCK, TX 78664

Driller Name: **TOM ARNOLD** License Number: **2096**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**TOPSOIL & LOOSE ROCK**
1	**21**	**YELLOW LINMESTONE**
21	**31**	**BLUE LIMESTONE**
31	**136**	**GRAY LIMESTONE**
136	**148**	**BROWN LIMESTONE**
148	**210**	**GRAY LIMESTONE**
210	**219**	**BLUE LIMESTONE & SHALE**
219	**313**	**GRAY LIMESTONE**
313	**319**	**BLUE LIMESTONE & SHALE**
319	**387**	**GRAY LIMESTONE**
387	**391**	**BLUE LIMESTONE & SHALE**
391	**415**	**GRAY LIMESTONE**
415	**420**	**GRAY SAND**
420	**470**	**GRAY SANDSTONE & SAND STRIPS**
470	**480**	**GRAY SAND**
480	**488**	**WHITE SANDSTONE**
488	**501**	**GRAY SAND**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**		**0**	**530**
	Perforated or Slotted		**0.032**	**470**	**530**

501	**514**	**GRAY SANDSTONE & SAND**
514	**530**	**GRAY LIMESTONE**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-605

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5817605
County	Williamson
River Basin	Brazos
Groundwater Management Area	8
Regional Water Planning Area	G - Brazos G
Groundwater Conservation District	GCD Does Not Exist
Latitude (decimal degrees)	30.671111
Latitude (degrees minutes seconds)	30° 40' 16" N
Longitude (decimal degrees)	-97.903612
Longitude (degrees minutes seconds)	097° 54' 13" W
Coordinate Source	+/- 5 Seconds
Aquifer Code	218TRNT - Trinity Group
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1065
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	555
Well Depth Source	Geophysical Log
Drilling Start Date	
Drilling End Date	9/0/1978
Drilling Method	Air Rotary
Borehole Completion	Open Hole

Well Type	Withdrawal of Water
Well Use	Irrigation
Water Level Observation	None
Water Quality Available	Yes
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Garry Goerdel
Driller	Harrison Drlg.
Other Data Available	Caliper; Electric Log; Gamma Ray; Neutron
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	11/2/1994
Last Update Date	3/4/2020

Remarks	

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
6	Blank	Plastic (PVC)			0	31
	Open Hole				31	423

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

Sample Date: 2/19/1979 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Trinity Group

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		312	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		380.75	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		3800	ug/L	
00910	CALCIUM (MG/L)		94	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		116	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		3.8	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		538	mg/L as CACO3	
01045	IRON, TOTAL (UG/L AS FE)		260	ug/L	
00920	MAGNESIUM (MG/L)		74	mg/L	
01055	MANGANESE, TOTAL (UG/L AS MN)	<	20	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		2.2	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.7	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		26	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		12	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.55		
00932	SODIUM, CALCULATED, PERCENT		35	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		136	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1968	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		394	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		1045	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 58-17-605

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

STATE OF TEXAS WELL REPORT for Tracking #302042

Owner:	**Alex Dossey**	Owner Well #:	**No Data**
Address:	**500 Long Run Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**500 Long Run Liberty Hill, TX 78642**	Latitude:	**30° 40' 24" N**
		Longitude:	**097° 53' 26" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **9/18/2012** Drilling End Date: **9/18/2012**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**20**
6.5	**20**	**565**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**4 of Portland**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Landowner**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **Burlap/Neoprene 440', 430', 100', 20'**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 35 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
440-537	**M.Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Apex Drilling, Inc.**

P.O. Box 867
Marble Falls, TX 78654

Driller Name: **Michael G. Becker** License Number: **54516**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**11**	**Tan Limestone**
11	**440**	**Gran/Tan Limestone **Oil Stain @ 408**
440	**456**	**Gray/Tan Sandstone **H2O**
456	**485**	**Green Sandstone**
485	**522**	**Sand & Tan Limestone **H2O**
522	**524**	**Green Clay**
524	**537**	**Tan Limestone **H2O**
537	**565**	**Gray/Tan Limestone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4.5'' (5'' OD) New PVC +2' to 485' SDR17
4.5'' (5'' OD) New Slotted PVC 485' to 545' .035
4.5'' (5'' OD) New PVC 545' to 565' SDR17

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STATE OF TEXAS WELL REPORT for Tracking #265187

Owner:	**Frank Acosta**	Owner Well #:	**No Data**
Address:	**P.O. Box 369 Liberty Hill, TX 78642**	Grid #:	**58-17-6**
		Latitude:	**30° 40' 19" N**
Well Location:	**381 Lone Run Liberty Hill, TX 78642**	Longitude:	**097° 53' 11" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **8/3/2011** Drilling End Date: **8/3/2011**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**30**
6	**30**	**565**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**30**	**6**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed**

Water Level: **No Data**

Packers: **3 Packers, PVC & Burlap, 30,460,480**

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 20-30 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
50	**Hensell**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Western Water Wells**

500 Southland Dr.
Burnet, TX 78611

Driller Name: **Frank Glass** License Number: **1313**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil**
1	**16**	**Caliche & Lime**
16	**65**	**Blue Lime**
65	**170**	**Gray Lime**
170	**200**	**Brown Lime**
200	**440**	**Gray Lime & stripes Shale & Clay**
440	**480**	**Hensell Sand & Clay**
480	**560**	**Hensell Sand**
560	**565**	**White Lime**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
5" OD, New, Plastic, +2'-565', 17, 60' of Screen			

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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #29778

Owner:	**Larry Dayhoff**	Owner Well #:	**No Data**
Address:	**1497 North Hwy 183 Leander, TX 78641**	Grid #:	**58-17-6**
Well Location:	**1497 North Hwy 183 Leander, TX 78641**	Latitude:	**30° 40' 16" N**
		Longitude:	**097° 53' 12" W**
Well County:	**Williamson**	Elevation:	**887 ft. above sea level**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **11/15/2003** Drilling End Date: **11/19/2003**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
7.875	**0**	**20**
7	**20**	**360**
6.75	**360**	**600**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**30**	**9**

Seal Method: **Gravity**

Sealed By: **ADC**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **344 ft.** below land surface on **2003-11-21** Measurement Method: **Unknown**

Packers: **Neoprene/Burlap 30, 120 & 440**

Type of Pump: **Submersible** Pump Depth (ft.): **500**

Well Tests: **Estimated** **Yield: 30 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
440-600	**trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Associated Drilling Company**

P.O. Box 1060
Manchaca, TX 78652

Driller Name: **Byron Benoit** License Number: **1955**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**topsoil**
1	**20**	**caliche-tan sandstone**
20	**52**	**broken gray lime**
52	**58**	**Void-Lost returns**
58	**200**	**Lime**
200	**260**	**Broken lime**
260	**360**	**lime with shale**
360	**420**	**sandstone**
420	**480**	**broken sandstone**
480	**500**	**sandstone**
500	**560**	**broken sandstone**
560	**600**	**clay with shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4.5	**New**	**Plastic**	**-2 to 600 SDR 17**
perf. from 440-600			

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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #658431

Owner:	**Maria Magallon**	Owner Well #:	**No Data**
Address:	**201 Long Run Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**201 Long Run Liberty Hill, TX 78642**	Latitude:	**30° 40' 18.73" N**
		Longitude:	**097° 52' 57.68" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **1/10/2024** Drilling End Date: **1/10/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.75	**0**	**20**
6.25	**20**	**610**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
-1	**30**	**4 cement, 1 Benseal Bags/Sacks**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **+75**

Distance to Septic Field or other concentrated contamination (ft.): **+100**

Distance to Septic Tank (ft.): **+50**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **485 ft.** below land surface on **2024-01-10** Measurement Method: **Sonic/Radar**

Packers: **Burlap & PVC 490', 470'**
Burlap 30'

Type of Pump: **Submersible**

Well Tests: **Estimated** **Yield: 10-13 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
485 - 610	**Hensel**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Associated Drilling Inc**

PO BOX 673
Dripping Springs, TX 78620

Driller Name: **James Benoit** License Number: **4064**

Comments: **Drilled for A&W Water Well Service.**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**10**	**white chalk**
10	**410**	**blue lime**
410	**450**	**gray lime & clay**
450	**490**	**tan lime**
490	**515**	**tan white limestone**
515	**560**	**white limestone some sand**
560	**590**	**tan limestone**
590	**610**	**gray limestone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**-3**	**530**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.020**	**530**	**590**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**590**	**610**

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STATE OF TEXAS WELL REPORT for Tracking #483014

Owner:	**Bailey and Colt Hamilton**	Owner Well #:	**No Data**
Address:	**11797 HWY 183 Florence, TX 76527**	Grid #:	**58-17-6**
Well Location:	**11797 HWY 183 Florence, TX 76527**	Latitude:	**30° 40' 08.4" N**
		Longitude:	**097° 53' 58.74" W**
Well County:	**Williamson**	Elevation:	**1136 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **5/9/2018** Drilling End Date: **5/9/2018**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**50**
6.25	**50**	**610**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
-1	**50**	**7 Cement 2 Benseal Bags/Sacks**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **+100**

Distance to Septic Field or other concentrated contamination (ft.): **Unknown**

Distance to Septic Tank (ft.): **Unknown**

Method of Verification: **Well drilled first by owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **Burlap at 50 ft.**
Burlap & Plastic at 490 ft.
Burlap & Plastic at 510 ft.

Type of Pump: **Submersible**

Well Tests: **Estimated** **Yield: 15-20 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
515 - 570	**Mid Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Associated Drilling Co.**

PO Box 673
Dripping Springs, TX 78620

Driller Name: **James Benoit**

License Number: **4064**

Apprentice Number: **4064**

Comments: **Drilled for J&J Well Service**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**Topsoil**
2	**15**	**Tan Lime**
15	**135**	**Blue Lime**
135	**145**	**Grey Sand**
145	**485**	**Blue Lime**
485	**490**	**Grey Lime and Clay**
490	**515**	**Tan Limestone**
515	**545**	**Tan White Limestone, H2O**
545	**570**	**Tan and Grey Limestone**
570	**595**	**Blue White limestone**
595	**610**	**Grey Limestone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**-3**	**530**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.020**	**530**	**590**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**590**	**610**

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Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-606

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5817606
County	Williamson
River Basin	Brazos
Groundwater Management Area	8
Regional Water Planning Area	G - Brazos G
Groundwater Conservation District	GCD Does Not Exist
Latitude (decimal degrees)	30.669722
Latitude (degrees minutes seconds)	30° 40' 11" N
Longitude (decimal degrees)	-97.893889
Longitude (degrees minutes seconds)	097° 53' 38" W
Coordinate Source	+/- 1 Second
Aquifer Code	217HSTN - Hosston Formation
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1035
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	604
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	5/27/1973
Drilling Method	Cable Tool
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	Westwood Boys Ranch
Driller	Bonnet Drilling Co.
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	8/1/1988
Last Update Date	3/4/2020

Remarks	Owner's #2 well. Measured yield 25 GPM with 20 feet drawdown after pumping 2 hours in 1973. Pump set at 380 feet.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
6	Blank	Plastic (PVC)			0	260
6	Screen	Plastic (PVC)			260	300
6	Blank	Plastic (PVC)			300	523
6	Screen	Plastic (PVC)			523	563
6	Blank	Plastic (PVC)			563	585
7	Open Hole				585	604

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

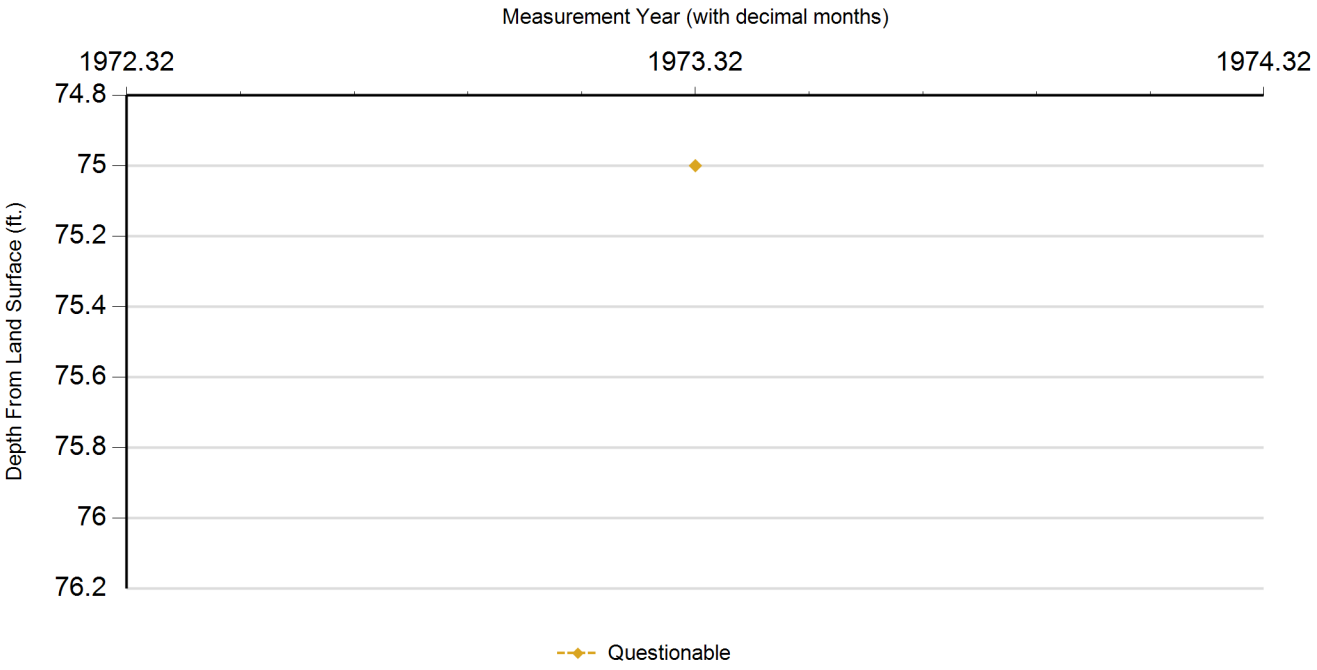
Borehole - No Data

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
Q	4/27/1973		75		960	1	Registered Water Well Driller	Unknown	17	

Code Descriptions

Status Code	Status Description
Q	Questionable

Remark ID	Remark Description
17	Measurement before well completion

Water Quality Analysis - No Data Available

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

STATE OF TEXAS WELL REPORT for Tracking #184293

Owner:	**Buffington Capital Holdings**	Owner Well #:	**StonewallRanch3**
Address:	**3600 Capital of Tx Hwy, B170 Austin, TX 78746**	Grid #:	**58-17-6**
Well Location:	**Stonewall Ranch-Phase 3 Liberty Hill, TX 78642**	Latitude:	**30° 40' 02" N**
		Longitude:	**097° 53' 34" W**
Well County:	**Williamson**	Elevation:	**1001 ft. above sea level**

Type of Work: **New Well** Proposed Use: **Irrigation**

Drilling Start Date: **5/13/2009** Drilling End Date: **5/27/2009**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8**	**0**	**600**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**100**	**16PORTLD2HP6BEN**
350	**360**	**1BENSEAL**

Seal Method: **Pressure Grout**

Sealed By: **Driller**

Distance to Property Line (ft.): **45'**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Measured**

Surface Completion: **Surface Slab Installed**

Water Level: **422 ft.** below land surface on **2009-05-22** Measurement Method: **Unknown**

Packers: **6MIL POLY 100'**
6MIL POLY 280'
6MIL POLY/SHALE PACKER 360'

Type of Pump: **Submersible** Pump Depth (ft.): **500**

Well Tests: **Jetted** **Yield: 20+ GPM**

Water Quality:

Strata Depth (ft.)	Water Type
500'-600'	**Good**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Whisenant & Lyle Water Services Inc**

P.O. Box 525
Dripping Springs, TX 78620

Driller Name: **Martin D. Lingle** License Number: **54813**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**1/2**	**topsoil**
1/2	**5**	**brown clay**
5	**8**	**white limestone clay**
8	**15**	**white limestone hard**
15	**180**	**grey limestone**
180	**240**	**white sandstone**
240	**263**	**grey white sandstone**
263	**266**	**grey clay**
266	**307**	**white limestone**
307	**309**	**brown clay**
309	**392**	**grey white limestone**
392	**460**	**grey limestone hard**
460	**500**	**grey white blue shale hard**
500	**590**	**grey white brown limestone fractured**
590	**600**	**grey light clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4.5	**N**	**PVC-SDR17IB**	**+2'-500'**
4.5	**N**	**PVC-17SLOTTED.085**	**500'-600'**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS PLUGGING REPORT for Tracking #30216

Owner:	**Lennar Buffington Stonewall Ra**	Owner Well #:	**No Data**
Address:	**12301 Research Rd, Bldg 4, Suite 450 Austin, TX 78759**	Grid #:	**58-17-6**
Well Location:	**HWY 29 Liberty Hill, TX 78648**	Latitude:	**30° 40' 06" N**
		Longitude:	**097° 53' 23" W**
Well County:	**Williamson**	Elevation:	**No Data**

Well Type: **Withdrawal of Water**

Drilling Information

Company: **No Data** Date Drilled: **No Data**

Driller: **No Data** License Number: **No Data**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**5**		**600**

Plugging Information

Date Plugged: **2/10/2006** Plugger: **David McDearmon**

Plug Method: **Tremmie pipe bentonite from bottom to 2 feet from surface, cement top 2 feet**

Casing Left in Well:

No Data

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**20**	**2 bags cement**
20	**600**	**22 Benseal**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **David McDearmon**

12907 Lowden Rd
Manchaca, TX 78652

Driller Name: **David McDearmon** License Number: **2563**

Comments: **No Data**

STATE OF TEXAS PLUGGING REPORT for Tracking #6808

Owner:	**WILLIAMSON CO. MAINT.**	Owner Well #:	**MW 16**
Address:	**FM 1869W & HWY 29 LIBERTY HILL, TX 78642**	Grid #:	**58-17-6**
Well Location:	**FM 1869W & HWY 29 LIBERTY HILL, TX 78642**	Latitude:	**30° 40' 12" N**
		Longitude:	**097° 54' 28" W**
Well County:	**Williamson**	Elevation:	**No Data**

Well Type: **Monitor**

Drilling Information

Company:	**No Data**	Date Drilled:	**No Data**
Driller:	**No Data**	License Number:	**No Data**

Borehole: **No Data**

Plugging Information

Date Plugged: **4/25/2002** Plugger: **JAMES E. NEAL**

Plug Method: **Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet**

Casing Left in Well:

Dia (in.)	*Top (ft.)*	*Bottom (ft.)*
4	**0**	**0**

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**10**	**4**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **VORTEX DRILLING, INC.**

4412 BLUEMEL RD.
SAN ANTONIO, TX 78240

Driller Name: **JAMES E. NEAL** License Number: **4868**

Comments: **ENTERED BY WLS**

STATE OF TEXAS PLUGGING REPORT for Tracking #82798

Owner:	**The Lookout Group**	Owner Well #:	**No Data**
Address:	**1001 Crystal Falls Pkwy. Leander, TX 78641**	Grid #:	**58-17-6**
Well Location:	**299 Limestone Rd. Liberty Hill, TX 78642**	Latitude:	**30° 40' 02" N**
		Longitude:	**097° 53' 15" W**
Well County:	**Williamson**	Elevation:	**No Data**

Well Type: **Withdrawal of Water**

Drilling Information

Company: **No Data** Date Drilled: **No Data**

Driller: **No Data** License Number: **No Data**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**4.5**		**500**

Plugging Information

Date Plugged: **8/8/2012** Plugger: **Jimmy Arnold**

Plug Method: **Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet**

Casing Left in Well:

Dia (in.)	*Top (ft.)*	*Bottom (ft.)*
4.5	**2**	**500**

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**2**	**1**
0	**500**	**1**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Tom Arnold Drilling**

2750 S AW Grimes Blvd.
Round Rock, TX 78664

Driller Name: **Jimmy Arnold** License Number: **4200**

Comments: **^EAD**

STATE OF TEXAS PLUGGING REPORT for Tracking #82799

Owner:	**The Lookout Group**	Owner Well #:	**No Data**
Address:	**1001 Crystal Falls Pkwy. Leander, TX 78641**	Grid #:	**58-17-6**
Well Location:	**299 Limestone Rd. Liberty Hill, TX 78642**	Latitude:	**30° 40' 02" N**
		Longitude:	**097° 53' 15" W**
Well County:	**Williamson**	Elevation:	**No Data**

Well Type: **Withdrawal of Water**

Drilling Information

Company: **No Data** Date Drilled: **No Data**

Driller: **No Data** License Number: **No Data**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**4.75**		**343**

Plugging Information

Date Plugged: **8/8/2012** Plugger: **Jimmy Arnold**

Plug Method: **Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet**

Casing Left in Well:

Dia (in.)	*Top (ft.)*	*Bottom (ft.)*
7	**2**	**40**

Plug(s) Placed in Well:

Top (ft.)	*Bottom (ft.)*	*Description (number of sacks & material)*
0	**2**	**1**
2	**343**	**49**

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Tom Arnold Drilling**

2750 S AW Grimes Blvd.
Round Rock, TX 78664

Driller Name: **Jimmy Arnold** License Number: **4200**

Comments: **^EAD**

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-601

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5817601
County	Williamson
River Basin	Brazos
Groundwater Management Area	8
Regional Water Planning Area	G - Brazos G
Groundwater Conservation District	GCD Does Not Exist
Latitude (decimal degrees)	30.69
Latitude (degrees minutes seconds)	30° 41' 24" N
Longitude (decimal degrees)	-97.893334
Longitude (degrees minutes seconds)	097° 53' 36" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	218HNSL - Hensell Sand Member of Travis Peak Formation
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1025
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	492
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	5/0/1968
Drilling Method	Cable Tool
Borehole Completion	Open Hole

Well Type	Withdrawal of Water
Well Use	Irrigation
Water Level Observation	Historical
Water Quality Available	Yes
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Rick Hollar
Driller	Hunt Drlg. Co.
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	11/2/1994
Last Update Date	3/4/2020

Remarks	Observation well. Measured yield 50 GPM with 60 feet drawdown after pumping 14 hours. Specific capacity 2.5 GPM/ft. Pump set at 280 feet.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
7	Blank	Steel			0	455
	Open Hole				455	492

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

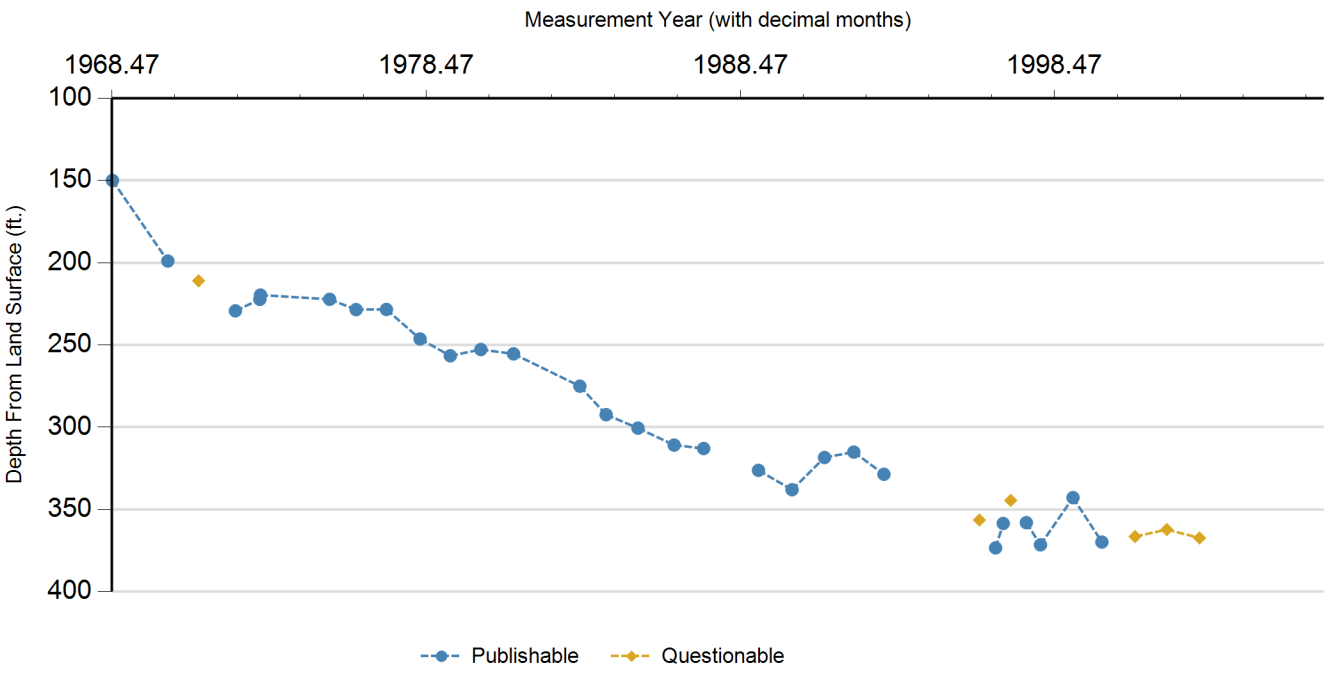
Borehole - No Data

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	5/0/1968		150		875	1	Registered Water Well Driller	Unknown		
P	4/2/1970		198.99	48.99	826.01	1	Texas Water Development Board	Steel Tape		
Q	3/25/1971		211.03	12.04	813.97	1	Texas Water Development Board	Steel Tape	4	
P	5/27/1972		229.27	18.24	795.73	1	Texas Water Development Board	Steel Tape		
P	3/6/1973		222.29	(6.98)	802.71	1	Texas Water Development Board	Steel Tape		
P	3/13/1973		219.67	(2.62)	805.33	1	Texas Water Development Board	Steel Tape		
P	5/27/1975		222.25	2.58	802.75	1	Texas Water Development Board	Steel Tape		
P	3/29/1976		228.52	6.27	796.48	1	Texas Water Development Board	Steel Tape		
P	3/16/1977		228.4	(0.12)	796.6	1	Texas Water Development Board	Steel Tape		
P	4/12/1978		246.35	17.95	778.65	1	Texas Water Development Board	Steel Tape		
P	3/28/1979		256.58	10.23	768.42	1	Texas Water Development Board	Steel Tape		
P	3/18/1980		252.76	(3.82)	772.24	1	Texas Water Development Board	Steel Tape		
P	4/3/1981		255.42	2.66	769.58	1	Texas Water Development Board	Steel Tape		
P	5/13/1983		275.06	19.64	749.94	1	Texas Water Development Board	Steel Tape		
P	3/13/1984		292.37	17.31	732.63	1	Texas Water Development Board	Steel Tape		
P	3/18/1985		300.53	8.16	724.47	1	Texas Water Development Board	Steel Tape		
P	5/13/1986		310.85	10.32	714.15	1	Texas Water Development Board	Steel Tape		
P	4/21/1987		312.93	2.08	712.07	1	Texas Water Development Board	Steel Tape		
X	2/26/1988					1	Texas Water Development Board		20	
P	1/18/1989		326.2		698.8	1	Texas Water Development Board	Steel Tape		
P	2/13/1990		338	11.80	687	1	Texas Water Development Board	Steel Tape		

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 58-17-601

groundwater division

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	2/25/1991		318.4	(19.60)	706.6	1	Texas Water Development Board	Steel Tape		
P	1/30/1992		315.1	(3.30)	709.9	1	Texas Water Development Board	Steel Tape		
P	1/15/1993		328.6	13.50	696.4	1	Texas Water Development Board	Steel Tape		
X	2/24/1994					1	Texas Water Development Board		20	
X	11/9/1994					1	Texas Water Development Board		20	
Q	1/29/1996		356.4		668.6	1	Texas Water Development Board	Steel Tape	10	
P	8/7/1996		373.35	16.95	651.65	1	Texas Water Development Board	Steel Tape		
P	11/6/1996		358.5	(14.85)	666.5	1	Texas Water Development Board	Steel Tape		
Q	1/28/1997		344.5	(14.00)	680.5	1	Texas Water Development Board	Steel Tape	10	
P	7/29/1997		358	13.50	667	1	Texas Water Development Board	Steel Tape		
P	1/8/1998		371.5	13.50	653.5	1	Texas Water Development Board	Steel Tape		
P	1/21/1999		342.8	(28.70)	682.2	1	Texas Water Development Board	Steel Tape		
P	12/27/1999		369.8	27.00	655.2	1	Texas Water Development Board	Steel Tape		
Q	1/12/2001		366.45	(3.35)	658.55	1	Texas Water Development Board	Steel Tape	10	
Q	1/16/2002		362.2	(4.25)	662.8	1	Texas Water Development Board	Steel Tape	10	
Q	1/31/2003		367.3	5.10	657.7	1	Texas Water Development Board	Steel Tape	10	
X	2/26/2004					1	Texas Water Development Board	Steel Tape	25	
X	1/28/2005					1	Texas Water Development Board	Steel Tape	25	
X	1/26/2006					1	Texas Water Development Board	Steel Tape	25	
X	1/8/2007					1	Texas Water Development Board	Steel Tape	25	

Code Descriptions

Status Code	Status Description
P	Publishable
Q	Questionable
X	No Measurement

Remark ID	Remark Description
4	Well pumped recently
10	Inconsistent or spotty tape mark due to wet or leaking casing
20	Unable to insert tape into well
25	Unable to measure due to wet or leaking casing

Water Quality Analysis

Sample Date: 5/27/1972 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hensell Sand Member of Travis Peak Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		302	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		368.54	mg/L	
00910	CALCIUM (MG/L)		67	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		119	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		3.5	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		422	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		62	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		1.5	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.6	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		31	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		12	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		3.07		
00932	SODIUM, CALCULATED, PERCENT		42	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		145	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1705	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		296	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		918	mg/L	

Water Quality Analysis

Sample Date: 3/18/1980 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hensell Sand Member of Travis Peak Formation

Analyzed Lab: Texas Department of Health **Reliability:** From well not sufficiently pumped; not filtered or preserved

Collection Remarks: faucet at pressure tank

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		340	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		414.92	mg/L	
00910	CALCIUM (MG/L)		79	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		100	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		4	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		530	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		81	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		0.6	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.9	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		34	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		9	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.46		
00932	SODIUM, CALCULATED, PERCENT		34	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		130	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1823	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		335	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		976	mg/L	

Water Quality Analysis

Sample Date: 5/13/1986 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hensell Sand Member of Travis Peak Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		332	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		405.15	mg/L	
00910	CALCIUM (MG/L)		71	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		101	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		3.5	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		452	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		67	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		0.58	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		8	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		22	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		10	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.68		
00932	SODIUM, CALCULATED, PERCENT		38	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		131	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1705	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		288	mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)		24	C	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		893	mg/L	

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

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Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-604

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5817604
County	Williamson
River Basin	Brazos
Groundwater Management Area	8
Regional Water Planning Area	G - Brazos G
Groundwater Conservation District	GCD Does Not Exist
Latitude (decimal degrees)	30.692778
Latitude (degrees minutes seconds)	30° 41' 34" N
Longitude (decimal degrees)	-97.8775
Longitude (degrees minutes seconds)	097° 52' 39" W
Coordinate Source	+/- 1 Second
Aquifer Code	100ALVM - Alluvium
Aquifer	Other
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	875
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	30
Well Depth Source	Measured
Drilling Start Date	
Drilling End Date	
Drilling Method	Dug
Borehole Completion	Open End

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	J.E.Ross
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	Texas Water Development Board
Created Date	11/2/1994
Last Update Date	3/4/2020

Remarks	

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
36	Blank	Brick			0	30

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

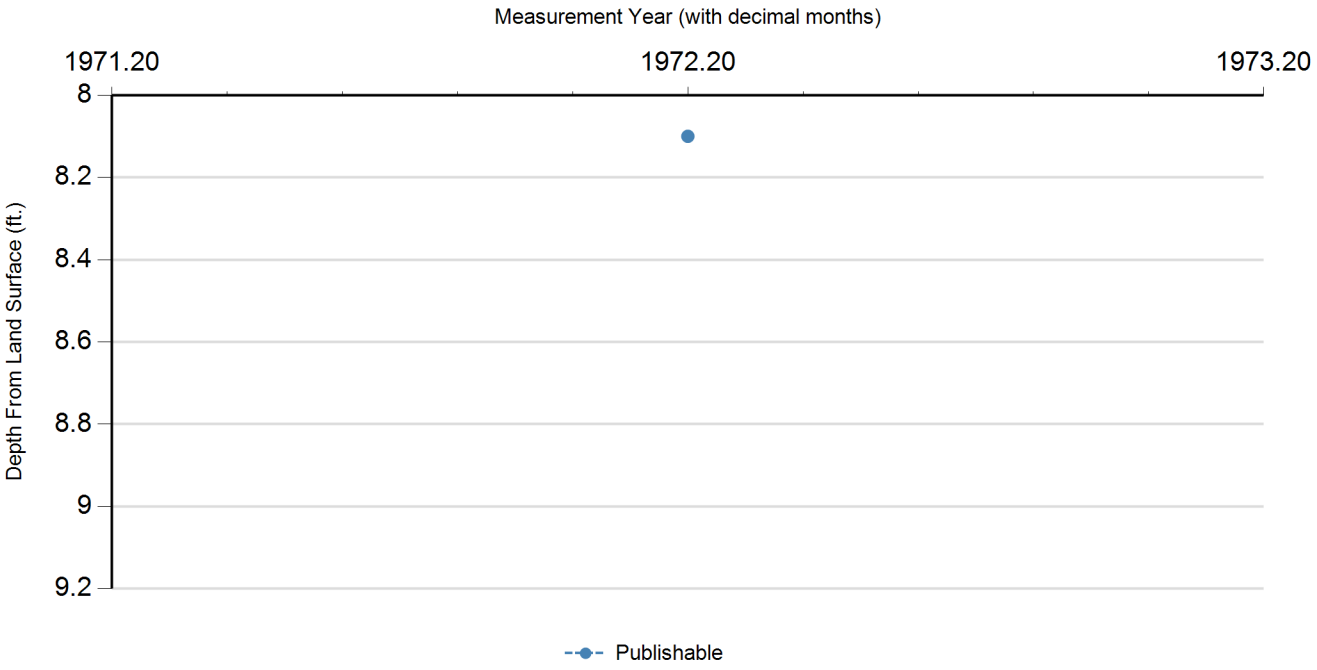
Borehole - No Data

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	3/13/1972		8.1		866.9	1	Texas Water Development Board	Steel Tape		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis

Sample Date: 3/13/1972 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Alluvium

Analyzed Lab: Texas Department of Health **Reliability:** Not indicative of aquifer quality.

Collection Remarks: bailer

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		237	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		289.22	mg/L	
00910	CALCIUM (MG/L)		79	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		16	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.2	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		275	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		19	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		2	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.4	SU	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		9	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		0.21		
00932	SODIUM, CALCULATED, PERCENT		5	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		8	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		580	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		24	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		299	mg/L	

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

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Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-810

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5817810
County	Williamson
River Basin	Brazos
Groundwater Management Area	8
Regional Water Planning Area	G - Brazos G
Groundwater Conservation District	GCD Does Not Exist
Latitude (decimal degrees)	30.6617222
Latitude (degrees minutes seconds)	30° 39' 42.2" N
Longitude (decimal degrees)	-97.8911111
Longitude (degrees minutes seconds)	097° 53' 28" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1013
Land Surface Elevation Method	
Well Depth (feet below land surface)	
Well Depth Source	
Drilling Start Date	
Drilling End Date	
Drilling Method	
Borehole Completion	

Well Type	
Well Use	
Water Level Observation	
Water Quality Available	No
Pump	
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Stonewall Ranch MUD
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	G2460013F
Groundwater Conservation District Well Number	
Owner Well Number	6
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	8/2/2023
Last Update Date	2/8/2024

Remarks	

Casing - No Data

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

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Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-902

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	5817902
County	Williamson
River Basin	Brazos
Groundwater Management Area	8
Regional Water Planning Area	G - Brazos G
Groundwater Conservation District	GCD Does Not Exist
Latitude (decimal degrees)	30.6661111
Latitude (degrees minutes seconds)	30° 39' 58" N
Longitude (decimal degrees)	-97.8927778
Longitude (degrees minutes seconds)	097° 53' 34" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	217HSTN - Hosston Formation
Aquifer	Trinity
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	1045
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	740
Well Depth Source	Measured
Drilling Start Date	
Drilling End Date	10/20/1967
Drilling Method	Mud (Hydraulic) Rotary
Borehole Completion	Unknown

Well Type	Withdrawal of Water
Well Use	Unused
Water Level Observation	TWDB Current Site Visit
Water Quality Available	Yes
Pump	None
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	Unknown
Surface Completion	Unknown
Owner	Westwood Boys Ranch Meridell Achievement
Driller	Central Texas Drilling Company
Other Data Available	Drillers Log; Specific Capacity
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	1/8/2007
Last Update Date	3/4/2020

Remarks	Owner's #2 well. Unused public supply well. Measured yield 14.7 GPM with 20 feet drawdown after pumping 8 hours in 1967. Specific capacity .88 GPM/ft. Pump set at 525 feet.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
7	Blank	Steel			0	580
4	Blank	Steel			580	740

Well Tests - No Data

Lithology

Top Depth (ft.)	Bottom Depth (ft.)	Description
0	18	Caliche
18	42	Blue Shale
42	103	Limestone
103	140	Blue Shale & Clay
140	360	Limestone
360	370	Sand
370	530	Limestone & Shale
530	580	Sand & Limestone
580	610	Blue Clay & Shale
610	660	Blue & Red Clay
660	740	Sandstone

Annular Seal Range - No Data

Borehole

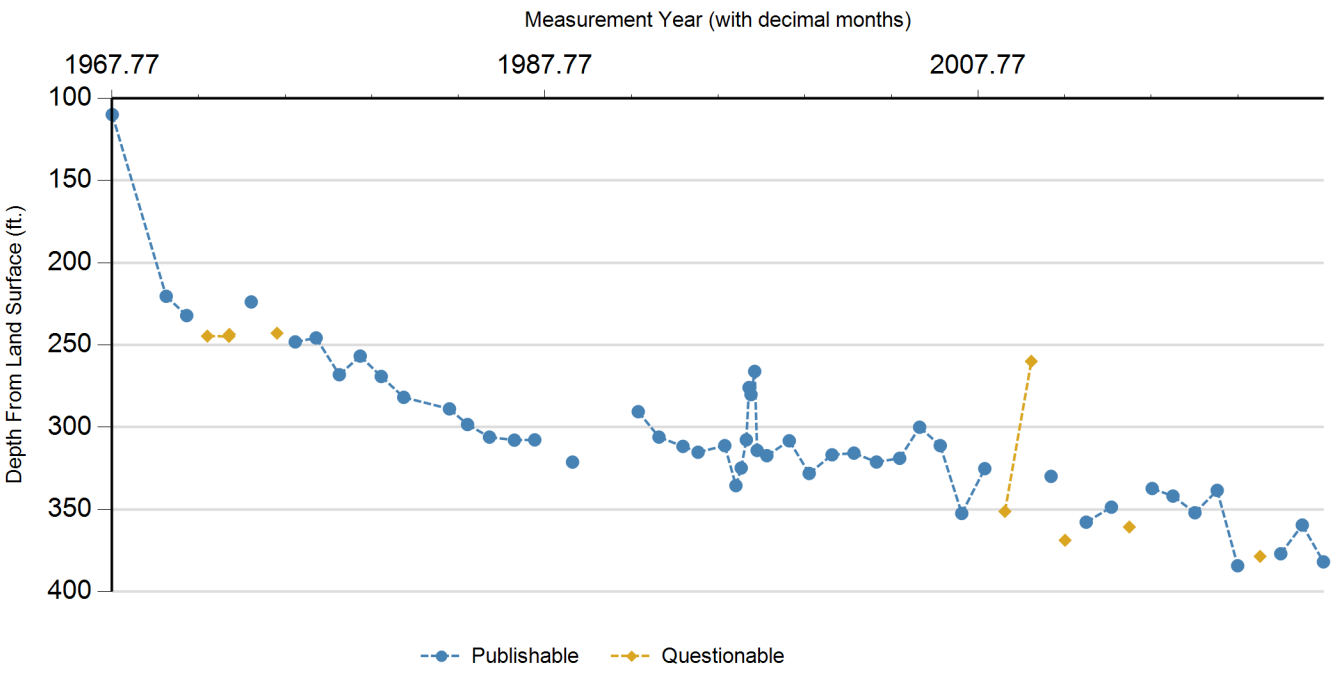
Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
8.75	0	740

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	10/20/1967		110		935	1	Registered Water Well Driller	Unknown		
P	4/14/1970		220.4	110.40	824.6	1	Texas Water Development Board	Electric Line		
P	3/25/1971		232.15	11.75	812.85	1	Texas Water Development Board	Steel Tape		
Q	3/8/1972		244.63	12.48	800.37	1	Texas Water Development Board	Steel Tape	4	
Q	3/6/1973		244.8	0.17	800.2	1	Texas Water Development Board	Steel Tape	4	
Q	3/13/1973		243.6	(1.20)	801.4	1	Texas Water Development Board	Steel Tape	4	
P	3/18/1974		223.85	(19.75)	821.15	1	Texas Water Development Board	Steel Tape		
Q	5/27/1975		242.85	19.00	802.15	1	Texas Water Development Board	Steel Tape	4	
P	3/29/1976		248.15	5.30	796.85	1	Texas Water Development Board	Steel Tape		
P	3/16/1977		245.72	(2.43)	799.28	1	Texas Water Development Board	Steel Tape		
P	4/12/1978		268.1	22.38	776.9	1	Texas Water Development Board	Steel Tape		
P	3/29/1979		256.75	(11.35)	788.25	1	Texas Water Development Board	Steel Tape		
P	3/18/1980		269.15	12.40	775.85	1	Texas Water Development Board	Steel Tape		
P	4/3/1981		281.85	12.70	763.15	1	Texas Water Development Board	Steel Tape		
P	5/13/1983		288.85	7.00	756.15	1	Texas Water Development Board	Steel Tape		
P	3/13/1984		298.37	9.52	746.63	1	Texas Water Development Board	Steel Tape		
P	3/18/1985		306	7.63	739	1	Texas Water Development Board	Steel Tape		
P	5/13/1986		307.85	1.85	737.15	1	Texas Water Development Board	Steel Tape		
P	4/21/1987		307.68	(0.17)	737.32	1	Texas Water Development Board	Steel Tape		
X	2/26/1988					1	Texas Water Development Board	Steel Tape	22	
P	1/18/1989		321.2		723.8	1	Texas Water Development Board	Steel Tape		

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
X	2/13/1990					1	Texas Water Development Board	Steel Tape	22	
X	2/11/1991					1	Texas Water Development Board	Steel Tape	22	
P	1/30/1992		290.55		754.45	1	Texas Water Development Board	Steel Tape		
P	1/15/1993		306	15.45	739	1	Texas Water Development Board	Steel Tape		
P	2/24/1994		311.65	5.65	733.35	1	Texas Water Development Board	Steel Tape		
P	11/9/1994		315.2	3.55	729.8	1	Texas Water Development Board	Steel Tape		
P	1/29/1996		311.2	(4.00)	733.8	1	Texas Water Development Board	Steel Tape		
P	8/7/1996		335.5	24.30	709.5	1	Texas Water Development Board	Steel Tape		
P	11/6/1996		324.8	(10.70)	720.2	1	Texas Water Development Board	Steel Tape		
P	1/27/1997		307.65	(17.15)	737.35	1	Texas Water Development Board	Steel Tape		
P	3/13/1997		275.9	(31.75)	769.1	1	Texas Water Development Board	Electric Line		
P	4/16/1997		280.16	4.26	764.84	1	Texas Water Development Board	Steel Tape		
P	6/18/1997		266.07	(14.09)	778.93	1	Texas Water Development Board	Steel Tape		
P	7/29/1997		314.11	48.04	730.89	1	Texas Water Development Board	Steel Tape		
P	1/8/1998		317.3	3.19	727.7	1	Texas Water Development Board	Steel Tape		
P	1/21/1999		308.25	(9.05)	736.75	1	Texas Water Development Board	Steel Tape		
P	12/27/1999		328.1	19.85	716.9	1	Texas Water Development Board	Steel Tape		
P	1/12/2001		316.75	(11.35)	728.25	1	Texas Water Development Board	Steel Tape		
P	1/16/2002		315.75	(1.00)	729.25	1	Texas Water Development Board	Steel Tape		
P	1/31/2003		321.15	5.40	723.85	1	Texas Water Development Board	Steel Tape		
P	2/27/2004		318.88	(2.27)	726.12	1	Texas Water Development Board	Steel Tape		
P	1/28/2005		300	(18.88)	745	1	Texas Water Development Board	Steel Tape		
P	1/11/2006		311.18	11.18	733.82	1	Texas Water Development Board	Steel Tape		
P	1/8/2007		352.4	41.22	692.6	1	Texas Water Development Board	Steel Tape		
P	1/31/2008		325.19	(27.21)	719.81	1	Texas Water Development Board	Steel Tape		
Q	1/6/2009		351.2	26.01	693.8	1	Texas Water Development Board	Steel Tape	10	
Q	3/26/2010		259.94	(91.26)	785.06	1	Texas Water Development Board	Steel Tape	10	
P	2/24/2011		329.85	69.91	715.15	1	Texas Water Development Board	Steel Tape		
Q	10/20/2011		368.72	38.87	676.28	1	Texas Water Development Board	Steel Tape	10	
P	10/11/2012		357.71	(11.01)	687.29	1	Texas Water Development Board	Steel Tape		
P	12/11/2013		348.58	(9.13)	696.42	1	Texas Water Development Board	Steel Tape		
Q	10/8/2014		360.64	12.06	684.36	1	Texas Water Development Board	Steel Tape	10	
P	10/28/2015	1220	337.26	(23.38)	707.74	1	Texas Water Development Board	Steel Tape		
P	10/13/2016	1000	341.85	4.59	703.15	1	Texas Water Development Board	Electric Line		
P	10/19/2017	1350	352	10.15	693	1	Texas Water Development Board	Electric Line		
P	10/29/2018	1245	338.4	(13.60)	706.6	1	Texas Water Development Board	Electric Line		
P	10/9/2019	1050	384.2	45.80	660.8	1	Texas Water Development Board	Electric Line		
Q	10/23/2020	1000	378.49	(5.71)	666.51	1	Texas Water Development Board	Electric Line	15	Eline hung frequently and right near water level.

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 58-17-902

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	10/5/2021	1029	376.91	(1.58)	668.09	1	Texas Water Development Board	Electric Line		Tape hangs at 200 and water level a lot
P	10/3/2022	1234	359.48	(17.43)	685.52	1	Texas Water Development Board	Electric Line		Eline hangs a lot
P	9/25/2023	1156	381.82	22.34	663.18	1	Texas Water Development Board	Electric Line		

Code Descriptions

Status Code	Status Description
P	Publishable
Q	Questionable
X	No Measurement

Remark ID	Remark Description
4	Well pumped recently
10	Inconsistent or spotty tape mark due to wet or leaking casing
15	Tape may not have fallen free in well during measurement
22	Unable to measure because tape hangs before reaching water level

Water Quality Analysis

Sample Date: 5/27/1972 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hosston Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		347.8	mg/L	
00910	CALCIUM (MG/L)		49	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		111	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.9	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		250	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		31	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.4	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.5	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		14	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0.7		
00955	SILICA, DISSOLVED (MG/L AS SI02)		18	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		3		
00932	SODIUM, CALCULATED, PERCENT		48	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		109	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1064	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		53	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		557	mg/L	

Water Quality Analysis

Sample Date: 10/23/1973 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hosston Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		287	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		350.24	mg/L	
00910	CALCIUM (MG/L)		52	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		114	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		1	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		248	mg/L as CACO3	
01045	IRON, TOTAL (UG/L AS FE)		1300	ug/L	
00920	MAGNESIUM (MG/L)		29	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)	<	0.4	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.8	SU	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0.76		
00955	SILICA, DISSOLVED (MG/L AS SI02)		16	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		3.2		
00932	SODIUM, CALCULATED, PERCENT		50	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		116	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1104	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		64	mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)		23	C	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		564	mg/L	

Water Quality Analysis

Sample Date: 8/1/1974 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hosston Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		307	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		374.65	mg/L	
00910	CALCIUM (MG/L)		74	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		102	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		2.2	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		377	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		47	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		1.5	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.8	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		14	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		13	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.19		
00932	SODIUM, CALCULATED, PERCENT		36	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		98	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1332	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		155	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		690	mg/L	

Water Quality Analysis

Sample Date: 3/18/1980 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Hosston Formation

Analyzed Lab: Texas Department of Health **Reliability:** Collected from pumped well, but not filtered or preserved

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)		293	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		357.56	mg/L	
00910	CALCIUM (MG/L)		85	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		278	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		3.3	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		495	mg/L as CACO3	
00920	MAGNESIUM (MG/L)		69	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		0.5	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.9	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		31	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		9	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		4.41		
00932	SODIUM, CALCULATED, PERCENT		49	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		226	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		2320	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		333	mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)		16	C	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		1210	mg/L	

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

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

STATE OF TEXAS WELL REPORT for Tracking #10641

Owner:	**Tom Hogan**	Owner Well #:	**No Data**
Address:	**111 Quarter Horse Court Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**111 Quarter Horse Court Liberty Hill, TX 78642**	Latitude:	**30° 40' 13" N**
		Longitude:	**097° 54' 18" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **5/16/2002** Drilling End Date: **5/18/2002**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**120**
6.75	**120**	**550**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**30**	**13**

Seal Method: **Gravity**

Sealed By: **ADC**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **359 ft.** below land surface on **2002-05-20** Measurement Method: **Unknown**

Packers: **Neoprene/burlap 420' & 30'**

Type of Pump: **Submersible** Pump Depth (ft.): **500**

Well Tests: **Estimated** **Yield: 45 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
440-550	**trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Associated Drilling Company**

P.O. Box 1060
Manchaca, TX 78652

Driller Name: **Byron Benoit** License Number: **1955**

Apprentice Name: **Byron Benoit** Apprentice Number: **1955**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top soil**
0	**45**	**broken tan lime with caliche**
45	**130**	**gray lime**
130	**160**	**broken tan lime**
160	**280**	**gray lime**
280	**320**	**broken tan lime**
320	**400**	**gray lime with shale**
400	**540**	**broken tan and white sandstone**
540	**550**	**Black shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4.5 N Plastic -2 to 550 SDR 17
perf. from 420-550

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #10643

Owner:	**Randy Odell**	Owner Well #:	**No Data**
Address:	**13951 West Hwy 29 Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**2224 RR 869 Liberty Hill, TX 78642**	Latitude:	**30° 40' 13" N**
		Longitude:	**097° 54' 18" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **6/5/2002** Drilling End Date: **6/6/2002**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
7.875	**0**	**20**
7	**20**	**420**
6.75	**420**	**560**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**30**	**11**

Seal Method: **Gravity**

Sealed By: **SDC**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **360 ft.** below land surface on **2002-06-06** Measurement Method: **Unknown**

Packers: **Neoprene/burlap 30' & 440'**

Type of Pump: **installed by other**

Well Tests: **Estimated** **Yield: 60 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
320-420	**trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Associated Drilling Company**

P.O. Box 1060
Manchaca, TX 78652

Driller Name: **Byron Benoit** License Number: **1955**

Apprentice Name: **Byron Benoit** Apprentice Number: **1955**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**4**	**topsoil with clay**
4	**12**	**tan clay**
12	**30**	**caliche**
30	**140**	**gray lime**
140	**180**	**broken tan lime**
180	**300**	**gray lime with shale**
300	**360**	**Broken tan and white lime**
360	**400**	**gray lime**
400	**440**	**gray lime with shale**
440	**560**	**broken tan sandstone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4.5	**N**	**Plastic**	**-2 to 560 SDR 17**
perf. from 440-560			

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Texas Department of Licensing and Regulation
P.O. Box 12157
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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #73130

Owner:	**4 STAR AUTOMOTIVE**	Owner Well #:	**1**
Address:	**925 North 183 LIBERTY HILL, TX 78642**	Grid #:	**58-17-9**
Well Location:	**925 N 183 LIBERTY HILL, TX 78642**	Latitude:	**30° 39' 53" N**
		Longitude:	**097° 52' 52" W**
Well County:	**Williamson**	Elevation:	**1035 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **11/9/2005** Drilling End Date: **11/9/2005**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8**	**0**	**56**

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**20**	**4 CEMENT**

Seal Method: **POURED SLURRY**

Sealed By: **Driller**

Distance to Property Line (ft.): **84**

Distance to Septic Field or other concentrated contamination (ft.): **168**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **measuring wheel**

Surface Completion: **Surface Sleeve Installed**

Water Level: **361 ft.** below land surface on **2005-11-09** Measurement Method: **Unknown**

Packers: **RUBBER 20'**

Type of Pump: **Submersible**

Well Tests: **Estimated** **Yield: 30 GPM**

	Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Plug Information:	**N/A**		

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Highland Drilling Inc.**

309 Frazier St.
Tow, TX 78672

Driller Name: **Clifford Bohannon** License Number: **4386**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**1**	**TOP SOIL**
1	**28**	**LIMESTONE**
28	**229**	**BLUE SHALE**
229	**443**	**BLUE SANDSTONE**
443	**472**	**BLUE SHALE**
472	**515**	**BLUE SANDSTONE**
515	**520**	**SAND**
520	**530**	**BLUE SANDSTONE**
530	**537**	**SAND**
537	**543**	**BLUE SANDSTONE**
543	**550**	**SAND**
550	**560**	**WHITE SANDSTONE**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4 1/2	**NEW**	**PVC**	**0/420 Sch40**
4 1/2	**NEW**	**PERF. PVC**	**420/460 Sch40**

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Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #93066

Owner:	**OMAR GALLE**	Owner Well #:	**No Data**
Address:	**1401 CR 258 LIBERTY HILL, TX 78642**	Grid #:	**58-18-4**
Well Location:	**1401 CR 258 LIBERTY HILL, TX 78642**	Latitude:	**30° 40' 37" N**
		Longitude:	**097° 52' 13" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **8/19/2006** Drilling End Date: **8/21/2006**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**25**
6	**25**	**563**

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**25**	**5 CEMENT**

Seal Method: **GRAVITY FEED**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **VISUAL**

Surface Completion: **Surface Sleeve Installed**

Water Level: **383 ft.** below land surface on **2006-08-21** Measurement Method: **Unknown**

Packers: **RUBBER 470'**

Type of Pump: **No Data**

Well Tests: **Estimated** **Yield: 40 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
470	**GOOD**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HARRISON WELL SERVICE, INC**

P.O. BOX 986
LAMPASAS, TX 76550

Driller Name: **JUAN MUNOZ** License Number: **54176**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**25**	**OVERBURDEN**
25	**390**	**GRAY SHALE**
390	**392**	**SAND/LIMESTONE MIX**
392	**452**	**GREEN SHALE**
452	**470**	**SANDSTONE/OIL SPOTS**
470	**490**	**SAND (WATER)**
490	**500**	**SAND/LIMESTONE MIX**
500	**508**	**SAND (WATER)**
508	**523**	**BROWN LIMESTONE**
523	**531**	**SAND/LIMESTONE MIX**
531	**555**	**SANDSTONE**
555	**563**	**BLACK SHALE**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
6" NEW SCH 40 PVC 0-25
4 1/2" NEW SDR 17 PVC 3-563
SLOTTED 503-563

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #104692

Owner:	**Wayne Christi**	Owner Well #:	**No Data**
Address:	**601 Oak Lane Liberty Hill, TX 78642**	Grid #:	**58-17-6**
		Latitude:	**30° 41' 36" N**
Well Location:	**601 Oak Lane Liberty Hill, TX 78642**	Longitude:	**097° 53' 41" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **8/7/2003** Drilling End Date: **8/14/2003**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**18**
6.5	**18**	**505**

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**18**	**6**

Seal Method: **Hand Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **155**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Tape Measure**

Surface Completion: **Surface Sleeve Installed**

Water Level: **359 ft.** below land surface on **2003-08-14** Measurement Method: **Unknown**

Packers: **Shale Catcher 445**

Type of Pump: **Submersible** Pump Depth (ft.): **440**

Well Tests: **Estimated** **Yield: 50 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Tom Arnold Drilling**

1147 CR 170
Round Rock, TX 78664

Driller Name: **Tommy D. Arnold** License Number: **2096**

Comments: **Logged by DT$**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil**
1	**8**	**Brown Limestone**
8	**19**	**Yellow Limestone**
19	**51**	**Gray Limestone**
51	**60**	**Brown Limestone**
60	**66**	**Blue Limestone**
66	**168**	**Gray Limestone**
168	**178**	**Blue Limestone and Shale**
178	**200**	**Brown Limestone**
200	**324**	**Gray Limestone**
324	**347**	**Blue Shale**
347	**360**	**Brown Limestone**
360	**365**	**Gray Sandstone and Shale**
365	**368**	**Blue Shale**
368	**405**	**Gray Sandstone**
405	**475**	**Gray and White Sand and Sandstone**
475	**480**	**Gray Sandstone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
6	**N**	**Plastic**	**0/18**
4 1/2	**N**	**Plastic**	**0/505**
Perf.			**445/485**

480	**492**	**Gray Limestone**
492	**505**	**Green Limestone**

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Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #111861

Owner:	**R H BALZEN**	Owner Well #:	**No Data**
Address:	**309 BLESSING RANCH ROAD LIBERTY HILL, TX 78642**	Grid #:	**58-17-6**
Well Location:	**731 LACKEY CREEK RD LIBERTY HILL, TX 78642**	Latitude:	**30° 40' 13" N**
		Longitude:	**097° 54' 29" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **4/20/2004** Drilling End Date: **4/29/2004**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**20**
6.5	**20**	**420**

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**7**

Seal Method: **HAND POURED**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **145**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **TAPE MEASURE**

Surface Completion: **Surface Sleeve Installed**

Water Level: **254 ft.** below land surface on **2004-04-29** Measurement Method: **Unknown**

Packers: **SHALE TRAP 380 360 20**

Type of Pump: **No Data**

Well Tests: **Estimated** **Yield: 100 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **TOM ARNOLD DRILLING**

1147 CR 170
ROUND ROCK, TX 78664

Driller Name: **Tommy D Arnold** License Number: **2096**

Comments: **LCS$**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**6**	**CALICHE**
6	**11**	**YELLOW LIMESTONE**
11	**88**	**GREY LIMESTONE**
88	**106**	**BROWN LIMESTONE**
106	**109**	**BLUE LIMESTONE & SHALE**
109	**138**	**GREY LIMESTONE**
138	**141**	**BLUE LIMESTONE & SHALE**
141	**172**	**BROWN LIMESTONE**
172	**208**	**GREY LIMESTONE**
208	**289**	**BROWN LIMESTONE**
289	**339**	**GREY LIMESTONE**
339	**341**	**SAND**
341	**345**	**GREY SANDSTONE**
345	**346**	**GREY SAND**
346	**350**	**GREY SANDSTONE**
350	**360**	**GREY SAND**
360	**364**	**GREY SANDSTONE**
364	**366**	**GREY & WHITE SAND**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4 1/2	**NEW**	**PLASTIC**	**0 420**
PERF			**380 400**

366	**383**	**GREY SANDSTONE**
383	**395**	**GREY SAND**
395	**405**	**GREEN SANDSTONE & SHALE**
405	**426**	**GREEN LIMESTONE & SHALE**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #183538

Owner:	**Kathy Adams**	Owner Well #:	**No Data**
Address:	**480 Liberty Drive Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**480 Liberty Drive Liberty Hill, TX 78642**	Latitude:	**30° 41' 27" N**
		Longitude:	**097° 53' 17" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **9/16/2004** Drilling End Date: **9/19/2004**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**25**
6	**25**	**483**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**25**	**6**

Seal Method: **Gravity Feed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Visual**

Surface Completion: **Surface Sleeve Installed**

Water Level: **335 ft.** below land surface on **2004-09-19** Measurement Method: **Unknown**

Packers: **Rubber 45',400'**

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 30 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**Good**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Harrison Drilling**

P. O. Box 986
Lampasas, TX 76550

Driller Name: **Juan Munoz** License Number: **54176**

Comments: **$dfs**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**25**	**Overburden**
25	**180**	**Gray Shale**
180	**182**	**Hard Limestone**
182	**194**	**Sandstone**
194	**364**	**Gray Shale**
364	**434**	**Hard Limestone**
434	**453**	**Sand (water)**
453	**483**	**Hard White Limestone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
6 New Sch40 PVC 0 25
4.5 New SDR 17 PVC 3 483
Perforated 423 483

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #244340

Owner:	**Liberty Hill ISD**	Owner Well #:	**No Data**
Address:	**1009 Hwy. 29 West Liberty Hill, TX 78642**	Grid #:	**58-17-9**
Well Location:	**315 Stonewall Blvd. Liberty Hill, TX 78642**	Latitude:	**30° 39' 38" N**
		Longitude:	**097° 53' 23" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Irrigation**

Drilling Start Date: **7/24/2006** Drilling End Date: **8/24/2006**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**20**
6.5	**20**	**565**

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**7**

Seal Method: **Hand Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Municipal Sewer System**

Surface Completion: **Surface Sleeve Installed**

Water Level: **362 ft.** below land surface on **2006-07-24** Measurement Method: **Unknown**

Packers: **Shale Trap 20',265',465',505'**

Type of Pump: **Submersible** Pump Depth (ft.): **500**

Well Tests: **Estimated** **Yield: 75 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Tom Arnold Drilling**

1147 CR 170
Round Rock, TX 78664

Driller Name: **Tommy D. Arnold** License Number: **2096**

Comments: **$dfs**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**17**	**Yellow Limestone**
17	**44**	**Blue Limestone**
44	**266**	**Gray Limestone**
266	**290**	**Brown Limestone**
290	**380**	**Gray Limestone**
380	**391**	**Blue Limestone and Shale**
391	**480**	**Gray Limestone**
480	**525**	**Gray Sandstone and Sand Strips**
525	**545**	**Coarse Gray Sand**
545	**565**	**Gray Sandstone and Sand Strips**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4.5	**New**	**Plastic**	**0 565**
Perforated			**525 565**

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #277836

Owner:	**Lawrence Gabel**	Owner Well #:	**1**
Address:	**987 HWY 183** **Liberty Hill, TX 78642**	Grid #:	**58-17-9**
Well Location:	**987 HWY 183** **LIBERTY HILL, TX 78642**	Latitude:	**30° 39' 55" N**
		Longitude:	**097° 52' 59" W**
Well County:	**Williamson**	Elevation:	**1068 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **12/3/2011** Drilling End Date: **12/5/2011**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9.75	**0**	**20**
7.25	**20**	**100**
6.25	**120**	**620**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**120**	**18**

Seal Method: **PRESSURE CEMENTED**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Water Level: **469 ft.** below land surface on **2011-12-05** Measurement Method: **Unknown**

Packers: **RUBBER 120'**
RUBBER 500'

Type of Pump: **OWNER WAITING TO INSTALL PUMP**

Well Tests: **Jetted** **Yield: 45 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
459	**TRINITY**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HILL COUNTRY WATER WELL**

POBOX 220
BRIGGS, TX 78608

Driller Name: **JOE MCDEARMON** License Number: **2334**

Comments: **PUMP INSTALLATION AT A LATER DATE PER OWNERS INSTRUCTION.**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**6**	**WHITE LIME**
6	**18**	**CALICHE**
18	**180**	**GRAY LIME**
180	**260**	**BROWN LIME**
260	**380**	**GRAY LIME**
380	**440**	**BROWN LIME**
440	**445**	**GRAY SHALE**
445	**510**	**SANDSTONE**
510	**512**	**SAND DRY**
512	**550**	**SANDSTONE**
550	**570**	**TRINITY SAND**
570	**585**	**SANDSTONE**
585	**590**	**TRINITY SAND**
590	**605**	**SANDSTONE**
605	**610**	**TRINITY SAND**
610	**620**	**SANDSTONE**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4.5 NEW PLASTIC 0'/620
4.5 NEW SCREEN 560' .032
4.5 NEW SCREEN 580' .032
4.5 NEW SCREEN 620' .032

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #282006

Owner:	**Larry Smith**	Owner Well #:	**No Data**
Address:	**281 CR 1869 Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**281 CR 1869 LIberty Hill, TX 78642**	Latitude:	**30° 41' 12" N**
		Longitude:	**097° 52' 53" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **7/11/2011** Drilling End Date: **7/19/2011**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**20**
6.5	**20**	**505**

Drilling Method: **Air Hammer**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**7**

Seal Method: **Hand Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **176**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Tape Measure**

Surface Completion: **Surface Sleeve Installed**

Water Level: **326 ft.** below land surface on **2011-07-12** Measurement Method: **Unknown**

Packers: **Shale Trap 405', 385', and 20'**

Type of Pump: **Submersible** Pump Depth (ft.): **440**

Well Tests: **Estimated** **Yield: 50 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Tom Arnold Drilling**

2750 S A. W. Grimes Blvd.
Round Rock, TX 78664

Driller Name: **Not Given** License Number: **2096**

Comments: **^EAD**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**topsoil**
2	**16**	**yellow shale & gravel**
16	**19**	**yellow limestone**
19	**26**	**blue limestone & shale**
26	**150**	**gray limestone**
150	**166**	**brown limestone**
166	**254**	**gray limestone**
254	**260**	**gray limestone & shale**
260	**320**	**gray limestone**
320	**330**	**blue limestone & shale**
330	**390**	**gray sandstone & sand**
390	**404**	**green limestone & shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4 1/2" N Plastic 0'-505'
Perf. 405'-445'

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #298691

Owner:	**liberty hill isd**	Owner Well #:	**978**
Address:	**p.o. box 68 liberty hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**16500 w.s.h 29 liberyhill, TX 78642**	Latitude:	**30° 40' 21" N**
		Longitude:	**097° 52' 35" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Closed-Loop Geothermal**

Drilling Start Date: **4/5/2012** Drilling End Date: **8/12/2012**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
4.75	**0**	**250**

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
14	**250**	**Gravel**	**3/8**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**14**	**5 bags hole plu**
14	**250**	**pea gravel 6 wh**

Seal Method: **pourd with water**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Unknown**

Water Level: **No Data**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Plug Information:

Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
14 to 0 hole plug		

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **Unknown**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **central north const.**

5970 lindsey lane
allen, TX 75002

Driller Name: **Tracy Niles** License Number: **3139**

Comments: **hard drilling with fractures**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**top soil**
2	**250**	**hard limestone**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
One inch polly pipe coil 0 to 250			

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #305817

Owner:	**MARTIN DENBAR**	Owner Well #:	**1**
Address:	**CR 1869 LIBERTY HILL, TX 78642**	Grid #:	**58-17-6**
		Latitude:	**30° 40' 14" N**
Well Location:	**CR 1869 LIBERTY HILL, TX 78642**	Longitude:	**097° 54' 21" W**
Well County:	**Williamson**	Elevation:	**1049 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **11/13/2012** Drilling End Date: **11/15/2012**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9.75	**0**	**20**
8	**20**	**100**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**100**	**12**

Seal Method: **MIXED**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **OWNER**

Surface Completion: **Surface Sleeve Installed**

Water Level: **420 ft.** below land surface on **2012-11-15** Measurement Method: **Unknown**

Packers: **RUBBER 40'**
RUBBER 400'
RUBBER 500'

Type of Pump: **Submersible** Pump Depth (ft.): **500**

Well Tests: **Jetted** **Yield: 30 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**TRINITY**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HILL COUNTRY WATER WELL**

POBOX 220
BRIGGS, TX 78608

Driller Name: **JOE MCDEARMON** License Number: **2334**

Apprentice Name: **COTY BLAIR**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**TOP SOIL**
2	**18**	**CALICHE**
18	**25**	**WHITE LIME**
25	**160**	**GREY LIME**
160	**165**	**GREY SHALE**
165	**280**	**BROWN LIME**
280	**400**	**GREY LIME**
400	**405**	**GREY SHALE**
405	**480**	**GREY LIME**
480	**520**	**SANDSTONE**
520	**535**	**TRINITY SAND**
535	**545**	**SANDSTONE**
545	**550**	**TRINITY SAND**
550	**560**	**SANDSTONE**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
4.5 NEW PLASTIC SDR17 0-560
4.5 NEW PLASTIC SCREEN 520 - 540 .032

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #376899

Owner:	**Running W Land Co. S. Watson**	Owner Well #:	**No Data**
Address:	**777 Oak Lane Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**777 Oak Lane Liberty Hill, TX 78642**	Latitude:	**30° 41' 24" N**
		Longitude:	**097° 53' 54" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Stock**

Drilling Start Date: **8/14/2014** Drilling End Date: **8/14/2014**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9	**0**	**50**
6.25	**50**	**625**

Drilling Method: **Air Rotary**

Borehole Completion: **cased; Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
1	**50**	**6cmt 2gel**

Seal Method: **hand poured**

Sealed By: **ADC**

Distance to Property Line (ft.): **75+**

Distance to Septic Field or other concentrated contamination (ft.): **300+**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **owner**

Surface Completion: **Surface Sleeve Installed**

Water Level: **413 ft.** below land surface on **2014-08-14** Measurement Method: **Unknown**

Packers: **burlap,plastic,rubber @ 485,465,50**

Type of Pump: **Submersible** Pump Depth (ft.): **0**

Well Tests: **Jetted** **Yield: 10-12 GPM**

Plug Information:

Description (number of sacks & material)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
n/a		

Water Quality:

Strata Depth (ft.)	Water Type
505-570	**Glen Rose**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Associated Drilling Inc.**

PO Box 673
Dripping Springs, TX 78620

Driller Name: **James Benoit** License Number: **4064**

Comments: **Bud Dobson**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**20**	**white limestone**
20	**505**	**gray lime few strips of shale**
505	**570**	**tan and white limestone**
570	**615**	**gray and white limestone**
615	**625**	**gray shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
5 od new sdr17 pvc -3 to 545
5 od new sdr17 pvc (.032) screen 545 to 605
5 od new sdr17 pvc 605 to 625

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #495542

Owner:	**Stonewall Ranch MUD**	Owner Well #:	**No Data**
Address:	**P.O. Box 2029 Pflugerville, TX 78691**	Grid #:	**58-17-9**
Well Location:	**231 Drystone Trail Liberty Hill, TX 78642**	Latitude:	**30° 39' 42.7" N**
		Longitude:	**097° 53' 28.3" W**
Well County:	**Williamson**	Elevation:	**1015 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Irrigation**

Drilling Start Date: **9/13/2018** Drilling End Date: **9/14/2018**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**50**
6.75	**50**	**575**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**Cement 7 Bags/Sacks**
20	**50**	**Bentonite 7 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Pitless Adapter Used** **Surface Completion by Driller**

Water Level: **432 ft.** below land surface on **2018-09-25**

Packers: **Rubber at 50 ft.**
Rubber at 55 ft.
Rubber at 460 ft.
Rubber at 480 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **540**

Well Tests: **Jetted** **Yield: 25 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
490 - 560	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Dr.
Dripping Springs, TX 78620

Driller Name: **Jim Blair** License Number: **54416**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**topsoil**
5	**20**	**tan limestone**
20	**280**	**gray limestone**
280	**340**	**gray sandstone**
340	**380**	**clay**
380	**460**	**gray limestone**
460	**575**	**gray & brown sandstone wb 25 gpm 800 tds**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**485**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**sdr-17**	**485**	**575**

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STATE OF TEXAS WELL REPORT for Tracking #521773

Owner:	**Michael Ferguson**	Owner Well #:	**No Data**
Address:	**1003 Suffolk Cedar park, TX 78613**	Grid #:	**58-17-6**
Well Location:	**850 Cole Dr. Liberty Hill, TX 78642**	Latitude:	**30° 41' 42" N**
		Longitude:	**097° 53' 22" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **5/13/2019** Drilling End Date: **5/15/2019**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**19**
6.5	**19**	**570**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**Cement 4 Bags/Sacks**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **na**

Distance to Septic Field or other concentrated contamination (ft.): **140**

Distance to Septic Tank (ft.): **na**

Method of Verification: **Tape Measure**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **380 ft.** below land surface on **2019-05-15**

Packers: **Shale trap at 50 ft.**
Shale trap at 250 ft.
Shale trap at 450 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **460**

Well Tests: **Estimated** **Yield: 50 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **TOM ARNOLD DRILLING**

2750 SOUTH A. W. GRIMES BLVD
ROUND ROCK, TX 78664

Driller Name: **Tommy Arnold** License Number: **2096**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Topsoil & loose rock**
1	**18**	**Yellow Limestone**
18	**67**	**Blue Limestone**
67	**171**	**Gray Limestone**
171	**180**	**Brown Limestone**
180	**214**	**Gray Limestone**
214	**232**	**Brown Limestone**
232	**350**	**Gray Limestone**
350	**430**	**Gray Sandstone**
430	**435**	**Gray Sand**
435	**450**	**Brown Limestone**
450	**468**	**Gray Sand & Sandstone**
468	**512**	**Green & Gray Sandstone**
512	**530**	**Gray sandstone**
530	**570**	**Gray Limestone & Shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**		**0**	**570**
	Screen		**0.032**	**450**	**490**

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STATE OF TEXAS WELL REPORT for Tracking #560816

Owner:	**Green Water Site Works**	Owner Well #:	**No Data**
Address:	**506 West Drive Leander, TX 78641**	Grid #:	**58-17-6**
Well Location:	**640 Whitaker Florence, TX**	Latitude:	**30° 40' 07" N**
		Longitude:	**097° 52' 46" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **9/17/2020** Drilling End Date: **9/18/2020**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10	**0**	**19**
6.5	**19**	**630**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**20**	**Cement 6 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **157**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Tape**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **424 ft.** below land surface on **2020-09-17**

Packers: **Shale Trap at 20 ft.**
Shale Trap at 350 ft.
Shale Trap at 550 ft.
Shale Trap at 570 ft.

Type of Pump: **No Data**

Well Tests: **Estimated** **Yield: 40 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **TOM ARNOLD DRILLING**

2750 SOUTH A. W. GRIMES BLVD
ROUND ROCK, TX 78664

Driller Name: **Tommy Arnold** License Number: **2096**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil & Loose Rock**
1	**21**	**Yellow Limestone**
21	**41**	**Tan LImestone**
41	**44**	**Blue Limestone**
44	**170**	**Gray LImestone**
170	**189**	**Brown LImestone**
189	**380**	**Gray Limestone**
380	**440**	**Gray LImestone**
440	**451**	**Brown Limestone**
451	**460**	**Blue LimeStone & Shale**
460	**551**	**Gray Sandstone**
551	**570**	**Gray Sandstone & Sand Strips**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**		**0**	**570**
4.5	**Perforated or Slotted**	**New Plastic (PVC)**	**0.032**	**570**	**630**

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STATE OF TEXAS WELL REPORT for Tracking #576288

Owner:	**MBS Family LP**	Owner Well #:	**No Data**
Address:	**4500 Williams Dr, 212-423 Georgetown , TX 78633**	Grid #:	**58-17-9**
Well Location:	**951 Highway 183 Liberty Hill, TX 78633**	Latitude:	**30° 39' 54.8" N**
		Longitude:	**097° 52' 54.84" W**
Well County:	**Williamson**	Elevation:	**1051 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **5/17/2021** Drilling End Date: **5/18/2021**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**620**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 8**
40	**50**	**Bentonite 3**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **58**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **50+**

Method of Verification: **No Data**

Surface Completion: **Pitless Adapter Used**

Water Level: **No Data**

Packers: **Rubber at 50 ft.**
Rubber at 55 ft.
Rubber at 495 ft.
Rubber at 500 ft.

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 5 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Rd.
Dripping Springs, TX 78620

Driller Name: **Michael Scott** License Number: **59719**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**10**	**tan limestone**
10	**240**	**grey limestone**
240	**510**	**grey / tan limestone**
510	**615**	**grey / tan sandstone wb 5+ gpm at 1100 tds**
615	**620**	**grey clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**20**
5	**Blank**	**New Plastic (PVC)**	**sch-80**	**20**	**560**
5	**Perforated or Slotted**	**New Plastic (PVC)**	**sch-80**	**560**	**620**

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STATE OF TEXAS WELL REPORT for Tracking #576297

Owner:	**MBS Family LP**	Owner Well #:	**No Data**
Address:	**4500 Williams Dr. Suite 212-423 Georgetown , TX 78633**	Grid #:	**58-17-9**
Well Location:	**951 Highway 183 Liberty Hill, TX 78633**	Latitude:	**30° 39' 52.99" N**
		Longitude:	**097° 52' 59.38" W**
Well County:	**Williamson**	Elevation:	**1055 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Industrial**

Drilling Start Date: **5/19/2021** Drilling End Date: **5/24/2021**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**620**

Drilling Method: **Air Rotary**

Borehole Completion: **Perforated or Slotted**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**10**	**Cement 4**
10	**100**	**Bentonite 9**

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **12**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

Distance to Septic Tank (ft.): **100+**

Method of Verification: **No Data**

Surface Completion: **Pitless Adapter Used**

Water Level: **No Data**

Packers: **Rubber at 100 ft.**
Rubber at 105 ft.
Rubber at 495 ft.
Rubber at 500 ft.

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 10 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Rd.
Dripping Springs, TX 78620

Driller Name: **Michael Scott** License Number: **59719**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**20**	**tan limestone**
20	**270**	**grey limestone**
270	**520**	**grey / tan limestone**
520	**610**	**grey sandstone mix wb 10 gpm 1213 tds**
610	**620**	**grey clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**sdr-17**	**0**	**100**
5	**Blank**	**New Plastic (PVC)**	**sch-80**	**100**	**540**
5	**Perforated or Slotted**	**New Plastic (PVC)**	**sch-80**	**540**	**600**
5	**Blank**	**New Plastic (PVC)**	**sch-80**	**600**	**620**

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STATE OF TEXAS WELL REPORT for Tracking #645190

Owner:	**Liberty Hill RV Resort**	Owner Well #:	**No Data**
Address:	**2224 RR 1869 Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**2224 RR 1869 Liberty Hill, TX 78642**	Latitude:	**30° 40' 10.89" N**
		Longitude:	**097° 54' 25.36" W**
Well County:	**Williamson**	Elevation:	**1045 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **3/28/2023** Drilling End Date: **3/30/2023**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
11.75	**0**	**20**
6.75	**20**	**600**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 7 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **50**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Tape**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **454 ft.** below land surface, and **27 GPM** artesian flow on **2023-04-07**

Packers: **Rubber at 40 ft.**
Rubber at 420 ft.
Rubber at 440 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **560**

Well Tests: **Jetted** **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Hill Country Water Well**

2740 COUNTY ROAD 210
Briggs, TX 78608

Driller Name: **Bradley Cowan** License Number: **61014**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**2**	**Top Soil**
2	**20**	**Caliche**
20	**32**	**Tan Limestone**
32	**150**	**Gray Limestone**
150	**210**	**Tan Limestone**
210	**325**	**Gray Limestone**
325	**380**	**Tan Limestone**
380	**440**	**Gray Limestone**
440	**460**	**Dry Sand**
460	**560**	**Broken Tan Sandstone/ White Limestone (Water)**
560	**585**	**Gray Limestone**
585	**600**	**Gray Clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**0**	**480**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**480**	**500**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**500**	**520**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**520**	**540**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**540**	**560**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**560**	**580**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**580**	**600**

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STATE OF TEXAS WELL REPORT for Tracking #646739

Owner:	**Lance Jones**	Owner Well #:	**No Data**
Address:	**756 Oak Ln. Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**756 Oak Ln. Liberty Hill, TX 78642**	Latitude:	**30° 41' 38.51" N**
		Longitude:	**097° 53' 27.1" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **8/14/2023** Drilling End Date: **8/14/2023**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.75	**0**	**20**
6.25	**20**	**510**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
-1	**30**	**4 cement, 1 Benseal Bags/Sacks**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **+100**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **413 ft.** below land surface on **2023-08-14** Measurement Method: **Sonic/Radar**

Packers: **Burlap & PVC 390', 370'**
Burlap 30'

Type of Pump: **Submersible**

Well Tests: **Estimated** **Yield: 10-13 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
413 - 510	**Hensel**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Western Water Wells**

500 Southland Drive
Burnet, TX 78611

Driller Name: **James Benoit** License Number: **4064**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**5**	**white chalk**
5	**355**	**blue lime some clay**
355	**400**	**gray lime & clay**
400	**440**	**tan limestone some sand**
440	**480**	**tan gray limestone**
480	**500**	**white limestone**
500	**510**	**blue clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**-3**	**430**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**430**	**490**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**490**	**510**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #651589

Owner:	**Vick Nuuttila**	Owner Well #:	**No Data**
Address:	**353 CR 258 Liberty Hill, TX 78642**	Grid #:	**58-18-7**
Well Location:	**353 CR 258 Liberty Hill, TX 78642**	Latitude:	**30° 39' 58.46" N**
		Longitude:	**097° 52' 24.92" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **10/20/2023** Drilling End Date: **10/20/2023**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.75	**0**	**20**
6.25	**20**	**690**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
-1	**30**	**4 cement, 1 Benseal Bags/Sacks**

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **75**

Distance to Septic Field or other concentrated contamination (ft.): **+100**

Distance to Septic Tank (ft.): **+100**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **510 ft.** below land surface on **2023-10-20** Measurement Method: **Sonic/Radar**

Packers: **Burlap & PVC 530', 510'**
Burlap 30'

Type of Pump: **Submersible**

Well Tests: **Estimated** **Yield: 5-7 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
510 - 690	**Hensel**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Western Water Wells**

500 Southland Drive
Burnet, TX 78611

Driller Name: **James Benoit** License Number: **4064**

Comments: **Drilled for A&W Water Well Service.**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**20**	**white limestone**
20	**505**	**blue lime**
505	**530**	**blue lime & clay**
530	**570**	**white limestone**
570	**600**	**tan limestone some sand**
600	**635**	**white limestone**
635	**645**	**gray limestone**
645	**690**	**blue clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**-3**	**590**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.020**	**590**	**650**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**650**	**690**

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STATE OF TEXAS WELL REPORT for Tracking #659195

Owner:	**Clint Riding**	Owner Well #:	**No Data**
Address:	**775 Rolling Hills Liberty Hill , TX 78642**	Grid #:	**58-17-6**
Well Location:	**775 Rolling Hills Liberty Hill, TX 78642**	Latitude:	**30° 41' 12.7" N**
		Longitude:	**097° 54' 12.53" W**
Well County:	**Williamson**	Elevation:	**No Data**

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **2/16/2023** Drilling End Date: **2/18/2023**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8	**0**	**100**
6.75	**100**	**540**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**120**	**Bentonite 15 Bags/Sacks**

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **10 FT**

Distance to Septic Field or other concentrated contamination (ft.): **Wasn't Avalible**

Distance to Septic Tank (ft.): **NOT THEIR**

Method of Verification: **Tape**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **420 ft.** below land surface on **2023-02-22** Measurement Method: **Sonic/Radar**

Packers: **Plastic at 120 ft.**
Plastic at 400 ft.
Plastic at 440 ft.
Plastic at 460 ft.

Type of Pump: **No Data**

Well Tests: **Jetted** **Yield: 30+ gpm GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **B & B Water Well Service, Inc**

PO Box 232
Bertram, TX 78605

Driller Name: **JOSUA DICKINSON** License Number: **54204**

Apprentice Name: **JOSHUA DYLAN DICKINSON**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil**
1	**30**	**Caliche**
30	**100**	**Blue Lime**
100	**280**	**Grey Lime**
280	**300**	**Brown / Grey Lime**
300	**400**	**Grey / Clay Strips**
400	**520**	**Sand Stone /Trinity Sand's / Layers**
520	**540**	**Sand Stone / Grey Clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR 17**	**0**	**460**
4.5	**Screen**	**New Plastic (PVC)**	**SDR 17 0.032**	**460**	**540**

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STATE OF TEXAS WELL REPORT for Tracking #662401

Owner:	**Liberty Hill High School**	Owner Well #:	**No Data**
Address:	**Sunset Ridge Dr &, Co Rd 258 Williamson, TX 78642**	Grid #:	**58-18-4**
Well Location:	**Sunset Ridge Dr &, Co Rd 258 Williamson, TX 78642**	Latitude:	**30° 40' 22" N**
		Longitude:	**097° 52' 18" W**
Well County:	**Williamson**	Elevation:	**998 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Irrigation**

Drilling Start Date: **2/29/2024** Drilling End Date: **3/4/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
10.625	**0**	**10**
8.5	**10**	**640**

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
100	**490**	**Gravel**	**3/8**
510	**640**	**Gravel**	**3/8**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**10**	**Cement 5**
10	**100**	**Bentonite 12**
490	**510**	**Bentonite 3**

Seal Method: **Pressure**

Sealed By: **Driller**

Distance to Property Line (ft.): **35**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **100**

Method of Verification: **No Data**

Surface Completion: **Pitless Adapter Used**

Water Level: **462 ft.** below land surface on **2024-03-15** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **Submersible** Pump Depth (ft.): **600**

Well Tests: **Jetted** **Yield: 20-30 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Bee Cave Drilling, Inc.**

185 Angel Fire Rd.
Dripping Springs, TX 78620

Driller Name: **Michael Scott** License Number: **59719**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**topsoil**
1	**5**	**caliche**
5	**25**	**tan limestone**
25	**250**	**grey limestone**
250	**490**	**grey limestone / tan strips**
490	**640**	**Partial / no returns**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
5	**Blank**	**New Plastic (PVC)**		**0**	**600**
5	**Screen**	**New Plastic (PVC)**		**600**	**640**

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STATE OF TEXAS WELL REPORT for Tracking #665145

Owner:	**Linda Cole**	Owner Well #:	**No Data**
Address:	**801 Cole Dr. Liberty Hill, TX 78642**	Grid #:	**58-17-6**
Well Location:	**801 Cole Dr. Liberty Hill, TX 78642**	Latitude:	**30° 41' 39.67" N**
		Longitude:	**097° 53' 19.86" W**
Well County:	**Williamson**	Elevation:	**988 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **3/14/2024** Drilling End Date: **3/15/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
11.75	**0**	**20**
6.75	**20**	**520**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**40**	**Cement 7 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Driller**

Distance to Property Line (ft.): **200**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Tape**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **274 ft.** below land surface, and **15 GPM** artesian flow on **2024-03-15**

Packers: **Rubber at 40 ft.**
Rubber at 400 ft.
Rubber at 420 ft.

Type of Pump: **Submersible** Pump Depth (ft.): **480**

Well Tests: **Jetted** **Yield: 15 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
420 - 520	**Trinity**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Hill Country Water Well**

2740 COUNTY ROAD 210
Briggs, TX 78608

Driller Name: **Bradley Cowan** License Number: **61014**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**1**	**Top Soil**
1	**6**	**White Limestone**
6	**360**	**Gray Limestone**
360	**520**	**Lost Circulation**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**0**	**420**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**420**	**440**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17 0.032**	**440**	**460**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17 0.032**	**460**	**480**
4.5	**Blank**	**New Plastic (PVC)**	**SD17 0.032**	**480**	**520**

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STATE OF TEXAS WELL REPORT for Tracking #673199

Owner:	**Mike Vague**	Owner Well #:	**No Data**
Address:	**605 Oak Lane Liberty Hill, TX 78642**	Grid #:	**58-17-6**
		Latitude:	**30° 41' 33.43" N**
Well Location:	**605 Oak Lane Liberty Hill, TX 78642**	Longitude:	**097° 53' 40.27" W**
Well County:	**Williamson**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **6/11/2024** Drilling End Date: **6/11/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.75	**0**	**100**
6.25	**100**	**530**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
-1	**100**	**6 cement, 4 Benseal Bags/Sacks**

Seal Method: **Pressure Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **30**

Distance to Septic Field or other concentrated contamination (ft.): **+100**

Distance to Septic Tank (ft.): **+100**

Method of Verification: **Owner**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **425 ft.** below land surface on **2024-06-11** Measurement Method: **Sonic/Radar**

Packers: **Burlap & PVC 430', 410'**
Burlap & Rubber 100'

Type of Pump: **Submersible**

Well Tests: **Estimated** **Yield: 10-15 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
425 - 530	**Hensel**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Western Water Wells**

500 Southland Drive
Burnet, TX 78611

Driller Name: **James Benoit** License Number: **4064**

Comments: **Drilled for A&W Water Well Service.**

Report Amended on 7/22/2024 by Request #42840

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**10**	**tan lime**
10	**365**	**blue lime**
365	**410**	**white limestone & blue clay**
410	**445**	**tan white limestone**
445	**460**	**tan limestone some sand**
460	**490**	**white limestone**
490	**510**	**gray limestone**
510	**530**	**blue clay**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**-3**	**450**
4.5	**Screen**	**New Plastic (PVC)**	**SDR17**	**450**	**510**
4.5	**Blank**	**New Plastic (PVC)**	**SDR17**	**510**	**530**

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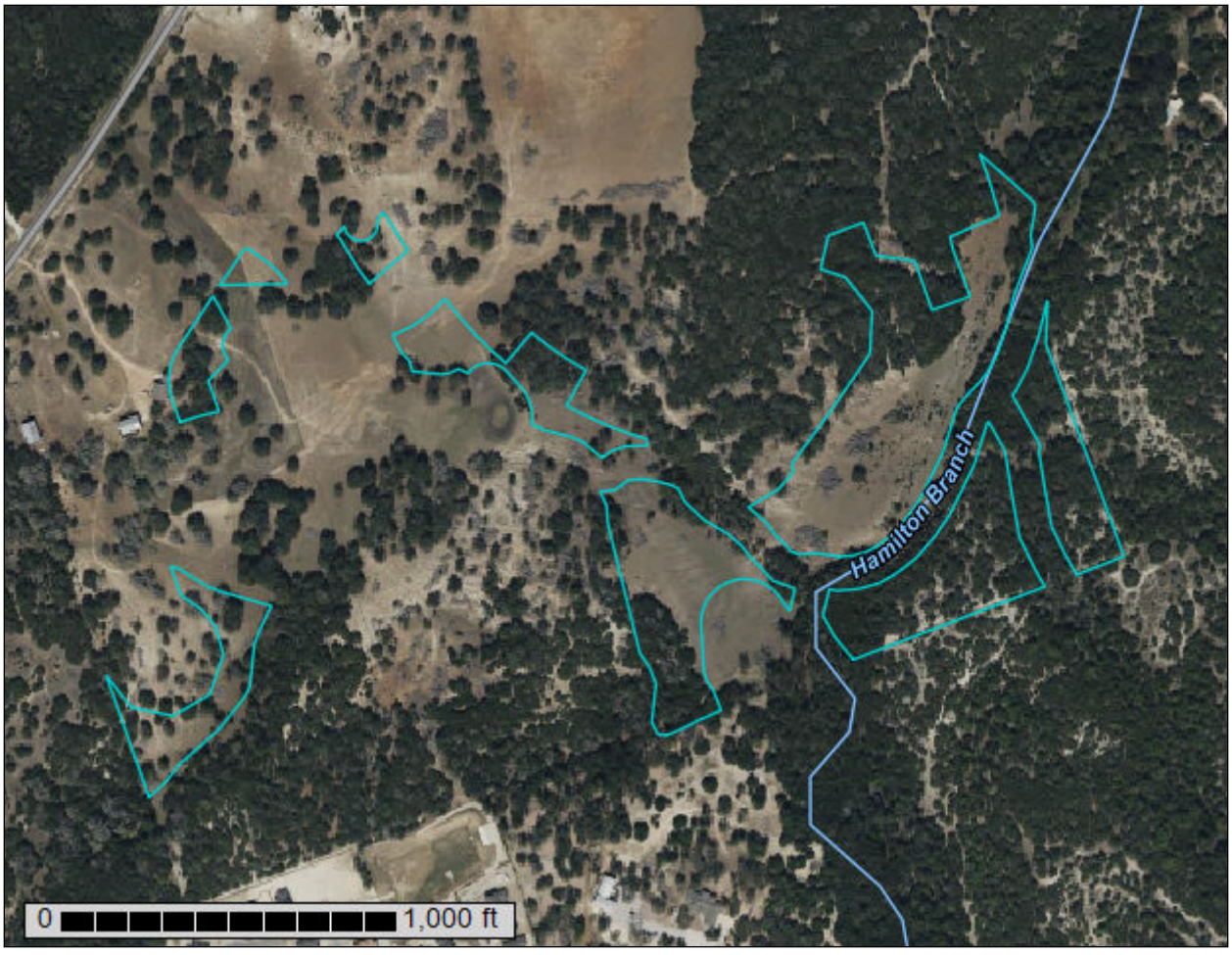
United States Department of Agriculture

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 Williamson County, Texas



November 27, 2024

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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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.

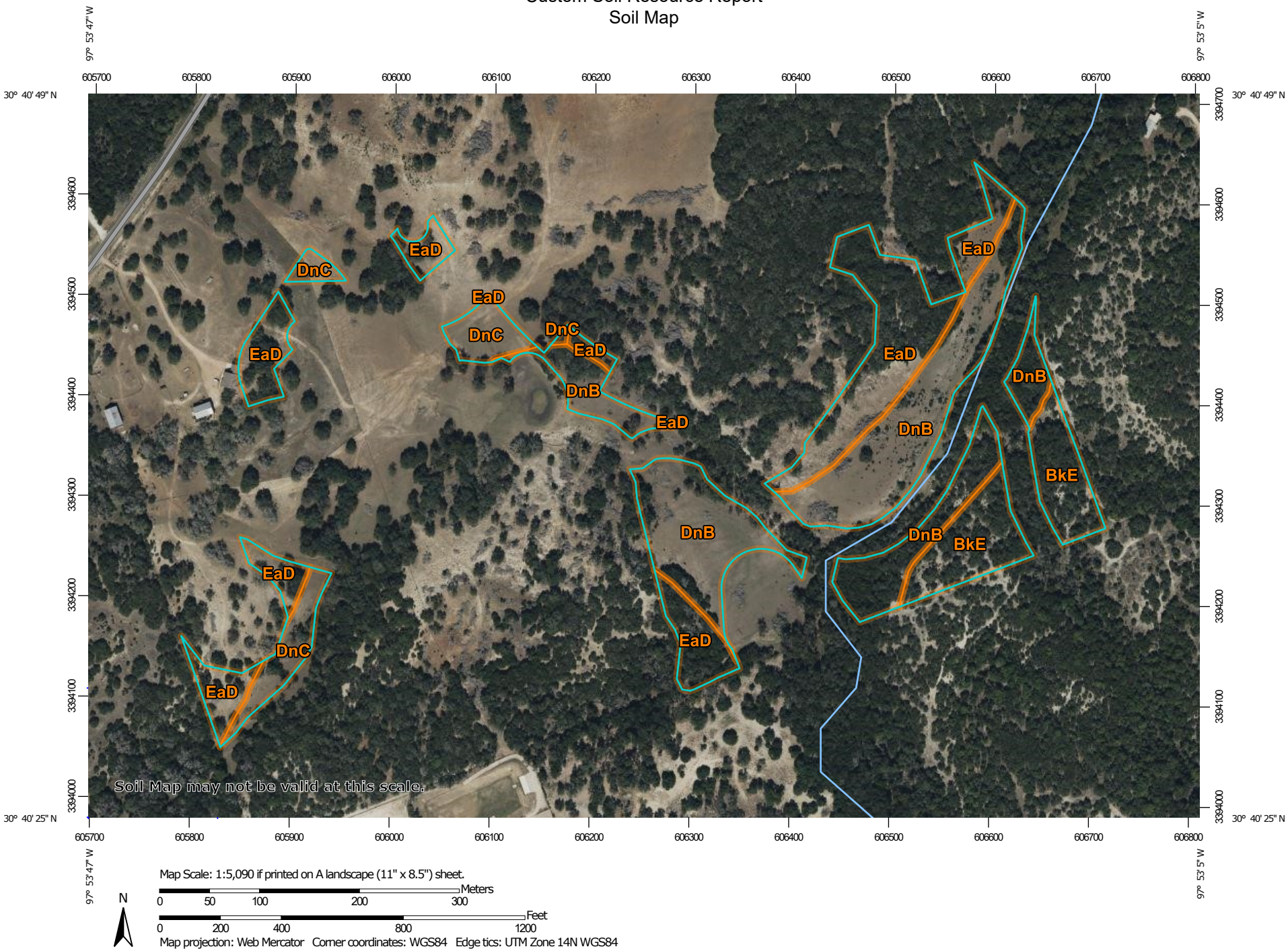
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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 1:20,000.

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: Williamson County, Texas
Survey Area Data: Version 25, 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: Data not available.

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
BkE	Brackett gravelly clay loam, 3 to 12 percent slopes	3.5	13.7%
DnB	Denton silty clay, 1 to 3 percent slopes	11.6	45.2%
DnC	Denton silty clay, 3 to 5 percent slopes	2.2	8.7%
EaD	Eckrant cobbly clay, 1 to 8 percent slopes	8.3	32.3%
Totals for Area of Interest		**25.7**	**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.

Williamson County, Texas

BkE—Brackett gravelly clay loam, 3 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2t2m5
Elevation: 700 to 1,450 feet
Mean annual precipitation: 30 to 36 inches
Mean annual air temperature: 66 to 69 degrees F
Frost-free period: 230 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Brackett and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brackett

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 5 inches: gravelly clay loam
Bk - 5 to 16 inches: clay loam
Cr - 16 to 60 inches: bedrock

Properties and qualities

Slope: 3 to 12 percent
Surface area covered with cobbles, stones or boulders: 3.0 percent
Depth to restrictive feature: 6 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 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
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): 6e
Hydrologic Soil Group: D
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Minor Components

Sunev

Percent of map unit: 6 percent
Landform: Drainageways
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Austin

Percent of map unit: 2 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

DnB—Denton silty clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2t26l
Elevation: 570 to 1,870 feet
Mean annual precipitation: 31 to 36 inches
Mean annual air temperature: 65 to 68 degrees F
Frost-free period: 220 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Denton and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Denton

Setting

Landform: Hillslopes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Silty and clayey slope alluvium over residuum weathered from limestone

Typical profile

A - 0 to 14 inches: silty clay

Bw - 14 to 25 inches: silty clay
Bk - 25 to 33 inches: silty clay
Ck - 33 to 36 inches: gravelly silty clay
R - 36 to 80 inches: bedrock

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 22 to 60 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 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 80 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Minor Components

Krum

Percent of map unit: 6 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Doss

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081BY343TX - Shallow 23-31 PZ
Hydric soil rating: No

Anhalt

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R081CY358TX - Deep Redland 29-35 PZ
Hydric soil rating: No

DnC—Denton silty clay, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2t26r
Elevation: 570 to 1,870 feet
Mean annual precipitation: 31 to 36 inches
Mean annual air temperature: 65 to 68 degrees F
Frost-free period: 220 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Denton and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Denton

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Silty and clayey slope alluvium over residuum weathered from limestone

Typical profile

A - 0 to 14 inches: silty clay
Bw - 14 to 25 inches: silty clay
Bk - 25 to 33 inches: silty clay
Ck - 33 to 36 inches: gravelly silty clay
R - 36 to 80 inches: bedrock

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: 22 to 60 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 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 80 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: D
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Minor Components

Brackett
Percent of map unit: 6 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Doss
Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Purves
Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

EaD—Eckrant cobbly clay, 1 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2t0sg
Elevation: 650 to 1,900 feet
Mean annual precipitation: 30 to 35 inches
Mean annual air temperature: 65 to 69 degrees F
Frost-free period: 210 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition
Eckrant and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eckrant

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: Residuum weathered from limestone

Typical profile

A1 - 0 to 4 inches: cobbly clay
A2 - 4 to 11 inches: very cobbly clay
R - 11 to 80 inches: bedrock

Properties and qualities

Slope: 1 to 8 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: 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: 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 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: R081CY360TX - Low Stony Hill 29-35 PZ
Hydric soil rating: No

Minor Components

Brackett

Percent of map unit: 7 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Bexar

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear

Across-slope shape: Linear
Ecological site: R081CY361TX - Redland 29-35 PZ
Hydric soil rating: No

Krum

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Toeslope
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

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Leah Whallon

From: Janela Revilla <jrevilla@jawastewater.com>
Sent: Tuesday, February 11, 2025 10:32 AM
To: Leah Whallon; Ash Upadhyaya
Cc: Jamie Miller; justin.reynolds@sapelogroup.com
Subject: Re: Application for Proposed Permit No. WQ0016683001; Sapelo Liberty Hill, LP; Canady Tract WWTF; Notice of Deficiency 30-Day Will Return Letter
Attachments: Updated_Forms_and_Exhibits_2.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Part 2 of 2:

- Updated Forms and Exhibits 2

Please let me know if they all went through! I'm happy to send a Dropbox link as a backup.

Thanks,
Janela Revilla

Janela Revilla
Project Engineer
JA Wastewater, LLC
(737) 864-3476
jrevilla@jawastewater.com

From: Janela Revilla <jrevilla@jawastewater.com>
Sent: Tuesday, February 11, 2025 10:30 AM
To: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>; Ash Upadhyaya <aupadhyaya@jawastewater.com>
Cc: Jamie Miller <jmiller@jawastewater.com>; justin.reynolds@sapelogroup.com <justin.reynolds@sapelogroup.com>
Subject: Re: Application for Proposed Permit No. WQ0016683001; Sapelo Liberty Hill, LP; Canady Tract WWTF; Notice of Deficiency 30-Day Will Return Letter

Hi Leah,

I attached the responses here. Sorry about that! The files sent previously were under 20MB but perhaps outlook did not let it go through.

Here is part 1 of 2:

- Setback request
- Storage request
- Updated Forms and Exhibits 1

Thanks,
Janela Revilla

Janela Revilla
Project Engineer
JA Wastewater, LLC
(737) 864-3476
jrevilla@jawastewater.com

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Tuesday, February 11, 2025 10:18 AM
To: Janela Revilla <jrevilla@jawastewater.com>; Ash Upadhyaya <aupadhyaya@jawastewater.com>
Cc: Jamie Miller <jmiller@jawastewater.com>; justin.reynolds@sapelogroup.com <justin.reynolds@sapelogroup.com>
Subject: RE: Application for Proposed Permit No. WQ0016683001; Sapelo Liberty Hill, LP; Canady Tract WWTF; Notice of Deficiency 30-Day Will Return Letter

Good Morning Janela,

I'm following up again, I didn't see an email response for this application yet.

Thanks,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

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From: Janela Revilla <jrevilla@jawastewater.com>
Sent: Monday, February 10, 2025 9:57 AM
To: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>; Ash Upadhyaya <aupadhyaya@jawastewater.com>
Cc: Jamie Miller <jmiller@jawastewater.com>; justin.reynolds@sapelogroup.com
Subject: Re: Application for Proposed Permit No. WQ0016683001; Sapelo Liberty Hill, LP; Canady Tract WWTF; Notice of Deficiency 30-Day Will Return Letter

Good morning Leah,

I believe we have sent the responses in a different email chain. I will forward it shortly!

Thanks,
Janela Revilla

Janela Revilla
Project Engineer
JA Wastewater, LLC
(737) 864-3476
jrevilla@jawastewater.com

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Monday, February 10, 2025 9:16 AM
To: Ash Upadhyaya <aupadhyaya@jawastewater.com>
Cc: Jamie Miller <jmiller@jawastewater.com>; Janela Revilla <jrevilla@jawastewater.com>; justin.reynolds@sapelogroup.com <justin.reynolds@sapelogroup.com>
Subject: RE: Application for Proposed Permit No. WQ0016683001; Sapelo Liberty Hill, LP; Canady Tract WWTF; Notice of Deficiency 30-Day Will Return Letter

Good Morning,

I wanted to follow up on this application. I have not received the updated response and application. Please let me know if you have any questions.

Thank you,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

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From: Leah Whallon
Sent: Thursday, January 9, 2025 4:26 PM
To: Ash Upadhyaya <aupadhyaya@jawastewater.com>
Cc: Jamie Miller <jmiller@jawastewater.com>; Janela Revilla <jrevilla@jawastewater.com>; justin.reynolds@sapelogroup.com
Subject: Application for Proposed Permit No. WQ0016683001; Sapelo Liberty Hill, LP; Canady Tract WWTF; Notice of Deficiency 30-Day Will Return Letter

Good Afternoon,

Please see the attached Notice of Deficiency 30-Day Will Return Letter dated January 10, 2025 requesting the response needed to declare the application administratively complete. The original will be sent by certified mail. Please send the complete response by February 9, 2025.

Thank you,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
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January 21, 2025

Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, TX 78753

Subject: Request for Variance on Setback Requirement from Water Bodies

Hello,

I am writing to formally request a variance to the setback requirement for the TLAP Application for Canady Tract WWTF (WQ0016683001). The current regulation stipulates a 100-foot setback from waters of the state. We are requesting approval for a 50-foot setback instead of the required 100 feet.

We recognize the importance of protecting water bodies and maintaining water quality. We plan to integrate environmental safeguards into the disposal area design to minimize potential impacts on water bodies. These measures include the construction of berms and the installation of erosion control structures to mitigate any runoff into the water bodies. With these measures in place, we believe that a 50-foot setback will provide adequate protection while allowing us to proceed with the project in an efficient manner.

We are committed to ensuring that all aspects of the project adhere to regulatory requirements and best practices for environmental protection. We are happy to provide any additional information or documentation needed to support this request.

Thank you for your time and consideration. We look forward to your favorable response.

Sincerely,

Jamie L. Miller

Jamie Miller, PE
President
JA Wastewater, LLC
Firm Number F-23372

Canady Tract WWTF - Attachment A

RM 1869

50' Setback from Waters of the State

50' Setback from Waters of the State

50' Setback from Waters of the State

AMENITY 1.22 AC

WWTP

BUFFER ZONE

AREA 1

AREA 2

AREA 3

AREA 4

AREA 5

AREA 6

AREA 7

AREA 8

AREA 9

AREA 10

AREA 12

AREA 13

SCALE: 1"=200'
GRAPHIC SCALE IN FEET
0 100 200 300 400

January 21, 2025

Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, TX 78753

Subject: Request for Reduction in Wastewater Treatment Facility Storage Requirement

Hello,

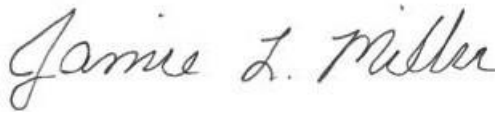
I am writing to formally request a modification to the storage requirements for the TLAP Application for Canady Tract WWTF (WQ0016683001). Specifically, we are requesting a reduction in the required storage duration from 109 days shown on the water balance to 50 days of storage.

While our water balance calculations indicate a need for 109 days of storage, experience with similar WWTFs in the area show that these systems typically remain empty. Additionally, it is important to note that extreme weather events have occurred in certain years, which skews the water balance, exaggerating the required pond size.

Based on this regional operational data and an analysis of flows, we believe that a 50-day storage capacity is sufficient for the Canady Tract WWTF. In the event that the 50-day threshold is exceeded, we are fully prepared to implement pump and haul procedures to manage any excess volume as needed.

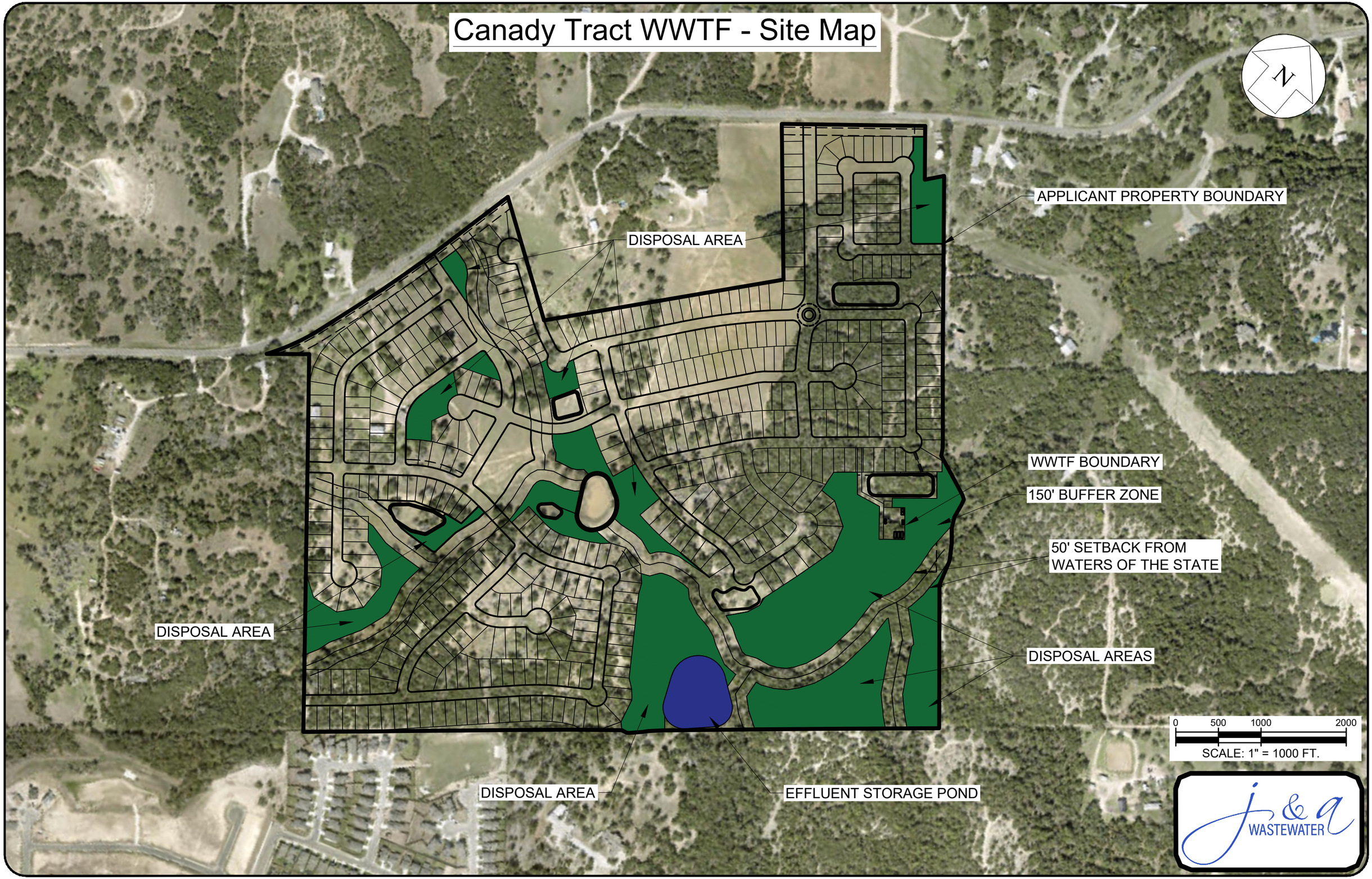
We kindly request your consideration of this adjustment and look forward to your feedback. If additional information or documentation is needed, please do not hesitate to contact me directly.

Sincerely,



Jamie Miller, PE
President
JA Wastewater, LLC
Firm Number F-23372

Canady Tract WWTF - Site Map



Canady Tract WWTF - Disposal Phasing Map

DISPOSAL PHASING

PHASE 1 13.25 ACRES

FINAL PHASE 29.31 ACRES

NOTE: A MINIMUM OF 26.5 ACRES WILL BE IRRIGATED PER WATER BALANCE CALCULATIONS

N

APPLICANT PROPERTY BOUNDARY

DISPOSAL AREA

WWTF BOUNDARY

150' BUFFER ZONE

50' SETBACK FROM WATERS OF THE STATE

DISPOSAL AREAS

DISPOSAL AREA

DISPOSAL AREA

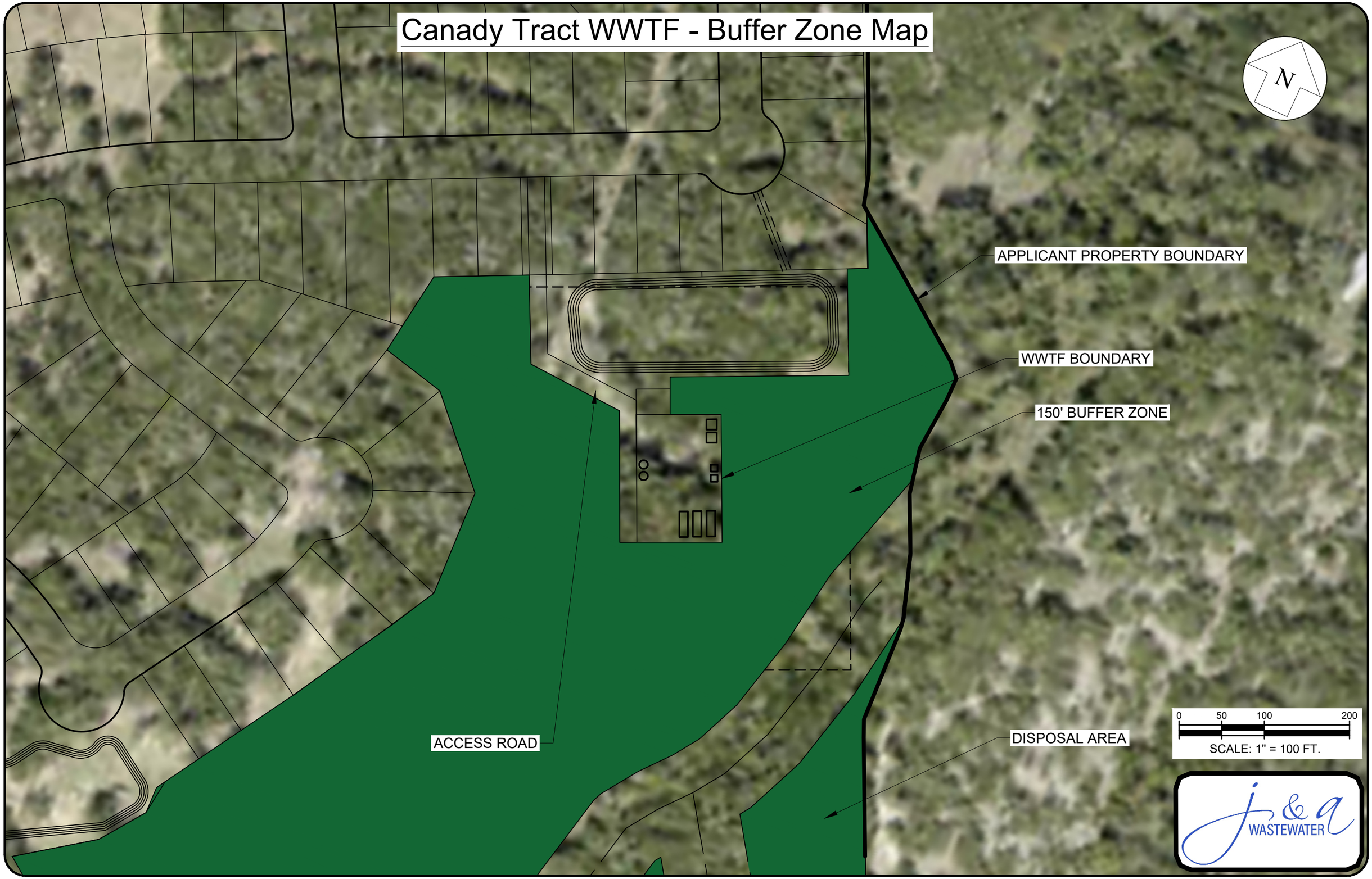
EFFLUENT STORAGE POND

0 500 1000 2000

SCALE: 1" = 1000 FT.

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Canady Tract WWTF - Buffer Zone Map



Canady Tract WWTF - Water Balance

Phase 1 (47,700 GPD)

1	2	3	4	5	6	7	8		9	10	11
	Avg Rain	Avg Runoff	Avg Infiltrated Rainfall	Evapo transpiration	Required Leaching	Total Water Needs	Effluent Req'd in Root Zone	Avg Evaporation	Evap from Reservoir	Effluent Applied to Land	Consumption from Reservoir
JAN	2.46	0.86	1.60	1.30	0.00	1.30	0.00	2.20	0.33	0.00	0.33
FEB	1.95	0.53	1.42	2.30	0.35	2.65	1.24	2.31	0.35	1.45	1.80
MAR	2.88	1.16	1.72	5.70	1.59	7.29	5.57	3.38	0.51	6.56	7.07
APR	2.63	0.98	1.65	3.42	0.71	4.13	2.48	4.19	0.63	2.92	3.55
MAY	4.31	2.30	2.01	6.12	1.64	7.76	5.75	4.62	0.70	6.77	7.47
JUN	2.96	1.22	1.74	6.48	1.90	8.38	6.64	6.11	0.92	7.81	8.73
JUL	2.21	0.69	1.52	6.66	2.06	8.72	7.20	6.94	1.05	8.47	9.52
AUG	2.36	0.79	1.57	4.59	1.21	5.80	4.23	7.02	1.06	4.98	6.04
SEP	3.13	1.35	1.78	5.13	1.34	6.47	4.69	5.31	0.80	5.51	6.32
OCT	4.20	2.21	1.99	4.05	0.82	4.87	2.88	4.03	0.61	3.39	4.00
NOV	2.81	1.11	1.70	1.60	0.00	1.60	0.00	2.84	0.43	0.00	0.43
DEC	2.25	0.72	1.53	1.30	0.00	1.30	0.00	2.11	0.32	0.00	0.32
TOTAL	**34.15**	**13.93**	**20.22**	**48.65**	**11.62**	**60.27**	**40.68**	**51.06**	**7.71**	**47.86**	**55.57**

12	13	14a	14b	15	16	17	18a		18b	19	20
	Effluent Applied to Land (in)	Mean Rainfall Distribution (%)	Rainfall (Max) (in)	Runoff (Max) (in)	Infiltrated Rainfall (in)	Total Avail H_2O (in)	% Distribution of Mean	Min Annual Net Evap Proportionally Distributed (in)	Net Evaporation (min) (in)	Storage (in-ac/ac)	Accumulated Storage (in-ac/ac)
JAN	4.033	7.2	3.74	1.83	1.91	5.94	4.31	1.75	0.26	3.77	11.24
FEB	4.033	5.7	2.96	1.22	1.74	5.77	4.52	1.84	0.28	2.68	13.92
MAR	4.033	8.4	4.38	2.36	2.02	6.05	6.62	2.69	0.41	-2.58	11.34
APR	4.033	7.7	4.00	2.04	1.96	5.99	8.21	3.34	0.50	0.98	12.32
MAY	4.033	12.6	6.55	4.28	2.27	6.30	9.05	3.68	0.56	-2.99	9.33
JUN	4.033	8.7	4.50	2.46	2.04	6.07	11.97	4.87	0.73	-4.16	5.17
JUL	4.033	6.5	3.36	1.52	1.83	5.87	13.59	5.53	0.83	-4.90	0.27
AUG	4.033	6.9	3.59	1.70	1.88	5.91	13.75	5.59	0.84	-1.42	-1.15
SEP	4.033	9.2	4.76	2.68	2.07	6.11	10.40	4.23	0.64	-1.78	-2.93
OCT	4.033	12.3	6.38	4.13	2.25	6.29	7.89	3.21	0.48	0.47	-2.46
NOV	4.033	8.2	4.27	2.27	2.00	6.04	5.56	2.26	0.34	3.69	3.69
DEC	4.033	6.6	3.42	1.57	1.85	5.88	4.13	1.68	0.25	3.78	7.47
TOTAL	**48.39**	**100.00**	**51.88**	**28.05**	**23.83**	**72.22**	**100.00**	**40.68**	**6.14**		

Hydro Group:	D	Effluent Quantity:	47,700 gpd
Curve Number (N):	80	Pond Size:	2 acres
S = 1000/N - 10:	2.500	Disposal area:	**13.25 acres**
C_E:	2	Ratio:	0.1509
C_1:	7		
irrigation efficiency:	0.85	Max Year Annual Rainfall:	51.88 in
		Min Year Annual Evaporation:	40.68 in
Required Capacity:	15.37 acre-ft		
	5.01 MG		
	5008038 gal		
app rate:	0.083 gal/sqft/day		
	4.03251793 ac-ft/ac/yr		

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Canady Tract WWTF - Water Balance

Phase 1 (95,400 GPD)

1	2	3	4	5	6	7	8		9	10	11
	Avg Rain	Avg Runoff	Avg Infiltrated Rainfall	Evapo transpiration	Required Leaching	Total Water Needs	Effluent Req'd in Root Zone	Avg Evaporation	Evap from Reservoir	Effluent Applied to Land	Consumption from Reservoir
JAN	2.46	0.86	1.60	1.30	0.00	1.30	0.00	2.20	0.17	0.00	0.17
FEB	1.95	0.53	1.42	2.30	0.35	2.65	1.24	2.31	0.17	1.45	1.63
MAR	2.88	1.16	1.72	5.70	1.59	7.29	5.57	3.38	0.26	6.56	6.81
APR	2.63	0.98	1.65	3.42	0.71	4.13	2.48	4.19	0.32	2.92	3.23
MAY	4.31	2.30	2.01	6.12	1.64	7.76	5.75	4.62	0.35	6.77	7.12
JUN	2.96	1.22	1.74	6.48	1.90	8.38	6.64	6.11	0.46	7.81	8.27
JUL	2.21	0.69	1.52	6.66	2.06	8.72	7.20	6.94	0.52	8.47	9.00
AUG	2.36	0.79	1.57	4.59	1.21	5.80	4.23	7.02	0.53	4.98	5.51
SEP	3.13	1.35	1.78	5.13	1.34	6.47	4.69	5.31	0.40	5.51	5.92
OCT	4.20	2.21	1.99	4.05	0.82	4.87	2.88	4.03	0.30	3.39	3.69
NOV	2.81	1.11	1.70	1.60	0.00	1.60	0.00	2.84	0.21	0.00	0.21
DEC	2.25	0.72	1.53	1.30	0.00	1.30	0.00	2.11	0.16	0.00	0.16
TOTAL	**34.15**	**13.93**	**20.22**	**48.65**	**11.62**	**60.27**	**40.68**	**51.06**	**3.85**	**47.86**	**51.71**

12	13	14a	14b	15	16	17	18a		18b	19	20
	Effluent Applied to Land (in)	Mean Rainfall Distribution (%)	Rainfall (Max) (in)	Runoff (Max) (in)	Infiltrated Rainfall (in)	Total Avail H_2O (in)	% Distribution of Mean	Min Annual Net Evap Proportionally Distributed (in)	Net Evaporation (min) (in)	Storage (in-ac/ac)	Accumulated Storage (in-ac/ac)
JAN	4.033	7.2	3.74	1.83	1.91	5.94	4.31	1.75	0.13	3.90	11.67
FEB	4.033	5.7	2.96	1.22	1.74	5.77	4.52	1.84	0.14	2.82	14.49
MAR	4.033	8.4	4.38	2.36	2.02	6.05	6.62	2.69	0.20	-2.37	12.12
APR	4.033	7.7	4.00	2.04	1.96	5.99	8.21	3.34	0.25	1.23	13.34
MAY	4.033	12.6	6.55	4.28	2.27	6.30	9.05	3.68	0.28	-2.71	10.63
JUN	4.033	8.7	4.50	2.46	2.04	6.07	11.97	4.87	0.37	-3.79	6.84
JUL	4.033	6.5	3.36	1.52	1.83	5.87	13.59	5.53	0.42	-4.48	2.36
AUG	4.033	6.9	3.59	1.70	1.88	5.91	13.75	5.59	0.42	-1.00	1.36
SEP	4.033	9.2	4.76	2.68	2.07	6.11	10.40	4.23	0.32	-1.46	-0.10
OCT	4.033	12.3	6.38	4.13	2.25	6.29	7.89	3.21	0.24	0.71	0.61
NOV	4.033	8.2	4.27	2.27	2.00	6.04	5.56	2.26	0.17	3.86	3.86
DEC	4.033	6.6	3.42	1.57	1.85	5.88	4.13	1.68	0.13	3.91	7.77
TOTAL	**48.39**	**100.00**	**51.88**	**28.05**	**23.83**	**72.22**	**100.00**	**40.68**	**3.07**		

Hydro Group:	D	Effluent Quantity:	95,400 gpd
Curve Number (N):	80	Pond Size:	**2 acres**
S = 1000/N - 10:	2.500	Disposal area:	**26.5 acres**
C_E:	2	Ratio:	0.0755
C_1:	7		
irrigation efficiency:	0.85	Max Year Annual Rainfall:	51.88 in
		Min Year Annual Evaporation:	40.68 in

Required Capacity:	32.00	acre-ft
	10.43	MG
	10425365	gal
app rate:	0.083	gal/sqft/day
	4.03251793	ac-ft/ac/yr

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Canady Tract WWTF – Domestic Worksheet 3.1
Surface Land Disposal of Effluent Engineering Report

Water balance and storage volume calculations have been completed for final phase. The effluent storage pond required for full buildout is 2 acres. At full buildout of 95,400 gpd, 26.5 acres area disposal is required. The following is a summary providing references/sources for the data used to develop the tables. Also enclosed are the irrigation efficiency assumptions, summary of the application rates per month per acre, nitrogen loading, and water balance. The clarifications are below, water balance with storage volume calculations is presented separately as their own attachments titled “Water Balance”.

Water Balance Table Column	**Assumptions and References/Sources**
Column 2: Average Rainfall	Data obtained from Texas Water Development Board Quadrangle 710; https://waterdatafortexas.org/lake-evaporation-rainfall; years 1998 – 2023.
Column 3: Average Runoff	Curve number (CN) was obtained from SCS Technical Release No. 55. A curve number of 80 was used, considering lawns and parks in fair condition (grass cover between 50% to 75%) in soils that fall into hydro groups D.
Column 4: Average Infiltrated Rainfall	Obtained by subtracting average runoff from average rainfall.
Column 5: Evapotranspiration	Data obtained from Texas Board of Water Engineers, Bulletin 6019 (Consumptive Use of Water by Major Crops in Texas). Average monthly and annual consumptive use, Table 5 – Area 7C for Warm Season (April – Oct), Kc of 0.9 used for Zoysia Grass. Table 8 – Area 7C for Cool Season (Nov-March), used for small grain, Cereal Rye.
Column 6: Required Leaching	Ce (electrical conductivity) was based on a close by groundwater well, a value of 2 mmhos/cm was used. Cl (allowable conductivity of soil) = 7 based on 30 TAC 309.20, Table 3, Cereal Rye and Zoysia Grass.
Column 7: Total Water Needs	Obtained by adding evapotranspiration and required leaching.
Column 8: Effluent Needed in Root Zone	Obtained by subtracting average infiltrated rainfall from total water needs (assume zero if value is less than zero).
Column 9: Net Evaporation from Reservoir Surface	Data obtained from Texas Water Development Board Quadrangle 710; https://waterdatafortexas.org/lake-evaporation-rainfall; years 1998 – 2023.
Column 10: Effluent Applied to Land	Obtained by dividing the effluent needed in root zone by the irrigation efficiency, K, assumed to be 0.85 or 85%
Column 11: Consumption from Reservoir	Obtained by adding net evaporation and effluent applied to land.
Column 13: Effluent Received for Application or Storage	Based on full buildout flows of 95,400 gpd and 26.5 acres of TLAP disposal area.
Column 14: Rainfall (Maximum)	Data on maximum rainfall year in the past 25 years was obtained from Texas Water Development Board Quadrangle 710 Precipitation (inches) from 1998 to 2023, 51.88 inches in 2004. The total was distributed proportionally to monthly average rainfall.

Column 15: Runoff (Maximum)	Calculated as shown above for Column 3 using maximum rainfall numbers from Column 14.
Column 16: Infiltrated Rainfall	Obtained by subtracting maximum runoff (Column 15) from maximum rainfall (Column 14).
Column 17: Available Water	Obtained by adding effluent received (Column 13) and infiltrated rainfall (Column 16).
Column 18b: Lowest Annual Net Evaporation	Data on minimum net evaporation year in the past 25 years was obtained from Texas Water Development Board Quadrangle 710, Monthly Evaporation (inches) from 1998 to 2023: 40.68 inches in 2021. The total was distributed proportionally to monthly average evaporation.
Column 19: Storage	Obtained by subtracting lowest annual net evaporation (Column 18b) from effluent received (Column 13), then subtracting total water needs (Column 7) – infiltrated rainfall (Column 16) divided by k (irrigation efficiency of 0.85). If total water needs (Column 7) – infiltrated rainfall (Column 16) divided by k (irrigation efficiency of 0.85) is < 0, then storage = Column 13 – Column 18b).
Column 20: Accumulated Storage	Summation beginning with the first consecutive month of possible values from Column 19.

Irrigation Efficiency
Based on Howell 2003, average irrigation efficiency for spray irrigation in a field environment ranges from 85 to 90 percent. Therefore, an efficiency of 85 percent was assumed for water balance and storage calculations.

Nitrogen Balance
It is anticipated that total nitrogen in the effluent will be ≤30 mg/L. Loading will be as follows:

30 mg/L x 95,400 g/day x 3.78 L/g / 453,592 lbs/mg x 365 day/year =

8,705.40 lbs/year spread across 26.5 acres = 328 lbs/acre/year

Zoysia Grass is able to utilize large amounts of nitrogen, with excellent yield response at around 400 pounds per acre per year.

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
- ☐ Other (describe in detail):
- ☐ Subsurface application
- ☐ Subsurface soils absorption
- ☐ Subsurface area drip dispersal system
- ☐ Evapotranspiration beds

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

For existing authorizations, provide Registration Number:

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
Cereal Rye and Zoysia Grass (Phase 1)	13.25	47,700	Y
Cereal Rye and Zoysia Grass (Final Phase)	26.50	95,400	Y

DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.1: SURFACE LAND DISPOSAL OF EFFLUENT

The following is required for new and major amendment permit applications. Renewal and minor amendment permit applications may be asked for this worksheet on a case by case basis.

Section 1. Surface Disposal (Instructions Page 72)

Complete the item that applies for the method of disposal being used.

A. Irrigation

Area under irrigation, in acres: 26.5

Design application frequency:

hours/day 0.33(20 min/d) **And** days/week 7

Land grade (slope):

average percent (%): 3-5

maximum percent (%): 3-8

Design application rate in acre-feet/acre/year: 4.03

Design total nitrogen loading rate, in lbs N/acre/year: 328

Soil conductivity (mmhos/cm): See Soil Report

Method of application: Spray Irrigation

Attach a separate engineering report with the water balance and storage volume calculations, method of application, irrigation efficiency, and nitrogen balance.

Attachment: Water Balance and 3.1 Surface Land Disposal Engineering Report

B. Evaporation ponds

Daily average effluent flow into ponds, in gallons per day:

Attach a separate engineering report with the water balance and storage volume calculations.

Attachment:

C. Evapotranspiration beds

Number of beds:

Area of bed(s), in acres:

Depth of bed(s), in feet:

Void ratio of soil in the beds:

Storage volume within the beds, in acre-feet:

Attach a separate engineering report with the water balance and storage volume calculations, and a description of the lining.

Attachment:

DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.1: SURFACE LAND DISPOSAL OF EFFLUENT

The following is required for new and major amendment permit applications. Renewal and minor amendment permit applications may be asked for this worksheet on a case by case basis.

Section 1. Surface Disposal (Instructions Page 72)

Complete the item that applies for the method of disposal being used.

A. Irrigation

Area under irrigation, in acres: 26.5

Design application frequency:

hours/day 0.33(20 min/d) **And** days/week 7

Land grade (slope):

average percent (%): 3-5

maximum percent (%): 3-8

Design application rate in acre-feet/acre/year: 4.03

Design total nitrogen loading rate, in lbs N/acre/year: 347

Soil conductivity (mmhos/cm): See Soil Report

Method of application: Spray Irrigation

Attach a separate engineering report with the water balance and storage volume calculations, method of application, irrigation efficiency, and nitrogen balance.

Attachment: Water Balance and 3.1 Surface Land Disposal Engineering Report

B. Evaporation ponds

Daily average effluent flow into ponds, in gallons per day:

Attach a separate engineering report with the water balance and storage volume calculations.

Attachment:

C. Evapotranspiration beds

Number of beds:

Area of bed(s), in acres:

Depth of bed(s), in feet:

Void ratio of soil in the beds:

Storage volume within the beds, in acre-feet:

Attach a separate engineering report with the water balance and storage volume calculations, and a description of the lining.

Attachment:

Canady Tract WWTF – Annual Cropping Plan

a. Soils map depicting the location of the crops proposed or currently being grown. These locations should be identified by field and crop on the soils map.

A USDA Soils Map has been provided with the permit application.

b. All types of crops and acreage irrigated for each crop, including warm and cool season crops.

The 26.5-acre area will be seeded with Zoysia Grass and Cereal Rye.

c. Crop yield goals or estimates.

Yield estimate: Zoysia Grass will produce about 1 ton per acre with no applied fertilizer. Cereal Rye produces 2 to 3 tons per acres.

d. Growing seasons for each crop including months the field is left fallow (no crops).

Growing season for Zoysia Grass is from April through October. The growing season for Cereal Rye is November through March, the fields are never left fallow.

e. Nutrient requirements for each crop, including additional fertilizer requirements for each crop, proposed additional fertilizer applications for each crop, and methods of fertilizer application for each crop, based on annual soil sampling and analysis.

The proposed design total nitrogen loading rate is 0.90 lb/acre/day or 328 lb/acre/year. Zoysia Grass can utilize large amounts of nitrogen, with excellent yield response at 400 lbs/ acre/ year.To most effectively use nitrogen, other nutrients are required such as phosphorus and potassium. These nutrient levels will be monitored through annual soil analysis and supplemented if required. Additional fertilizer is not anticipated but a manual spreader would be used if needed.

f. Provide the minimum and maximum harvest height for the crop (e.g. mowing height of grasses).

Minimum mowing height will be such that the grass is not scorched, approximately 3”. The maximum growing height will be determined by the operator, 18” is anticipated maximum height prior to mowing.

g. Supplemental watering requirements for each crop.

No supplemental watering is anticipated.

h. Salt tolerances of each crop.

Zoysia Grass is highly salt tolerant, Cereal Rye is considered to be intermediate in salt tolerance.

i. Describe the harvesting method and the proposed number of harvests for each crop.

The irrigation fields will be regularly mowed with clippings hauled off.

j. If the proposed crop is existing native vegetation that will not be harvested, include a justification that the non-removal of crops will not lead to a buildup in nutrients. If the proposed system is drip irrigation with a proposal to use the existing forested vegetation as a crop, then provide a vegetation survey by a certified arborist describing at a minimum: (1) the number of mature ashe juniper (Juniperus ashei) and oaks (Quercus viginiana) trees per acre, (2) the number of other trees per acre, (3) percent of overstory canopy cover, (4) the extent of open

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spaces, and (5) areas with forbs and grasses expressed as percent of the land of each application site. A mature tree is one with a minimum height of 14 feet.

Varies

Canady Tract WWTF – Groundwater Quality Report

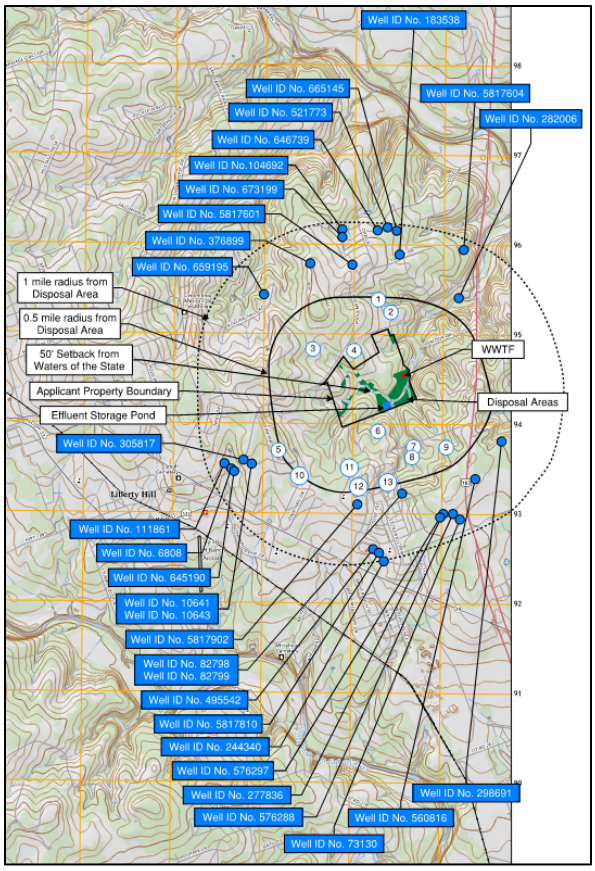
Background
The Canady Tract WWTF will serve a new development that generates 95,400 gpd at full buildout. The treated effluent will be disposed of via spray irrigation of 26.5 acres at full buildout.

Aquifer
The nearby aquifer codes are:

- 218HNSL - Hensell Sand Member of Travis Peak Formation
- 217HSTN - Hosston Formation

Nearby Well Information
A USGS map showing all wells within 1 mile of the property boundaries has been included with the application. A well reference list with well attributes such as the well ID number, well depth, well status, and proposed management practice is provided with this application. There are no wells located within 500’ of the disposal areas. The well logs for the wells on the reference list are included with this application. There are no monitoring wells available, and therefore no groundwater quality baseline data has been established. Below is a portion of the USGS map depicting the WWTF site, effluent disposal areas, 0.5 mi and 1-mile radius from the property boundaries, and well locations.

Impact on Local Groundwater Resources
The wastewater effluent is used to irrigate publicly accessible fields. The effluent applied to the land has a maximum application rate of 0.087 gal/sqft/day to ensure the effluent is taken up by the crop root systems and that potential contaminants do not migrate below the root zone. The treated effluent will be stored in a pond with a liner certified by a Texas Professional Engineer prior to being conveyed to the disposal areas.



English Plain Language Summary

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 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.

Sapelo Liberty Hill LP, 1608 W 5th Street, Suite 240, Austin, TX 78703 applied to the Texas Commission on Environmental Quality (TCEQ) for a New (TLAP) Permit to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 95,400 gallons per day via public access surface spray irrigation system with a minimum of 26.5 acres.

The domestic wastewater treatment facility will be located approximately 0.54 miles west of the intersection of SH 183 and Agua Fria Rd in the city of Liberty Hill in Williamson County, Texas 78642. The permit application will be available for viewing and copying Liberty Hill Public Library, 355 Main St, Liberty Hill in Williamson County TX 78642.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand (CBOD5), total suspended solids (TSS), ammonia nitrogen (NH3-N), and Escherichia coli. Domestic wastewater will be treated by an MBR, and the system will have a primary screen, equalization tank, multiple process trains consisting of anoxic, aeration, membrane zones, and sludge holding tanks. The facility will utilize chlorine or UV disinfection.

j & a WASTEWATER

Spanish Plain Language Summary

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 exige 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 federal. representaciones ejecutables de la solicitud de permiso.

Sapelo Liberty Hill LP, 1608 W 5th Street, Suite 240, Austin, TX 78703 solicitó a la Comisión de Calidad Ambiental de Texas (TCEQ) un nuevo permiso (TLAP) para autorizar la eliminación de aguas residuales tratadas en un volumen que no exceda el diario. Flujo promedio de 95,400 galones por día a través de un sistema de riego por aspersión superficial de acceso público con un mínimo de 26.5 acres.

La instalación de tratamiento de aguas residuales domésticas estará ubicada aproximadamente a 0.54 millas al oeste de la intersección de SH 183 y Agua Fria Rd en la ciudad de Liberty Hill en el condado de Williamson, Texas 78642. La solicitud de permiso estará disponible para ver y copiar en la Biblioteca Pública de Liberty Hill. 355 Main St, Liberty Hill en el condado de Williamson TX 78642.

Se espera que las descargas de la instalación contengan demanda bioquímica de oxígeno carbonoso (CBOD5) de cinco días, sólidos suspendidos totales (SST), nitrógeno amoniacal (NH3-N) y Escherichia coli. Las aguas residuales domésticas serán tratadas mediante un MBR y el sistema tendrá una pantalla primaria, un tanque de ecualización, múltiples trenes de proceso que constan de zonas anóxicas, de aireación, de membrana y tanques de retención de lodos. La instalación utilizará cloro o desinfección UV.

J&A WASTEWATER

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

Canady Tract WWTF - TLAP Map

LIBERTY HILL QUADRANGLE
TEXAS
7.5-MINUTE TOPO

Well ID No. 183538
Well ID No. 665145
Well ID No. 521773
Well ID No. 646739
Well ID No.104692
Well ID No. 673199
Well ID No. 5817601
Well ID No. 376899
Well ID No. 659195
Well ID No. 5817604
Well ID No. 282006
1 mile radius from Disposal Area
0.5 mile radius from Disposal Area
50' Setback from Waters of the State
Applicant Property Boundary
Effluent Storage Pond
WWTF
Disposal Areas
Well ID No. 305817
Well ID No. 111861
Well ID No. 6808
Well ID No. 645190
Well ID No. 10641
Well ID No. 10643
Well ID No. 5817902
Well ID No. 82798
Well ID No. 82799
Well ID No. 495542
Well ID No. 5817810
Well ID No. 244340
Well ID No. 576297
Well ID No. 277836
Well ID No. 576288
Well ID No. 298691
Well ID No. 560816
Well ID No. 73130

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

Data is provided by The National Map (TNM), is the best available at the time of map generation, and includes data content from supporting themes of Elevation, Hydrography, Geographic Names, Boundaries, Transportation, Structures, Land Cover, and Orthoimagery. Refer to associated Federal Geographic Data Committee (FGDC) Metadata for additional source data information.

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands. Temporal changes may have occurred since these data were collected and some data may no longer represent actual surface conditions.

Learn About The National Map: https://nationalmap.gov

UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
NV PV
NU PU
Grid Zone Designation 14R

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

USER DEFINED CONTENT

QUADRANGLE LOCATION

Joppa	Mahomet	Florence
Bertram	Liberty Hill	Leander NE
Travis Peak	Nameless	Leander

ADJOINING QUADRANGLES

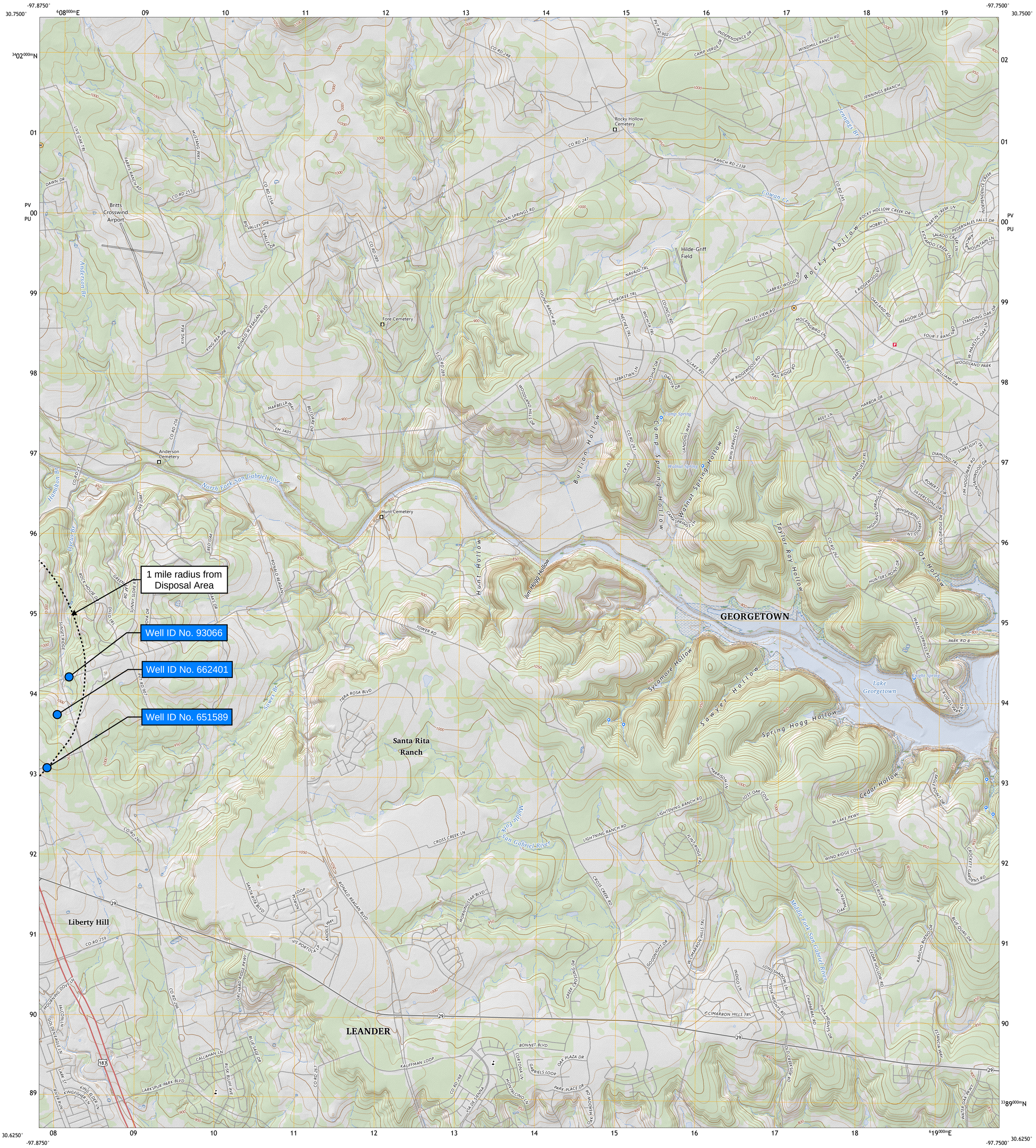
ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

LIBERTY HILL, TX
2024

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

Canady Tract WWTF - TLAP Map

LEANDER NE QUADRANGLE
TEXAS - WILLIAMSON COUNTY
7.5-MINUTE TOPO



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

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MN
GN
3°31'
63 MILS
0°36'
11 MILS

UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
PV
00
PU
Grid Zone Designation 14R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

USER DEFINED CONTENT

TEXAS

QUADRANGLE LOCATION

Mahomet	Florence	Cobbs Cavern
Liberty Hill	Leander NE	Georgetown
Nameless	Leander	Round Rock

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

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

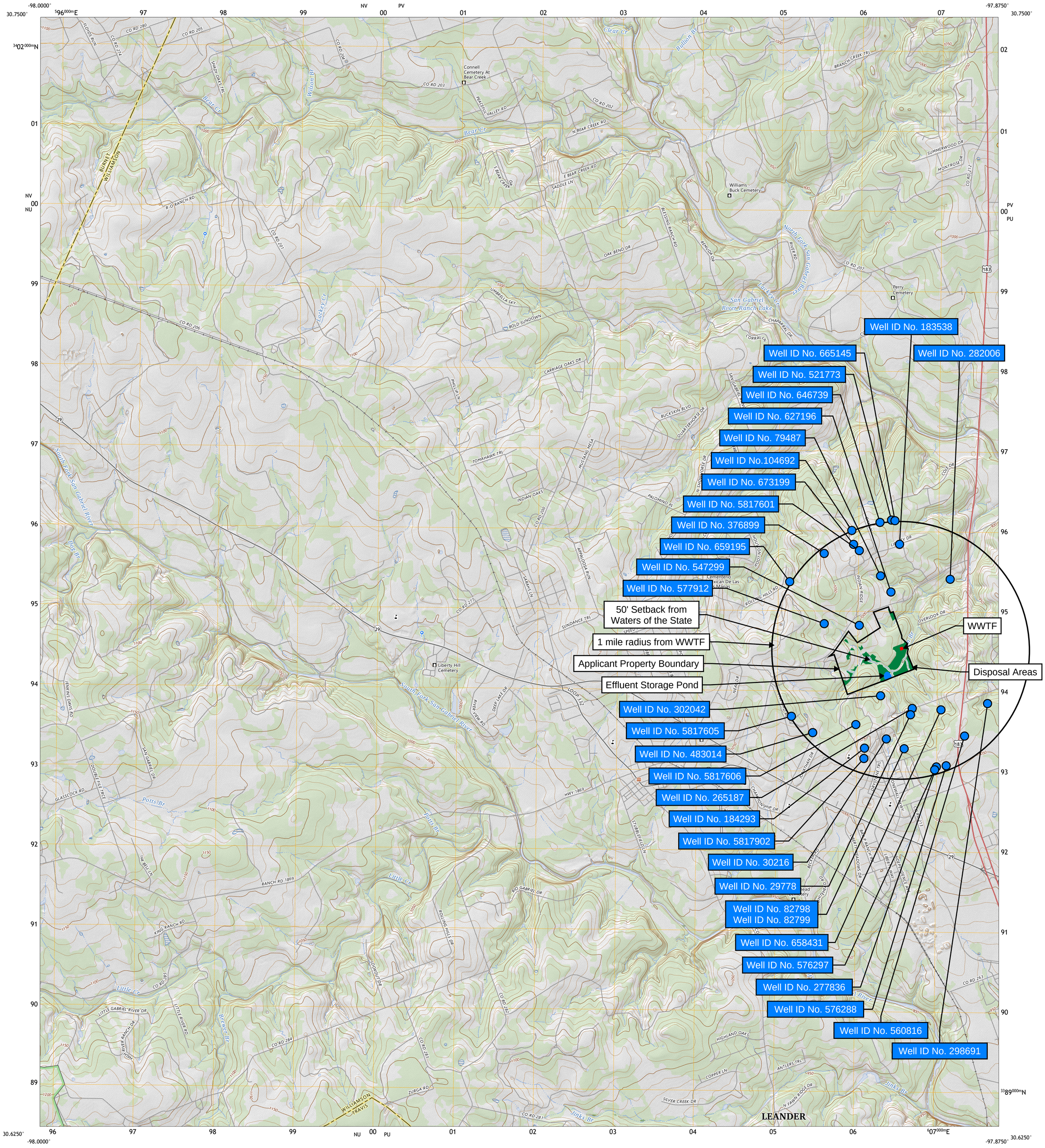
LEANDER NE, TX
2024

J&A WASTEWATER

Canady Tract WWTF - USGS Map

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

LIBERTY HILL QUADRANGLE
TEXAS
7.5-MINUTE TOPO



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MN
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3°35'
64 MILS
0°33'
10 MILS
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U.S. National Grid
100,000 - m Square ID
NV PV
NU PU
Grid Zone Designation 14R

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

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Joppa	Mahomet	Florence
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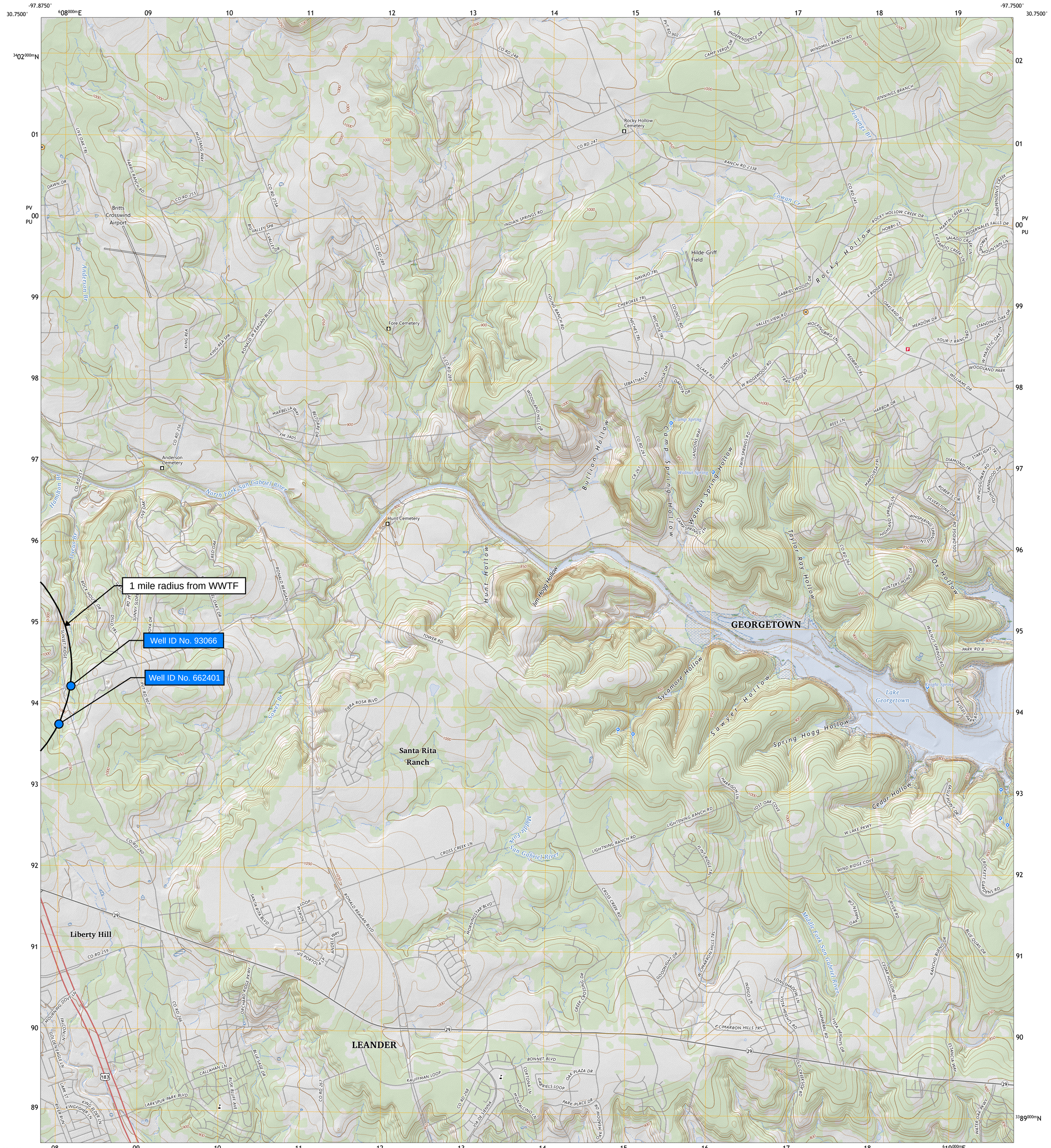
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LIBERTY HILL, TX
2024

Canady Tract WWTF - USGS Map

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U.S. GEOLOGICAL SURVEY

LEANDER NE QUADRANGLE
TEXAS - WILLIAMSON COUNTY
7.5-MINUTE TOPO

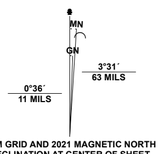


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North American Datum of 1983 (NAD83)
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Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

LEANDER NE, TX
2024

J&A WASTEWATER

Leah Whallon

From: Janela Revilla <jrevilla@jawastewater.com>
Sent: Friday, December 20, 2024 4:58 PM
To: Leah Whallon
Cc: Ash Upadhyaya; Jamie Miller
Subject: Re: Application for Proposed Permit No. WQ0016683001; Sapelo Liberty Hill, LP; Canady Tract WWTF
Attachments: Municipal Disposal New Spanish NORI.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Good afternoon Leah,

The NORI preview is correct. Please see attached Spanish translation.

Thanks,
Janela Revilla

Janela Revilla
Project Engineer
JA Wastewater, LLC
(737) 864-3476
jrevilla@jawastewater.com

From: Ash Upadhyaya <aupadhyaya@jawastewater.com>
Sent: Friday, December 20, 2024 2:44 PM
To: Janela Revilla <jrevilla@jawastewater.com>
Subject: Fw: Application for Proposed Permit No. WQ0016683001; Sapelo Liberty Hill, LP; Canady Tract WWTF

Ashraya Upadhyaya, M.S
Project Engineer
JA Wastewater, LLC
903-414-0307
aupadhyaya@jawastewater.com

From: Leah Whallon <Leah.Whallon@Tceq.Texas.Gov>
Sent: Friday, December 20, 2024 2:40 PM
To: Ash Upadhyaya <aupadhyaya@jawastewater.com>
Cc: Jamie Miller <jmiller@jawastewater.com>
Subject: Application for Proposed Permit No. WQ0016683001; Sapelo Liberty Hill, LP; Canady Tract WWTF

Good Afternoon,

Please see the attached Notice of Deficiency letter dated December 20, 2024 requesting additional information needed to declare the application administratively complete. Please send the complete response by January 3, 2025.

Please let me know if you have any questions.

Thank you,

Leah Whallon
Texas Commission on Environmental Quality
Water Quality Division
512-239-0084
leah.whallon@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

Comisión de Calidad Ambiental del Estado de Texas

AVISO DE RECIBO DE LA SOLICITUD E
INTENCION DE OBTENER PERMISO PARA LA CALIDAD DEL AGUA

PERMISO PROPUESTO NO. WQ00_____

SOLICITUD. Sapelo Liberty Hill, LP, 1608 West 5th Street, Unit 240, Austin, Texas 78703, ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) para el propuesto Permiso No. WQ0016683001 de disposición de aguas residuales para autorizar la disposición de aguas residuales tratadas en un volumen que no sobrepasa un flujo promedio diario de 95,400 galones por día por medio de acceso público sistema de riego por aspersión superficial con un mínimo de 25.1 acres. La planta de tratamiento de aguas domésticos residuales y el área de disposición están ubicados en aproximadamente 0,54 millas al oeste del intersección de Agua Fria Road y U.S. Highway 183, cerca de la ciudad de Liberty Hill, en Williamson Condado, Texas 78642. La TCEQ recibió esta solicitud el día 10 de diciembre de 2024. La solicitud para el permiso estará disponible para leerla y copiarla en Liberty Hill Public Library, 355 Main Street, Liberty Hill, en el condado de Williamson, Texas antes de la fecha de publicación de este aviso en el periódico. 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://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications.

Include the following non-italicized sentence if the facility is located in the Coastal Management Program boundary. The Coastal Management Program boundary is the area along the Texas Coast of the Gulf of México as depicted on the map in 31 TAC §503.1 and includes part or all of the following counties: Cameron, Willacy, Kenedy, Kleberg, Nueces, San Patricio, Aransas, Refugio, Calhoun, Victoria, Jackson, Matagorda, Brazoria, Galveston, Harris, Chambers, Jefferson y Orange. El Director Ejecutivo de la TCEQ ha revisado esta medida para ver si está de acuerdo con los objetivos y las regulaciones del Programa de Administración Costero de Texas (CMP) de acuerdo con las regulaciones del Consejo Coordinador de la Costa (CCC) y ha determinado que la acción es conforme con las metas y regulaciones pertinentes del CMP.

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

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

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

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

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

LISTA DE CORREO. Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la

Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. 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 Sapelo Liberty Hill, LP a la dirección indicada arriba o llamando a Ashraya Upadhyaya al 903-414-0307.

Fecha de emisión _____ *[Date notice issued]*

Alan Barraza

From: Janela Revilla <jrevilla@jawastewater.com>
Sent: Friday, March 7, 2025 3:04 PM
To: Alan Barraza; Hannah Zellner
Cc: Ash Upadhyaya; Jamie Miller
Subject: Re: WQ0016683001 NOD
Attachments: 2025.03.07_USDA Report.pdf

Ok, I thought this would take me longer to finish but I ran the USDA report just now, and it looks like there are no changes in the soil groups! The same brackett gravelly clay loam, denton silty clay, and eckrant cobbly clay are found in the adjusted disposal areas.

Please see attached USDA report with updated disposal areas and let me know if there's anything you need!

Thanks,
Janela Revilla

Janela Revilla
Project Engineer
JA Wastewater, LLC
(737) 864-3476
jrevilla@jawastewater.com

From: Janela Revilla <jrevilla@jawastewater.com>
Sent: Friday, March 7, 2025 2:27 PM
To: Alan Barraza <Alan.Barraza@tceq.texas.gov>; Hannah Zellner <Hannah.Zellner@Tceq.Texas.Gov>
Cc: Ash Upadhyaya <aupadhyaya@jawastewater.com>; Jamie Miller <jmiller@jawastewater.com>
Subject: Re: WQ0016683001 NOD

Hi Alan,

No worries, I'll work on these items and get them back to you early next week.

You have a good weekend too!!

Thanks,
Janela Revilla

Janela Revilla
Project Engineer
JA Wastewater, LLC
(737) 864-3476
jrevilla@jawastewater.com

From: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Sent: Friday, March 7, 2025 2:22 PM
To: Janela Revilla <jrevilla@jawastewater.com>; Hannah Zellner <Hannah.Zellner@Tceq.Texas.Gov>
Cc: Ash Upadhyaya <aupadhyaya@jawastewater.com>; Jamie Miller <jmiller@jawastewater.com>
Subject: RE: WQ0016683001 NOD

Janella,

I hate to do this to you, but since the fields have moved slightly, can you please provide an updated USDA soil survey map as well as WS 3.0, Section 8 Table 3.0(4) if any of the soil groups changed. Hope you have a good weekend!

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

From: Janela Revilla <jrevilla@jawastewater.com>
Sent: Wednesday, March 5, 2025 3:08 PM
To: Hannah Zellner <Hannah.Zellner@Tceq.Texas.Gov>
Cc: Ash Upadhyaya <aupadhyaya@jawastewater.com>; Jamie Miller <jmiller@jawastewater.com>; Alan Barraza <Alan.Barraza@tceq.texas.gov>
Subject: Re: WQ0016683001 NOD

Good afternoon Hannah,

Here is a pdf containing our response to the NOD along with revised exhibits. Just let me know if there's anything else you need or if you have questions!

Thanks,
Janela Revilla

Janela Revilla
Project Engineer
JA Wastewater, LLC
(737) 864-3476
jrevilla@jawastewater.com

From: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Sent: Monday, February 24, 2025 10:36 AM
To: Janela Revilla <jrevilla@jawastewater.com>
Cc: Ash Upadhyaya <aupadhyaya@jawastewater.com>; Jamie Miller <jmiller@jawastewater.com>; Hannah Zellner <Hannah.Zellner@Tceq.Texas.Gov>
Subject: WQ0016683001 NOD

Good morning,

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. Please send updated technically complete and accurate information within **14 days** (March 10th) of the date of this email.

Any revisions can be sent electronically to myself or Hannah Zellner, P.G. (cc'd on this email). Please let us know if you have any questions.

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

SAPELO LIBERTY HILL – CANADY TRACT

PERMIT NO. WQ0016683001

APPLICATION FOR NEW PERMIT

Technical Completeness Review

Please address the following items:

Please see answers in blue.

GEOLOGY & AGRONOMY

1. Domestic Worksheet 3.0, Section 6. Well and Map information– Well #8 is identified with State Well ID #29448. This appears to be a typo. The correct number is #29778. For clarity, please revise the well table.

   Well #8 is #29778. Please see updated Well ID Attachment.

2. Request for Variance on Setback Requirement from Water Bodies – Due to excessive slopes onsite and the increased risk of runoff and flooding, a 50-ft buffer from surface waters with the proposed additional measures is not sufficiently protective of waters in the state. Please submit revised maps showing that the proposed spray fields are a minimum of 100-feet from the onsite waters in the state.

   Please see updated exhibits reflecting the 100-feet setback from waters of the state.

3. Domestic Worksheet 3.0, Section 6. Well and Map information – an on-channel pond is shown on the USGS topography map, aerial imagery of the site, and identified on several of the submitted maps. Due to the scale of the USGS topographic map, the buffer for this feature is unclear. Submitted site maps do not appear to include a buffer for this water in the state. Please revise the site maps and USGS map to clearly show a 100-ft buffer for this feature.

   Please see updated exhibits reflecting the 100-feet setback from waters of the state.

4. Domestic Worksheet 3.0, Section 8.B – Soil Analyses: Please submit laboratory results sheets from the soil analyses.

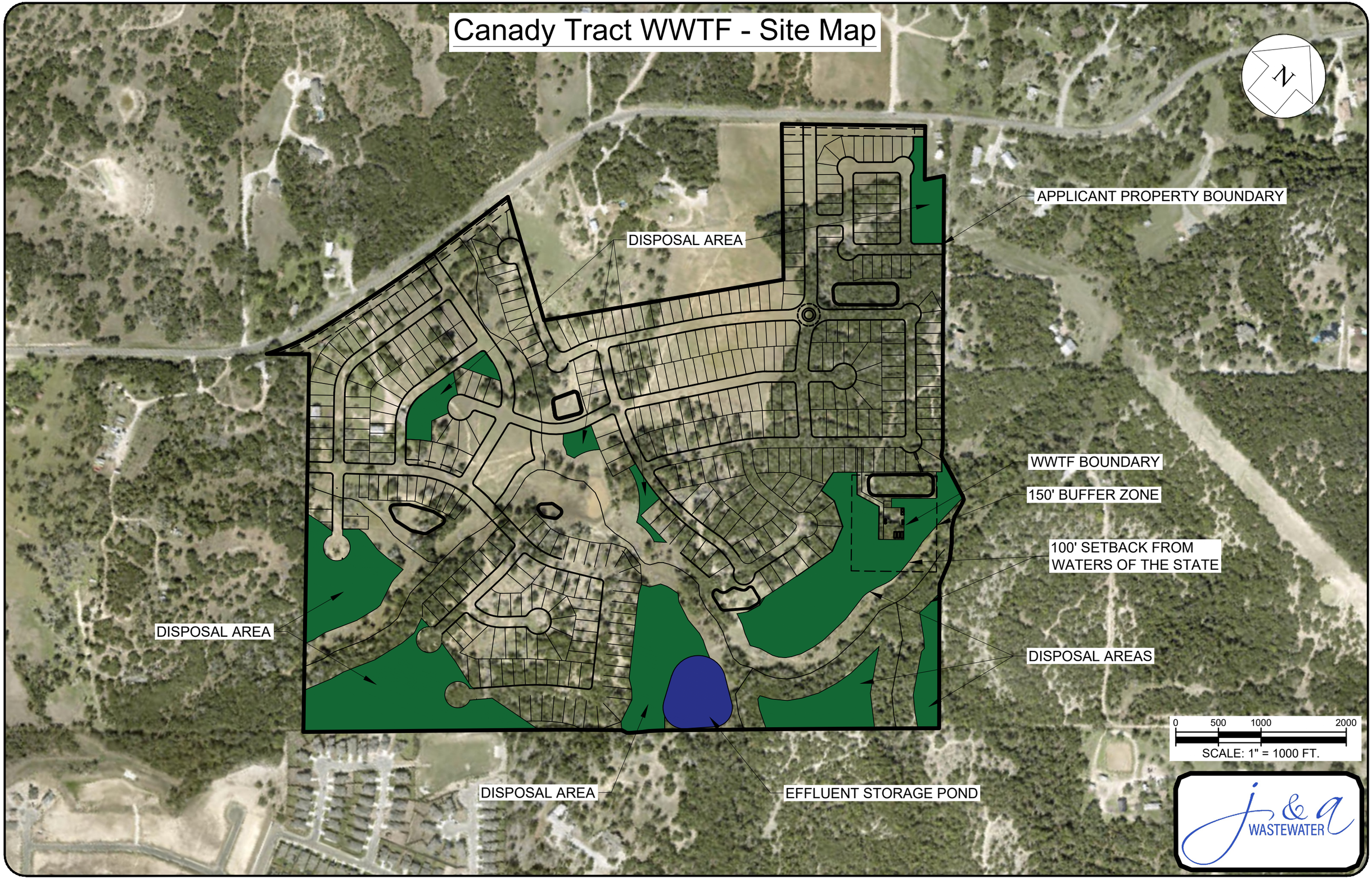
   Please see attached Soils Analyses.

For geology/groundwater-related questions, please contact Hannah Zellner, P.G. via email at Hannah.Zellner@tceq.texas.gov (preferred) or at 512-239-2908. For agronomy-related questions, please contact Alan Barraza via email at Alan.Barraza@tceq.texas.gov (preferred) or at 512-239-4534.

Canady Tract WWTF - USGS Well ID Attachment						
Map Reference Number	Well ID #	Well Use	Producing Y/N	Open, cased, capped, or Plugged?	Proposed Best Management Practice	Well Log Included? Y/N
1	79487	Domestic	Y	Cased	Buffer requirement will be met	Y
2	627196	Domestic	Y	Cased	Buffer requirement will be met	Y
3	577912	Domestic	Y	Cased	Buffer requirement will be met	Y
4	547299	Domestic	Y	Cased	Buffer requirement will be met	Y
5	5817605	Irrigation	Y	Cased	Buffer requirement will be met	Y
6	302042	Domestic	Y	Cased	Buffer requirement will be met	Y
7	265187	Domestic	Y	Cased	Buffer requirement will be met	Y
8	29778	Domestic	Y	Cased	Buffer requirement will be met	Y
9	658431	Domestic	Y	Cased	Buffer requirement will be met	Y
10	483014	Domestic	Y	Cased	Buffer requirement will be met	Y
11	5817606	Public Supply	Y	Cased	Buffer requirement will be met	Y
12	184293	Irrigation	Y	Cased	Buffer requirement will be met	Y
13	30216	Withdrawal of Water	N	Plugged	Buffer requirement will be met	Y

j & a WASTEWATER

Canady Tract WWTF - Site Map



Canady Tract WWTF - Disposal Phasing Map

DISPOSAL PHASING

PHASE 1 13.25 ACRES

FINAL PHASE 28.30 ACRES

NOTE: A MINIMUM OF 26.5 ACRES WILL BE IRRIGATED PER WATER BALANCE CALCULATIONS

N

APPLICANT PROPERTY BOUNDARY

DISPOSAL AREA

WWTF BOUNDARY

150' BUFFER ZONE

100' SETBACK FROM WATERS OF THE STATE

DISPOSAL AREAS

DISPOSAL AREA

DISPOSAL AREA

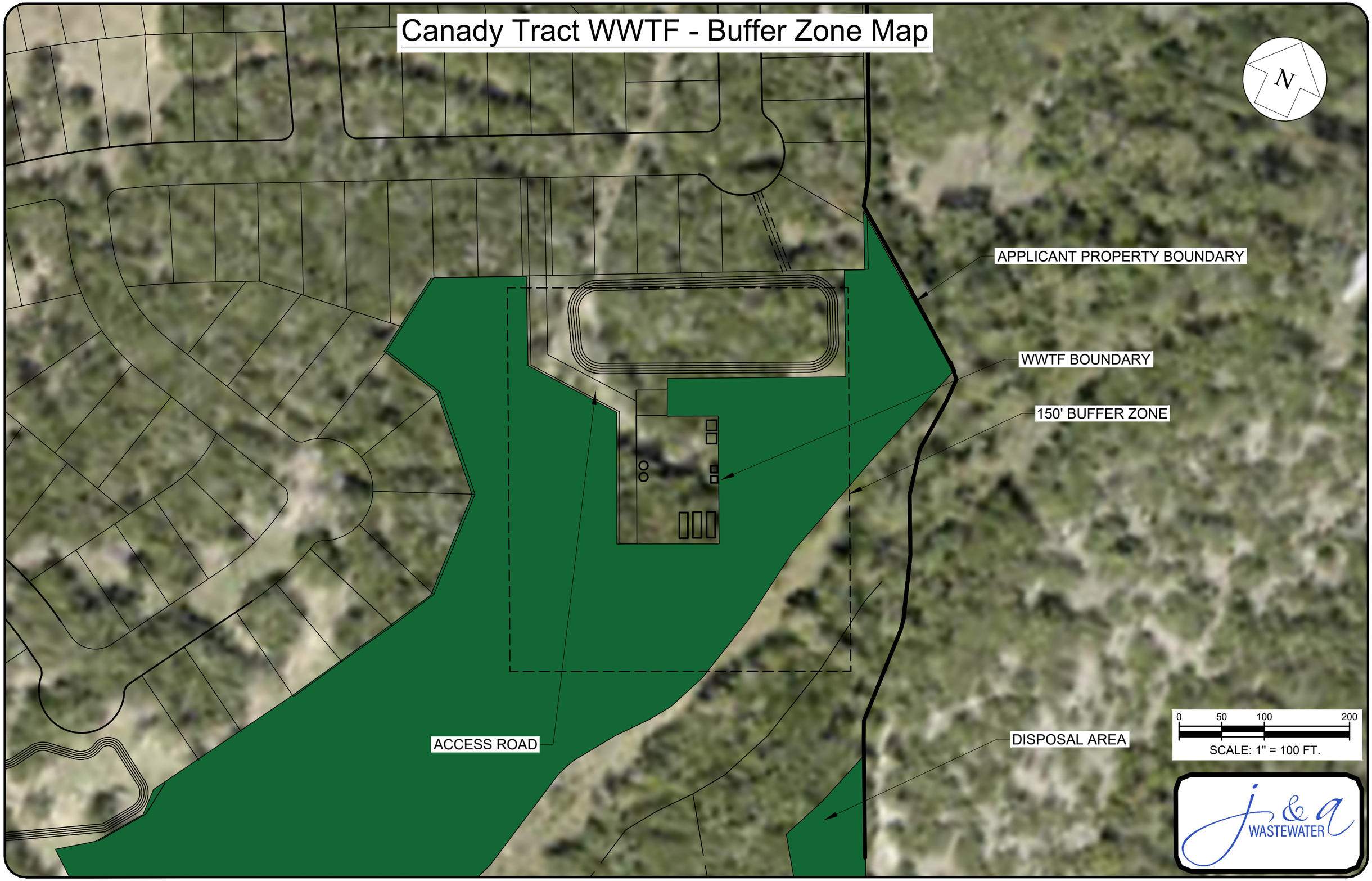
EFFLUENT STORAGE POND

0 500 1000 2000

SCALE: 1" = 1000 FT.

j & a WASTEWATER

Canady Tract WWTF - Buffer Zone Map



Canady Tract WWTF - USGS Map

USGS science for a changing world

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

LIBERTY HILL QUADRANGLE
TEXAS
7.5-MINUTE TOPO

Well ID No. 183538
Well ID No. 665145
Well ID No. 282006
Well ID No. 521773
Well ID No. 646739
Well ID No. 627196
Well ID No. 79487
Well ID No.104692
Well ID No. 673199
Well ID No. 5817601
Well ID No. 376899
Well ID No. 659195
Well ID No. 547299
Well ID No. 577912
100' Setback from Waters of the State
1 mile radius from WWTF
Applicant Property Boundary
Effluent Storage Pond
Well ID No. 302042
Well ID No. 5817605
Well ID No. 483014
Well ID No. 5817606
Well ID No. 265187
Well ID No. 184293
Well ID No. 5817902
Well ID No. 30216
Well ID No. 29778
Well ID No. 82798
Well ID No. 82799
Well ID No. 658431
Well ID No. 576297
Well ID No. 277836
Well ID No. 576288
Well ID No. 560816
Well ID No. 298691
WWTF
Disposal Areas

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

Data is provided by The National Map (TNM), is the best available at the time of map generation, and includes data content from supporting themes of Elevation, Hydrography, Geographic Names, Boundaries, Transportation, Structures, Land Cover, and Orthoimagery. Refer to associated Federal Geographic Data Committee (FGDC) Metadata for additional source data information.

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands. Temporal changes may have occurred since these data were collected and some data may no longer represent actual surface conditions.

Learn About The National Map: https://nationalmap.gov

UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
NV PV
NU PU
Grid Zone Designation 14R

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

USER DEFINED CONTENT

QUADRANGLE LOCATION

Joppa	Mahomet	Florence
Bertram	Liberty Hill	Leander NE
Travis Peak	Nameless	Leander

ADJOINING QUADRANGLES

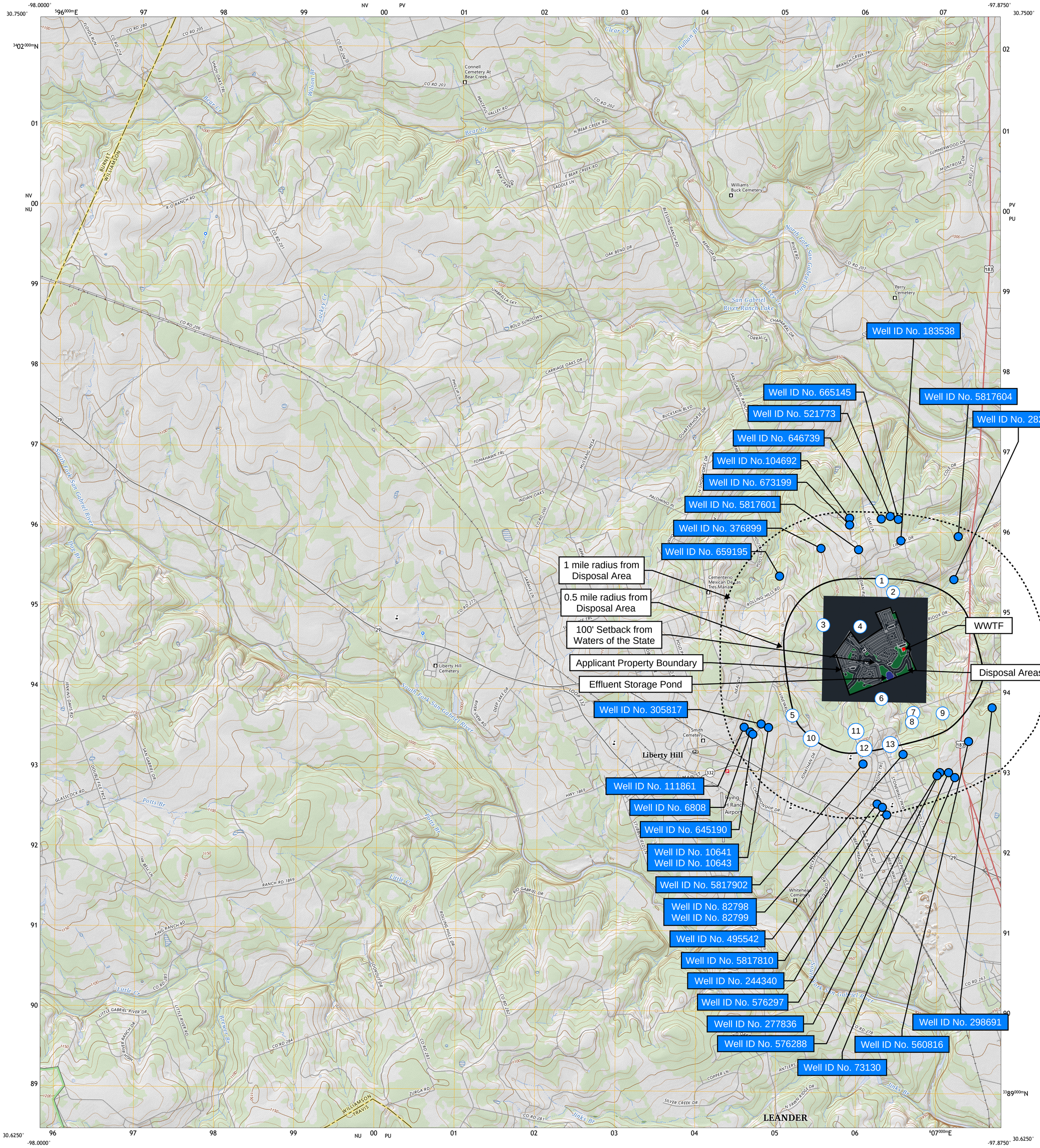
ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

LIBERTY HILL, TX
2024

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

Canady Tract WWTF - TLAP Map

LIBERTY HILL QUADRANGLE
TEXAS
7.5-MINUTE TOPO



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

Data is provided by The National Map (TNM), is the best available at the time of map generation, and includes data content from supporting themes of Elevation, Hydrography, Geographic Names, Boundaries, Transportation, Structures, Land Cover, and Orthoimagery. Refer to associated Federal Geographic Data Committee (FGDC) Metadata for additional source data information.

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Learn About The National Map: https://nationalmap.gov

UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

MN
GN
0°33′ 10 MILS
3°35′ 64 MILS

U.S. National Grid
100,000 - m Square ID
NV PV
NU PU
Grid Zone Designation 14R

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

USER DEFINED CONTENT

TEXAS

QUADRANGLE LOCATION

Joppa	Mahomet	Florence
Bertram	Liberty Hill	Leander NE
Travis Peak	Nameless	Leander

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

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

LIBERTY HILL, TX
2024

J&A WASTEWATER

GRAY ENGINEERING

STATE OF TEXAS
CRYSTAL HALL
GEOLOGY
11409
LICENSED
PROFESSIONAL GEOSCIENTIST

C Hall
Dec. 23, 2024

To: Justin Reynolds, Sapelo Group

From: Crystal Hall, PG, Gray Engineering, Inc.

Date: December 23, 2024

Subject: TCEQ TLAP Soil Assessment Memorandum for the +/-156-acre Canady Tract, Williamson County, Texas

---

Introduction

A wastewater treatment facility (WWTF) is proposed on the +/-156-acre Canady Tract (tract). The tract is located west of U.S. Highway 183, northeast of State Highway 29, and south of Ranch Road 1869, in Williamson County, Texas. Gray Engineering, Inc. (GEI) completed soil sampling on a +/-34-acre portion of the tract, herein "project area" that is proposed as an effluent irrigation area. This memorandum summarizes TCEQ regulations, methodology, field reconnaissance and includes the laboratory soil analysis, NRCS Soil Report, and Site Soils and Sampling Map.

Regulatory Overview

As part of the WWTF, a 34-acre effluent irrigation area (project area) has been identified. The Texas Commission on Environmental Quality (TCEQ) regulates WWTFs under 30 TAC Chapter 222. TCEQ approval is required through a Texas Land Application Permit (TLAP) which includes soil evaluation and analysis.

Methodology

According to the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), four soil types occur with the project area. These soils include: Brackett gravelly clay loam, 3 to 12 percent slopes; Denton silty clay, 1 to 3 percent slopes; Denton silty clay, 3 to 5 percent slopes; and Eckrant cobbly clay, 1 to 8 percent slopes. A report generated by the online NRCS Web Soil Survey is attached. Following TCEQ guidance, composite sampling of each soil type was taken individually at zones 0 to 6, 6 to 18, and 18 to 30 inches below existing grade. Each composite sample represented less than 80 acres with a minimum of 15 subsamples representing each composite sample. Subsamples were composited by individual site, zone, and soil type for analysis and reporting.

Field Reconnaissance

GEI environmental scientists completed site visits on August 2, and December 10, 2024, to complete the soil sampling and analysis. GEI sampled a total of 60 locations as seen on the attached **Site Soils and Sampling Map**. Crystal Hall, a registered professional geoscientist in the State of Texas, completed the soil evaluation as required by TCEQ. At least one profile hole per soil type was assessed as provided in **Table 1**.

Table 1. Soil Assessment

Soil Type	Denton silty clay, 1 to 3 percent slopes (DnB)		Eckrant cobbly clay, 1 to 8 percent slopes (EaD0		
Corresponding Lab ID	1A (0-6”), 1B (6-18”), 1C (18-30”)		2A (0-6”), 2B (6-18”)		
Total Depth	0-5”	5-22”	0-11”		
Primary Rooting Depth	0-10”		0-3”		
Secondary Rooting Depth	None		3-11”		
Texture	Loamy Clay	Clay Loam	Silty clay		
Color*	10YR 3/1	10YR 3/2	7.5 YR 3/2		
Structure	Crumbly		Crumbly		
Mottling	None	None	None		
% Coarse Fragments	10%	10%	50% Rock		
Restrictive Horizon	-	Caliche at 22-30”	Caliche or rock at 11”		
Water Table Present	No	No	No		
Soil Type	**Brackett gravelly clay, 3 to 12 percent slopes (BkE)**		**Denton silty clay, 3 to 5 percent slopes (DnC)**		
Corresponding Lab ID	3A (0-6”), 3B (6-18”), 3C (18-30”)		1A (0-6”), 1B (6-18”), 1C (18-30”)		
Total Depth	0-13”	13-30”	0-12”	12-15”	15-27”
Primary Rooting Depth	0-6”		0-4”		
Secondary Rooting Depth	6-13”		4-7”		
Texture	Silty	Sandy	Silty clay loam	Silty clay	Silty loam
Color*	7.5YR 4/3		10 YR 3/2	10 YR 7/4	10 YR 7/4
Structure	Crumbly		Platy	Granular	Granular
Mottling	None	None	None		
% Coarse Fragments	20%	30%	0%	80%	10%
Restrictive Horizon	-	None	-	-	Caliche at 27”
Water Table Present	No	No	No		

*Colors are derived using the *Munsell Soil Charts*

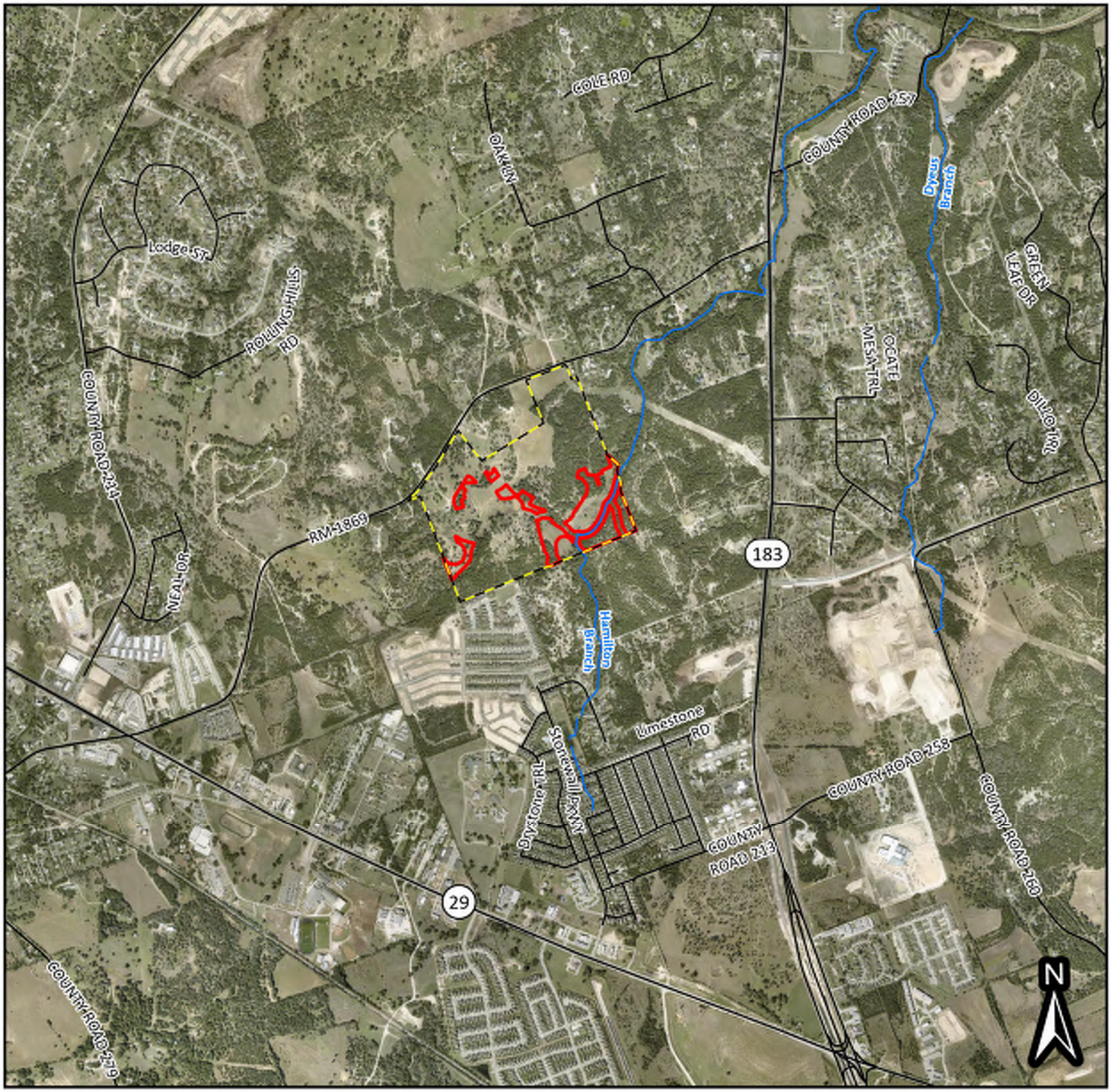
Results

A total of 15 sample points were taken for each zone of the four soil units within the project area. A total of eleven composite samples were sent to the Texas A&M AgriLife Extension Soil, Water and Forage Testing Laboratory on August 7 and December 12, 2024. The laboratory analysis followed TCEQ requirements. The laboratory results are attached.

Appendices

Appendix A:

Exhibits





Legend

- Canady Tract
- Project Area
- Stream (NHD)
- Roadway (TxDOT)

0 1,050 2,100 4,200

1 inch : 2,100 feet Feet

Sources: NHD (2023), NWI (2022), TxDOT (2023)

Canady Tract

Project Vicinity Map

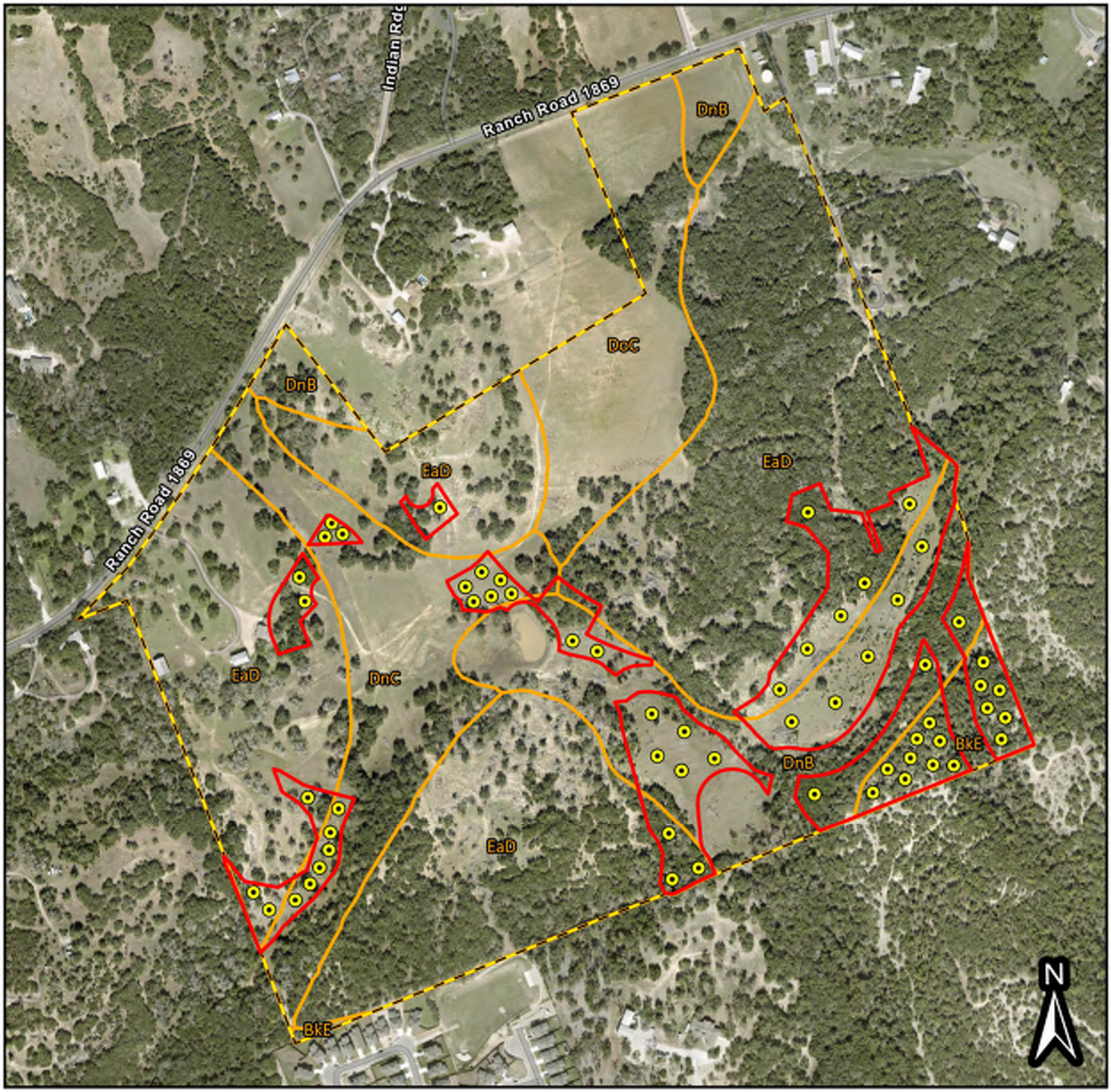
Williamson County, Texas

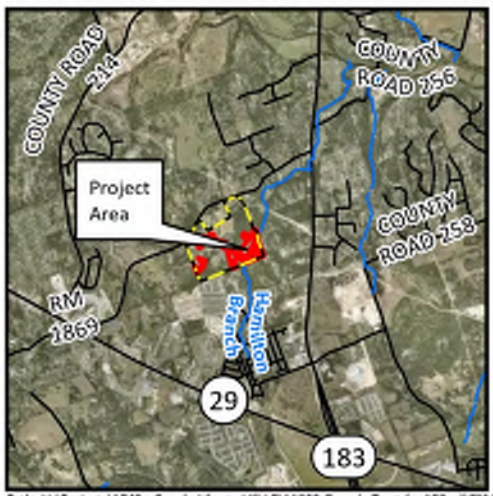
GRAY ENGINEERING
8834 North Capital of Texas Highway
Suite 140, Austin, Texas 78759
Telephone: 512.452.9933

December 2024 | Project Number: 11800

Path: H:\Projects\1743 - Sapelo Liberty Hill LP\11800 Canady Tract (+-158ac)\ENVIRONMENTAL\GIS\Canady Maps\Canady Maps.aprx

User: jtreder





Legend

- Canady Tract
- Project Area
- Soil Sample Point (GEI)
- Soil Unit (NRCS)

0 250 500 1,000

1 inch : 500 feet Feet

Sources: GEI (2024), NRCS (2023)

Canady Tract

Site Soils and Sampling Map

Williamson County, Texas

GRAY ENGINEERING
8834 North Capital of Texas Highway
Suite 140, Austin, Texas 78759
Telephone: 512.452.9933

December 2024 | Project Number: 11800

Path: H:\Projects\1743 - Sapelo Liberty Hill LP\11800 Canady Tract (+-158ac)\ENVIRONMENTAL\GIS\Canady Maps\Canady Maps.aprx

User: jtreder

Appendix B:

Project Area Photographs



Photograph 1: View of soil pit taken within Denton silty clay, 1 to 3 percent slopes (DnB) soil unit.



Photograph 2: View of soil pit taken within Denton silty clay, 1 to 3 percent slopes (DnB) soil unit.



Photograph 3: View of soil pit taken within Denton silty clay, 1 to 3 percent slopes (DnB) soil unit.



Photograph 4: View of soil pit taken within Eckrant cobbly clay, 1 to 8 percent slopes (EaD) soil unit.



Photograph 5: View of soil pit taken within Eckrant cobbly clay, 1 to 8 percent slopes (EaD) soil unit.



Photograph 6: View of soil pit taken within Brackett gravelly clay, 3 to 12 percent slopes (BkE) soil unit.



Photograph 7: View of soil pit taken within Denton silty clay, 3 to 5 percent slopes (DnC) soil unit.

Appendix C:

NRCS Custom Soil Report

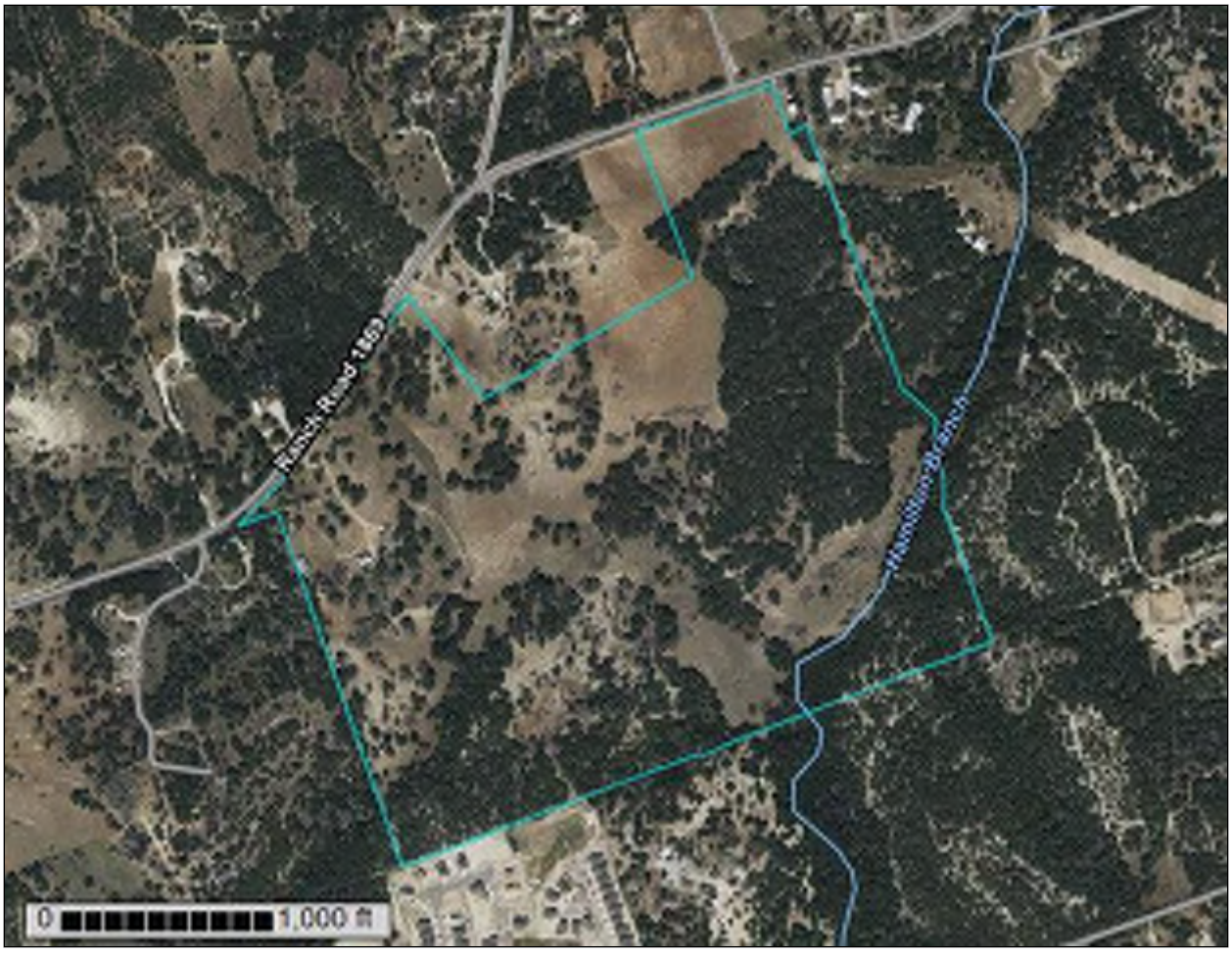
United States Department of Agriculture

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 Williamson County, Texas



December 12, 2024

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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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DnC—Denton silty clay, 3 to 5 percent slopes.....16
DoC—Doss silty clay, moist, 1 to 5 percent slopes.....17
EaD—Eckrant cobbly clay, 1 to 8 percent slopes.....19
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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.

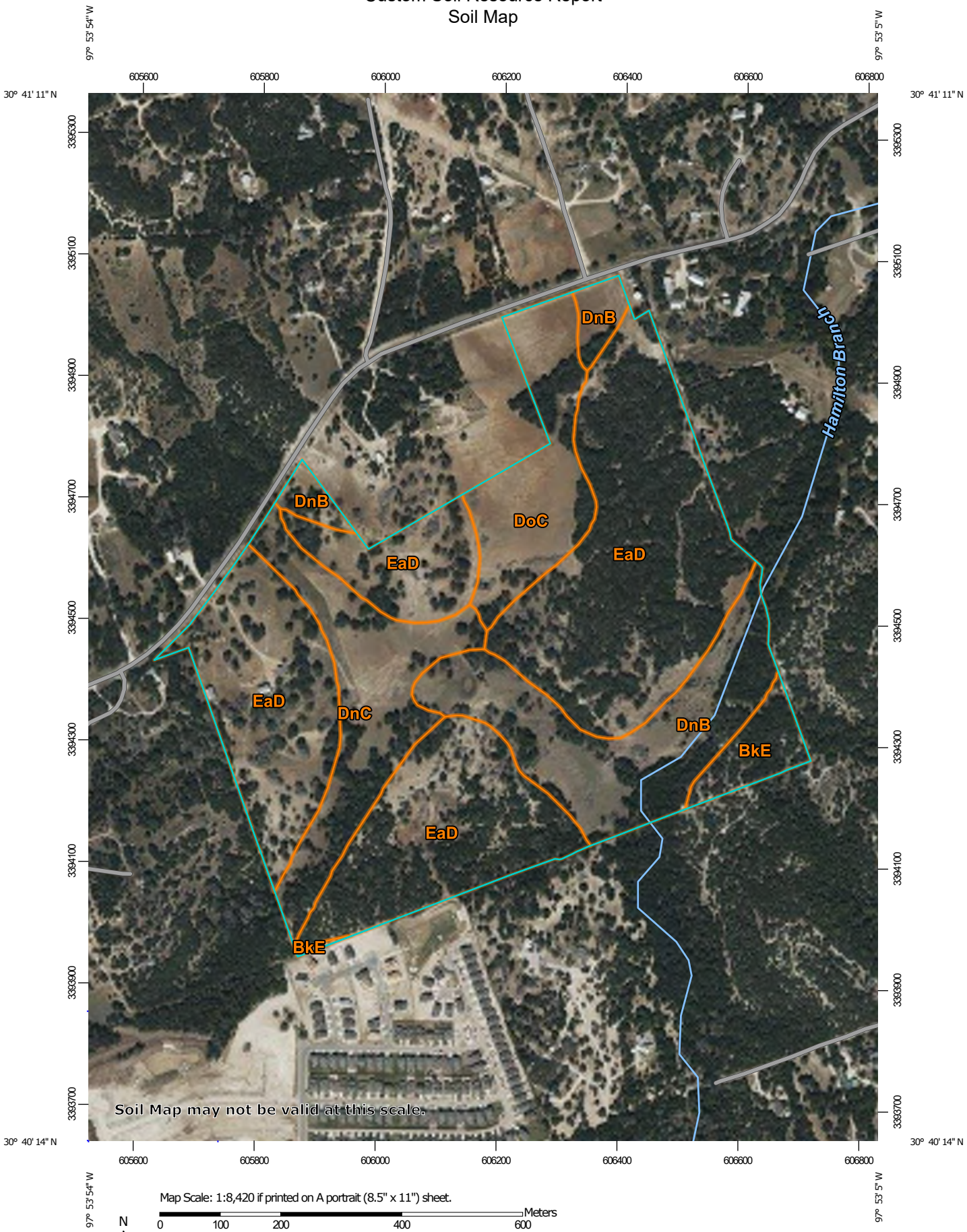
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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 Scale: 1:8,420 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

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 1:20,000.

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: Williamson County, Texas
Survey Area Data: Version 25, 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: Data not available.

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
BkE	Brackett gravelly clay loam, 3 to 12 percent slopes	4.7	3.0%
DnB	Denton silty clay, 1 to 3 percent slopes	27.0	17.3%
DnC	Denton silty clay, 3 to 5 percent slopes	19.0	12.2%
DoC	Doss silty clay, moist, 1 to 5 percent slopes	14.9	9.5%
EaD	Eckrant cobbly clay, 1 to 8 percent slopes	91.0	58.1%
Totals for Area of Interest		**156.6**	**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.

Williamson County, Texas

BkE—Brackett gravelly clay loam, 3 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2t2m5
Elevation: 700 to 1,450 feet
Mean annual precipitation: 30 to 36 inches
Mean annual air temperature: 66 to 69 degrees F
Frost-free period: 230 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Brackett and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brackett

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 5 inches: gravelly clay loam
Bk - 5 to 16 inches: clay loam
Cr - 16 to 60 inches: bedrock

Properties and qualities

Slope: 3 to 12 percent
Surface area covered with cobbles, stones or boulders: 3.0 percent
Depth to restrictive feature: 6 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 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
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): 6e
Hydrologic Soil Group: D
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Minor Components

Sunev

Percent of map unit: 6 percent
Landform: Drainageways
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Austin

Percent of map unit: 2 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

DnB—Denton silty clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2t26l
Elevation: 570 to 1,870 feet
Mean annual precipitation: 31 to 36 inches
Mean annual air temperature: 65 to 68 degrees F
Frost-free period: 220 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Denton and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Denton

Setting

Landform: Hillslopes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Silty and clayey slope alluvium over residuum weathered from limestone

Typical profile

A - 0 to 14 inches: silty clay

Bw - 14 to 25 inches: silty clay
Bk - 25 to 33 inches: silty clay
Ck - 33 to 36 inches: gravelly silty clay
R - 36 to 80 inches: bedrock

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 22 to 60 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 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 80 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Minor Components

Krum

Percent of map unit: 6 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Doss

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081BY343TX - Shallow 23-31 PZ
Hydric soil rating: No

Anhalt

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R081CY358TX - Deep Redland 29-35 PZ
Hydric soil rating: No

DnC—Denton silty clay, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2t26r
Elevation: 570 to 1,870 feet
Mean annual precipitation: 31 to 36 inches
Mean annual air temperature: 65 to 68 degrees F
Frost-free period: 220 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Denton and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Denton

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Silty and clayey slope alluvium over residuum weathered from limestone

Typical profile

A - 0 to 14 inches: silty clay
Bw - 14 to 25 inches: silty clay
Bk - 25 to 33 inches: silty clay
Ck - 33 to 36 inches: gravelly silty clay
R - 36 to 80 inches: bedrock

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: 22 to 60 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 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 80 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: D
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Minor Components

Brackett
Percent of map unit: 6 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Doss
Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Purves
Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

DoC—Doss silty clay, moist, 1 to 5 percent slopes

Map Unit Setting
National map unit symbol: 2s0st
Elevation: 630 to 1,840 feet
Mean annual precipitation: 30 to 36 inches
Mean annual air temperature: 66 to 68 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition
Doss and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Doss

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 9 inches: silty clay
Bk - 9 to 17 inches: silty clay
Cr - 17 to 80 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 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Minor Components

Brackett

Percent of map unit: 7 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R081CY362TX - Steep Adobe 29-35 PZ
Hydric soil rating: No

Bolar

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY357TX - Clay Loam 29-35 PZ

Hydric soil rating: No

Eckrant

Percent of map unit: 1 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY360TX - Low Stony Hill 29-35 PZ
Hydric soil rating: No

Purves

Percent of map unit: 1 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Denton

Percent of map unit: 1 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

EaD—Eckrant cobbly clay, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t0sg
Elevation: 650 to 1,900 feet
Mean annual precipitation: 30 to 35 inches
Mean annual air temperature: 65 to 69 degrees F
Frost-free period: 210 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Eckrant and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eckrant

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: Residuum weathered from limestone

Typical profile

A1 - 0 to 4 inches: cobbly clay
A2 - 4 to 11 inches: very cobbly clay
R - 11 to 80 inches: bedrock

Properties and qualities

Slope: 1 to 8 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: 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: 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 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: R081CY360TX - Low Stony Hill 29-35 PZ
Hydric soil rating: No

Minor Components

Brackett

Percent of map unit: 7 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Bexar

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R081CY361TX - Redland 29-35 PZ
Hydric soil rating: No

Krum

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Toeslope
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

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix D:

Soil Analysis Results

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
(979)321-5960

Visit our website: http://soiltesting.tamu.edu

Report generated for:
Matthew Darsey
8834 North Capital of Texas Highway
AUSTIN, TX 78728

Sample received on: 8/7/2024
Printed on: 8/16/2024
Area Represented: 14.8 acres

Williamson County
Laboratory Number: 665302
Customer Sample ID: 1A
Crop Grown: MINIMUM REQUIREMENT: WARM SEASON PERENNIAL GRASS

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	**7.9**	(5.8)	-	**Mod. Alkaline**							
Conductivity	**76**	(-)	umho/cm	**None**			CL*			**Fertilizer Recommended**	
Nitrate-N	**7**	(-)	ppm**							**25**	lbs N/acre
Phosphorus	**8**	(50)	ppm							**45**	lbs P2O5/acre
Potassium	**394**	(130)	ppm							**0**	lbs K20/acre
Calcium	**11,760**	(180)	ppm							**0**	lbs Ca/acre
Magnesium	**398**	(50)	ppm							**0**	lbs Mg/acre
Sulfur	**87**	(13)	ppm							**0**	lbs S/acre
Sodium	**14**	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement										**0.00**	tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	**6.8**		
Conductivity	**0.80**	mmhos/cm	
Sodium	**19**	ppm	**0.843** meq/L
Potassium	**15**	ppm	**0.372** meq/L
Calcium	**135**	ppm	**6.759** meq/L
Magnesium	**16**	ppm	**1.284** meq/L
SAR	**0.42**		
SSP	**9.11**		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478
(979)321-5960

Visit our website: http://soiltesting.tamu.edu

Report generated for:
Matthew Darsey
8834 North Capital of Texas Highway
AUSTIN, TX 78728

Sample received on: 8/7/2024
Printed on: 8/16/2024
Area Represented: 14.8 acres

Williamson County
Laboratory Number: 665303
Customer Sample ID: 1B
Crop Grown: MINIMUM REQUIREMENT: WARM SEASON PERENNIAL GRASS

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	**7.9**	(5.8)	-	**Mod. Alkaline**							
Conductivity	**72**	(-)	umho/cm	**None**				CL*		**Fertilizer Recommended**	
Nitrate-N	**1**	(-)	ppm**							**35**	lbs N/acre
Phosphorus	**4**	(50)	ppm							**50**	lbs P2O5/acre
Potassium	**230**	(130)	ppm							**0**	lbs K20/acre
Calcium	**12,506**	(180)	ppm							**0**	lbs Ca/acre
Magnesium	**427**	(50)	ppm							**0**	lbs Mg/acre
Sulfur	**90**	(13)	ppm							**0**	lbs S/acre
Sodium	**16**	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement										**0.00**	tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	**6.8**		
Conductivity	**0.52**	mmhos/cm	
Sodium	**18**	ppm	**0.774** meq/L
Potassium	**6**	ppm	**0.143** meq/L
Calcium	**75**	ppm	**3.757** meq/L
Magnesium	**8**	ppm	**0.618** meq/L
SAR	**0.52**		
SSP	**14.62**		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

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Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

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8834 North Capital of Texas Highway
AUSTIN, TX 78728

Sample received on: 8/7/2024
Printed on: 8/16/2024
Area Represented: 14.8 acres

Williamson County
Laboratory Number: 665304
Customer Sample ID: 1C
Crop Grown: MINIMUM REQUIREMENT: WARM SEASON PERENNIAL GRASS

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	7.8	(5.8)	-	Mod. Alkaline							
Conductivity	107	(-)	umho/cm	None							
Nitrate-N	6	(-)	ppm**					CL*			25 lbs N/acre
Phosphorus	5	(50)	ppm								50 lbs P2O5/acre
Potassium	241	(130)	ppm								0 lbs K20/acre
Calcium	11,183	(180)	ppm								0 lbs Ca/acre
Magnesium	365	(50)	ppm								0 lbs Mg/acre
Sulfur	81	(13)	ppm								0 lbs S/acre
Sodium	17	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	6.9		
Conductivity	0.48	mmhos/cm	
Sodium	13	ppm	0.562 meq/L
Potassium	6	ppm	0.150 meq/L
Calcium	76	ppm	3.781 meq/L
Magnesium	5	ppm	0.433 meq/L
SAR	0.39		
SSP	11.41		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

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Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
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College Station, TX 77843-2478
(979)321-5960

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Report generated for:
Matthew Darsey
8834 North Capital of Texas Highway
AUSTIN, TX 78728

Sample received on: 8/7/2024
Printed on: 8/16/2024
Area Represented: 5.8 acres

Williamson County
Laboratory Number: 665305
Customer Sample ID: 2A
Crop Grown: MINIMUM REQUIREMENT: WARM SEASON PERENNIAL GRASS

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	7.8	(5.8)	-	Mod. Alkaline							
Conductivity	88	(-)	umho/cm	None				CL*			
Nitrate-N	10	(-)	ppm**								15 lbs N/acre
Phosphorus	8	(50)	ppm								45 lbs P2O5/acre
Potassium	271	(130)	ppm								0 lbs K20/acre
Calcium	11,285	(180)	ppm								0 lbs Ca/acre
Magnesium	415	(50)	ppm								0 lbs Mg/acre
Sulfur	86	(13)	ppm								0 lbs S/acre
Sodium	14	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	6.8		
Conductivity	0.65	mmhos/cm	
Sodium	14	ppm	0.626 meq/L
Potassium	9	ppm	0.234 meq/L
Calcium	113	ppm	5.641 meq/L
Magnesium	12	ppm	0.963 meq/L
SAR	0.34		
SSP	8.38		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

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Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

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Matthew Darsey
8834 North Capital of Texas Highway
AUSTIN, TX 78728

Sample received on: 8/7/2024
Printed on: 8/16/2024
Area Represented: 5.8 acres

Williamson County
Laboratory Number: 665306
Customer Sample ID: 2B
Crop Grown: MINIMUM REQUIREMENT: WARM SEASON PERENNIAL GRASS

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	**7.9**	(5.8)	-	**Mod. Alkaline**							
Conductivity	**52**	(-)	umho/cm	**None**				CL*			**Fertilizer Recommended**
Nitrate-N	**6**	(-)	ppm**	IIII							**25** lbs N/acre
Phosphorus	**1**	(50)	ppm	II							**50** lbs P2O5/acre
Potassium	**146**	(130)	ppm	IIII

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Report generated for:
Matthew Darsey
8834 North Capital of Texas Highway
AUSTIN, TX 78728

Sample received on: 8/7/2024
Printed on: 8/16/2024
Area Represented: 4.4 acres

Williamson County
Laboratory Number: 665307
Customer Sample ID: 3A
Crop Grown: MINIMUM REQUIREMENT: WARM SEASON PERENNIAL GRASS

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	**7.8**	(5.8)	-	**Mod. Alkaline**							
Conductivity	**73**	(-)	umho/cm	**None**			CL*			**Fertilizer Recommended**	
Nitrate-N	**6**	(-)	ppm**							**25**	lbs N/acre
Phosphorus	**7**	(50)	ppm							**45**	lbs P2O5/acre
Potassium	**242**	(130)	ppm							**0**	lbs K20/acre
Calcium	**15,396**	(180)	ppm							**0**	lbs Ca/acre
Magnesium	**338**	(50)	ppm							**0**	lbs Mg/acre
Sulfur	**121**	(13)	ppm							**0**	lbs S/acre
Sodium	**14**	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement										**0.00**	tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	**6.9**		
Conductivity	**1.27**	mmhos/cm	
Sodium	**32**	ppm	**1.381** meq/L
Potassium	**28**	ppm	**0.705** meq/L
Calcium	**240**	ppm	**11.972** meq/L
Magnesium	**24**	ppm	**1.941** meq/L
SAR	**0.52**		
SSP	**8.63**		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

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Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

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Report generated for:
Matthew Darsey
8834 North Capital of Texas Highway
AUSTIN, TX 78728

Sample received on: 8/7/2024
Printed on: 8/16/2024
Area Represented: 4.4 acres

Williamson County
Laboratory Number: 665308
Customer Sample ID: 3B
Crop Grown: MINIMUM REQUIREMENT: WARM SEASON PERENNIAL GRASS

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	7.9	(5.8)	-	Mod. Alkaline							
Conductivity	55	(-)	umho/cm	None				CL*			
Nitrate-N	4	(-)	ppm**	II							30 lbs N/acre
Phosphorus	4	(50)	ppm	IIIIIII							50 lbs P2O5/acre
Potassium	120	(130)	ppm	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII							0 lbs K20/acre
Calcium	8,262	(180)	ppm	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII							0 lbs Ca/acre
Magnesium	352	(50)	ppm	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII							0 lbs Mg/acre
Sulfur	62	(13)	ppm	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII							0 lbs S/acre
Sodium	12	(-)	ppm	II							
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	6.8		
Conductivity	0.55	mmhos/cm	
Sodium	13	ppm	0.556 meq/L
Potassium	5	ppm	0.125 meq/L
Calcium	89	ppm	4.441 meq/L
Magnesium	11	ppm	0.920 meq/L
SAR	0.34		
SSP	9.20		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

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Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

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Report generated for:
Matthew Darsey
8834 North Capital of Texas Highway
AUSTIN, TX 78728

Sample received on: 8/7/2024
Printed on: 8/16/2024
Area Represented: 4.4 acres

Williamson County
Laboratory Number: 665309
Customer Sample ID: 3C
Crop Grown: MINIMUM REQUIREMENT: WARM SEASON PERENNIAL GRASS

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	**7.9**	(5.8)	-	**Mod. Alkaline**							
Conductivity	**56**	(-)	umho/cm	**None**				CL*		**Fertilizer Recommended**	
Nitrate-N			ppm**							**#VALUE!**	lbs N/acre
Phosphorus	**2**	(50)	ppm							**50**	lbs P2O5/acre
Potassium	**144**	(130)	ppm							**0**	lbs K20/acre
Calcium	**11,632**	(180)	ppm							**0**	lbs Ca/acre
Magnesium	**425**	(50)	ppm							**0**	lbs Mg/acre
Sulfur	**85**	(13)	ppm							**0**	lbs S/acre
Sodium	**19**	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement										**0.00**	tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)			
pH	**7.0**		
Conductivity	**0.32**	mmhos/cm	
Sodium	**18**	ppm	**0.783** meq/L
Potassium	**6**	ppm	**0.142** meq/L
Calcium	**41**	ppm	**2.069** meq/L
Magnesium	**5**	ppm	**0.409** meq/L
SAR	**0.70**		
SSP	**23.01**		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

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http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

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Report generated for:
Matthew Darsey
8834 North Capital of Texas Highway
AUSTIN, TX 78728

Sample received on: 12/12/2024
Printed on: 12/18/2024
Area Represented: 2.1 acres

Williamson County
Laboratory Number: 673682
Customer Sample ID: 4A
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	7.7	(5.8)	-	Mod. Alkaline							
Conductivity	150	(-)	umho/cm	None							
Nitrate-N	1	(-)	ppm**								95 lbs N/acre
Phosphorus	7	(50)	ppm								105 lbs P2O5/acre
Potassium	351	(150)	ppm								0 lbs K20/acre
Calcium	12,707	(180)	ppm								0 lbs Ca/acre
Magnesium	359	(50)	ppm								0 lbs Mg/acre
Sulfur	88	(13)	ppm								0 lbs S/acre
Sodium	13	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)					
pH	7.0				
Conductivity	0.53	mmhos/cm			
Sodium	5	ppm	0.224	meq/L	
Potassium	5	ppm	0.125	meq/L	
Calcium	100	ppm	4.980	meq/L	
Magnesium	6	ppm	0.468	meq/L	
SAR	0.14				
SSP	3.86				

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

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Report generated for:
Matthew Darsey
8834 North Capital of Texas Highway
AUSTIN, TX 78728

Sample received on: 12/12/2024
Printed on: 12/18/2024
Area Represented: 2.1 acres

Williamson County
Laboratory Number: 673683
Customer Sample ID: 4B
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	Fertilizer Recommended
pH	7.8	(5.8)	-	Mod. Alkaline	
Conductivity	56	(-)	umho/cm	None	
Nitrate-N	0	(-)	ppm**	CL*	95 lbs N/acre
Phosphorus	4	(50)	ppm		115 lbs P2O5/acre
Potassium	217	(150)	ppm		0 lbs K20/acre
Calcium	17,036	(180)	ppm		0 lbs Ca/acre
Magnesium	433	(50)	ppm		0 lbs Mg/acre
Sulfur	106	(13)	ppm		0 lbs S/acre
Sodium	14	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					0.00 tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)				
pH	6.9			
Conductivity	0.26	mmhos/cm		
Sodium	3	ppm	0.129	meq/L
Potassium	2	ppm	0.047	meq/L
Calcium	47	ppm	2.340	meq/L
Magnesium	3	ppm	0.239	meq/L
SAR	0.11			
SSP	4.68			

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

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Report generated for:
Matthew Darsey
8834 North Capital of Texas Highway
AUSTIN, TX 78728

Sample received on: 12/12/2024
Printed on: 12/18/2024
Area Represented: 2.1 acres

Williamson County
Laboratory Number: 673684
Customer Sample ID: 4C
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	7.9	(5.8)	-	Mod. Alkaline							
Conductivity	83	(-)	umho/cm	None							
Nitrate-N	0	(-)	ppm**					CL*			95 lbs N/acre
Phosphorus	3	(50)	ppm								115 lbs P2O5/acre
Potassium	149	(150)	ppm								0 lbs K20/acre
Calcium	15,362	(180)	ppm								0 lbs Ca/acre
Magnesium	441	(50)	ppm								0 lbs Mg/acre
Sulfur	100	(13)	ppm								0 lbs S/acre
Sodium	14	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre

Detailed Salinity Test (Saturated Paste Extract)				
pH	7.0			
Conductivity	0.19	mmhos/cm		
Sodium	4	ppm	0.182	meq/L
Potassium	1	ppm	0.028	meq/L
Calcium	32	ppm	1.577	meq/L
Magnesium	2	ppm	0.189	meq/L
SAR	0.19			
SSP	9.23			

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

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http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

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 Williamson County, Texas



March 7, 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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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.

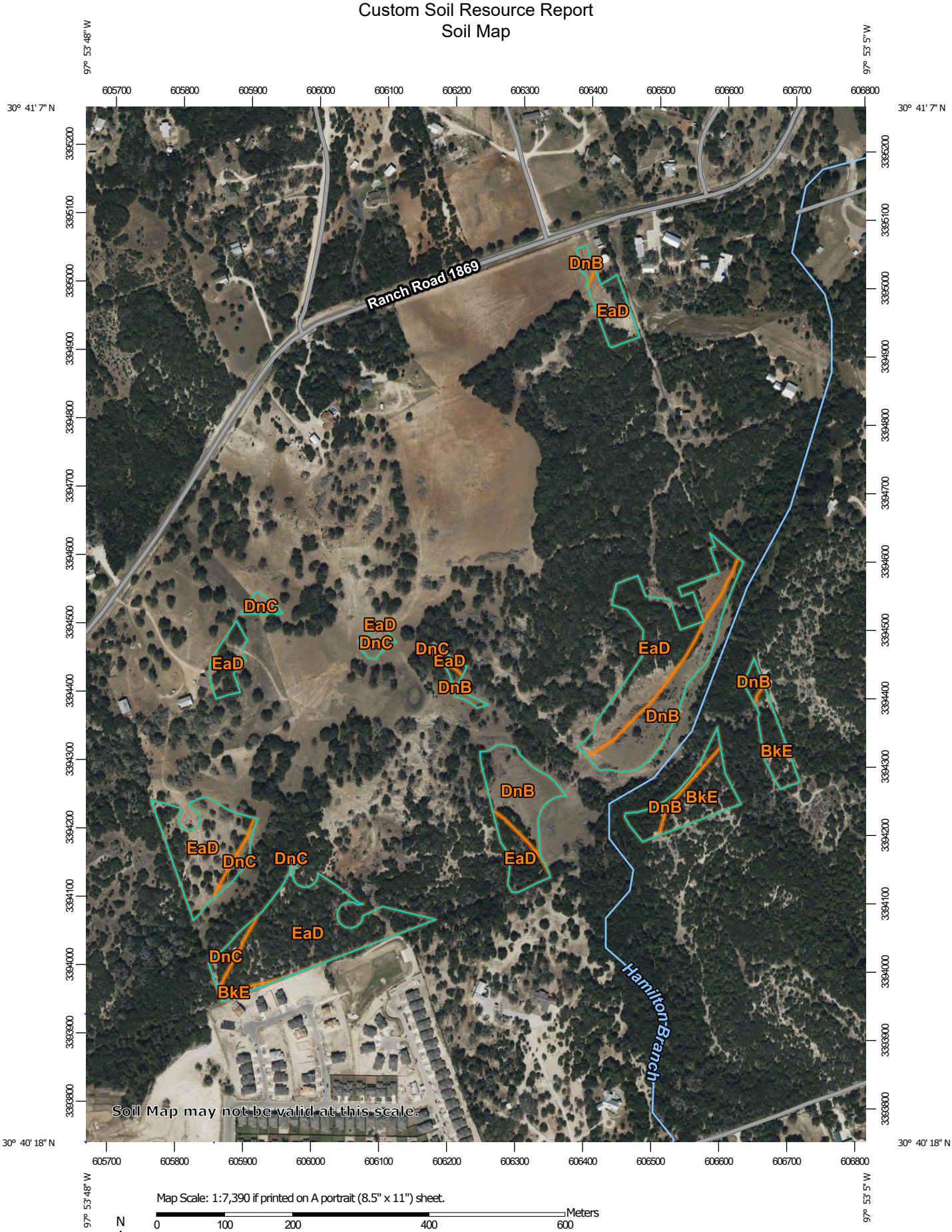
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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 Scale: 1:7,390 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0, 100, 200, 400, 600

Feet: 0, 350, 700, 1400, 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

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 1:20,000.

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: Williamson County, Texas
Survey Area Data: Version 25, 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: Data not available.

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
BkE	Brackett gravelly clay loam, 3 to 12 percent slopes	2.8	10.1%
DnB	Denton silty clay, 1 to 3 percent slopes	6.9	24.6%
DnC	Denton silty clay, 3 to 5 percent slopes	1.5	5.4%
EaD	Eckrant cobbly clay, 1 to 8 percent slopes	16.9	59.9%
Totals for Area of Interest		**28.3**	**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.

Williamson County, Texas

BkE—Brackett gravelly clay loam, 3 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2t2m5
Elevation: 700 to 1,450 feet
Mean annual precipitation: 30 to 36 inches
Mean annual air temperature: 66 to 69 degrees F
Frost-free period: 230 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Brackett and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brackett

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from limestone

Typical profile

A - 0 to 5 inches: gravelly clay loam
Bk - 5 to 16 inches: clay loam
Cr - 16 to 60 inches: bedrock

Properties and qualities

Slope: 3 to 12 percent
Surface area covered with cobbles, stones or boulders: 3.0 percent
Depth to restrictive feature: 6 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 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
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): 6e
Hydrologic Soil Group: D
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Minor Components

Sunev

Percent of map unit: 6 percent
Landform: Drainageways
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Austin

Percent of map unit: 2 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

DnB—Denton silty clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2t26l
Elevation: 570 to 1,870 feet
Mean annual precipitation: 31 to 36 inches
Mean annual air temperature: 65 to 68 degrees F
Frost-free period: 220 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Denton and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Denton

Setting

Landform: Hillslopes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Silty and clayey slope alluvium over residuum weathered from limestone

Typical profile

A - 0 to 14 inches: silty clay

Bw - 14 to 25 inches: silty clay
Bk - 25 to 33 inches: silty clay
Ck - 33 to 36 inches: gravelly silty clay
R - 36 to 80 inches: bedrock

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 22 to 60 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 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 80 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Minor Components

Krum

Percent of map unit: 6 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Doss

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081BY343TX - Shallow 23-31 PZ
Hydric soil rating: No

Anhalt

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R081CY358TX - Deep Redland 29-35 PZ
Hydric soil rating: No

DnC—Denton silty clay, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2t26r
Elevation: 570 to 1,870 feet
Mean annual precipitation: 31 to 36 inches
Mean annual air temperature: 65 to 68 degrees F
Frost-free period: 220 to 260 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Denton and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Denton

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Silty and clayey slope alluvium over residuum weathered from limestone

Typical profile

A - 0 to 14 inches: silty clay
Bw - 14 to 25 inches: silty clay
Bk - 25 to 33 inches: silty clay
Ck - 33 to 36 inches: gravelly silty clay
R - 36 to 80 inches: bedrock

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: 22 to 60 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 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 80 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: D
Ecological site: R081CY357TX - Clay Loam 29-35 PZ
Hydric soil rating: No

Minor Components

Brackett
Percent of map unit: 6 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Doss
Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Purves
Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

EaD—Eckrant cobbly clay, 1 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2t0sg
Elevation: 650 to 1,900 feet
Mean annual precipitation: 30 to 35 inches
Mean annual air temperature: 65 to 69 degrees F
Frost-free period: 210 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition
Eckrant and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eckrant

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: Residuum weathered from limestone

Typical profile

A1 - 0 to 4 inches: cobbly clay
A2 - 4 to 11 inches: very cobbly clay
R - 11 to 80 inches: bedrock

Properties and qualities

Slope: 1 to 8 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: 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: 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 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: R081CY360TX - Low Stony Hill 29-35 PZ
Hydric soil rating: No

Minor Components

Brackett

Percent of map unit: 7 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Bexar

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear

Across-slope shape: Linear
Ecological site: R081CY361TX - Redland 29-35 PZ
Hydric soil rating: No

Krum

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Toeslope
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

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

PERMIT NO. WQ0016683001

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

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

Sapelo Liberty Hill, LP

whose mailing address is

1608 West 5th Street, Unit 240
Austin, Texas 78703

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

General Description and Location of Waste Disposal System:

Description: The Canady Tract Wastewater Treatment Facility consists of a membrane bioreactor system. Treatment units in the Interim phase will include headworks with screening, an equalization basin, two MBR basins, a sludge holding tank, and a chlorine contact chamber or a ultraviolet light (UV) disinfection system. Treatment units in the Final phase will include headworks with screening, two equalization basins, three MBR basins, two sludge holding tanks, and two chlorine contact chambers or UV disinfection systems. The permittee is authorized to dispose of treated domestic wastewater effluent at a daily average flow not to exceed 0.0477 million gallons per day (MGD) in the Interim Phase and 0.0954 MGD via surface irrigation of 13.25 acres in the Interim phase and 26.5 acres in the Final phase of public access land. The facility includes one storage ponds with a total surface area of 2.0 acres and total capacity of 14.63 acre-feet for storage of treated effluent prior to irrigation. Application rates to the irrigated land shall not exceed 4.03 acre-feet per year per acre irrigated. The irrigated crops include Zoysia grass and/or Bermuda grass (warm season) and rye (cool season).

Location: The wastewater treatment facility and disposal site are located approximately 0.54 miles west of the intersection of Agua Fria Road and U.S. Highway 183, in Williamson County, Texas 78642. (See Attachment A.)

Drainage Area: The wastewater treatment facility and disposal site are located in the drainage basin of North Fork San Gabriel River in Segment No. 1251 of the Brazos 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, **five 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 – 0.0477 MGD from the treatment system (Interim Phase)
Daily Average Flow – 0.0954 MGD from the treatment system (Final Phase)

Quality: The following effluent limitations are required:

Parameter	Effluent Concentrations (Not to Exceed) Daily Average mg/l	7-Day Average mg/l	Daily Maximum mg/	Single Grab mg/l
Biochemical Oxygen Demand (5-day)	20	30	45	65
Total Suspended Solids	20	30	45	65
E. coli, CFU or MPN/100 ml	N/A	N/A	N/A	126

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

If chlorine is used for disinfection: 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. 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 total chlorine residual shall be maintained in the effluent at the point of irrigation application.*

If Ultraviolet Light (UV) disinfection is used: The permittee shall utilize an UV system for disinfection purposes. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.**

B. Monitoring Requirements:

Parameter	Monitoring Frequency	Sample Type
Flow	Continuous	Totalizing Meter
Biochemical Oxygen Demand (5-day)	One/week	Grab
Total Suspended Solids	One/week	Grab

pH	One/week	Grab
Total Chlorine Residual	Five/week	Grab
E. coli	1/quarter* 5/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 11) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped, and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 11) and the Enforcement Division (MC 224) by September 30th of each year.

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.

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 report annually to the TCEQ Regional Office (MC Region 11) and the Enforcement Division (MC 224), by September 30th of each year the following information:

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. 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 11) 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 11) and the Enforcement Division (MC 224), by September 30_{th} of each year.

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

E. 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.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 11) and the Enforcement Division (MC 224), by September 30th of each year the following information:

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 report annually to the TCEQ Regional Office (MC Region 11) and the Enforcement Division (MC 224), by September 30th of each year the following information:

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 C facility must be operated by a chief operator or an operator holding a Class C 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.

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 provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

5. Prior to construction of the Interim and Final phase wastewater treatment facilities, the permittee shall submit to the TCEQ Wastewater Permitting Section (MC 148) of the Water Quality Division, a summary transmittal letter according to the requirements in 30 TAC § 217.6(d). If requested by the Wastewater Permitting Section, the permittee shall submit plans, specifications and a final engineering design report which comply with the requirements of 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems. The permittee shall clearly show how the treatment system will meet the permitted effluent limitations required on Page 2 of the permit. A copy of the summary transmittal letter shall be available at the plant site for inspection by authorized representatives of the TCEQ.

6. Reporting requirements according to 30 TAC § 319.1-319.11 and any additional effluent reporting requirements contained in this permit are suspended from the effective date of the permit until plant startup or discharge, whichever occurs first, from the facility described by this permit. The permittee shall provide written notice to the TCEQ Regional Office (MC

Region 11) and the Applications Review and Processing Team (MC 148) of the Water Quality Division at least forty-five (45) days prior to plant startup or anticipated discharge, whichever occurs first, and prior to completion of the Final phase on Notification of Completion Form 20007.

7. The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). In addition, by ownership of the required buffer zone area, the permittee shall comply with the requirements of 30 TAC § 309.13(e).

8. 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 26.5 acres with no less than 12 subsamples representing each composite sample. Subsamples shall be composited by like sampling depth, type of crop and soil type for analysis and reporting. 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 11), the Water Quality Assessment Team (MC 150), 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.

9. The irrigated crops include Zoysia grass and/or Bermuda grass (warm season) and rye (cool season). Application rates to the irrigated land shall not exceed 4.03 acre-feet/acre/year. The permittee is responsible for providing equipment to determine application rates and maintaining accurate records of the volume of effluent applied. The records shall be made available for review by the Texas Commission on Environmental Quality and shall be maintained for at least three years.

10. The permittee shall use cultural practices to promote and maintain the health and propagation of the Zoysia grass and/or Bermuda grass and rye crops and avoid plant lodging. The permittee shall harvest the crops (cut and remove it from the field) at least twice 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.

11. The permittee shall erect adequate signs stating that the irrigation water is from a non-potable water supply for any area where treated effluent is stored or where there exist hose bibs or faucets. 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. 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. The design application frequency shall minimally be of one hour or greater. Crops or other ground cover shall be established and well maintained in the irrigation area throughout the year for effluent and nutrient uptake by the crop and to prevent pathways for effluent surfacing. Tailwater control facilities shall be provided as necessary to prevent the discharge of any effluent from the irrigated land.

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

14. The permittee shall construct and maintain earthen berms to prevent runoff from leaving the irrigation site.

15. The physical condition of the spray irrigation fields will be monitored on a weekly basis when the fields are being utilized for the purpose of wastewater irrigation. Any areas with problems such as surface runoff, surficial erosion, stressed or damaged vegetation will be

recorded in the field log kept onsite and corrective measures will be initiated within 24 hours of discovery.

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

17. The permittee shall remove large (greater than 12-inch) stones and flagstones from the irrigation area. Any large stones brought to the surface during any construction, maintenance activities, and/or any disturbing of the soil shall be removed.

18. A minimum of 12 inches of soil shall exist throughout the application area (note that ground-up limestone rock is not soil). If imported soils are utilized, the permittee shall submit, no later than 90 days prior to construction to the TCEQ Water Quality Assessment Team (MC 150) and the Wastewater Permitting Section (MC 148) of the Water Quality Division, a plan for review and possible revision and approval describing how the imported soils will be incorporated into the native soils and how soil erosion will be prevented in the affected areas.

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

20. Holding or storage ponds shall conform to the design criteria for stabilization ponds with regard to construction and levee design and shall maintain a minimum freeboard of two feet according to 30 TAC Chapter 217, Design Criteria for Domestic Wastewater Systems.

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

22. This facility is located within the Edwards Aquifer Contributing Zone and is subject to 30 TAC Chapter 213, subchapter B.

23. A wastewater treatment plant unit may not be located in wetlands per 30 TAC §309.13(b).

24. The permittee shall comply with buffer zone requirements of 30 TAC §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.

25. The permittee shall comply with the buffer zone requirements of 30 TAC §309.13(c), specifically regarding water wells and waters in the state. The permittee must locate the wastewater irrigation fields a minimum horizontal distance of 500 feet from public water wells, springs, or other similar sources of public drinking water; 150 feet from private water wells; and 100 feet from surface waters in the state.

26. 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. New or modified wastewater ponds shall not be put into service until the permittee demonstrates that the pond liners meet the requirements of 30 TAC §217.203 and 30 TAC §309.13(d). The permittee shall demonstrate that the number, location, and test results of samples collected for geotechnical testing are in accordance with 30 TAC §217.203(d) and (e), and that the liner has a minimum thickness of 3 feet in

accordance with 30 TAC §309.13(d) since the facility overlies the recharge zone of an aquifer. The report providing this demonstration shall be submitted to the Water Quality Assessment Team (MC-150) and the TCEQ Regional Office (MC-Region 11) for review and approval prior to use of the wastewater ponds. If a synthetic liner is to be used, the liner thickness shall be a minimum of 40 mils and be constructed with an underground leak detection system with appropriate sampling points.

27. 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 11), 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).

28. 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 the 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.

29. 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.

30. In accordance with 30 TAC § 319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee may be given a less frequent measurement schedule. For this permit, 1/quarter may be reduced to 1/6 months (Chlorine) or 5/week may be reduced to 3/week (UV) based on which disinfection method is used. **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule and submit written notice to the TCEQ Wastewater Permitting Section (MC 148).** The permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

TECHNICAL SUMMARY AND
EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

DESCRIPTION OF APPLICATION

Applicant:	Sapelo Liberty Hill, LP TCEQ Permit No. WQ0016683001
Regulated Activity:	Domestic Wastewater Permit
Type of Application:	New Permit
Request:	New Permit
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 **five 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

Sapelo Liberty Hill, LP has applied to the Texas Commission on Environmental Quality (TCEQ) for new Permit No. WQ0016683001 to authorize the disposal of treated domestic wastewater at a daily average flow not to exceed 0.0477 million gallons per day (MGD) in the Interim phase and 0.0954 MGD in the Final phase via surface irrigation of 13.25 acres in the Interim phase and 26.5 acres in the Final phase of public access land. The facility includes one storage ponds with a total surface area of 2.0 acres and total capacity of 14.63 acre-feet for storage of treated effluent prior to irrigation. The proposed wastewater treatment facility will serve the Canady Tract Development.

PROJECT DESCRIPTION AND LOCATION

The Canady Tract Wastewater Treatment Facility will consist of a membrane bioreactor system. Treatment units in the Interim phase will include headworks with screening, an equalization basin, two MBR basins, a sludge holding tank, and a chlorine contact chamber or ultraviolet light (UV) disinfection system. Treatment units in the Final phase will include headworks with screening, two equalization basins, three MBR basins, two sludge holding tanks, and two chlorine contact chambers or UV disinfection system. The facility has not been constructed.

The draft permit 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 will be located approximately 0.54 miles west of the intersection of Agua Fria Road and U.S. Highway 183, in Williamson County, Texas

78642.

The wastewater treatment facility and disposal site are located in the drainage basin of North Fork San Gabriel River in Segment No. 1251 of the Brazos River Basin. No discharge of pollutants into water in the state is authorized by this permit.

SUMMARY OF EFFLUENT DATA

There is no effluent data since the facility has not been constructed.

DRAFT PERMIT CONDITIONS

The draft permit authorizes the disposal of treated domestic wastewater effluent at a daily average flow not to exceed 0.0477 MGD in the Interim phase and 0.0954 MGD in the Final phase via surface irrigation of 13.25 acres in the Interim phase and 26.5 acres in the Final phase of public access land. The facility includes one storage ponds with a total surface area of 2.0 acres and total capacity of 14.63 acre-feet for storage of treated effluent prior to irrigation. Application rates to the irrigated land shall not exceed 4.03 acre-feet per year per acre irrigated. The irrigated crops include Zoysia grass and/or Bermuda grass (warm season) and rye (cool season).

The effluent limitations in the draft permit, based on a daily average, are 20 mg/l biochemical oxygen demand (BOD_5), 20 mg/l total suspended solids (TSS), and a single grab limit of 126 colony forming units (CFU) or most probable number (MPN) of *E. coli* per 100 ml. If chlorine disinfection is used: 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. If UV disinfection is used: The permittee shall utilize a UV system for disinfection purposes and shall not exceed a single grab of 126 CFU or MPN colonies per 100 ml of *E. coli*.

The permittee shall comply with the requirements of 30 TAC § 309.13(a) through (d). In addition, by ownership of the required buffer zone area, the permittee shall comply with the requirements of 30 TAC § 309.13(e).

The draft permit includes Sludge Provisions according to the requirements of 30 TAC Chapter 312, Sludge Use, Disposal, and Transportation. The draft permit authorizes the disposal of sludge at a TCEQ-authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge.

SUMMARY OF CHANGES FROM APPLICATION

None.

BASIS FOR DRAFT PERMIT

The following items were considered in developing the draft permit:

1. Application received on December 10, 2024, and additional information received on February 11, 2025, March 5, 2025, March 7, 2025, July 3, 2025, and July 7, 2025.

2. 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 J. Alfonso Martinez III at (512) 239-4668.

JAM III

August 21, 2025

J. Alfonso Martinez III
Municipal Permits Team
Wastewater Permitting Section (MC 148)

Date