



Technical Package Cover Page

This file contains the following documents:

1. Summary of application (in plain language)
 - English
 - Alternative Language (Spanish)
 2. First notice (NORI-Notice of Receipt of Application and Intent to Obtain a Permit)
 - English
 - Alternative Language (Spanish)
 3. Second notice (NAPD-Notice of Preliminary Decision)
 - English
 - Alternative Language (Spanish)
 4. Application materials
 5. Draft permit
 6. Technical summary or fact sheet
-



Portada de Paquete Técnico

Este archivo contiene los siguientes documentos:

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



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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

Summary of Application (in plain language) Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

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

City of Runge (CN600737357) operates the City of Runge Wastewater Treatment Plant (RN: 101917839), a treatment plant with a primary settling pond system that consists of a bar screen, facultative lagoon, effluent storage pond, and irrigation fields. The facility is located at 400 W. Lyons, in the City of Runge, Karnes County, Texas 78151. This request is to renew the Texas Land Application Permit (TLAP). This permit will not authorize a discharge of pollutants into water in the state.

Discharges from the facility are expected to contain CBOD5, suspended solids, ammonia nitrogen, nitrate nitrogen, kjeldahl nitrogen, sulfate, chloride, phosphorus, E. coli, and dissolved solids. The irrigated effluent is treated by a bar screen and pumped via a wet well and lift station to a facultative lagoon for settling. The treated effluent is then conveyed to a storage pond and pumped to the irrigation field.

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

AGUAS RESIDUALES DOMÉSTICAS /AGUAS PLUVIALES

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

La ciudad de Runge (CN600737357) opera la planta de tratamiento de aguas residuales de la ciudad de Runge (RN: 101917839, una planta de tratamiento con un sistema de estanque de sedimentación primario que consta de una pantalla de barras, una laguna facultativa, un estanque de almacenamiento de efluentes y campos de riego.. La instalación está ubicada en 400 W. Lyons, en la ciudad de Runge, Condado de Karnes, Texas 78151. Este solicitud es para renovar el Permiso de solicitud de tierras de Texas (TLAP). Este permiso no autorizará una descarga de contaminantes en el agua en el estado.

Se espera que las descargas de la instalación contengan CBOD5, sólidos suspendidos, nitrógeno amoniacal, nitrógeno nitrato, nitrógeno kjeldahl, sulfato, cloruro, fósforo, E. coli y sólidos disueltos. El efluente irrigado . está tratado por mediante una rejilla de barras y bombeado a través de un pozo húmedo y una estación de bombeo hacia una laguna facultativa para su sedimentación. Luego, el efluente tratado se transporta a un estanque de almacenamiento y se bombea al campo de riego.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



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

PERMIT NO. WQ0010266001

APPLICATION. City of Runge, P.O. Box 206, Runge, Texas 78151, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Land Application Permit (TLAP) No. WQ0010266001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 110,000 gallons per day via surface irrigation on 42 acres. The domestic wastewater treatment facility and disposal site is located at 301 East Cleveland Street, in the City of Runge, in Karnes County, Texas 78151. TCEQ received this application on February 14, 2025. The permit application will be available for viewing and copying at Runge City Hall, 109 North Helena Street, Runge, in Karnes 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=-97.707777,28.881111&level=18>

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

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

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

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

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

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

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

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

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

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

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

Further information may also be obtained from City of Runge at the address stated above or by calling Mr. Homer Lott, Mayor at 830-239-4121.

Issuance Date: March 13, 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 RENOVACION

PERMISO NO. WQ0010266001

SOLICITUD. Ciudad de Runge, P.O. Box 206, Runge, Texas 78151, ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) para renovar el Permiso No. WQ0010266001 de disposición de aguas residuales para autorizar Planta de tratamiento de aguas residuales de la ciudad de Runge la disposición de aguas residuales tratadas en un volumen que no sobrepasa un flujo promedio diario de 110,000 galones por día por medio de riego superficial en 42 acres. La planta de tratamiento de aguas domésticos residuales y el área de disposición están ubicados en 301 Este Calle Cleveland, en la ciudad de Runge en el Condado de Karnes, Texas. La TCEQ recibió esta solicitud el día 14 de febrero de 2025. La solicitud para el permiso estará disponible para leerla y copiarla en 109 Norte Calle de Helena, en la ciudad de Runge, en el condado de Karnes, Texas 78151 antes de la fecha de publicación de este aviso en el periódico. La aplicación incluidas las actualizaciones y los avisos asociados están disponibles electrónicamente en la siguiente pagina web: <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>. Este enlace a un mapa electrónico de la ubicación general del sitio o de la instalación es proporcionado como una cortesía y no es parte de la solicitud o del aviso. Para la ubicación exacta, consulte la solicitud.

<https://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. Si ciertos criterios se cumplen, la TCEQ puede actuar sobre una solicitud para renovar un permiso sin proveer una oportunidad de una audiencia administrativa de lo contencioso.

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

CONTACTOS E INFORMACIÓN 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 ciudad de Runge a la dirección indicada arriba o llamando a Alcalde, Homer Lott al 830-239-4121

Fecha de emisión 13 de marzo de 2025

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



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

RENEWAL

PERMIT NO. WQ0010266001

APPLICATION AND PRELIMINARY DECISION. City of Runge, P.O. Box 206, Runge, Texas 78151, has applied to the Texas Commission on Environmental Quality (TCEQ) for a renewal of TCEQ Permit No. WQ0010266001 which authorizes the disposal of treated domestic wastewater at a daily average flow not to exceed 110,000 gallons per day via surface irrigation of 42 acres of non-public access agricultural land. This permit will not authorize a discharge of pollutants into water in the state. TCEQ received this application on February 14, 2025.

The wastewater treatment facility and disposal site are located at 301 East Cleveland Street, in the City of Runge, in Karnes County, Texas 78151. The wastewater treatment facility and disposal site are located in the drainage basin of Lower San Antonio River in Segment No. 1901 of the San Antonio River Basin. This link to an electronic map of the site or facility's general location is provided as a public courtesy and is not part of the application or notice. For the exact location, refer to the application.

<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.707777,28.881111&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 Runge City Hall, 109 North Helena Street, Runge, in Karnes 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>.

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

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

Commissioners for their consideration at a scheduled Commission meeting.

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

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

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

AGENCY CONTACTS AND INFORMATION. Public comments and requests must be submitted either electronically at www.tceq.texas.gov/goto/comment, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC 105, P.O. Box 13087, Austin, Texas 78711-3087. Any personal information you submit to the TCEQ will become part of the agency's record; this includes email addresses. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from City of Runge at the address stated above or by calling Mr. Christopher Parker, Mayor at 830-239-4121

Issuance Date: September 17, 2025

Comisión de Calidad Ambiental del Estado de Texas



AVISO DE LA SOLICITUD Y DECISIÓN PRELIMINAR PARA EL PARA LA CALIDAD DEL AGUAS RESIDUALES MUNICIPALES

RENOVACION

PERMISO NO. WQ0010266001

SOLICITUD Y DECISIÓN PRELIMINAR. Ciudad de Runge, P.O. Box 206, Runge, Texas 78151, ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) para renovar el Permiso No. WQ0010266001 de disposición de aguas residuales para autorizar Planta de tratamiento de aguas residuales de la ciudad de Runge la disposición de aguas residuales tratadas en un volumen que no sobrepasa un flujo promedio diario de 110,000 galones por día por medio de riego superficial en 42 acres. La planta de tratamiento de aguas domésticos residuales y el área de disposición están ubicados en 301 East Cleveland St., en la ciudad de Runge en el Condado de Karnes, Texas. La TCEQ recibió esta solicitud el día 14 de febrero de 2025. La solicitud para el permiso estará disponible para leerla y copiarla en 400 West Lyons, en la ciudad de Runge, en el condado de Karnes, Texas 78151 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://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.707777,28.881111&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 Ayuntamiento de Runge, 109 North Helena Street, en la ciudad de Runge, en el condado de Karnes, Texas 78151. 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 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. 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 todos 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 por qué el miembro sería afectado; y explicar cómo los intereses que el grupo desea proteger son pertinentes al propósito del grupo.

Después del cierre de todos los períodos de comentarios y de petición que aplican, el Director Ejecutivo enviará la solicitud y cualquier petición para reconsideración o para una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración durante una reunión programada de la

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

ACCIÓN DEL DIRECTOR EJECUTIVO. El Director Ejecutivo puede emitir una aprobación final de la solicitud a menos que exista un pedido antes del plazo de vencimiento de una audiencia administrativa de lo contencioso o se ha presentado un pedido de reconsideración. Si un pedido ha llegado antes del plazo de vencimiento de la audiencia o el pedido de reconsideración ha sido presentado, el Director Ejecutivo no emitirá una aprobación final sobre el permiso y enviará la solicitud y el pedido a los Comisionados de la TCEQ 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. Además, puede pedir que la TCEQ ponga su nombre en una o más de las listas de correos siguientes (1) la lista de correo permanente para recibir los avisos de el solicitante indicado por nombre y número del permiso específico y/o (2) la lista de correo de todas las solicitudes en un condado específico. Si desea que se agregue su nombre en una de las listas designe cual lista(s) y envía por correo su pedido a la Oficina del Secretario Principal de la TCEQ.

Todos los comentarios escritos del público y los pedidos una reunión deben ser presentados durante los 30 días después de la publicación del aviso a la Oficina del Secretario Principal, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 or por el internet a www.tceq.texas.gov/about/comments.html. Tenga en cuenta que cualquier información personal que usted proporcione, incluyendo su nombre, número de teléfono, dirección de correo electrónico y dirección física pasarán a formar parte del registro público de la Agencia.

CONTACTOS E INFORMACIÓN DE LA AGENCIA. Los comentarios y solicitudes públicas deben enviarse electrónicamente a <https://www14.tceq.texas.gov/epic/eComment/>, o por escrito a Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Cualquier información personal que envíe a 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 la TCEQ, sin cargo, al 1-800-687-4040 o visite su sitio web en www.tceq.texas.gov/goto/pep. Si desea información en español, puede llamar al 1-800-687-4040.

También se puede obtener información adicional del ciudad de Runge
a la dirección indicada arriba o llamando a Alcalde, Christopher Parker al 830-239-4121

Fecha de emisión: 17 de Septiembre de 2025



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

Complete and submit this checklist with the application.

APPLICANT NAME: City of Runge

PERMIT NUMBER (If new, leave blank): WQ00 10266001

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

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

For TCEQ Use Only

Segment Number _____ County _____
Expiration Date _____ Region _____
Permit Number _____



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

**DOMESTIC WASTEWATER PERMIT APPLICATION
ADMINISTRATIVE REPORT 1.0**

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

Section 1. Application Fees (Instructions Page 26)

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

Flow	New/Major Amendment	Renewal
<0.05 MGD	\$350.00 ☐	\$315.00 ☐
≥0.05 but <0.10 MGD	\$550.00 ☐	\$515.00 ☐
≥0.10 but <0.25 MGD	\$850.00 ☐	\$815.00 ☒
≥0.25 but <0.50 MGD	\$1,250.00 ☐	\$1,215.00 ☐
≥0.50 but <1.0 MGD	\$1,650.00 ☐	\$1,615.00 ☐
≥1.0 MGD	\$2,050.00 ☐	\$2,015.00 ☐

Minor Amendment (for any flow) \$150.00 ☐

Payment Information:

Mailed Check/Money Order Number: 26617
Check/Money Order Amount: \$815.00
Name Printed on Check: City of Runge

EPAY Voucher Number: N/A

Copy of Payment Voucher enclosed? Yes ☐

Section 2. Type of Application (Instructions Page 26)

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

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

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

- ☒ Active ☐ Inactive

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

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

d. Check the box next to the appropriate application type

- | | |
|---|---|
| ☐ New | |
| ☐ Major Amendment <u>with</u> Renewal | ☐ Minor Amendment <u>with</u> Renewal |
| ☐ Major Amendment <u>without</u> Renewal | ☐ Minor Amendment <u>without</u> Renewal |
| ☒ Renewal without changes | ☐ Minor Modification of permit |

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

f. For existing permits:

Permit Number: WQ00 10266001

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

Expiration Date: March 1, 2025

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

City of Runge

(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: 600737357

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: Lott, Homer

Title: Mayor

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

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

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

[Click to enter text.](#)

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

If the co-applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at: <http://www15.tceq.texas.gov/crpub/>

CN: Click to enter text.

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

Prefix: Click to enter text.

Last Name, First Name: Click to enter text.

Title: Click to enter text.

Credential: Click to enter text.

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

C. Core Data Form

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

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: Stoner, Kyle
Title: Graduate Engineer Credential: E.I.T.
Organization Name: Cope Engineering, Inc.
Mailing Address: 8611 Botts Lane City, State, Zip Code: San Antonio, TX., 78217
Phone No.: 210-828-7070 E-mail Address: kyle@copeengineeringtx.com
Check one or both: ☒ Administrative Contact ☒ Technical Contact

B. Prefix: Mr. Last Name, First Name: Cope, Brian
Title: Vice President Credential: P.E.
Organization Name: Cope Engineering, Inc.
Mailing Address: 8611 Botts Lane City, State, Zip Code: San Antonio, TX., 78217
Phone No.: 210-828-7070 E-mail Address: brian@copeengineeringtx.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: Lott, Homer
Title: Mayor Credential: Click to enter text.
Organization Name: City of Runge
Mailing Address: P.O. Box 206 City, State, Zip Code: Runge, TX., 78151
Phone No.: 830-239-4121 E-mail Address: city.of.runge@sbcglobal.net

B. Prefix: Ms. Last Name, First Name: Castro, Esmeralda
Title: City Secretary Credential: Click to enter text.
Organization Name: City of Runge
Mailing Address: P.O. Box 206 City, State, Zip Code: Runge, TX, 78151
Phone No.: 830-239-4121 E-mail Address: city.of.runge@sbcglobal.net

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: Ms. Last Name, First Name: Castro, Esmeralda
Title: City Secretary Credential: Click to enter text.
Organization Name: City of Runge
Mailing Address: P.O. Box 206 City, State, Zip Code: Runge, TX., 78151
Phone No.: 830-239-4121 E-mail Address: city.of.runge@sbcglobal.net

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: Lott, Homer
Title: Mayor Credential: Click to enter text.
Organization Name: City of Runge
Mailing Address: P.O. Box 206 City, State, Zip Code: Runge, TX., 78151
Phone No.: 830-239-4121 E-mail Address: city.of.runge@sbcglobal.net

Section 8. Public Notice Information (Instructions Page 27)

A. Individual Publishing the Notices

Prefix: Mr. Last Name, First Name: Lott, Homer
Title: Mayor Credential: Click to enter text.
Organization Name: City of Runge
Mailing Address: P.O. Box 206 City, State, Zip Code: Runge, TX., 78151
Phone No.: 830-239-4121 E-mail Address: city.of.runge@sbcglobal.net

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: Lott, Homer

Title: Mayor

Credential: Click to enter text.

Organization Name: City of Runge

Mailing Address: P.O. Box 206

City, State, Zip Code: Runge, TX., 78151

Phone No.: 830-239-4121

E-mail Address: city.of.runge@sbcglobal.net

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: City Hall

Location within the building: Lobby

Physical Address of Building: 109 N. Helena St.

City: Runge

County: Karnes

Contact (Last Name, First Name): Lott, Homer

Phone No.: 830-239-4121 Ext.: Click to enter text.

E. Bilingual Notice Requirements

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

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

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

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

☒ Yes ☐ No

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

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

☒ Yes ☐ No

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

☐ Yes ☒ No

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

☐ Yes ☒ No

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

F. Plain Language Summary Template

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

Attachment:

G. Public Involvement Plan Form

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

Attachment: N/A

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

A. If the site is currently regulated by TCEQ, provide the Regulated Entity Number (RN) issued to this site. **RN** 101917839

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):

City of Runge Wastewater Treatment Plant

C. Owner of treatment facility: City of Runge

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

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

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

Last Name, First Name: City of Runge

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

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

Organization Name: City of Runge

Mailing Address: P.O. Box 206

City, State, Zip Code: Runge, TX., 78151

Phone No.: 830-239-4121

E-mail Address: city.of.runge@sbcglobal.net

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: N/A

E. Owner of effluent disposal site:

Prefix: Click to enter text

Last Name, First Name: City of Runge

Title: Click to enter text

Credential: Click to enter text

Organization Name: City of Runge

Mailing Address: P.O. Box 206

City, State, Zip Code: Runge, TX., 78151

Phone No.: 830-239-4121

E-mail Address: city.of.runge@sbcglobal.net

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: N/A

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

Prefix: Click to enter text

Last Name, First Name: Click to enter text

Title: Click to enter text

Credential: Click to enter text

Organization Name: Click to enter text

Mailing Address: Click to enter text

City, State, Zip Code: Click to enter text

Phone No.: Click to enter text

E-mail Address: Click to enter text

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

Attachment: N/A

Section 10. TPDES Discharge Information (Instructions Page 31)

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

☐

Yes

☐

No

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

Click to enter text

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

☐

Yes

☐

No

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

Click to enter text

City nearest the outfall(s): City of Runge

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

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

☐

Yes

☐

No

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

- ☐ Authorization granted ☐ Authorization pending

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

Attachment: N/A

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

Section 11. TLAP Disposal Information (Instructions Page 32)

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

☒ Yes ☐ No

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

Click to enter text.

- B. City nearest the disposal site: Runge, Texas

- C. County in which the disposal site is located: Karnes

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

The treated effluent is pumped from the storage pond to the irrigation area approximately 300 feet south of the facility.

- E. For TLAPs, please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: Ojo de Agua Creek

Section 12. Miscellaneous Information (Instructions Page 32)

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

☐ Yes ☒ No

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

☐ Yes ☐ No ☒ Not Applicable

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

Click to enter text.

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

☐ Yes ☒ No

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

D. Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If yes, provide the following information:

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

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

E. Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If yes, please provide the following information:

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

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

Section 13. Attachments (Instructions Page 33)

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

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

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

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

☐ Attachment 1 for Individuals as co-applicants

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

Section 14. Signature Page (Instructions Page 34)

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

Permit Number: Click to enter text.

WQ0010266001

Applicant: City of Runge

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): Homer Lott

Signatory title: Mayor

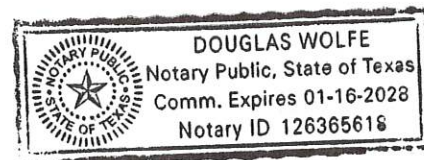
Signature: Mayor Homer Lott Date: 9/25/24
(Use blue ink)

Subscribed and Sworn to before me by the said Mayor Homer Lott
on this 25th day of September, 2024.
My commission expires on the 16th day of January, 2028.

D Wolfe
Notary Public

[SEAL]

Bever
County, Texas



DOMESTIC WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.0

The following information is required for new and amendment applications.

Section 1. Affected Landowner Information (Instructions Page 36)

A. Indicate by a check mark that the landowners map or drawing, with scale, includes the following information, as applicable:

- ☐ The applicant's property boundaries
- ☐ The facility site boundaries within the applicant's property boundaries
- ☐ The distance the buffer zone falls into adjacent properties and the property boundaries of the landowners located within the buffer zone
- ☐ The property boundaries of all landowners surrounding the applicant's property (Note: if the application is a major amendment for a lignite mine, the map must include the property boundaries of all landowners adjacent to the new facility (ponds).)
- ☐ The point(s) of discharge and highlighted discharge route(s) clearly shown for one mile downstream
- ☐ The property boundaries of the landowners located on both sides of the discharge route for one full stream mile downstream of the point of discharge
- ☐ The property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge if the point of discharge is into a lake, bay, estuary, or affected by tides
- ☐ The boundaries of the effluent disposal site (for example, irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property
- ☐ The property boundaries of all landowners surrounding the effluent disposal site
- ☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners surrounding the applicant's property boundaries where the sewage sludge land application site is located
- ☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (for example, sludge surface disposal site or sludge monofill) is located

B. ☐ Indicate by a check mark that a separate list with the landowners' names and mailing addresses cross-referenced to the landowner's map has been provided.

C. Indicate by a check mark in which format the landowners list is submitted:

- ☐ USB Drive ☐ Four sets of labels

D. Provide the source of the landowners' names and mailing addresses: [Click to enter text.](#)

E. As required by *Texas Water Code § 5.115*, is any permanent school fund land affected by this application?

- ☐ Yes ☐ No

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

Click to enter text.

Section 2. Original Photographs (Instructions Page 38)

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

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

Section 3. Buffer Zone Map (Instructions Page 38)

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

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

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

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

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

- ☐ Yes ☐ No

DOMESTIC WASTEWATER PERMIT APPLICATION

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

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

Attachment: [Click to enter text](#)

ATTACHMENT 1

INDIVIDUAL INFORMATION

Section 1. Individual Information (Instructions Page 41)

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

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

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

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

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

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

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

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

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

CN: [Click to enter text](#)

For Commission Use Only:

Customer Number:

Regulated Entity Number:

Permit Number:

DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST OF COMMON DEFICIENCIES

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

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

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

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

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

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

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

Things to Know:

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

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

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

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

Plain Language Summary ☒ Yes



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

DOMESTIC WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.0

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): 0.110

2-Hr Peak Flow (MGD): 0.300

Estimated construction start date: Existing

Estimated waste disposal start date: Existing

B. Interim II Phase

Design Flow (MGD): N/A

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

Estimated construction start date: N/A

Estimated waste disposal start date: N/A

C. Final Phase

Design Flow (MGD): N/A

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

Estimated construction start date: N/A

Estimated waste disposal start date: N/A

D. Current Operating Phase

Provide the startup date of the facility: July, 1996

Section 2. Treatment Process (Instructions Page 43)

A. Current Operating Phase

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

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

The treatment process is a primary settling pond system that consists of a bar screen, facultative lagoon, effluent storage pond, and irrigation field. Sewage effluent enters the bar screen and is pump (via a wet well and lift station) to a facultative lagoon for settling. The treated effluent is then conveyed to a storage pond and pumped to an irrigation area approximately 300 feet south of the facility for disposal by means of surface irrigation on non-public access agricultural land.

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)
Facultative Pond (Existing)	1	363'Lx121'Wx8'd & 12'd
Storage Pond (Existing)	1	537'Lx179'Wx6'd
Irrigation Area (Existing)	1	42 Acres

C. Process Flow Diagram

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

Attachment: No. 4

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: 28d52'32"N
- Longitude: 97d42'15"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: No. 5

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

The treatment facility serves the City of Runge, a +/- 760 acre area composed of residential and commercial development.

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

Collection System Information

Collection System Name	Owner Name	Owner Type	Population Served
		Choose an item.	
		Choose an item.	
		Choose an item.	
		Choose an item.	

Section 4. Unbuilt Phases (Instructions Page 45)

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

☐ Yes ☒ No

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

☐ Yes ☒ No

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

The permit allows for a design flow not to exceed 0.11 MGD. The facility is currently operating at 0.065 MGD. However, the existing ponds are designed for maximum capacity; therefore, no additional expansion is needed in the future to accommodate 0.11 MGD.

Section 5. Closure Plans (Instructions Page 45)

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

☐ Yes ☒ No

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

☐ Yes ☐ No

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

Click to enter text.

Section 6. Permit Specific Requirements (Instructions Page 45)

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

A. Summary transmittal

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

☒ Yes ☐ No

If **yes**, provide the date(s) of approval for each phase: 10/05/99

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.**

Click to enter text.

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 required buffer zones of 150' around all wastewater treatment plant structures and 500' around the facultative lagoon are maintained within the property boundaries or land owned by the City of Runge.

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*.

-facility is maintained and operated by a City employee holding a Category D license.
-flow meters are used to monitor effluent flow and quality five times a week.
-irrigation site is monitored and maintained by the City of Runge for ponding or contamination.
-a meter is used to monitor volume of effluent applied for irrigation.
-analysis of representative soil sample from disposal site is taken annually.
-a right of way easement agreement with owner(s) of irrigation site is executed.

D. Grit and grease treatment

1. Acceptance of grit and grease waste

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

☐ Yes ☒ No

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

2. Grit and grease processing

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

Click to enter text.

3. Grit disposal

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

☐ Yes ☐ No

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

Describe the method of grit disposal.

Click to enter text.

4. Grease and decanted liquid disposal

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

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

Click to enter text.

E. Stormwater management

1. Applicability

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

☐ Yes ☒ No

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

☐ Yes ☒ No

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

2. MSGP coverage

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

☐ Yes ☐ No

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

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

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

☐ Yes ☐ No

3. Conditional exclusion

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

☐ Yes ☐ No

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

Click to enter text.

4. Existing coverage in individual permit

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

☐ Yes ☐ No

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

Click to enter text.

5. Zero stormwater discharge

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

☐ Yes ☐ No

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

Click to enter text.

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

6. Request for coverage in individual permit

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

☐ Yes ☐ No

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

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

Click to enter text.

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

F. Discharges to the Lake Houston Watershed

Does the facility discharge in the Lake Houston watershed?

☐ Yes ☒ No

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

Click to enter text.

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

1. Acceptance of sludge from other WWTPs

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

☐ Yes ☒ No

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

In addition, provide the date the plant started or is anticipated to start accepting sludge, an estimate of monthly sludge acceptance (gallons or millions of gallons), an estimate of the BOD₅ concentration of the sludge, and the design BOD₅ concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click to enter text.

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

2. Acceptance of septic waste

Is the facility accepting or will it accept septic waste?

☐ Yes ☒ No

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

☐ Yes ☐ No

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

☐ Yes ☐ No

If **yes to any of the above**, provide the date the plant started or is anticipated to start accepting septic waste, an estimate of monthly septic waste acceptance (gallons or millions of gallons), an estimate of the BOD₅ concentration of the septic waste, and the design BOD₅ concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click to enter text.

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

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

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

☐ Yes ☒ No

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

Click to enter text.

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

Is the facility in operation?

☒ Yes ☐ No

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

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

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

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

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
CBOD ₅ , mg/l		14.8	1	Grab	1/14/25
Total Suspended Solids, mg/l		39	1	Grab	1/14/25
Ammonia Nitrogen, mg/l		3.36	1	Grab	1/14/25
Nitrate Nitrogen, mg/l		0.989	1	Grab	1/14/25
Total Kjeldahl Nitrogen, mg/l		4.48	1	Grab	1/14/25
Sulfate, mg/l		43.4	1	Grab	1/14/25
Chloride, mg/l		276	1	Grab	1/14/25
Total Phosphorus, mg/l		1.58	1	Grab	1/14/25
pH, standard units		7.8	1	Grab	1/14/25
Dissolved Oxygen*, mg/l			N/A		
Chlorine Residual, mg/l		<0.1	1	Grab	1/14/25
<i>E.coli</i> (CFU/100ml) freshwater		770	1	Grab	1/14/25
Enterococci (CFU/100ml) saltwater			N/A		
Total Dissolved Solids, mg/l		856	1	Grab	1/14/25
Electrical Conductivity, umohs/cm, †		1550	1	Grab	1/14/25
Oil & Grease, mg/l			N/A		
Alkalinity (CaCO ₃)*, mg/l			N/A		

*TPDES permits only

†TLAP permits only

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

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

Section 8. Facility Operator (Instructions Page 50)

Facility Operator Name: Jesse SandovalFacility Operator's License Classification and Level: Waste Water Treatment Class D OperatorFacility Operator's License Number: WW0052079

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

N/A

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

B. WWTP's Biosolids Treatment Process

Check all that apply. See instructions for guidance.

- ☐ Aerobic Digestion
- ☐ Air Drying (or sludge drying beds)
- ☐ Lower Temperature Composting
- ☐ Lime Stabilization
- ☐ Higher Temperature Composting
- ☐ Heat Drying
- ☐ Thermophilic Aerobic Digestion
- ☐ Beta Ray Irradiation
- ☐ Gamma Ray Irradiation
- ☐ Pasteurization
- ☐ Preliminary Operation (e.g. grinding, de-gritting, blending)
- ☐ Thickening (e.g. gravity thickening, centrifugation, filter press, vacuum filter)
- ☐ Sludge Lagoon
- ☐ Temporary Storage (< 2 years)
- ☐ Long Term Storage (≥ 2 years)
- ☐ Methane or Biogas Recovery
- ☒ Other Treatment Process: The City of Runge does not produce enough sludge from the facultative pond to haul off at this time.

C. Biosolids Management

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

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

Biosolids Management

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

If "Other" is selected for Management Practice, please explain (e.g. monofill or transport to another WWTP): The City of Runge does not produce enough sludge from the facultative pond to haul off at this time.

D. Disposal site

Disposal site name: Click to enter text.

TCEQ permit or registration number: Click to enter text.

County where disposal site is located: Click to enter text.

E. Transportation method

Method of transportation (truck, train, pipe, other): Click to enter text.

Name of the hauler: Click to enter text.

Hauler registration number: Click to enter text.

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: No. 6
- USDA Natural Resources Conservation Service Soil Map:
Attachment: No. 7
- Federal Emergency Management Map:
Attachment: No. 8
- Site map:
Attachment: No. 9

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

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

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

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

[Click to enter text.](#)

B. Temporary storage information

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Provide the following information:

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

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

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

C. Liner information

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

☐ Yes ☐ No

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

Click to enter text.

D. Site development plan

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

Click to enter text.

Attach the following documents to the application.

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

E. Groundwater monitoring

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

☐ Yes ☒ No

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

Attachment: Click to enter text.

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

A. Additional authorizations

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

☐ Yes ☒ No

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

Click to enter text.

B. Permittee enforcement status

Is the permittee currently under enforcement for this facility?

☐ Yes ☒ No

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

☐ Yes ☒ No

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

Click to enter text.

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

A. RCRA hazardous wastes

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

☐ Yes ☒ No

B. Remediation activity wastewater

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

☐ Yes ☒ No

C. Details about wastes received

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

Attachment: N/A

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: Homer Lott

Title: Mayor

Signature: _____

Date: 9/25/24

DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND DISPOSAL OF EFFLUENT

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

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

Identify the method of land disposal:

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

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

For existing authorizations, provide Registration Number: N/A

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
Agricultural Land – Bermuda grass	42	65,000	N

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

Table 3.0(2) – Storage and Evaporation Ponds

Pond Number	Surface Area (acres)	Storage Volume (acre-feet)	Dimensions	Liner Type
1	2.21	11.8	6'dx179'Wx537'L	Clay (compacted)

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

Attachment:

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.

The irrigation area is not irrigated during wet weather. A portion of the irrigation area is in the backwater of the tributary of Ojo de Aqua Creek.

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

NFIP FIMA Firm Map No. 48255Co300C and Map No. 48255Co425C, Effective October 19, 2010

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

A berm is constructed along the irrigation boundary area to prevent any run on from Ojo de Aqua Creek.

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: No. 10**

- 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: No. 11**

- 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
7903704	Public	Y	Open	Outside buffer
7903705	Public	N	Plugged	Outside buffer
7903707	Public	Y	Cased	Outside buffer
7903708	Public	Y	Cased	Outside buffer
7911204	Private	Y	Open	Outside buffer

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

Attachment: No. 12

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: No. 13

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: N/A

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: No. 14

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: No. 15

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
Schattel Clay Shc	0-80"	Slow	low	71
Coy Clay Loam	0-80"	Very slow	high	71
Pernitas Sandy Clay Loam	0-80"	Moderate	moderate	58
Weesatche Fine Sandy Loam	0-80"	Moderate	high	58
Colibro Sandy Clay Loam	0-80"	High	moderate	30

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
June 2022	.0061	24	N/A	8.9	N/A	42
July 2022	.0261	19	N/A	9.0	N/A	42
Aug. 2022	.0218	19	N/A	8.4	N/A	42
Sept. 2022	.0385	38	N/A	7.3	N/A	42
Oct. 2022	.0192	25	N/A	8.8	N/A	42
Nov. 2022	.0351	53	N/A	8.8	N/A	42
Dec. 2022	.0366	76	N/A	8.6	N/A	42
Feb. 2023	.0399	96	N/A	6.8	N/A	42
April 2023	.0649	15	N/A	9.3	N/A	42
May 2023	.0752	21	N/A	9.8	N/A	42
July 2023	.0392	15	N/A	8.3	N/A	42
Aug. 2023	.0437	20	N/A	8.2	N/A	42
Oct. 2023	.0316	35	N/A	8.8	N/A	42
Nov. 2023	.0162	24	N/A	8.7	N/A	42
Dec. 2023	.0494	44	N/A	8.3	N/A	42
Jan. 2024	.0475	25	N/A	8.8	N/A	42
Feb. 2024	.0479	17	N/A	8.9	N/A	42
Mar. 2024	.0409	21	N/A	9.0	N/A	42
April 2024	.0522	21	N/A	9.1	N/A	42
May 2024	.0470	12	N/A	8.6	N/A	42
June 2024	.0422	13	N/A	8.1	N/A	42
July 2024	.0343	13	N/A	8.5	N/A	42
Aug. 2024	.0312	20	N/A	9.0	N/A	42
Oct. 2024	.0000	18	N/A	9.0	N/A	42

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

Click to enter text.

DOMESTIC WASTEWATER PERMIT APPLICATION

WORKSHEET 6.0: INDUSTRIAL WASTE CONTRIBUTION

The following is required for all publicly owned treatment works.

Section 1. All POTWs (Instructions Page 89)

A. Industrial users (IUs)

Provide the number of each of the following types of industrial users (IUs) that discharge to your POTW and the daily flows from each user. See the Instructions for definitions of Categorical IUs, Significant IUs - non-categorical, and Other IUs.

If there are no users, enter 0 (zero).

Categorical IUs:

Number of IUs: 0 (zero)

Average Daily Flows, in MGD: 0 (zero)

Significant IUs - non-categorical:

Number of IUs: 0 (zero)

Average Daily Flows, in MGD: 0 (zero)

Other IUs:

Number of IUs: 0 (zero)

Average Daily Flows, in MGD: 0 (zero)

B. Treatment plant interference

In the past three years, has your POTW experienced treatment plant interference (see instructions)?

☐ Yes ☒ No

If yes, identify the dates, duration, description of interference, and probable cause(s) and possible source(s) of each interference event. Include the names of the IUs that may have caused the interference.

Click to enter text.

C. Treatment plant pass through

In the past three years, has your POTW experienced pass through (see instructions)?

☐ Yes ☒ No

If **yes**, identify the dates, duration, a description of the pollutants passing through the treatment plant, and probable cause(s) and possible source(s) of each pass through event. Include the names of the IUs that may have caused pass through.

Click to enter text.

D. Pretreatment program

Does your POTW have an approved pretreatment program?

☐ Yes ☒ No

If **yes**, complete Section 2 only of this Worksheet.

Is your POTW required to develop an approved pretreatment program?

☐ Yes ☒ No

If **yes**, complete Section 2.c. and 2.d. only, and skip Section 3.

If **no** to either question above, skip Section 2 and complete Section 3 for each significant industrial user and categorical industrial user.

Section 2. POTWs with Approved Programs or Those Required to Develop a Program (Instructions Page 90)

A. Substantial modifications

Have there been any **substantial modifications** to the approved pretreatment program that have not been submitted to the TCEQ for approval according to 40 CFR §403.18?

☐ Yes ☐ No

If **yes**, identify the modifications that have not been submitted to TCEQ, including the purpose of the modification.

Click to enter text.

N/A

B. Non-substantial modifications

Have there been any **non-substantial modifications** to the approved pretreatment program that have not been submitted to TCEQ for review and acceptance?

☐ Yes ☐ No

If yes, identify all non-substantial modifications that have not been submitted to TCEQ, including the purpose of the modification.

Click to enter text.

C. Effluent parameters above the MAL

In Table 6.0(1), list all parameters measured above the MAL in the POTW's effluent monitoring during the last three years. Submit an attachment if necessary.

Table 6.0(1) – Parameters Above the MAL

Pollutant	Concentration	MAL	Units	Date

D. Industrial user interruptions

Has any SIU, CIU, or other IU caused or contributed to any problems (excluding interferences or pass throughs) at your POTW in the past three years?

☐ Yes ☐ No

If yes, identify the industry, describe each episode, including dates, duration, description of the problems, and probable pollutants.

Click to enter text.

Section 3. Significant Industrial User (SIU) Information and Categorical Industrial User (CIU) (Instructions Page 90)

A. General information

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

SIC Code: [Click to enter text.](#)

Contact name: [Click to enter text.](#)

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

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

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

Email address: [Click to enter text.](#)

N/A

B. Process information

Describe the industrial processes or other activities that affect or contribute to the SIU(s) or CIU(s) discharge (i.e., process and non-process wastewater).

[Click to enter text.](#)

C. Product and service information

Provide a description of the principal product(s) or services performed.

[Click to enter text.](#)

D. Flow rate information

See the Instructions for definitions of "process" and "non-process wastewater."

Process Wastewater:

Discharge, in gallons/day: [Click to enter text.](#)

Discharge Type: ☐ Continuous ☐ Batch ☐ Intermittent

Non-Process Wastewater:

Discharge, in gallons/day: [Click to enter text.](#)

Discharge Type: ☐ Continuous ☐ Batch ☐ Intermittent

E. Pretreatment standards

Is the SIU or CIU subject to technically based local limits as defined in the instructions?

☐ Yes ☐ No

Is the SIU or CIU subject to categorical pretreatment standards found in *40 CFR Parts 405-471*?

☐ Yes ☐ No

If subject to categorical pretreatment standards, indicate the applicable category and subcategory for each categorical process.

Category: Subcategories: [Click to enter text](#)

Click or tap here to enter text: [Click to enter text](#)

Category: [Click to enter text](#)

Subcategories: [Click to enter text](#)

Category: [Click to enter text](#)

Subcategories: [Click to enter text](#)

Category: [Click to enter text](#)

Subcategories: [Click to enter text](#)

Category: [Click to enter text](#)

Subcategories: [Click to enter text](#)

F. Industrial user interruptions

Has the SIU or CIU caused or contributed to any problems (e.g., interferences, pass through, odors, corrosion, blockages) at your POTW in the past three years?

☐ Yes ☐ No

If yes, identify the SIU, describe each episode, including dates, duration, description of problems, and probable pollutants.

[Click to enter text](#)

ATTACHMENT No. 1

ADMINISTRATIVE REPORT 1.0

SECTION 3

CORE DATA FORM



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 600737357		RN 101917839

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)				
<i>The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).</i>				
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)			<i>If new Customer, enter previous Customer below:</i>	
City of Runge				
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits) 746002019	10. DUNS Number (if applicable)	
11. Type of Customer:		Partnership: ☐ General ☐ Limited		
☐ Corporation		☐ Individual		
Government: ☒ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other		☐ Sole Proprietorship ☐ Other:		
12. Number of Employees		13. Independently Owned and Operated?		
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher		☒ 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 ☐ Other:				
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant				
15. Mailing Address:		P.O. Box 206		
City		Runge	State	TX
ZIP		78151	ZIP + 4	
16. Country Mailing Information (if outside USA)		17. E-Mail Address (if applicable)		
		city.of.runge@sbcglobal.net		
18. Telephone Number		19. Extension or Code		20. Fax Number (if applicable)

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.)

City of Runge Wastewater Treatment Plant

23. Street Address of the Regulated Entity:

400 W. Lyons

(No PO Boxes)

City

Runge

State

TX

ZIP

78151

ZIP + 4

24. County

Karnes

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

25. Description to Physical Location:

26. Nearest City

State

Nearest ZIP Code

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:

28.87556

28. Longitude (W) In Decimal:

97.70417

Degrees

Minutes

Seconds

Degrees

Minutes

Seconds

28

52

32

97

42

15

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.)

A wastewater treatment plant for Runge

34. Mailing

P.O. Box 206

Address:

City

Runge

State

TX

ZIP

78151

ZIP + 4

35. E-Mail Address:

city.of.runge@sbcglobal.net

36. Telephone Number

(830) 239-4121

37. Extension or Code

38. Fax Number (if applicable)

() -

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:
	WQ0010266001			

SECTION IV: Preparer Information

40. Name:	Kyle Stoner	41. Title:	Graduate Engineer
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 828-7070		() -	kyle@copeengineeringtx.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:	Cope Engineering, Inc.	Job Title:	Graduate Engineer
Name (In Print):	Kyle Stoner	Phone:	(210) 828- 7070
Signature:		Date:	2/14/25

ATTACHMENT No. 2

**ADMINISTRATIVE REPORT 1.0
SECTION 8**

PLAIN LANGUAGE SUMMARY



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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

Summary of Application (in plain language) Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

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

City of Runge (CN600737357) operates the City of Runge Wastewater Treatment Plant (RN: 101917839), a treatment plant with a primary settling pond system that consists of a bar screen, facultative lagoon, effluent storage pond, and irrigation fields. The facility is located at 400 W. Lyons, in the City of Runge, Karnes County, Texas 78151. This request is to renew the Texas Land Application Permit (TLAP). This permit will not authorize a discharge of pollutants into water in the state.

Discharges from the facility are expected to contain CBOD5, suspended solids, ammonia nitrogen, nitrate nitrogen, kjeldahl nitrogen, sulfate, chloride, phosphorus, E. coli, and dissolved solids. The irrigated effluent is treated by a bar screen and pumped via a wet well and lift station to a facultative lagoon for settling. The treated effluent is then conveyed to a storage pond and pumped to the irrigation field.

ATTACHMENT No. 3

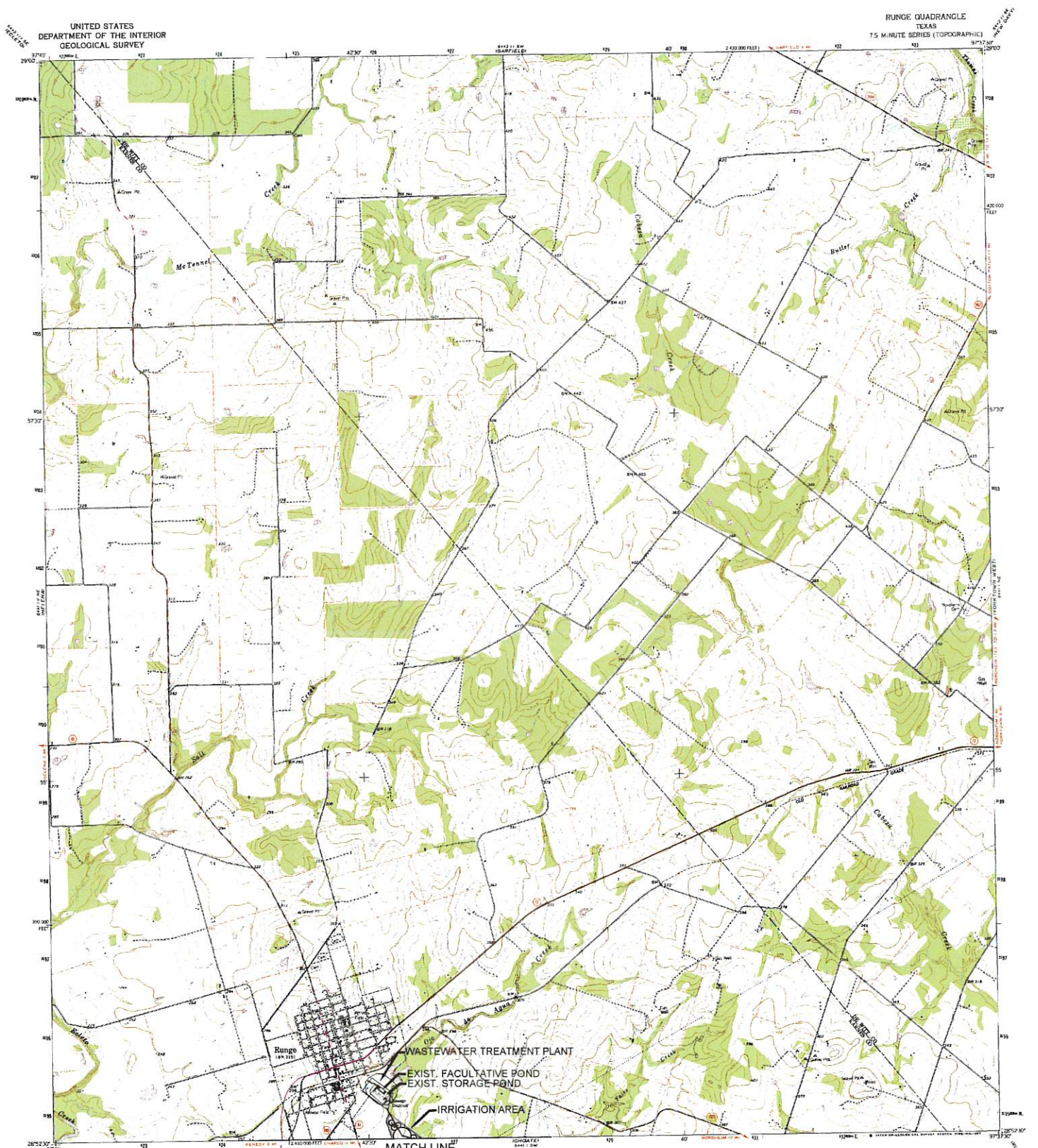
ADMINISTRATIVE REPORT 1.0

SECTION 13

USGS TOPOGRAPHIC MAP

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RUNGE QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey
Control by USGS and NOS/NOAA

Topography by photogrammetry, derived from aerial
photographs taken 1962. Field checked 1963.

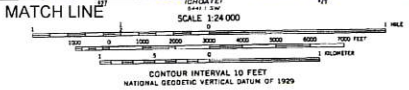
Projection: 1927 North American Datum
(10,000 feet g.c. based on Texas coordinate system, south central zone;
1000 m on Universal Transverse Mercator grid zone, zone 14, shown in blue)

Five red dashed lines indicate surveyed fence lines.

To place on the projected North American Datum 1983
move the projection lines 22 meters south and
25 meters east as shown by dashed corner ticks.

Revised to 1963 in 1964. 1964 edition is available only
in hard copy form. Aerial, 1962, and 1963, same as 1962.
For information on the 1964 edition, contact the publisher.

UTM ZONE AND 1983 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET



ROAD CLASSIFICATION
Heavy-duty ——— Light-duty ———
Medium-duty ——— Unimproved dirt ———
State Route ———

RUNGE, TEX.
2897-16-17-024
1963
PHOTOGRAPHICALLY
DATA 1:1 (N-SERIES 1962)

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80235, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

CHOATE QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

MATCH LINE

IRRIGATION AREA

RUNGE

DILL FIELD

DUNNELLERS

OIL FIELD

PORTER

OIL FIELD

LAKE ANTONIO

Maped, edited, and published by the Geological Survey
Control by USGS and HGS/HOAA
Topography by photogrammetry from aerial
photographs taken 1952. Fields checked 1963.
Projection: 1927 North American Datum
10,000 foot grid based on Texas coordinate system, south central zone
1000 meter Universal Transverse Mercator grid cells.
Zone 14, 1 meter in blue.
Fine red dashed lines indicate selected fence lines.
To place on the projected North American Datum 1983
move the projection lines 23 meters south and
27 meters east as shown by dashed corner ticks.
Views on power in purple and electrical completed from
aerial photographs taken 1951 and other source data.
This information has been checked. Map dated 1967.

UTM GRID AND 1983 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24,000
CONTOUR INTERVAL 10 FEET
300 FEET SMALL MINIMUM 4 FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

STATE OF TEXAS
2997-342

ROAD CLASSIFICATION
Heavy-duty ——— Light-duty ———
Medium-duty ——— Unimproved dirt ———
State Route ———
CHOATE, TEX.
28097-06-1F-024
1963
PHOTOGRAPHED 1967
DMA 8441 1 3W - SERIES 1962

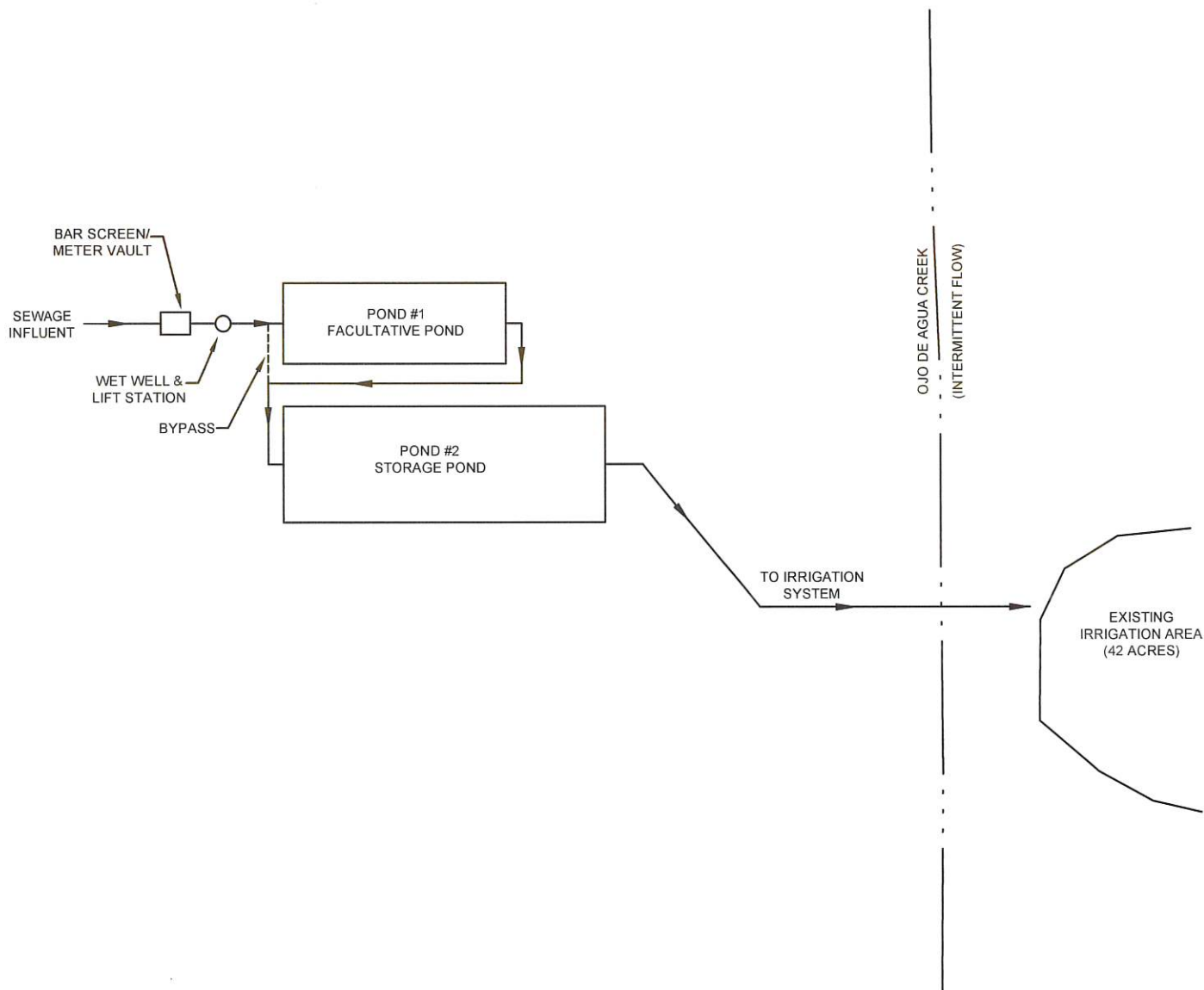
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80202, ON REQUEST, VIRGINIA 22062
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ADMINISTRATIVE REPORT SECTION 13

ATTACHMENT No. 4

**DOMESTIC TECHNICAL REPORT 1.0
ITEM 2C**

FLOW DIAGRAM



COPE ENGINEERING, INC.
8611 BOTTS LANE
SAN ANTONIO, TX 78217
(210) 828-7070 OFFICE
TEXAS REG. #F-16078
WWW.COPEENGINEERINGTX.COM

FLOW DIAGRAM DOMESTIC TECHNICAL REPORT 1.0 ITEM 2C

CITY OF RUNGE

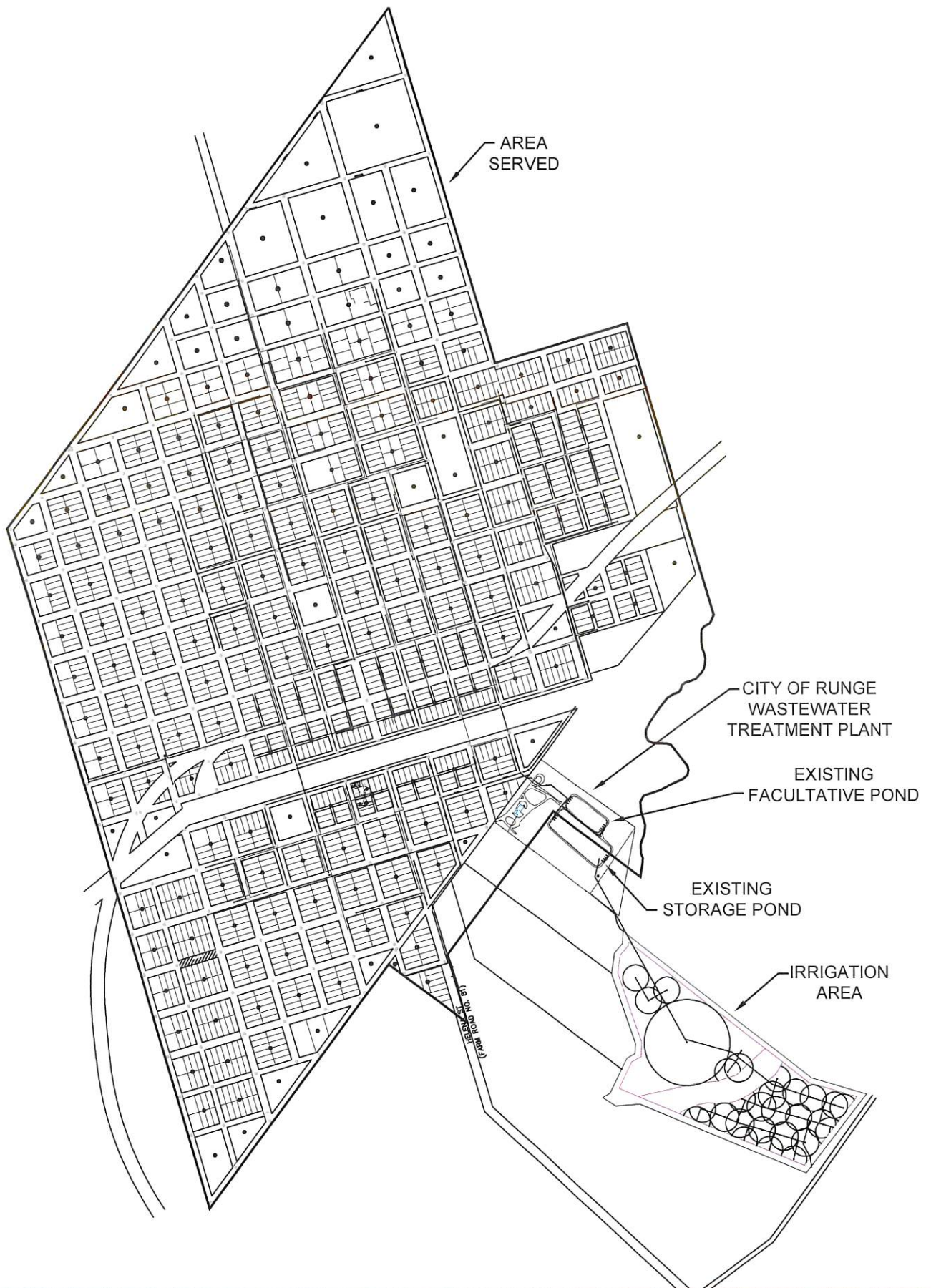
TEXAS

SHT
1
OF 1

ATTACHMENT No. 5

**DOMESTIC TECHNICAL REPORT 1.0
SECTION 3**

SITE DRAWING



COPE ENGINEERING, INC.
8611 BOTTS LANE
SAN ANTONIO, TX 78217
(210) 828-7070 OFFICE
TEXAS REG. #F-16078

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SITE DRAWING **DOMESTIC TECHNICAL REPORT 1.0** **ITEM 3**

CITY OF RUNGE

TEXAS

SHT

1

OF 1

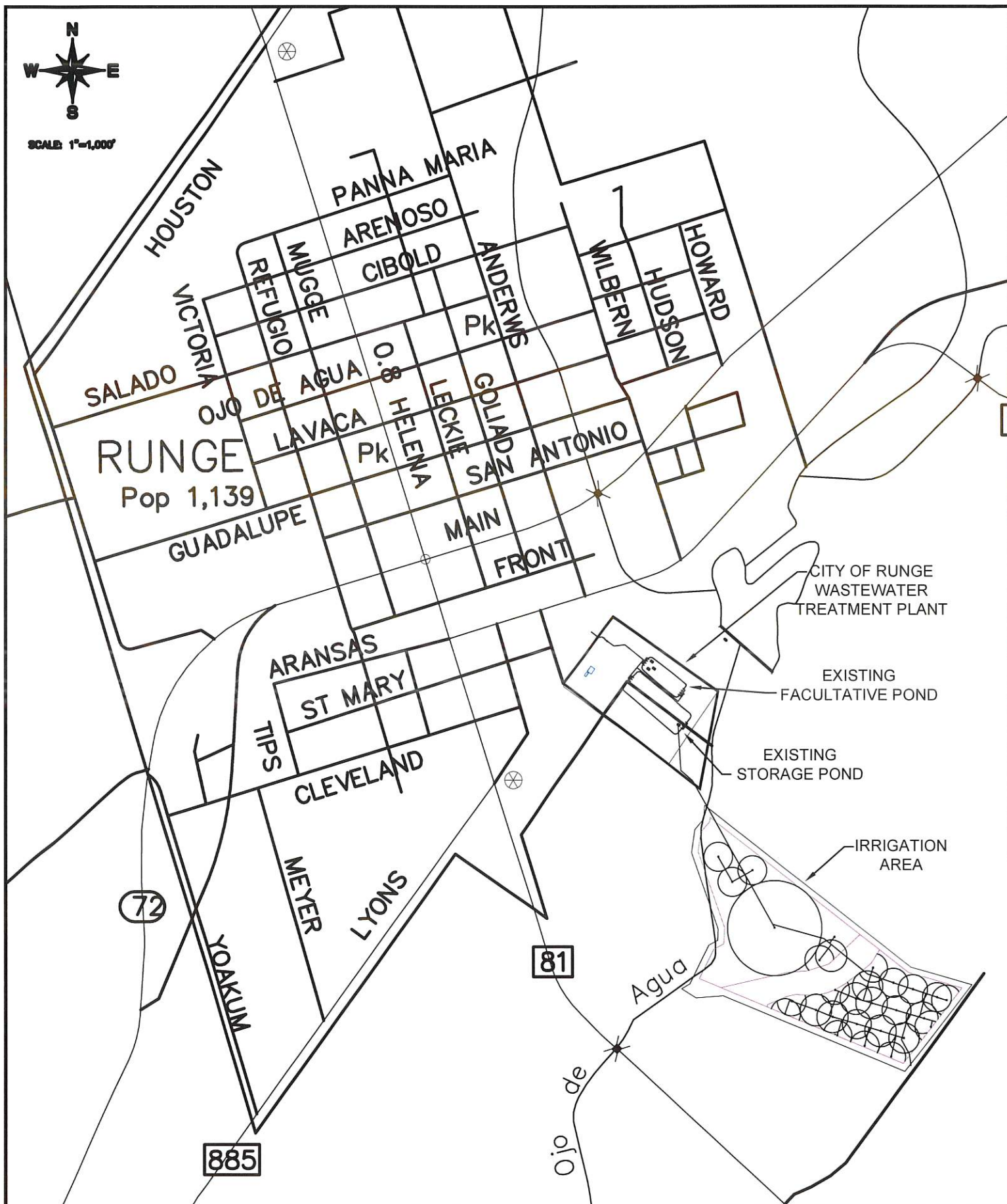
ATTACHMENT No. 6

**DOMESTIC TECHNICAL REPORT 1.0
ITEM 11A**

GENERAL HIGHWAY (COUNTY) MAP



SCALE 1"=1,000'



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GENERAL HIGHWAY (COUNTY) MAP DOMESTIC TECHNICAL REPORT 1.0 ITEM 11A

CITY OF RUNGE

TEXAS

SHT

1

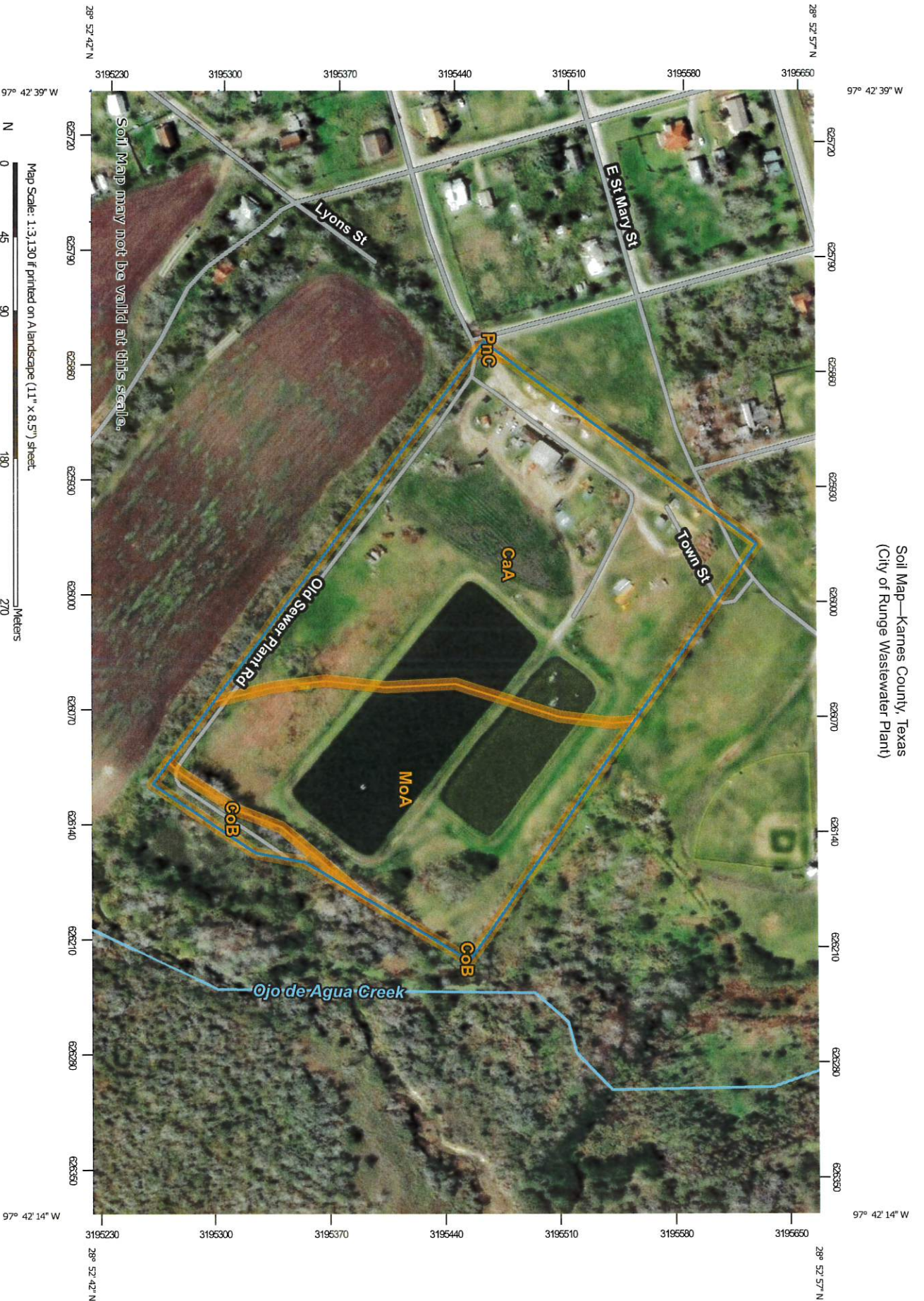
OF 1

ATTACHMENT No. 7

**DOMESTIC TECHNICAL REPORT 1.0
ITEM 11A**

USDA NATURAL RESOURCES CONSERVATION SERVICE SOIL MAP

Soil Map—Karnes County, Texas
(City of Runge Wastewater Plant)



MAP LEGEND

	Area of Interest (AOI)		Spill Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

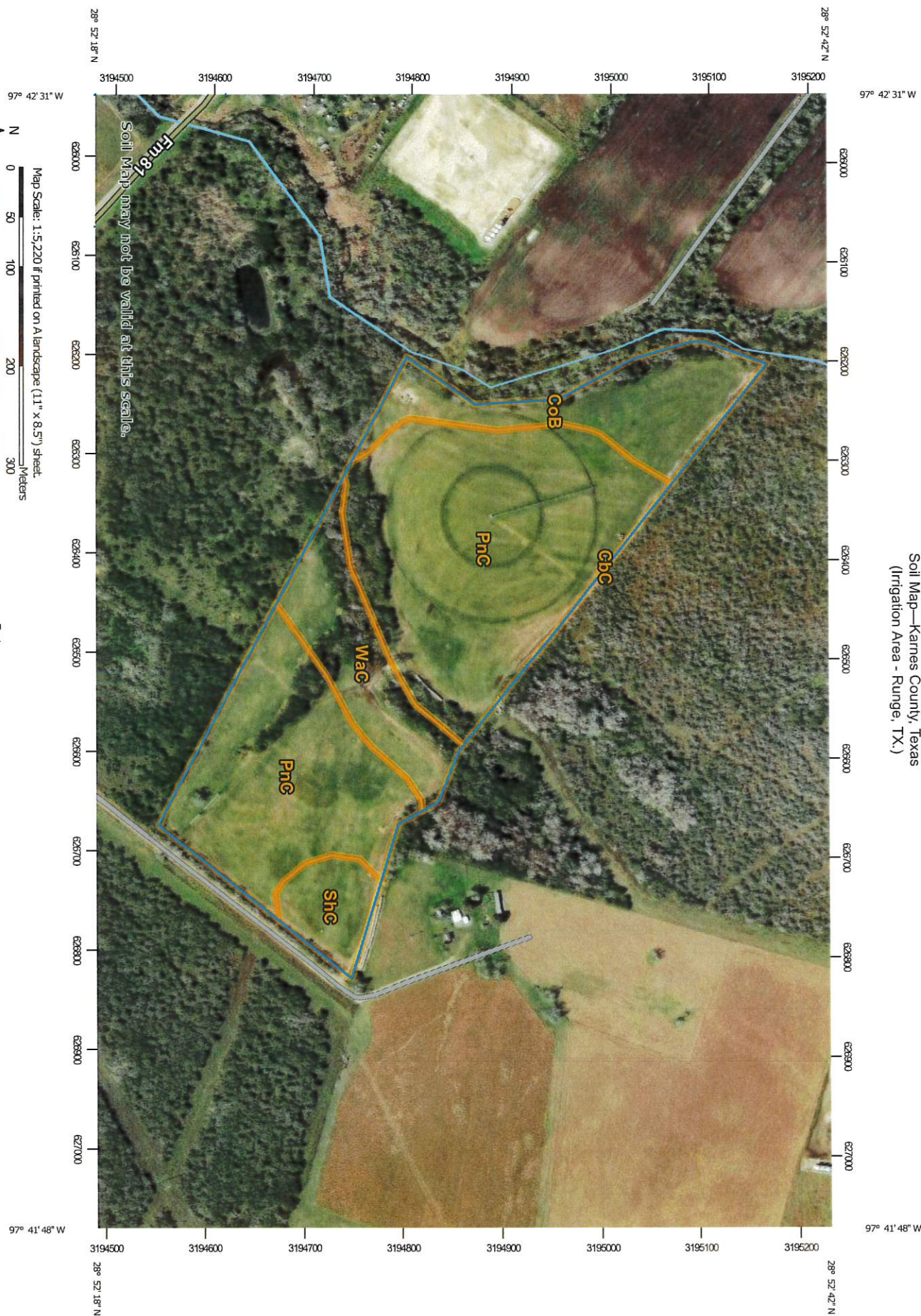
Date(s) aerial images were photographed: May 28, 2010—Oct 17, 2017

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
CaA	Clareville clay loam, 0 to 1 percent slopes	10.0	58.4%
CoB	Coy clay loam, 1 to 3 percent slopes	0.4	2.6%
MoA	Montecia clay, 0 to 1 percent slopes	6.6	38.9%
PnC	Perritas sandy clay loam, 2 to 5 percent slopes	0.0	0.1%
Totals for Area of Interest		17.1	100.0%

Soil Map—Karnes County, Texas
(Irrigation Area - Runge, TX.)



MAP LEGEND

	Area of Interest (AOI)		Spill Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

Date(s) aerial images were photographed: May 28, 2010—Oct 17, 2017

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
CbC	Collbro sandy clay loam, 3 to 5 percent slopes	0.0	0.0%
CoB	Coy clay loam, 1 to 3 percent slopes	5.8	14.7%
PnC	Pernitas sandy clay loam, 2 to 5 percent slopes	26.4	67.5%
ShC	Schattel clay loam, 2 to 5 percent slopes	2.0	5.2%
WaC	Weesatche fine sandy loam, 2 to 5 percent slopes	4.9	12.5%
Totals for Area of Interest		39.1	100.0%

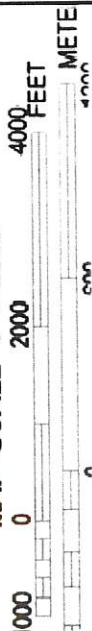
ATTACHMENT No. 8

**DOMESTIC TECHNICAL REPORT 1.0
ITEM 11A**

FEDERAL EMERGENCY MANAGEMENT MAP



MAP SCALE 1" = 2000'



PANEL 0425C

FIRM

FLOOD INSURANCE RATE MAP

KARNES COUNTY,
TEXAS
AND INCORPORATED AREAS

PANEL 425 OF 550

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY:

KARNES COUNTY
RUNGE, TOWN OF

NUMBER:

481175 0425 481120 0425

PANEL SUFFIX:

C C

Notice to User: This Map Number shown below should be used when placing map orders; the Community Number shown below should be used on insurance applications for the subject community.



MAP NUMBER
48255C0425C

EFFECTIVE DATE
OCTOBER 19, 2010

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

CITY OF RUNGE

481120

6,000m E

26

6,000m E

27

6,000m E

28

JOINS PANEL 0300

MATCHLINE

ZONE A

266

268

262

260

258

256

254

252

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248

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244

242

240

PROFILE BASE LINE

262

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238

LIMIT OF DETAILED STUDY

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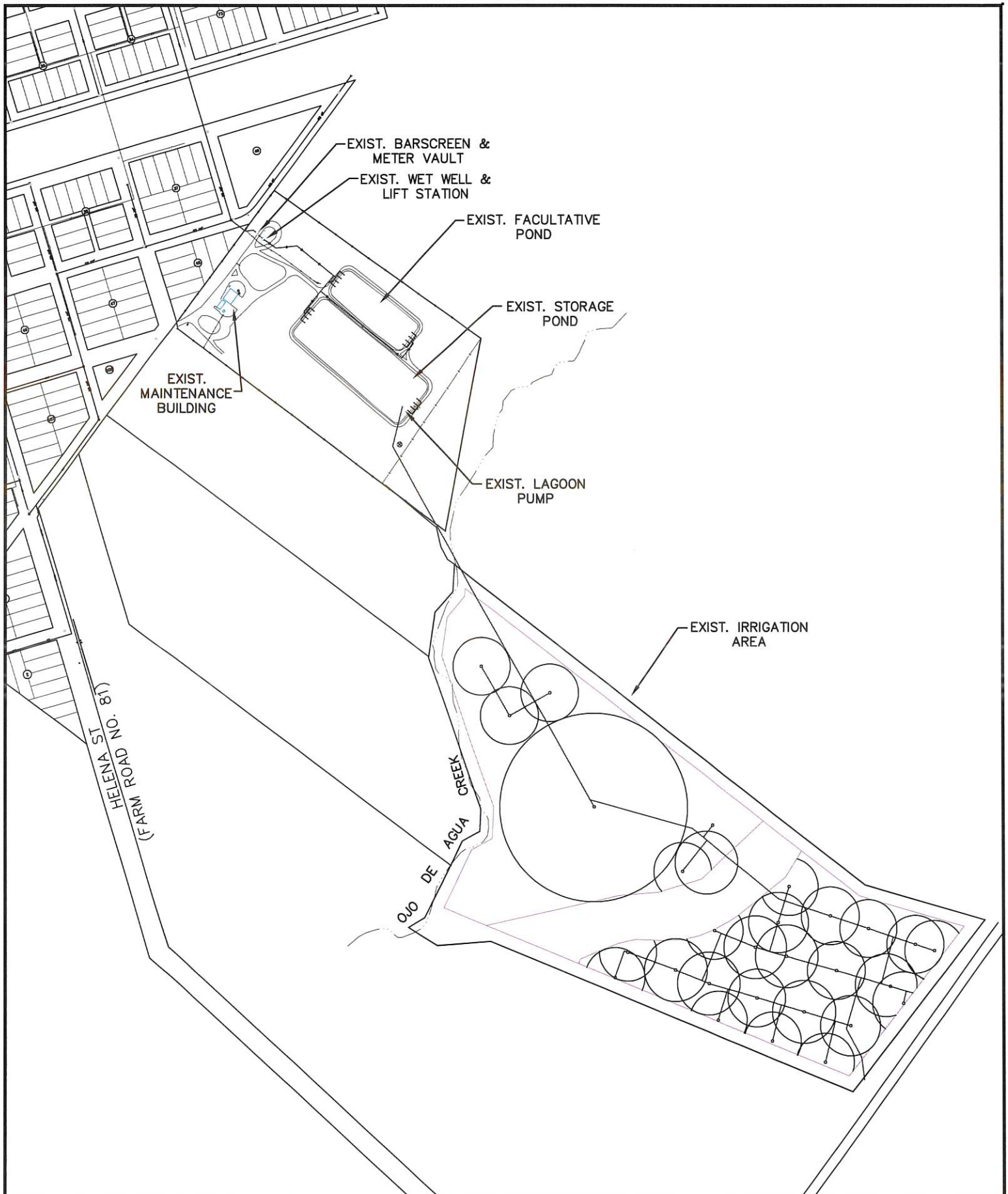
240

266

ATTACHMENT No. 9

**DOMESTIC TECHNICAL REPORT 1.0
ITEM 11A**

SITE MAP



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SITE MAP **DOMESTIC TECHNICAL REPORT 1.0** **ITEM 11A**

CITY OF RUNGE

TEXAS

SHT

1

OF 1

ATTACHMENT No. 10

**DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0
LAND DISPOSAL OF EFFLUENT**

SECTION 5

ANNUAL CROPPING PLAN

DOMESTIC WORKSHEET 3.0
SECTION 5

ANNUAL CROPPING PLAN

The irrigation site is composed of 42 acres used for agricultural pasture land.

The predominant soil on the surface at the irrigation site is Pernitas sandy clay loam (PnC). See attached USDA NRCS Soil Map in the attachments of this application.

The predominant cover is Coastal Bermuda grass. The minimum harvest height is 4" and the maximum harvest height is 24". It is harvested twice a year for the typical hay bailing activity. It has high salt tolerance and requires no supplemental watering. The growing season 8 out of 10 years is about 350 days per year for temperature above 24°F. No additional fertilizers are required.

ATTACHMENT No. 11

**DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0
LAND DISPOSAL OF EFFLUENT**

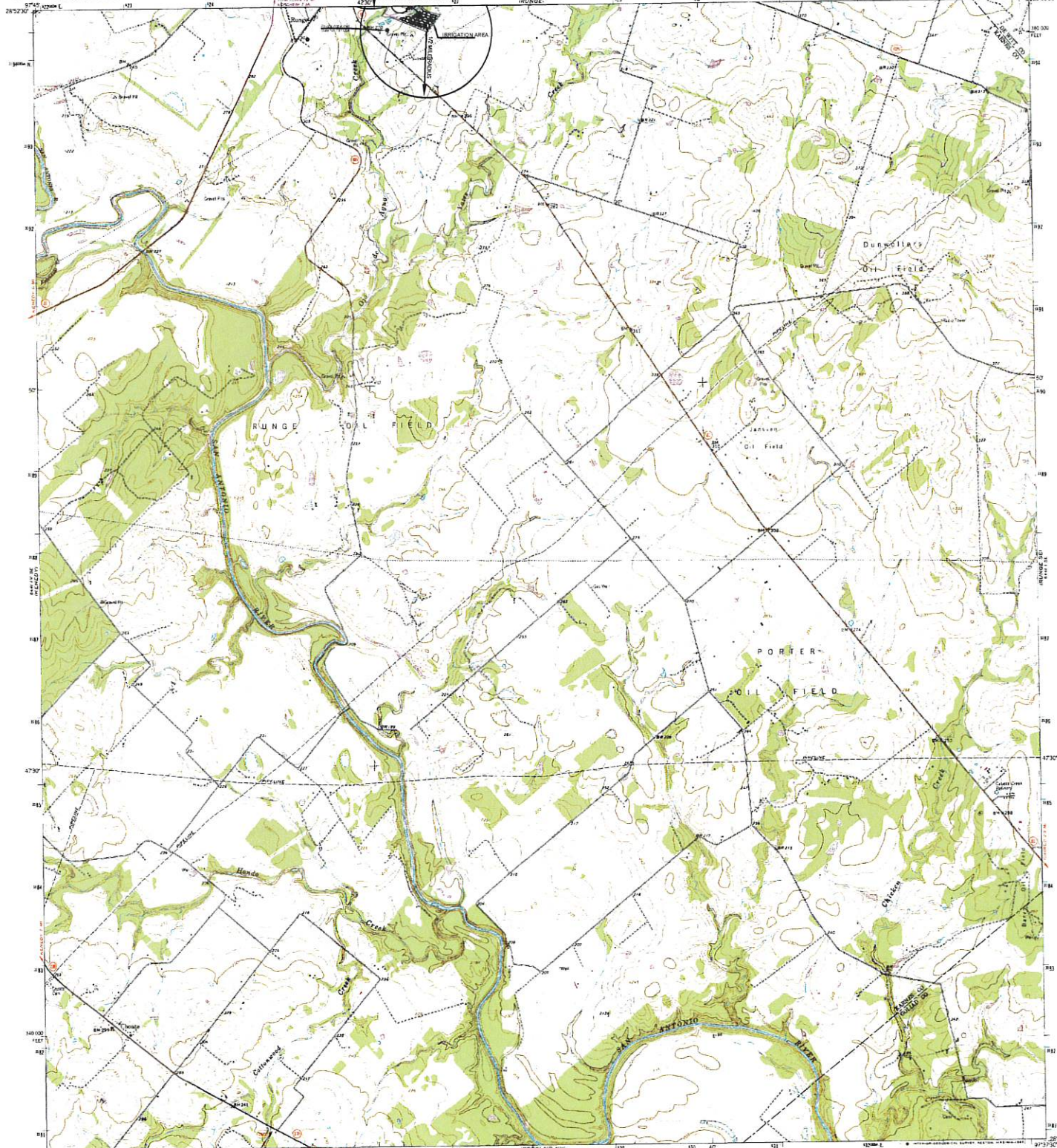
SECTION 6

NEARBY WELL & MAP INFORMATION (USGS MAP)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

CHOATE QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

MATCH LINE



Maped, edited, and published by the Geological Survey

Control by USGS and NOS/RMA

Topography by photogrammetry; spot heights from aerial

photographs taken 1962. Fields checked 1963.

Projection: 1927 North American Datum.

15,000 feet of 1:250,000 scale on Texas coordinate system, south central zone.

1000-meter Universal Transverse Mercator grid ticks.

Zone 14, UTM zone 14N.

For each 1000-meter interval, selected three lines.

To place on the predicted North American Datum 1983

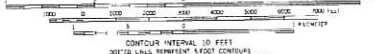
move the projection lines 23 meters south and

27 meters east as shown by dashed corner ticks.

Section corners in purple ink were and supplied from

aerial photographs taken 1961, and other source data.

This information not field checked. - WGS 80/83 1983



2012 UTM ZONE 14N, 14E, 14F, 14G, 14H, 14J, 14K, 14L, 14M, 14N, 14O, 14P, 14Q, 14R, 14S, 14T, 14U, 14V, 14W, 14X, 14Y, 14Z

NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

FOR SALE BY U.S. GEOLOGICAL SURVEY

DENVER, COLORADO 80526, OR RESTON, VIRGINIA 20192

A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



2957-342

ROAD CLASSIFICATION
Heavy duty ——— Light duty ———
Medium duty ——— Unimproved dirt ———
State Route ———

CHOATE, TEX.

2957-06-17-024

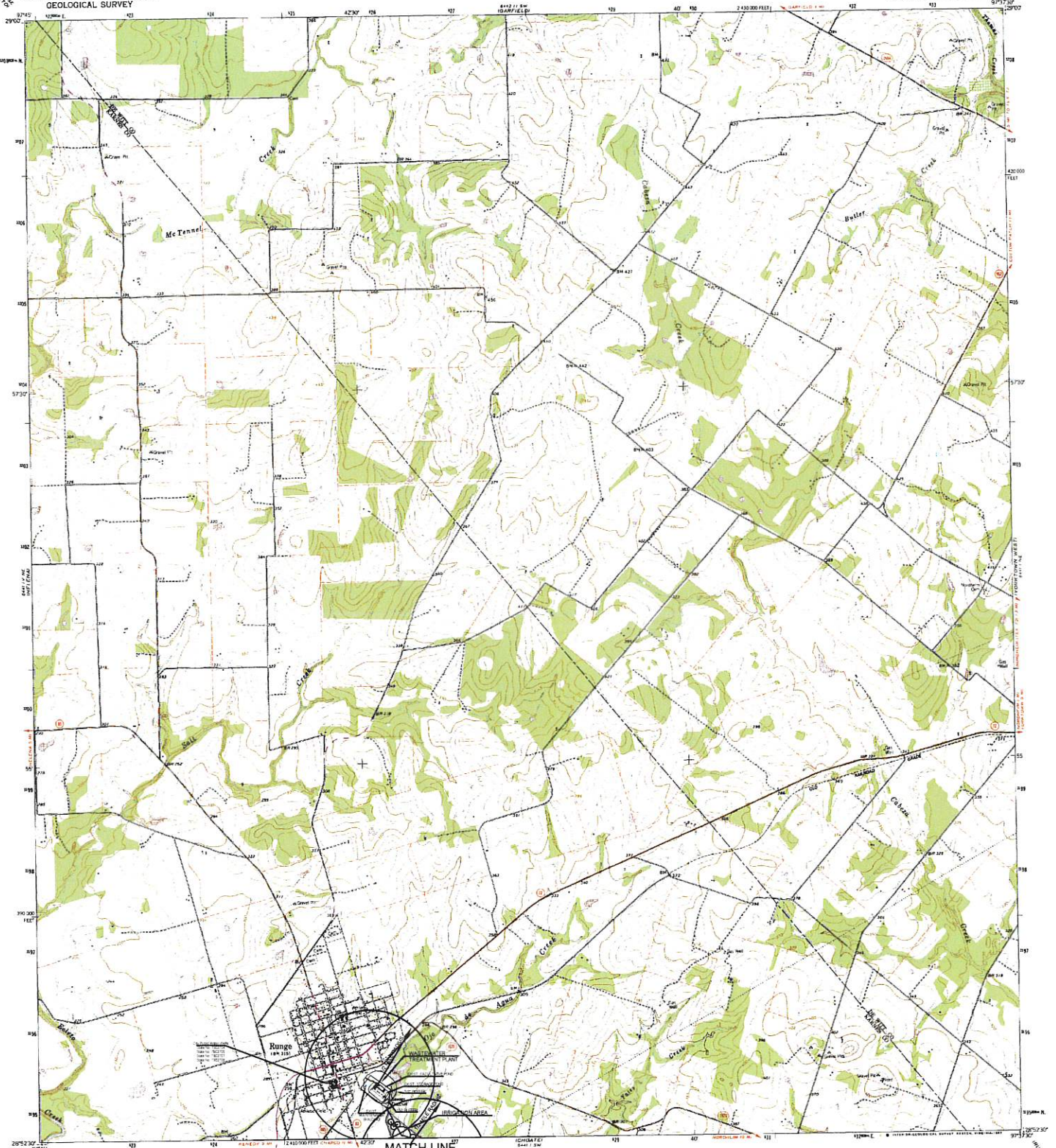
1963

PHOTOGRAPHED 1967

DNA 641 1 SW-SERIES 1962

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RUNGE QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey
Control by USGS and NOAA
Topography by photogrammetric methods from aerial
photographs taken 1962. First checked 1963.
Polyconic projection. 1927 North American Datum.
10,000 foot grid based on Texas coordinate system, south central zone.
1900 mean Universal Transverse Mercator grid ticks,
zone 14, shown in blue.
Fine red dashed lines indicate selected fence lines.
To place on the projected North American Datum 1983
move the projection lines 23 meters south and
26 meters west as shown by dashed corner ticks.
Revised by USGS in 1983 and 1984. All symbols and abbreviations are in accordance with the standards of the U.S. Geological Survey.
For more information, see the U.S. Geological Survey's
Topographic Map Symbols and Abbreviations, 1983 edition.



MATCH LINE
SCALE 1:24,000
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929



ROAD CLASSIFICATION
Heavy-duty ——— Light-duty ———
Medium-duty ——— Unimproved dirt ———
State Route ———

RUNGE, TEX
2897-146-1F-024
1963
UNPUBLISHED
DMA 544 1 N.W. SERIES 1962

THIS MAP COMPLES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOUR DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ATTACHMENT No. 12

**DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0
LAND DISPOSAL OF EFFLUENT**

SECTION 6

WELL ID INFORMATION

**Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number
79-03-704**

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	7903704	Well Type	Withdrawal of Water
County	Karnes	Well Use	Public Supply
River Basin	San Antonio	Water Level Observation	Miscellaneous Measurements
Groundwater Management Area	15	Water Quality Available	Yes
Regional Water Planning Area	L - South Central Texas	Pump	Submersible
Groundwater Conservation District	Evergreen UWCD	Pump Depth (feet below land surface)	
Latitude (decimal degrees)	28.881389	Power Type	Electric Motor
Latitude (degrees minutes seconds)	28° 52' 53" N	Annular Seal Method	
Longitude (decimal degrees)	-97.712778	Surface Completion	
Longitude (degrees minutes seconds)	097° 42' 46" W	Owner	City of Runge well # 2
Coordinate Source	Global Positioning System - GPS	Driller	Layne-Texas Co.
Aquifer Code	122JSPR - Jasper Aquifer	Other Data Available	Drillers Log
Aquifer	Gulf Coast	Well Report Tracking Number	
Aquifer Pick Method		Plugging Report Tracking Number	
Land Surface Elevation (feet above sea level)	310	U.S. Geological Survey Site Number	
Land Surface Elevation Method	Interpolated From Topo Map	Texas Commission on Environmental Quality Source Id	G1280003B
Well Depth (feet below land surface)	212	Groundwater Conservation District Well Number	
Well Depth Source	Driller's Log	Owner Well Number	
Drilling Start Date		Other Well Number	
Drilling End Date	0/0/1935	Previous State Well Number	
Drilling Method		Reporting Agency	Texas Water Development Board
Borehole Completion		Created Date	6/21/2001
		Last Update Date	10/4/2006

Remarks Reported yield, 132 gpm. Drawdown 26 ft. Screened from 156 to 190 ft

Casing - No Data

Well Tests

Test Date	Test Type	Yield (gallons per minute)	Drawdown (ft.)	Test Hours
	Unknown	132	26	0

Lithology

Top Depth (ft.)	Bottom Depth (ft.)	Description
0	4	SURFACE SOIL
4	66	HARD YELLOW CLAY
66	67	ROCK
67	96	HARD CLAY
96	116	CLAY AND BOULDERS
116	136	CLAY
136	154	HARD CLAY AND BOULDERS
154	188	SAND
188	212	CLAY

Annular Seal Range - No Data

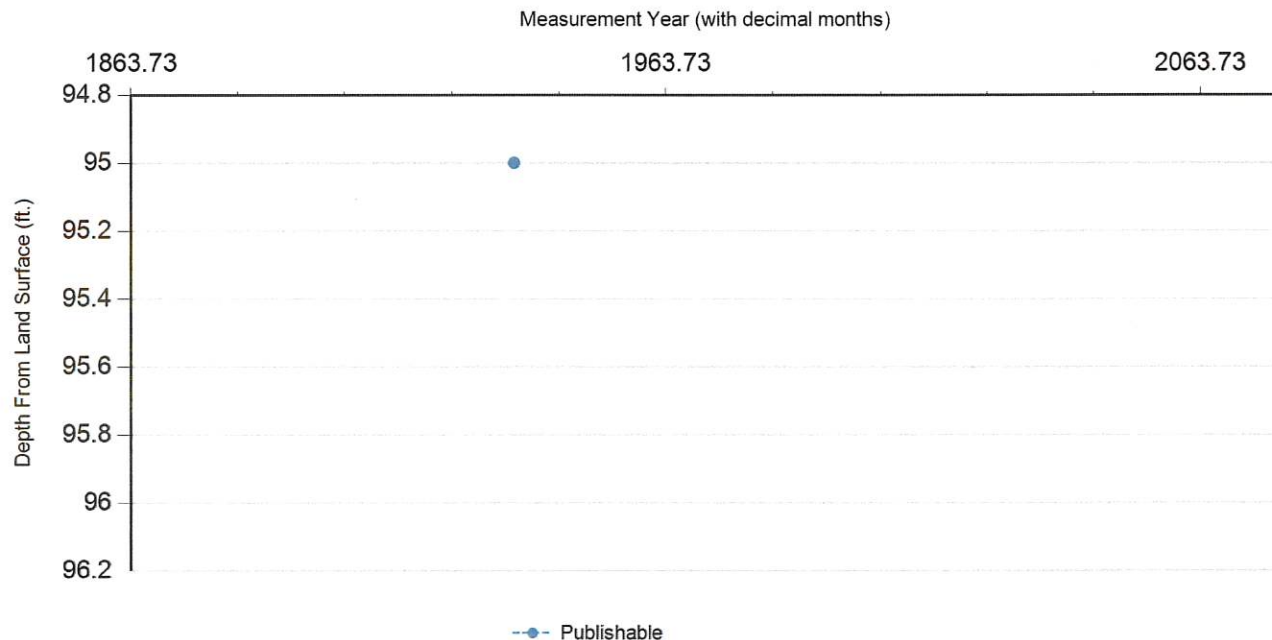
Borehole - No Data

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	0/0/1935		95		215	1	Other or Source of Measurement Unknown	Unknown		
X	8/7/2006					1	Texas Water Development Board	Steel Tape	28	

Code Descriptions

Status Code	Status Description
P	Publishable
X	No Measurement

Remark ID	Remark Description
28	Uncertain of reason for no measurement

**Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number
79-03-704**

Water Quality Analysis

Sample Date: 3/31/1937 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** U.S. Geological Survey

Sampled Aquifer: Jasper Aquifer

Analyzed Lab: U.S. Geological Survey Lab

Reliability: From a report; unknown sample collection & preservation

Collection Remarks: Analysis taken from M-151

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CaCO ₃)		85.25	mg/L as CaCO ₃	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO ₃)		104.03	mg/L	
00910	CALCIUM (MG/L)		54	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO ₃)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		312	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO ₃)		266	mg/L as CaCO ₃	
00920	MAGNESIUM (MG/L)		32	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		3.44		
00932	SODIUM, CALCULATED, PERCENT		51	PCT	
00929	SODIUM, TOTAL (MG/L AS Na)	calculated	129	mg/L	
00945	SULFATE, TOTAL (MG/L AS SO ₄)		23	mg/L as SO ₄	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		601	mg/L	

Water Quality Analysis

Sample Date: 4/18/1954 Sample Time: 0000 Sample Number: 1 Collection Entity: U.S. Geological Survey

Sampled Aquifer: Jasper Aquifer

Analyzed Lab:

Reliability: From a report; unknown sample collection & preservation

Collection Remarks: B-6007

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CaCO ₃)		231.15	mg/L as CaCO ₃	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO ₃)		282.08	mg/L	
00910	CALCIUM (MG/L)		130	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO ₃)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		315	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		1	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO ₃)		472	mg/L as CaCO ₃	
01045	IRON, TOTAL (UG/L AS FE)		200	ug/L	
00920	MAGNESIUM (MG/L)		36	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO ₃)		6.7	mg/L as NO ₃	
00400	PH (STANDARD UNITS), FIELD		7.1	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		27	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SiO ₂)		20	mg/L as SiO ₂	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		1.96		
00932	SODIUM, CALCULATED, PERCENT		31	PCT	
00929	SODIUM, TOTAL (MG/L AS Na)		98	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1540	MICR	
00945	SULFATE, TOTAL (MG/L AS SO ₄)		36	mg/L as SO ₄	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		808	mg/L	

Water Quality Analysis

Sample Date: 10/0/1955 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** U.S. Geological Survey

Sampled Aquifer: Jasper Aquifer

Analyzed Lab:

Reliability: From a report; unknown sample collection & preservation

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)		234.43	mg/L as CaCO 3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		286.09	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		300	ug/L	
00910	CALCIUM (MG/L)		121	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		312	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.5	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)		425	mg/L as CaCO 3	
01045	IRON, TOTAL (UG/L AS FE)	<	10	ug/L	
00920	MAGNESIUM (MG/L)		30	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		5.1	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.6	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		7.8	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SiO2)		37	mg/L as SiO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.7		
00932	SODIUM, CALCULATED, PERCENT		39	PCT	
00929	SODIUM, TOTAL (MG/L AS Na)		128	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1450	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		35	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		817	mg/L	

Water Quality Analysis

Sample Date: 7/23/1981 Sample Time: 0000 Sample Number: 1 Collection Entity: Texas Water Development Board

Sampled Aquifer: Jasper Aquifer

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 CaCO ₃)			205 mg/L as CaCO ₃	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO ₃)			250.17 mg/L	
00910	CALCIUM (MG/L)			131 mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO ₃)			0 mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)			353 mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)			0.6 mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO ₃)			454 mg/L as CaCO ₃	
00920	MAGNESIUM (MG/L)			31 mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO ₃)			7.3 mg/L as NO ₃	
00400	PH (STANDARD UNITS), FIELD			8 SU	
00937	POTASSIUM, TOTAL (MG/L AS K)			8 mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED			0	
00955	SILICA, DISSOLVED (MG/L AS SiO ₂)			31 mg/L as SiO ₂	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)			2.67	
00932	SODIUM, CALCULATED, PERCENT			38 PCT	
00929	SODIUM, TOTAL (MG/L AS Na)			131 mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)			1659 MICR	
00945	SULFATE, TOTAL (MG/L AS SO ₄)			36 mg/L as SO ₄	
00010	TEMPERATURE, WATER (CELSIUS)			28 C	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)			851 mg/L	

Water Quality Analysis

Sample Date: 6/21/2001 **Sample Time:** 1500 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Jasper Aquifer

Analyzed Lab: LCRA - Lower Colorado River Authority

Reliability: Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
39086	ALKALINITY FIELD DISSOLVED AS CaCO ₃		229	mg/L as CaCO ₃	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CaCO ₃)		222	mg/L as CaCO ₃	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	4	ug/L	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	2	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		141	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO ₃)		270.92	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		379	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		1.42	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		133	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO ₃)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		340	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)	<	1	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)	<	2	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.67	mg/L	
04241	GROSS ALPHA RADIATION, TOTAL, PRODUCED WATER(pCi/L)		7.3	pCi/L	2.7
04242	GROSS BETA RADIATION, TOTAL, PRODUCED WATER(pCi/L)		10	pCi/L	3
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO ₃)		482	mg/L as CaCO ₃	
01046	IRON, DISSOLVED (UG/L AS FE)	<	51	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		32.8	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		35.9	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	1	ug/L	
01065	NICKEL, DISSOLVED (UG/L AS NI)		1.65	ug/L	

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number
79-03-704

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		7.61	mg/L as NO3	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		1.72	mg/L as N	
00400	PH (STANDARD UNITS), FIELD		7.1	SU	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		7.92	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	4	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		31.7	mg/L as SI02	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.66		
00932	SODIUM, CALCULATED, PERCENT		37	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		134	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1584	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		2750	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		35.8	mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)		25.3	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		862	mg/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		8.29	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)		175	ug/L	

Water Quality Analysis

Sample Date: 6/21/2001 **Sample Time:** **Sample Number:** 1 **Collection Entity:** Texas Commission on Environmental Quality

Sampled Aquifer: Jasper Aquifer

Analyzed Lab: Immunoassay at TCEQ

Reliability: Sampled using TWDB protocols, but NOT filtered

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
39033	ATRAZINE, TOTAL, UG/L		<	0.05 ug/L	
82612	METOLACHLOR, WHOLE WATER, TOTAL RECOVERABLE, UG/L		<	0.05 ug/L	

Water Quality Analysis

Sample Date: 8/7/2006 Sample Time: 0838 Sample Number: 1 Collection Entity: Texas Water Development Board

Sampled Aquifer: Jasper Aquifer

Analyzed Lab: Energy Labs Inc.

Reliability: Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
39086	ALKALINITY FIELD DISSOLVED AS CaCO ₃		224	mg/L as CaCO ₃	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)	<	1	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CaCO ₃)		284	mg/L as CaCO ₃	
01503	ALPHA, DISSOLVED (PC/L)		9	PC/L	0.8
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	1	ug/L	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)		2	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		138	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO ₃)		346.57	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		360	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		1.7	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		130	mg/L	
28004	CARBON-14 DISS APPARENT AGE (YEARS BP)		12160	Y-BP	70
82172	CARBON-14 FRACTION MODERN		0.22		0.0019
00445	CARBONATE ION, CALCULATED (MG/L AS CO ₃)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		353	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		2	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)		1	ug/L	
82081	DELTA CARBON 13 C13/C12 PER MIL		-7.2	0/00	
50791	DEUTERIUM, EXPRESSED AS PERMIL VSMOW		-25	0/00	1
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.6	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO ₃)		472	mg/L as CaCO ₃	
01046	IRON, DISSOLVED (UG/L AS FE)		167	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)		1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		42	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		35	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)		5	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		1	ug/L	

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number
79-03-704

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		7.08	mg/L as NO3	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		1.6	mg/L as N	
50790	OXYGEN-18, EXPRESSED AS PERMIL VSMOW		-4.7	0/00	0.3
50982	OXYGEN-18/OXYGEN-16 OF SULFATE (RATIO PER MIL)		4.5	0/00	0.4
00400	PH (STANDARD UNITS), FIELD		6.94	SU	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		8.3	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
01145	SELENIUM, DISSOLVED (UG/L AS SE)		6	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SiO2)		30.2	mg/L as SiO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.63		
00932	SODIUM, CALCULATED, PERCENT		38	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		131	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1468	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		2480	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		39	mg/L as SO4	
49932	SULFUR-34/32 OF SULFATE, DISSOLVED, PER MIL		11	0/00	0.3
00010	TEMPERATURE, WATER (CELSIUS)		25	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		907	mg/L	
07012	TRITIUM IN WATER (TRITIUM UNITS)		0.1	TU	0.09
01085	VANADIUM, DISSOLVED (UG/L AS V)		9	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)		251	ug/L	

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

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WELL SCHEDULE

1. Location: 1, 1, Section , Block , Survey , Lat. 28-52-52 N, Long. 97-42-45 W

Tenant (other): _____ Address: _____

Driller: Layne Texas Address: _____

4. Drilled: 19.35; Dug, Cable Tool, Rotary, Air,

S. Depth: Rept. 212 ft. Meas. _____ ft.

6. Borehole Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump:	Mfr.	Type	Turbine	(In.)		from	to

No. Stages	Bowls Diam.	in., Setting	ft.
10		0	212

Column Diam.	in., Length Tailpipe	ft.	Scrubber	156	196
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8. Motor: Mfr. Fuel Elec HP. 10

9. Yield: Flow gpm. Pump 132 gpm. Meas. (Rept.), Est. Date

10. Performance Test:	Date	Length of Test	Made by				
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Static level: ft. Pumping level: ft. Drawdown: 26 ft.

Production	rpm	Specific Capacity	gpm/ft	RECEIVED		
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11. Quality: (Remarks on taste, odor, color, etc.)			
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Analyses

File #	Date	Lab	TDS	Sr Cond	Hardness	Alkalinity	pH	Temp	Remarks
10	EE	Laboratory							IDWR

Date 7/13/81 Laboratory TDS Sp. Cond

13. Other data available (as indicated):	Swimming Test	Swimming 2	Yield Test	Drillings Log
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Entity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414</
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(type)

13. Water Level(s): 95 ft. ^{Sept.} 1935 ^{above} 1 SD which is ft. ^{above} Land Surface

ft. rept. 19 above which is ft. above Land Surface

14. Use: Dom. Stock Public Supply Ind. Irr. Observation Other (Treat Hold. Oil Test, etc.)

15. Recorded by: B. JAMES Source of data: B - 6007 Date: 7/27/81

16. Remarks:

1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2810 2811 2812 2813 2814 2815 2816 2817

17. Location or Sketch: Next Page

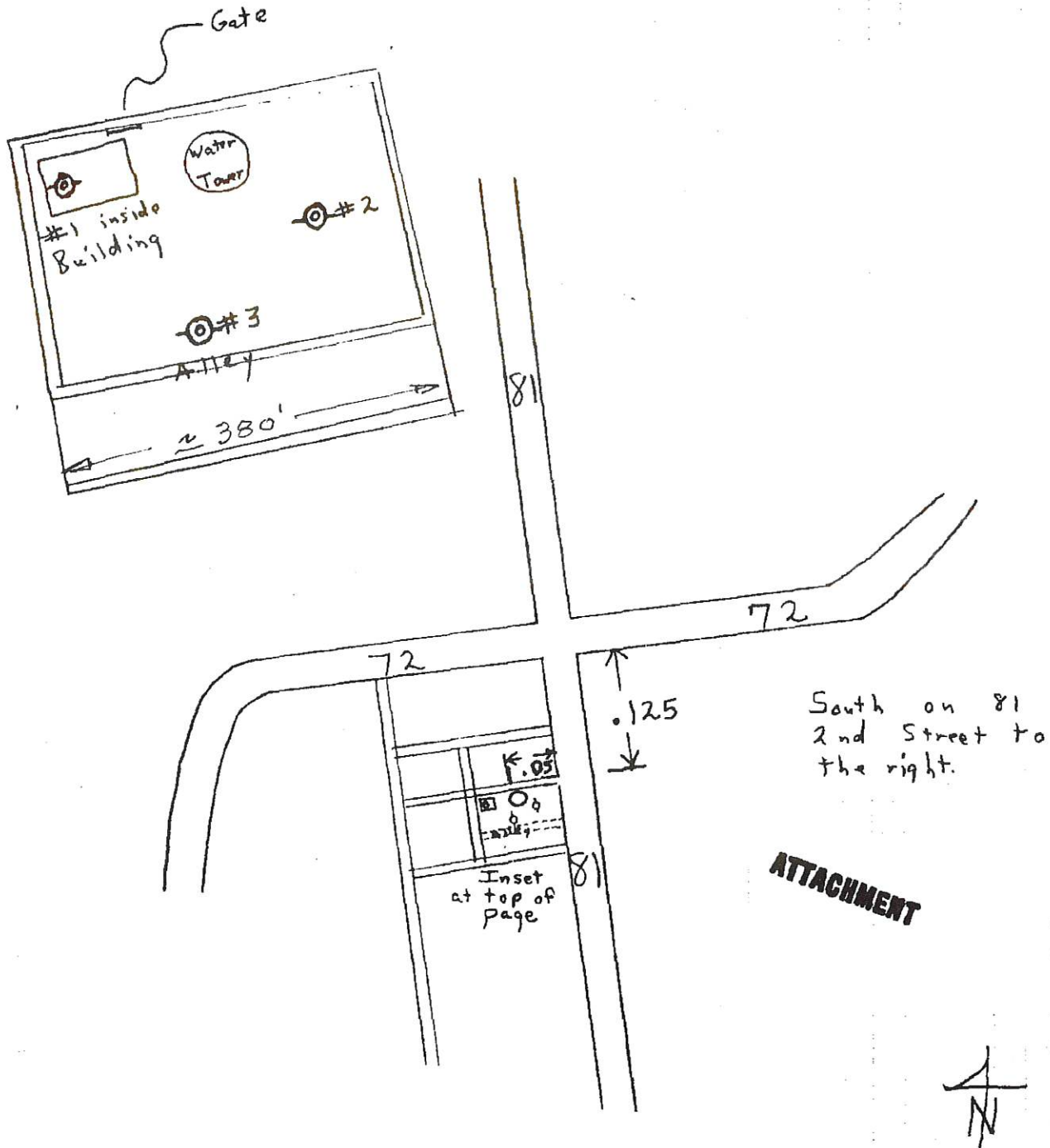
[illegible]

TE S DEPARTMENT OF WATER RESOURCES

BY _____ DATE _____ DIVISION _____ SHEET NO. _____ OF _____

CHKD _____ DATE _____ JOB NAME 28-79-03-7

JOB NO. E-39 PROG. CODE Well #2



ATTACHMENT

PZ 79-03-704

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

Texas Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

TDWR ONLY

Organization No. 410 Lab No. 01

Work No. 6040

CHEMICAL WATER ANALYSIS REPORT

RECEIVED

MAR 31 1982

CR-10

County

128

Karnes

State Well No.

79-03-704

Well No. 772

Date Collected

07-23-81

Send report to:

Data Collection and Evaluation Section
Texas Department of Water Resources
P.O. Box 13087
Austin, Texas 78711

Location

Sample No.

By

Source (type of well) Turb. Elec Owner City of Ruge

Date Drilled _____ Depth _____ ft. WBF _____

Producing intervals _____ Water level _____ ft. Sample depth _____ ft.

Sampled after pumping 5 Min hrs. Yield _____ GPM mess.

Temperature 81.2 °F _____ °C

Point of collection Farret

Appearance ☒ clear ☐ turbid ☐ solid ☐ other

Use Public Remarks _____

(FOR LABORATORY USE ONLY)

CHEMICAL JUL 27 1981

121 PUNCHED

AUG 31 '81

Laboratory N CE1-17031

Date Received JUL 27 1981

Date Reported _____

	MG/L	ME/L																																								
Silica . . . 00955 . . .	<table><tr><td></td><td></td><td>3</td><td>1</td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>			3	1													<table><tr><td></td><td></td><td>6</td><td>5</td><td>7</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>			6	5	7																			
		3	1																																							
		6	5	7																																						
Calcium . . . 00915 . . .	<table><tr><td></td><td></td><td>1</td><td>3</td><td>1</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>			1	3	1																<table><tr><td></td><td></td><td>2</td><td>5</td><td>3</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>			2	5	3															
		1	3	1																																						
		2	5	3																																						
Magnesium . . . 00925 . . .	<table><tr><td></td><td></td><td>3</td><td>1</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>			3	1																	<table><tr><td></td><td></td><td>5</td><td>7</td><td>0</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>			5	7	0															
		3	1																																							
		5	7	0																																						
Sodium . . . 00929 . . .	<table><tr><td></td><td></td><td>1</td><td>3</td><td>1</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>			1	3	1																<table><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>																				
		1	3	1																																						
Total																																										

☐ Potassium . . . 00937 . . .	<table><tr><td></td><td></td><td>8</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>			8																		<u>0.20</u> <u>15.00</u>
		8																				
³ ☐ Manganese . . . 01055 . . .	<table><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>																					%Na _____
☐ Boron . . . 01022 . . .	<table><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>																					SAR _____
³ ☐ Total Iron . . . 01045 . . .	<table><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table>																					RSC _____

☐ (other) _____	MG/L
Specific Conductance (micromhos/cm ³)	00095
Diluted Conductance (micromhos/cm ³)	21 x 79

☐ items will be analyzed if checked.

¹ The bicarbonate reported in this analysis can be converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure used in the computation of dissolved solids.

² Nitrogen cycle requires separate sample.

³ Total Iron and Manganese require separate sample.

	MG/L	ME/L																					
Carbonate . . . 00445 . . .	<table><tr><td></td><td></td><td>0</td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>			0																			
		0																					
¹²³ Bicarbonate . . . 00440 . . .	<table><tr><td></td><td>250</td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>		250											<table><tr><td>4</td><td>10</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	4	10							
	250																						
4	10																						
Sulfate . . . 00945 . . .	<table><tr><td></td><td>36</td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>		36											<table><tr><td>0</td><td>75</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	0	75							
	36																						
0	75																						
Chloride . . . 00940 . . .	<table><tr><td></td><td>353</td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>		353											<table><tr><td>9</td><td>55</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	9	55							
	353																						
9	55																						
Fluoride . . . 00951 . . .	<table><tr><td></td><td>0.6</td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>		0.6											<table><tr><td>0</td><td>03</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	0	03							
	0.6																						
0	03																						
Nitrate . . . 71850 . . .	<table><tr><td></td><td>7.3</td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>		7.3											<table><tr><td>0</td><td>12</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	0	12							
	7.3																						
0	12																						
pH 00403 . . .	<table><tr><td></td><td>8.0</td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>		8.0											Total	<table><tr><td>14</td><td>95</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	14	95						
	8.0																						
14	95																						

¹ Dissolved Solids (residue at 180° C)	70300			960
Phenolphthalein Alkalinity as CaCO ₃	00415			0
(4.10) Total Alkalinity as CaCO ₃	00410			205
(9.10) Total Hardness as CaCO ₃	00900			455
² Nitrogen Cycle				
Ammonia - N	00610			
Nitrite - N	00615			
Nitrate - N	00620			
Organic Nitrogen	00605			

Analyst _____ Checked By _____

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

Texas Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

TDWR ONLY

Organization No. _____ Lab No.

Work No. _____

CHEMICAL WATER ANALYSIS REPORT

Send report to:

Data Collection and Evaluation Section
Texas Department of Water Resources
P.O. Box 13087
Austin, Texas 78711

County 128 KARLES
State Well No. 79-03-704
Well No. _____
Date Collected 10-00-55

Location _____ Sample No. By _____
Source (type of well) _____ Owner _____
Date Drilled _____ Depth _____ ft. WBF
Producing intervals _____ Water level _____ ft. Sample depth ft.
Sampled after pumping _____ hrs. Yield _____ GPM meas. est. Temperature °F °C
Point of collection _____ Appearance ☐ clear ☐ turbid ☐ colored ☐ other
Use _____ Remarks _____

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

KEY PUNCHED

Laboratory No. _____ Date Received _____ Date Reported _____

	MG/L	ME/L		MG/L	ME/L
Silica . . . 00955 . . .	37		Carbonate . . . 00445 . . .	 	
Calcium . . . 00915 . . .	121		Bicarbonate . . . 00440 . . .	286	
Magnesium . . . 00925 . . .	30		Sulfate . . . 00945 . . .	35	
Sodium . . . 00929 . . .	128		Chloride . . . 00940 . . .	312	
	Total		Fluoride . . . 00951 . . .	.5	
☐ Potassium . . . 00937 . . .	7.8		Nitrate . . . 71850 . . .	5.1	
³ ☐ Manganese . . . 01055 . . .		%Na <u>39</u>	pH 00403 . . .	7.6	Total
☐ Boron . . . 01022 . . .		SAR <u>2.7</u>			
³ ☐ Total Iron . . . 01045 . . .		RSC <u>0</u>			
☐ (other) _____ MG/L					
Specific Conductance (micromhos/cm ³) . . . 00095 . . .	1450				
Diluted Conductance (micromhos/cm ³) _____ X _____					

¹ Dissolved Solids (residue at 180°C) . . . 70300 . . . 813

Phenolphthalein Alkalinity as CaCO₃ . . . 00415 . . .

Total Alkalinity as CaCO₃ 00410 . . .

Total Hardness as CaCO₃ 00900 . . . 426

² Nitrogen Cycle

Ammonia - N 00610 . . .

Nitrite - N 00615 . . .

Nitrate - N 00620 . . .

Organic Nitrogen 00605 . . .

☐ " items will be analyzed if checked.

¹ The bicarbonate reported in this analysis can be converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure used in the computation of dissolved solids.

² Nitrogen cycle requires separate sample.

³ Total Iron and Manganese require separate sample.

Analyst _____ Checked By _____

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

Texas Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

TDWR ONLY			
Organization No. _____	Lab No. <table border="1"><tr><td></td><td></td></tr></table>		
Work No. _____			

CHEMICAL WATER ANALYSIS REPORT

Send report to:

Data Collection and Evaluation Section
Texas Department of Water Resources
P.O. Box 13087
Austin, Texas 78711

County

1	2	8
---	---	---

KARNES
State Well No.

7	9	-	0	3	-	7	0	4
---	---	---	---	---	---	---	---	---

Well No. _____
Date Collected

0	4	-	1	8	-	5	4
---	---	---	---	---	---	---	---

Location _____ Sample No.

--

 By _____
Source (type of well) _____ Owner _____
Date Drilled _____ Depth _____ ft. WBF _____

--	--	--

Producing intervals _____ Water level _____ ft. Sample depth

--	--	--

 ft.

--	--	--

--	--	--

 °F

--	--	--

 °C
Sampled after pumping _____ hrs. Yield _____ GPM meas. est. Temperature _____ °F _____ °C
Point of collection _____ Appearance ☐ clear ☐ turbid ☐ colored ☐ other
Use _____ Remarks B - 6007

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

KEY PUNCHED

Laboratory No. _____ Date Received _____ Date Reported _____

	MG/L	ME/L					
Silica . . . 00955 . . .	<table border="1"><tr><td></td><td></td><td>2</td><td>0</td></tr></table>			2	0		
		2	0				
Calcium . . . 00915 . . .	<table border="1"><tr><td></td><td></td><td>1</td><td>3</td><td>0</td></tr></table>			1	3	0	
		1	3	0			
Magnesium . . . 00925 . . .	<table border="1"><tr><td></td><td></td><td>3</td><td>6</td></tr></table>			3	6		
		3	6				
Sodium . . . 00929 . . .	<table border="1"><tr><td></td><td></td><td>9</td><td>8</td></tr></table>			9	8		
		9	8				
Total							
☐ Potassium . 00937 . . .	<table border="1"><tr><td></td><td></td><td>2</td><td>7</td></tr></table>			2	7		
		2	7				
³ ☐ Manganese . 01055 . . .	<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					%Na <u>30</u>	
☐ Boron . . . 01022 . . .	<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>					SAR <u>2.0</u>	
³ ☐ Total Iron . 01045 . . .	<table border="1"><tr><td></td><td></td><td></td><td>2</td></tr></table>				2	RSC <u>0</u>	
			2				

☐ (other) _____ MG/L
Specific Conductance (micromhos/cm³) . 00095 .

		1	5	0
--	--	---	---	---

Diluted Conductance (micromhos/cm³) _____ X

	MG/L	ME/L					
Carbonate . . . 00445 . . .	<table border="1"><tr><td></td><td></td><td></td><td></td></tr></table>						
Bicarbonate . . . 00440 . . .	<table border="1"><tr><td></td><td></td><td>2</td><td>8</td><td>2</td></tr></table>			2	8	2	
		2	8	2			
Sulfate . . . 00945 . . .	<table border="1"><tr><td></td><td></td><td>3</td><td>6</td></tr></table>			3	6		
		3	6				
Chloride . . . 00940 . . .	<table border="1"><tr><td></td><td></td><td>3</td><td>1</td><td>5</td></tr></table>			3	1	5	
		3	1	5			
Fluoride . . . 00951 . . .	<table border="1"><tr><td></td><td></td><td>1</td><td>0</td></tr></table>			1	0		
		1	0				
Nitrate . . . 71850 . . .	<table border="1"><tr><td></td><td></td><td>6</td><td>7</td></tr></table>			6	7		
		6	7				
pH . . . 00403 . . .	<table border="1"><tr><td></td><td></td><td>7</td><td>1</td></tr></table>			7	1	Total	
		7	1				
¹ Dissolved Solids (residue at 180°C) . . . 70300 . . .		<table border="1"><tr><td></td><td></td><td>9</td><td>6</td><td>2</td></tr></table>			9	6	2
		9	6	2			
Phenolphthalein Alkalinity as CaCO ₃ . . . 00415 . . .							
Total Alkalinity as CaCO ₃ . . . 00410 . . .							
Total Hardness as CaCO ₃ . . . 00900 . . .		<table border="1"><tr><td></td><td></td><td>4</td><td>7</td><td>2</td></tr></table>			4	7	2
		4	7	2			
² Nitrogen Cycle							
Ammonia - N 00610 . . .							
Nitrite - N 00615 . . .							
Nitrate - N 00620 . . .							
Organic Nitrogen 00605 . . .							

Analyst _____ Checked By _____

¹ The bicarbonate reported in this analysis can be converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure used in the computation of dissolved solids.

² Nitrogen cycle requires separate sample.

³ Total Iron and Manganese require separate sample.

Texas Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

Program No. _____ Lab No. _____

Work No.

Send report to:

**Data Collection and Evaluation Section
Texas Department of Water Resources
P.O. Box 13087
Austin, Texas 78711**

County 1 2 0 KARNES
State Well No. 7 9 - 0 3 - 7 0 4
Well No. _____
Date Collected 0 3 - 3 1 - 3 7

Location _____ Sample No. ☐ By USGS

Source (type of well) _____ Owner City of Runge

Date Drilled 1935 Depth 212 ft. WBF OAKVILLE SANDSTONE

Producing intervals _____ Water level _____ ft. Sample depth

--	--	--

 ft.

--	--	--

--	--	--

Sampled after pumping _____ hrs. Yield 132 GPM $\frac{\text{mass}}{\text{vol}}$ Temperature

--	--	--	--

 °F

--	--	--	--

 °C

Point of collection _____ Appearance ☐ clear ☐ turbid ☐ colored ☐ other

Use P.S. Remarks _____

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062 1063 106

Laboratory No. _____ Date Received _____ Date Reported _____

	MG/L				ME/L			
Silica								
Calcium			5	4				
Magnesium			3	2				
Sodium			1	2				
Total								

[illegible]☐ (other) _____ MG/L

Specific Conductance	(micromhos/cm ³)						
-----------------------------	--	--	--	--	--	--	--

Diluted Conductance (micromhos/cm³) $\times$

	MG/L			ME/L		
Carbonate						•
Bicarbonate		104				•
Sulfate		23				•
Chloride		312				•
Fluoride			•			•
Nitrate			•			•
pH			•	Total		•

¹ Dissolved Solids (residue at 180°C)	601
--	-----

Phenolphthalein Alkalinity as CaCO_3 [illegible][illegible]

² Nitrogen Cycle

[illegible][illegible][illegible][illegible]

Analyst _____ Checked By _____

¹ The bicarbonate reported in this analysis can be converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure used in the computation of dissolved solids.

² Nitrogen cycle requires separate sample.

³ Total Iron and Manganese require separate sample.

Table 6.- Drillers' logs of wells in Karnes County--Continued

Thickness (feet)		Depth (feet)		Thickness (feet)		Depth (feet)	
Well E-39							
Owner: City of Runge, well 2. Driller: Layne-Texas Co.							
Surface soil -----	4	4	Clay -----	20	136		
Clay, hard, yellow -----	62	66	Clay, hard and boulders -	18	154		
Rock -----	1	67	Sand -----	34	188		
Clay, hard -----	29	96	Clay -----	24	212		
Clay and boulders -----	20	116					

79-03-704

TWDB Water Quality Field Data Sheet

New Well: yes / no
State Well Number: 79-03-704
County: KARNES
County Code: 255
Aquifer Code: 10251R
Aquifer Id: 15
Send Results To: Owner / Lessee
Owner's Name: CITY OF RUDGE
Lessee's Name: _____
Attention: _____
Mailing Address: Box 206 RUDGE
Well Number: 78151

Type of Sample: LCRA/HACH
Sample Number: 1049
Date: 6-21-01
Sampler(s): ML

CIRCLE BOTTLES TAKEN:				
1 (on ice)	2	3 (on ice)	4 (on ice)	5
500ml (filtered)	500ml (filtered)	250ml (filtered)	40 ml (not filtered)	1 gallon (filtered)
Anions / Total Alkalinity	Cations	Nitrate/Nitrite	Atrazine	Radioactivity
no preservative	1ml Nitric (HNO3)	0.5 ml Sulfuric (H2SO4)	no preservative	10 ml Nitric (HNO3)

Daily Meter Calibration:	
pH	7 <u>7.0</u>
4 or 10	<u>10.0</u>
Conductivity	500 <u>501</u>
	1000 <u>1001</u>
	2000 <u>2000</u>
	5000

Add enough of the proper acid to each bottle that is preserved to drop the pH to 2.
Time In: 1440 **Time Out:** 1535

W. L. depth from LSD (ft.): 804 **W. L. remark:** _____
Pumping Since: POA **Sampling Point:** FAV
Well Use: Public **Latitude:** 28.52 54
Lift: 2 **Longitude:** 97 42 46
Power: E **Elevation:** 302
Sample Time: 1500 **Filter pressure:** hand pump (line)

Field Alkalinity Titration:	
<u>7.11</u> Start pH	<u>4.52</u> End pH
<u>50</u> ml. Sample Size	
<u>11.45</u> ml. Acid added for Total	
ml. Acid added for Phenol	
Items below calculated from ml. acid added data:	
Field Total Alkalinity:	<u>229</u> mg/L
Field Phenol Alkalinity:	mg/L

Notes:

2100 6PM

Water Quality Stabilization Parameters Table

Time:	<u>1450</u>	<u>1500</u>		
pH:	<u>7.09</u>	<u>7.10</u>		
Temperature (Celsius):	<u>25.0</u>	<u>25.3</u>		
Conductivity (uS/cm):	<u>1582</u>	<u>1584</u>		
Conductivity Temperature (Celsius)	<u>25.2</u>	<u>25.6</u>		

Final Readings:

Items Below Calculated Later From Results:	
Total Hardness:	<u>482</u>
Calculated TDS (mg/L):	<u>862</u>
Balanced:	<u>B</u>

LCRA Environmental Laboratory Services

Date: 17-Jul-01

CLIENT: Texas Water Development Board
 Lab Order: 0106204 File No: 16418
 Project: TWDB 00-01B
 Lab ID: 0106204-13

Client Sample ID: 79-03-704
 Collection Date: 06/21/2001 3:00:00 PM
 Matrix: GROUNDWATER

Analyses	Storet	Result	PQL	Qual	Units	DF	BatchID	Date Analyzed
ICP METALS DISSOLVED		E200.7		Analyst: SW				
Calcium	133	0.204	mg/L	1.02	R9416	07/05/2001		
Magnesium	35.9	0.204	mg/L	1.02	R9416	07/05/2001		
Potassium	7.92	0.204	mg/L	1.02	R9416	07/05/2001		
Sodium	134	0.714	mg/L	1.02	R9416	07/05/2001		
ICP METALS DISSOLVED		E200.7		Analyst: SW				
Boron	379	51.0	µg/L	1.02	R9418	07/05/2001		
Iron	ND	51.0	µg/L	1.02	R9418	07/05/2001		
Strontium	2750	20.4	µg/L	1.02	R9418	07/05/2001		
ICPMS DISSOLVED METALS		E200.8		Analyst: PJM				
Aluminum	ND	4.00	µg/L	1	R9366	07/03/2001		
Antimony	ND	1.00	µg/L	1	R9366	07/03/2001		
Arsenic	ND	2.00	µg/L	1	R9366	07/03/2001		
Barium	141	1.00	µg/L	1	R9366	07/03/2001		
Beryllium	ND	1.00	µg/L	1	R9366	07/03/2001		
Cadmium	ND	1.00	µg/L	1	R9366	07/03/2001		
Chromium	ND	1.00	µg/L	1	R9366	07/03/2001		
Cobalt	ND	1.00	µg/L	1	R9366	07/03/2001		
Copper	ND	2.00	µg/L	1	R9366	07/03/2001		
Lead	ND	1.00	µg/L	1	R9366	07/03/2001		
Lithium	32.8	2.00	µg/L	1	R9366	07/03/2001		
Manganese	ND	1.00	µg/L	1	R9366	07/03/2001		
Molybdenum	ND	1.00	µg/L	1	R9366	07/03/2001		
Nickel	1.65	1.00	µg/L	1	R9366	07/03/2001		
Selenium	ND	4.00	µg/L	1	R9366	07/03/2001		
Thallium	ND	1.00	µg/L	1	R9366	07/03/2001		
Vanadium	8.29	1.00	µg/L	1	R9366	07/03/2001		
Zinc	175	4.00	µg/L	1	R9366	07/03/2001		
CATION/ANION BALANCES		CALCULATION		Analyst: AMJ				
Cation/Anion Balance	Balanced	Date	1	R9482	07/11/2001			
RADIOLOGICALS		RADIOCHEM		Analyst: SB				
ALPHA, Gross	7.3	pci/L	1	R9444	07/02/2001			
BETA, Gross	10	pci/L	1	R9444	07/02/2001			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range

LCRA Environmental Laboratory Services

Date: 17-Jul-01

CLIENT: Texas Water Development Board
Lab Order: 0106204 **File No:** 16418
Project: TWDB 00-01B
Lab ID: 0106204-13

Client Sample ID: 79-03-704**Collection Date:** 06/21/2001 3:00:00 PM**Matrix:** GROUNDWATER

Analyses	Storet	Result	PQL	Qual	Units	DF	BatchID	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY		E300						Analyst: AMJ
Bromide Dissolved		1.42	0.100		mg/L	5	R9465B	07/10/2001
Chloride Dissolved		340	5.00		mg/L	5	R9465B	07/10/2001
Fluoride Dissolved		0.673	0.0500		mg/L	5	R9465B	07/10/2001
Sulfate Dissolved		35.8	5.00		mg/L	5	R9465B	07/10/2001
ALKALINITY		M2320 B						Analyst: WM
Alkalinity, Phenolphthalein		ND			mg/L CaCO ₃	1	R9253	06/27/2001
Alkalinity, Total (As CaCO ₃)		222	2.00		mg/L CaCO ₃	1	R9253	06/27/2001
NITRATE AND NITRITE		E353.2						Analyst: WR
Nitrogen, Nitrate & Nitrite		1.72	0.0200		mg/L	1	R9315H	06/29/2001
SILICA		E370.1						Analyst: WR
Silica, Dissolved (as SiO ₂)		31.7	0.500		mg/L	1	R9509A	07/12/2001

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Gulf Coast FY06

TWDB Water Quality Field Data Sheet

Newly Inventoried Well 452

SWN: 79.63.704
 County: KANAWES
 County Code: 255
 Aquifer Code: 1225SPER
 Aquifer Id: 15

Name: City of Range
 Address: PO Box 206
Range, TN 37851
 Phone Number:
 Attention:

ID Number: 852
 Date: 8-7-06
 Sampler(s): D. GARCIA

Calibration Verification Readings	
pH <u>26.5</u>	7 = <u>699</u>
<u>SLP. 95.6</u>	4 or 10 = <u>10.00</u>
Conductivity	500 = <u>530</u>
	1000 = <u>996</u>
	2000 = <u>1917</u>
	5000 = <u>4800</u>

Well Name or #:										
1	2	3	4	5	6	7	8	9	10	11
250 ml unfiltered	250ml filtered	500ml filtered	500ml filtered	1 L unfiltered	1 L unfiltered	2 L filtered	2 L unfiltered	2 L unfiltered	2 L unfiltered	2 L unfiltered
O ₂	Isotide	Antionst. Alk.	Nitrate	Tritium	C14/C13 corr	Cation/G. Alpha	S-34/O-18	Chloride-36	Sr-86	Radium
Deuterium	Isot	Isot	Isot + H ₂ SO ₄	None	NaOH (*)	U 234,235,238 (Sulfate)	(None)	None	None	(228/226)
None	Isot	Isot	Isot	None	NaOH (*)	(HNO ₃)	(None)	None	None	None

All acidified samples pH < 2.0. (*) If natural pH < 7, then add NaOH until pH is > 7. If natural pH is > 7, no NaOH required.

Time In: 8:00
 Water Level: POA
 Pumping time:
 Well Use: Public Supply
 Lift: S
 Power: E
 Casing Type: Steel
 Sample Time: 0830

Time Out: 9:30
 W.L. remark:
 Sampling Point: FAW
 FIELD G.P.S. readings
 Latitude: 28° 52' 53.7"
 Longitude: 97° 42' 46.5"
 Casing Size: 10"
 (Filter pressure) hand pump / line / spring

Field Alkalinity Titration:
 Start pH 7.23 End pH
 mL Sample Size
 mL Acid Phenol (> 8.3)
11.2 mL Acid Total (to pH 4.5)
 mL acid added x 20 = Alkalinity

Phenol Alkalinity (82244): _____ mg/L
 Total Alkalinity (39086): 224 mg/L

Items Below Calculated Later From Results:
 Dissolved Solids (mg/L): 907
 Hardness (as CaCO₃): 472
 Balanced:

Water Quality Stabilization Parameters Table (At least 3 readings @ 5 min. intervals)

Time	<u>0820</u>	<u>0825</u>	<u>0830</u>	<u>0835</u>						
pH	<u>6.85</u>	<u>6.92</u>	<u>6.94</u>	<u>6.94</u>						
Celsius Temp.	<u>25.7</u>	<u>25.0</u>	<u>25.0</u>	<u>25.0</u>						
Conductivity	<u>1457</u>	<u>1457</u>	<u>1466</u>	<u>1468</u>						

Notes:

Date Entered By Sampler Into Database: YES / NO



LABORATORY ANALYTICAL REPORT

Client: Texas Water Development Board
Project: TWDB
Lab ID: C06080705-012
Client Sample ID: 7903704 (852)

Report Date: 09/19/06
Collection Date: 08/07/06 08:38
Date Received: 08/15/06
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Alkalinity, Phenolphthalein as CaCO ₃	ND	mg/L		1		A2320 B	08/17/06 14:44 / th
Alkalinity, Total as CaCO ₃	284	mg/L		1		A2320 B	08/17/06 14:44 / th
Bromide	1.7	mg/L		0.10		E300.0	08/19/06 01:51 / eli-b
Calcium	130	mg/L		0.5		E200.7	08/28/06 21:09 / ts
Chloride	353	mg/L		1		A4500-Cl B	08/16/06 15:02 / jl
Fluoride	0.6	mg/L		0.1		A4500-F C	08/16/06 14:01 / th
Magnesium	35.0	mg/L		0.5		E200.7	08/28/06 21:09 / ts
Nitrogen, Nitrate+Nitrite as N	1.6	mg/L		0.1		E353.2	08/21/06 13:22 / jal
Potassium	8.3	mg/L		0.5		E200.7	08/28/06 21:09 / ts
Silica	30.2	mg/L		0.1		E200.7	08/28/06 21:09 / ts
Sodium	131	mg/L		0.5		E200.7	08/28/06 21:09 / ts
Sulfate	39	mg/L		1		A4500-SO4 E	08/18/06 15:41 / bm
NON-METALS							
Iodide	ND	mg/L		0.10		E300.0	08/23/06 03:35 / eli-b
METALS - DISSOLVED							
Aluminum	ND	ug/L		1		E200.8	08/23/06 04:08 / smi
Antimony	ND	ug/L		1		E200.8	08/22/06 04:40 / bws
Arsenic	2	ug/L		1		E200.8	08/22/06 04:40 / bws
Barium	138	ug/L		1		E200.8	08/22/06 04:40 / bws
Beryllium	ND	ug/L		1		E200.8	08/22/06 04:40 / bws
Boron	360	ug/L		100		E200.7	08/28/06 21:09 / ts
Cadmium	ND	ug/L		1		E200.8	08/22/06 04:40 / bws
Chromium	2	ug/L		1		E200.8	08/22/06 04:40 / bws
Cobalt	ND	ug/L		1		E200.8	08/22/06 04:40 / bws
Copper	1	ug/L		1		E200.8	08/22/06 04:40 / bws
Iron	167	ug/L		30		E200.7	08/28/06 21:09 / ts
Lead	1	ug/L		1		E200.8	08/22/06 04:40 / bws
Lithium	42	ug/L		1		E200.8	08/26/06 13:53 / bws
Manganese	5	ug/L		1		E200.8	08/22/06 04:40 / bws
Molybdenum	1	ug/L		1		E200.8	08/22/06 04:40 / bws
Selenium	6	ug/L		1		E200.8	08/22/06 04:40 / bws
Strontium	2480	ug/L		1		E200.8	08/22/06 04:40 / bws
Thallium	ND	ug/L		1		E200.8	08/22/06 04:40 / bws
Vanadium	9	ug/L		1		E200.8	08/22/06 04:40 / bws
Zinc	251	ug/L		1		E200.8	08/22/06 04:40 / bws
RADIONUCLIDES - DISSOLVED							
Gross Alpha	9.0	pCi/L		1.0		E900.0	09/03/06 00:16 / rs
Gross Alpha precision (±)	0.8	pCi/L				E900.0	09/03/06 00:16 / rs
Radium 226	0.5	pCi/L		0.2		E903.0	09/11/06 10:44 / trs

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Client: Texas Water Development Board
Project: TWDB
Lab ID: C06080705-012
Client Sample ID: 7903704 (852)

Report Date: 09/19/06
Collection Date: 08/07/06 08:38
Date Received: 08/15/06
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - DISSOLVED							
Radium 226 precision (±)	0.2	pCi/L				E903.0	09/11/06 10:44 / trs
Radium 228	ND	pCi/L		1.0		RA-05	08/29/06 11:43 / pj
Uranium 234	3.5	pCi/L		0.2		E907.0	09/05/06 11:00 / df
Uranium 234 precision (±)	0.8	pCi/L				E907.0	09/05/06 11:00 / df
Uranium 235	ND	pCi/L		0.2		E907.0	09/05/06 11:00 / df
Uranium 238	3.0	pCi/L		0.2		E907.0	09/05/06 11:00 / df
Uranium 238 precision (±)	0.7	pCi/L				E907.0	09/05/06 11:00 / df
DATA QUALITY							
A/C Balance (± 5)	-4.00	%				Calculation	08/31/06 15:48 / cp
Anions	16.6	meq/L				Calculation	08/31/06 15:48 / cp
Cations	15.3	meq/L				Calculation	08/31/06 15:48 / cp

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

**BETA ANALYTIC INC.**

DR. M.A. TAMERS and MR. D.G. HOOD

UNIVERSITY BRANCH
4985 S.W. 74 COURT
MIAMI, FLORIDA, USA 33155
PH: 305/667-5167 FAX: 305/663-0964
E-MAIL: beta@radiocarbon.com**REPORT OF RADIOCARBON DATING ANALYSES**

Dr. Sheryl Garling

Report Date: 9/29/2006

Energy Laboratories, Inc.

Material Received: 8/28/2006

Sample Data	Apparent C14 Age (fraction modern)	C13/C12 Ratio	
Beta - 220278	17320 +/- 90 BP (Fmdn 0.1157 +/- 0.0013)	-10.6 o/oo	78-48-403
SAMPLE : C06080938-001C ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (water DIC): carbonate precipitation			
Beta - 220279	2950 +/- 40 BP (Fmdn 0.6923 +/- 0.0034)	-10.9 o/oo	78-39-804
SAMPLE : C06080938-002C ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (water DIC): carbonate precipitation			
Beta - 220280	26580 +/- 170 BP (Fmdn 0.0365 +/- 0.0008)	-10.9 o/oo	78-48-302
SAMPLE : C06080938-003C ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (water DIC): carbonate precipitation			
Beta - 220281	12160 +/- 70 BP (Fmdn 0.2200 +/- 0.0019)	-7.2 o/oo	79-03-704 ✓
SAMPLE : C06080938-004C ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (water DIC): carbonate precipitation			
Beta - 220282	16910 +/- 90 BP (Fmdn 0.1218 +/- 0.0014)	-8.3 o/oo	79-49-505
SAMPLE : C06080938-005C ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (water DIC): carbonate precipitation			

Dates are reported as RCYBP (radiocarbon years before present, "present" = 1950 A.D.). By International convention, the modern reference standard was 95% of the C14 content of the National Bureau of Standards' Oxalic Acid & calculated using the Libby C14 half life (5568 years). Quoted errors represent 1 standard deviation statistics (68% probability) & are based on combined measurements of the sample, background, and modern reference standards.

Measured C13/C12 ratios were calculated relative to the PDB-1 international standard and the RCYBP ages were normalized to -25 per mil. If the ratio and age are accompanied by an (*), then the C13/C12 value was estimated, based on values typical of the material type. The quoted results are NOT calibrated to calendar years. Calibration to calendar years should be calculated using the Conventional C14 age.

Client: ENERGY LABORATORIES, INC.

Recvd : 06/08/28

Job# : 2251

Final : 06/10/27

Purchase Order: 1643

Contact: S. Dobos 307/235-0515

2393 Salt Creek Hwy, PO Box 3258

Casper, WY 82602

07012

Cust LABEL INFO	JOB.SX	REFDATE	QUANT	ELYS	TU	eTU
C06080938-001B	2251.01	060803	1000	275	-0.01	0.09
C06080938-002B	2251.02	060803	1000	275	0.07	0.09
C06080938-003B	2251.03	060804	1000	275	0.07	0.09
C06080938-004B	2251.04	060807	1000	275	0.10	0.09
C06080938-005B	2251.05	060803	1000	275	0.00	0.09
C06080938-006B	2251.06	060803	1000	275	-0.04	0.09
C06080938-007B	2251.07	060807	1000	275	3.94	0.13
C06080938-008B	2251.08	060808	1000	275	0.08	0.09
C06080938-009B	2251.09	060808	1000	275	-0.08	0.09
C06080938-010B	2251.10	060808	1000	275	-0.01	0.09
C06080938-011B	2251.11	060809	1000	275	-0.04	0.09
C06080938-012B	2251.12	060809	1000	275	0.11	0.09

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C06080938-001	7848403 (847)	08/03/06 9:08	08/18/06	Aqueous	Subcontracted, Beta Analytic Subcontracted, Tritium Laboratory Subcontracted, ZymaX
C06080938-002	7839804 (848)	08/03/06 11:10	08/18/06	Aqueous	Same As Above
C06080938-003	7848302 (851)	08/04/06 9:05	08/18/06	Aqueous	Same As Above
C06080938-004	7903704 (852)	08/07/06 8:38	08/18/06	Aqueous	Same As Above
C06080938-005	7949505 (849)	08/03/06 14:20	08/18/06	Aqueous	Same As Above
C06080938-006	7957206 (850)	08/03/06 16:08	08/18/06	Aqueous	Same As Above
C06080938-007	7902505 (853)	08/07/06 10:10	08/18/06	Aqueous	Same As Above
C06080938-008	8035807 (854)	08/08/06 9:28	08/18/06	Aqueous	Same As Above
C06080938-009	8035808 (855)	08/08/06 10:28	08/18/06	Aqueous	Same As Above
C06080938-010	7912703 (856)	08/08/06 14:18	08/18/06	Aqueous	Same As Above
C06080938-011	8304210 (857)	08/09/06 9:05	08/18/06	Aqueous	Same As Above
C06080938-012	7960702 (858)	08/09/06 11:40	08/18/06	Aqueous	Same As Above

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative or Report.

If you have any questions regarding these tests results, please call.

Report Approved By: *E.A. Reaching*

REPORT OF ANALYTICAL RESULTS

Client: C Wagner
Energy Laboratories, Inc.
2393 Salt Creek Hwy
Casper, WY 82602

Lab Number: 40210
Received: 8/24/2006
Matrix: Water

Project:
Project Number:
Collected by: Client

Sample Description:
See Below
Analyzed: 10/30/2006
Method: CF-IRMS

$\delta^{34}\text{S}$ $\delta^{18}\text{O}$ 49932 50982

LAB NUMBER	SAMPLE DESCRIPTION	$\delta^{34}\text{S}$ ‰	$\delta^{18}\text{O}$ ‰
40210-1	C06080938-001A	12.4	11.3
40210-2	C06080938-002A	13.3	6.8
40210-3	C06080938-003A	NR	NR
40210-4	C06080938-004A	11.0	4.5
40210-5	C06080938-005A	NR	NR
40210-6	C06080938-006A	12.4	6.6
40210-7	C06080938-007A	10.2	4.7
40210-8	C06080938-008A	19.8	17.0
40210-9	C06080938-009A	17.1	16.7
40210-10	C06080938-010A	9.5	5.7
40210-11	C06080938-011A	11.8	8.8
40210-12	C06080938-012A	12.4	6.6

Analytical Precision
(1-sigma)

0.3 0.4

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C06080938-001	7848403 (847)	08/03/06 9:08	08/18/06	Aqueous	Subcontracted, Beta Analytic Subcontracted, Tritium Laboratory Subcontracted, ZymaX
C06080938-002	7839804 (848)	08/03/06 11:10	08/18/06	Aqueous	Same As Above
C06080938-003	7848302 (851)	08/04/06 9:05	08/18/06	Aqueous	Same As Above
C06080938-004	7903704 (852)	08/07/06 8:38	08/18/06	Aqueous	Same As Above
C06080938-005	7949505 (849)	08/03/06 14:20	08/18/06	Aqueous	Same As Above
C06080938-006	7957206 (850)	08/03/06 16:08	08/18/06	Aqueous	Same As Above
C06080938-007	7902505 (853)	08/07/06 10:10	08/18/06	Aqueous	Same As Above
C06080938-008	8035807 (854)	08/08/06 9:28	08/18/06	Aqueous	Same As Above
C06080938-009	8035808 (855)	08/08/06 10:28	08/18/06	Aqueous	Same As Above
C06080938-010	7912703 (856)	08/08/06 14:18	08/18/06	Aqueous	Same As Above
C06080938-011	8304210 (857)	08/09/06 9:05	08/18/06	Aqueous	Same As Above
C06080938-012	7960702 (858)	08/09/06 11:40	08/18/06	Aqueous	Same As Above

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative or Report.

REPORT OF ANALYTICAL RESULTS

Client: C Wagner
Energy Laboratories, Inc.
2393 Salt Creek Hwy
Casper, WY 82602

Lab Number: 40210
Received: 08/24/06
Matrix: Water

Project:
Project Number:
Collected by: Client

Sample Description:
See Below
Analyzed: 09/30/06
Method: CF-IRMS

$\delta^{18}\text{O}$ δD 50790 50791

LAB NUMBER	SAMPLE DESCRIPTION	$\delta^{18}\text{O}$ ‰	δD ‰
---------------	-----------------------	----------------------------	-----------------------

40210-1	C06080938-001A	-5.3	-26
40210-2	C06080938-002A	-4.2	-21
40210-3	C06080938-003A	-4.3	-25
40210-4	C06080938-004A	-4.7	-25
40210-5	C06080938-005A	-4.5	-26
40210-6	C06080938-006A	-4.0	-24
40210-7	C06080938-007A	-3.9	-21
40210-8	C06080938-008A	-4.0	-20
40210-9	C06080938-009A	-3.7	-20
40210-10	C06080938-010A	-4.1	-22
40210-11	C06080938-011A	-4.1	-21
40210-12	C06080938-012A	-3.9	-21

Analytical Precision (1-sigma) 0.3 1.0

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C06080938-001	7848403 (847)	08/03/06 9:08	08/18/06	Aqueous	Subcontracted, Beta Analytic Subcontracted, Tritium Laboratory Subcontracted, ZymaX
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C06080938-012	7960702 (858)	08/09/06 11:40	08/18/06	Aqueous	Same As Above

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative or Report.

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	7903705
County	Karnes
River Basin	San Antonio
Groundwater Management Area	15
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Evergreen UWCD
Latitude (decimal degrees)	28.881667
Latitude (degrees minutes seconds)	28° 52' 54" N
Longitude (decimal degrees)	-97.713056
Longitude (degrees minutes seconds)	097° 42' 47" W
Coordinate Source	+/- 1 Second
Aquifer Code	122JSPR - Jasper Aquifer
Aquifer	Gulf Coast
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	310
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	156
Well Depth Source	Another Government Agency
Drilling Start Date	
Drilling End Date	0/0/1914
Drilling Method	Cable Tool
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Unused
Water Level Observation	Miscellaneous Measurements
Water Quality Available	Yes
Pump	
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	City of RungeWell #1
Driller	Unknown
Other Data Available	Aquifer Test
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	G1280003A
Groundwater Conservation District Well Number	
Owner Well Number	E-40
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	5/20/1997
Last Update Date	5/27/2011

Remarks Well E-40 in TBWE B-6007. Reported yield 67.5 GPM in 1956. Aquifer test results in TWDB R-98. No test data in TWDB files.

Casing - No Data

Well Tests

Test Date	Test Type	Yield (gallons per minute)	Drawdown (ft.)	Test Hours
0/0/1956	Unknown	68		0
1956-01-20	Unknown	68		0

Lithology

Top Depth (ft.)	Bottom Depth (ft.)	Description
0	4	SURFACE SOIL
4	66	HARD YELLOW CLAY
66	67	ROCK
67	96	HARD CLAY
96	116	CLAY AND BOULDERS
116	136	CLAY
136	154	HARD CLAY AND BOULDERS
154	188	SAND
188	212	CLAY

Annular Seal Range - No Data

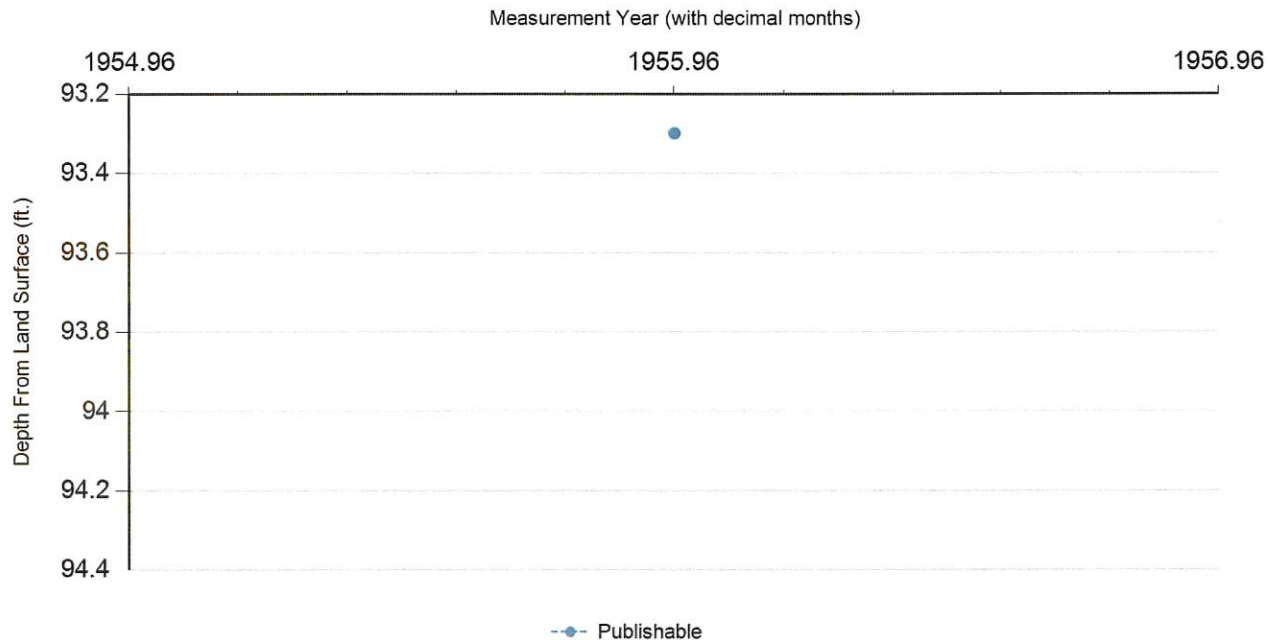
Borehole - No Data

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	12/20/1955		93.3		216.7	1	Other or Source of Measurement Unknown	Unknown		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis

Sample Date: 10/0/1955 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** U.S. Geological Survey

Sampled Aquifer: Jasper Aquifer

Analyzed Lab:

Reliability: From a report; unknown sample collection & preservation

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 CaCO ₃)		221.31	mg/L as CaCO ₃	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO ₃)		270.07	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		300	ug/L	
00910	CALCIUM (MG/L)		141	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO ₃)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		388	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.5	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO ₃)		491	mg/L as CaCO ₃	
01045	IRON, TOTAL (UG/L AS FE)		200	ug/L	
00920	MAGNESIUM (MG/L)		34	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO ₃)		5.6	mg/L as NO ₃	
00400	PH (STANDARD UNITS), FIELD		7.6	SU	
00937	POTASSIUM, TOTAL (MG/L AS K)		8.5	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SiO ₂)		35	mg/L as SiO ₂	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.79		
00932	SODIUM, CALCULATED, PERCENT		38	PCT	
00929	SODIUM, TOTAL (MG/L AS Na)		142	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1670	MICR	
00945	SULFATE, TOTAL (MG/L AS SO ₄)		36	mg/L as SO ₄	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		923	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
79-03-705**

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/gwdb rpt.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.

WELL SCHEDULE

1. Location: 4, 4, Section 4, Block 4, Survey 4, Lat. 28-52-53 N, Long. 97-43-46 W

Driller: _____ Address: _____

3. Land Surface Elevation: 300 ft. above msl determined by T-050

4. Drilled: 19 74 ; Dug, Cable Tool, Rotary, Air,

5. Depth: Rept. 156 ft. Meas. _____ ft.

6. Borehole Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfr. _____ Type Turbine

No. Stages	Bowls Diam.	In., Setting	ft.
1	12	12	12
2	12	12	12
3	12	12	12
4	12	12	12
5	12	12	12
6	12	12	12
7	12	12	12
8	12	12	12
9	12	12	12
10	12	12	12
11	12	12	12
12	12	12	12
13	12	12	12
14	12	12	12
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89	12	12	12
90	12	12	12
91	12	12	12
92	12	12	12
93	12	12	12
94	12	12	12
95	12	12	12
96	12	12	12
97	12	12	12
98	12	12	12
99	12	12	12
100	12	12	12

Column Diam. In., Length Tailpipe ft.

8. Motor: Mfr. _____ Fuel Elec HP. 15

9. Yield: Flow _____ gpm, Pump _____ gpm, Meas., Rept., Est. _____ Date _____

10. Performance Test: Date _____ Length of Test _____ Made by _____

Static Level _____ ft. Pumping Level _____ ft. Drawdown _____ ft.

Production _____ gpm Specific Capacity _____ gpm/ft.

11. Quality: (Remarks on taste, odor, color, etc.) _____

Analyses

770 F Date 10-55 Laboratory TDS Sp Cond

Date _____ Laboratory _____ TDS _____ Sp Cond _____

12. Other data available (as circled): Pumping Test, Power & Yield Test, Drillers Log,

Formation Samples, Geophysical Log(s) _____

13. Water Level(s): 93.3 ft. rept. meas. 12/20/1955 above below _____ which is _____ ft. above below Land Surface
_____ ft. rept. meas. 19 above below _____ which is _____ ft. above below Land Surface

14. Use: Dom., Stock, Public Supply, Ind., Irr., Observation, Other (Test Hole, Oil Test, etc.) _____

15. Recorded by: D. Jones Source of data: B-6007 Date: 7/30/81

16. Remarks: _____

17. Location or Sketch: Next Page

REGELN:

NOV 18 1982

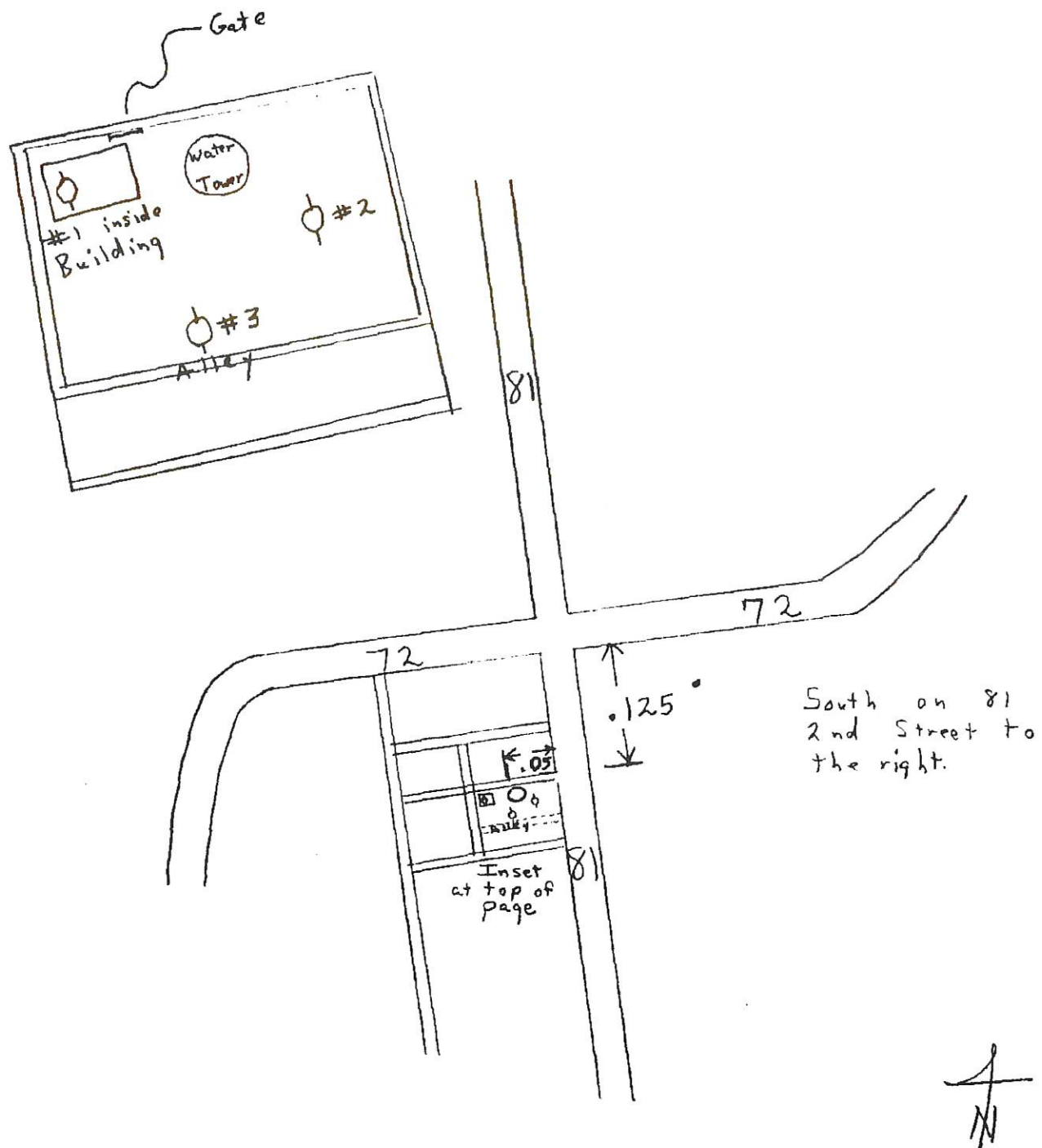
CR/12000

T S DEPARTMENT OF WATER RESOURCES

BY _____ DATE _____ DIVISION _____ SHEET NO. _____ OF _____

CHKD _____ DATE _____ JOB NAME 128 79-03-705

JOB NO. E-40 PROG. CODE #1 ^{Well}



79-03-705

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

Texas Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

TDWR ONLY

Organization No. _____ Lab No. _____

Work No. _____

CHEMICAL WATER ANALYSIS REPORT

Send report to:

Data Collection and Evaluation Section
Texas Department of Water Resources
P.O. Box 13087
Austin, Texas 78711

County 120 KARNES
State Well No. 79-03-705
Well No. _____
Date Collected 10-00-55

Location _____ Sample No. _____ By _____

Source (type of well) _____ Owner _____

Date Drilled _____ Depth 154 ft. WBF _____

Producing intervals _____ Water level _____ ft. Sample depth _____ ft.

Sampled after pumping _____ hrs. Yield _____ GPM ^{meas.}/_{est.} Temperature _____ °F _____ °C

Point of collection _____ Appearance ☐ clear ☐ turbid ☐ colored ☐ other

Use _____ Remarks _____

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

KEY PUNCHED

Laboratory No. _____ Date Received _____ Date Reported _____

	MG/L	ME/L
Silica . . . 00955 . . .	<u>35</u>	
Calcium . . . 00915 . . .	<u>141</u>	
Magnesium . . . 00925 . . .	<u>34</u>	
Sodium . . . 00929 . . .	<u>142</u>	
Total		
☐ Potassium . 00937 . . .	<u>8.5</u>	
³ ☐ Manganese . 01055 . . .		<u>38</u> %Ns
☐ Boron . . . 01022 . . .	<u>3</u>	<u>2.8</u> SAR
³ ☐ Total Iron . 01045 . . .	<u>2</u>	<u>0</u> RSC

☐ (other) _____ MG/L

Specific Conductance (micromhos/cm³) . 00095 . 1670

Diluted Conductance (micromhos/cm³) _____ X

	MG/L	ME/L
Carbonate . . . 00445 . . .		
Bicarbonate . . . 00440 . . .	<u>270</u>	
Sulfate . . . 00945 . . .	<u>36</u>	
Chloride . . . 00940 . . .	<u>388</u>	
Fluoride . . . 00951 . . .	<u>5</u>	
Nitrate . . . 71850 . . .	<u>5.6</u>	
pH 00403 . . .	<u>7.6</u>	
Total		
¹ Dissolved Solids (residue at 180°C) . . . 70300 . . .		<u>924</u>
Phenolphthalein Alkalinity as C aCO ₃ . . . 00415 . . .		
Total Alkalinity as C aCO ₃ 00410 . . .		
Total Hardness as C aCO ₃ 00900 . . .		<u>492</u>
² Nitrogen Cycle		
Ammonia - N 00610 . . .		
Nitrite - N 00615 . . .		
Nitrate - N 00620 . . .		
Organic Nitrogen 00605 . . .		

Analyst _____ Checked By _____

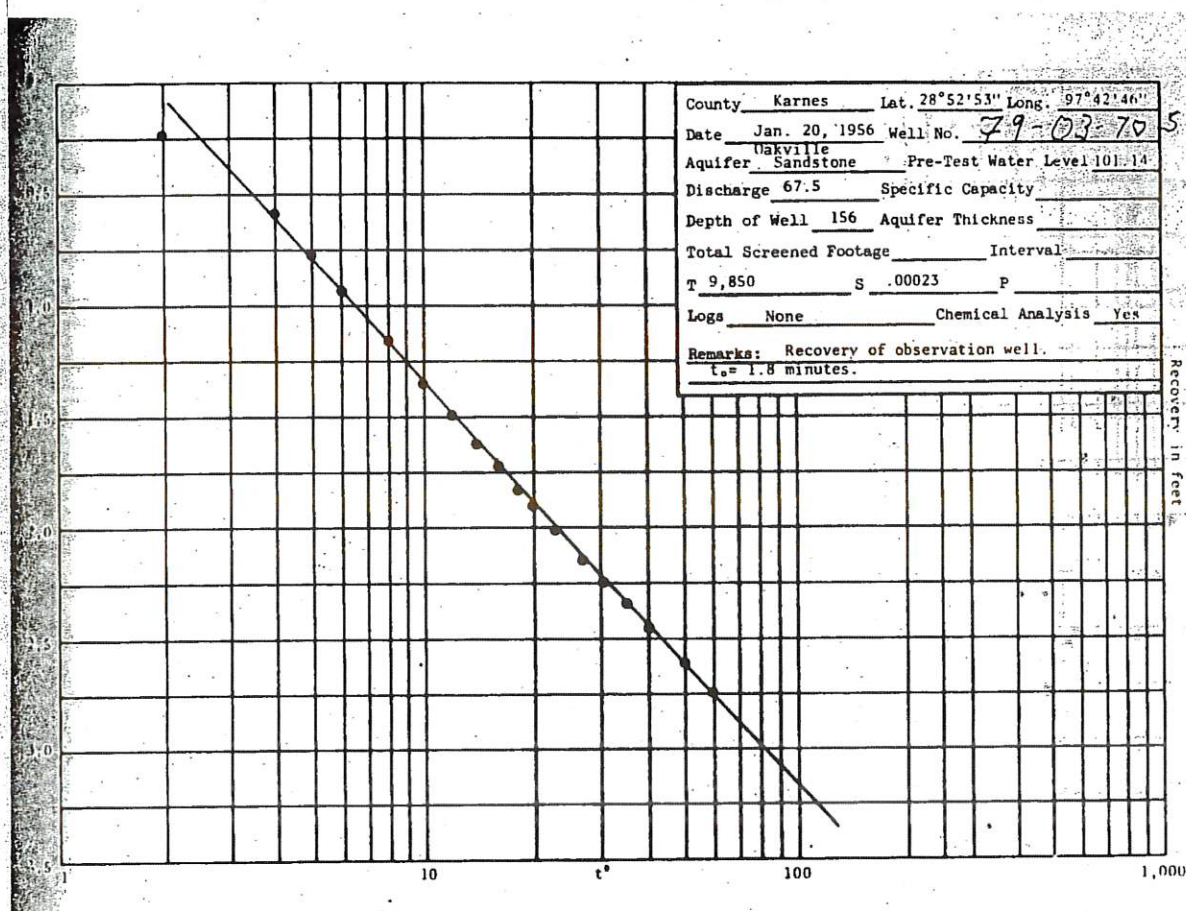
☐ " " items will be analyzed if checked.

¹ The bicarbonate reported in this analysis can be converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure used in the computation of dissolved solids.

² Nitrogen cycle requires separate sample.

³ Total Iron and Manganese require separate sample.

79-03-705



County Karnes Lat. 28°52'53" Long. 97°42'46"
 Date Jan. 20, 1956 Well No. 79-03-705
 Aquifer Oakville Sandstone Pre-Test Water Level 101.14
 Discharge 67.5 Specific Capacity _____
 Depth of Well 156 Aquifer Thickness _____
 Total Screened Footage _____ Interval _____
 T 9,850 S .00023 P _____
 Logs None Chemical Analysis Yes
 Remarks: Recovery of observation well.
t₀ = 1.8 minutes.

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	7903707
County	Karnes
River Basin	San Antonio
Groundwater Management Area	15
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Evergreen UWCD
Latitude (decimal degrees)	28.881111
Latitude (degrees minutes seconds)	28° 52' 52" N
Longitude (decimal degrees)	-97.712778
Longitude (degrees minutes seconds)	097° 42' 46" W
Coordinate Source	+/- 1 Second
Aquifer Code	121EVGL - Evangeline Aquifer
Aquifer	Gulf Coast
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	310
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	211
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	1/31/1977
Drilling Method	Mud (Hydraulic) Rotary
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Public Supply
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	City of Runge
Driller	Layne-Texas
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	G1280003C
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	5/20/1997
Last Update Date	6/6/1997

Remarks

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
12	Blank	Steel			0	145
8	Blank	Steel			0	155
8	Screen	Stainless Steel			155	190
8	Blank	Steel			190	195
8	Screen	Stainless Steel			195	200
8	Blank	Steel			200	208
8	Screen	Stainless Steel			208	210

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

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number
79-03-707

Water Quality Analysis

Sample Date: 3/14/1977 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Registered Water Well Driller

Sampled Aquifer: Evangeline Aquifer

Analyzed Lab: Pope Testing Lab

Reliability: Reliability unknown or not available

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CaCO ₃)		248	mg/L as CaCO ₃	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO ₃)		302.65	mg/L	
00910	CALCIUM (MG/L)		123	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO ₃)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		294	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.6	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO ₃)		418	mg/L as CaCO ₃	
01045	IRON, TOTAL (UG/L AS FE)		100	ug/L	
00920	MAGNESIUM (MG/L)		27	mg/L	
01055	MANGANESE, TOTAL (UG/L AS MN)		0	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO ₃)		5.6	mg/L as NO ₃	
00400	PH (STANDARD UNITS), FIELD		7.2	SU	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SiO ₂)		26	mg/L as SiO ₂	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.68		
00932	SODIUM, CALCULATED, PERCENT		39	PCT	
00929	SODIUM, TOTAL (MG/L AS Na)	calculated	126	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1440	MICR	
00945	SULFATE, TOTAL (MG/L AS SO ₄)		0	mg/L as SO ₄	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		751	mg/L	

Water Quality Analysis

Sample Date: 9/15/1983 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Evangeline Aquifer

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)			209 mg/L as CaCO 3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)			255.05 mg/L	
00910	CALCIUM (MG/L)			118 mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)			0 mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)			314 mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)			0.6 mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)			413 mg/L as CaCO 3	
00920	MAGNESIUM (MG/L)			29 mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)			5.89 mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD			8 SU	
00937	POTASSIUM, TOTAL (MG/L AS K)			9 mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED			0	
00955	SILICA, DISSOLVED (MG/L AS SiO2)			61 mg/L as SiO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)			2.76	
00932	SODIUM, CALCULATED, PERCENT			40 PCT	
00929	SODIUM, TOTAL (MG/L AS Na)			129 mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)			1639 MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)			36 mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)			26 C	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)			827 mg/L	

Water Quality Analysis

Sample Date: 5/23/1990 **Sample Time:** 1540 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Evangeline Aquifer

Analyzed Lab: Texas Department of Health

Reliability: Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
39740	2,4,5-T, TOTAL, UG/L	<	5	ug/L	
39045	2,4,5-TP INCLUDES ACIDS & SALTS IN WATER, UG/L	<	5	ug/L	
39730	2,4-D, TOTAL, UG/L	<	20	ug/L	
34253	A-BHC-ALPHA, TOTAL, UG/L	<	0.03	ug/L	
77825	ALACHLOR, TOTAL, UG/L	<	0.1	ug/L	
39330	ALDRIN, TOTAL, UG/L	<	0.2	ug/L	
39086	ALKALINITY FIELD DISSOLVED AS CACO3		220	mg/L as CACO 3	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		234	mg/L as CACO 3	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	50	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)	<	10	ug/L	
82052	BANVEL (DICAMBA), TOTAL, UG/L	<	1	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		151	ug/L	
34255	B-BHC-BETA, TOTAL, UG/L	<	0.03	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		285.56	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		610	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.17	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	10	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		107	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
39350	CHLORDANE, TOTAL, UG/L	<	0.2	ug/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		302	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)	<	20	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)	<	20	ug/L	
39770	DACTHAL (DCPA), TOTAL, UG/L	<	0.05	ug/L	
39360	DDD, TOTAL, UG/L	<	0.15	ug/L	
39365	DDE, TOTAL, UG/L	<	0.1	ug/L	
39370	DDT, TOTAL, UG/L	<	0.15	ug/L	
46323	DELTA-BHC, TOTAL, UG/L	<	0.03	ug/L	
39570	DIAZINON, TOTAL, UG/L	<	0.3	ug/L	
39380	DIELDRIN, TOTAL, UG/L	<	0.1	ug/L	
81403	DURSBAN (CHLOROPYRIFOS), TOTAL, UG/L	<	0.6	ug/L	

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number
79-03-707

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
34351	ENDOSULFAN SULFATE, TOTAL, UG/L	<	0.2	ug/L	
39388	ENDOSULFAN, TOTAL, UG/L	<	0.2	ug/L	
39390	ENDRIN, TOTAL, UG/L	<	0.2	ug/L	
46315	ETHYL PARATHION, TOTAL, UG/L	<	0.25	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.68	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)		401	mg/L as CaCO3	
39420	HEPTACHLOR EPOXIDE, TOTAL, UG/L	<	0.06	ug/L	
39410	HEPTACHLOR, TOTAL, UG/L	<	0.02	ug/L	
39700	HEXACHLOROBENZENE (HCB), TOTAL, UG/L	<	0.02	ug/L	
71865	IODIDE (MG/L AS I)	<	0.1	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	20	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	50	ug/L	
39782	LINDANE, TOTAL, UG/L	<	0.03	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		32	mg/L	
39530	MALATHION, TOTAL, UG/L	<	0.4	ug/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	20	ug/L	
71890	MERCURY, DISSOLVED (UG/L AS HG)	<	0.2	ug/L	
39480	METHOXYCHLOR, TOTAL, UG/L	<	0.5	ug/L	
39600	METHYL PARATHION, TOTAL, UG/L	<	0.25	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)	<	20	ug/L	
00618	NITRATE NITROGEN, DISSOLVED (MG/L AS N)		1.37	mg/L as N	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		6.06	mg/L as NO3	
00613	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	<	0.01	mg/L as N	
00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	<	0.02	mg/L as N	
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	<	0.1	mg/L as N	
00090	OXIDATION REDUCTION POTENTIAL (ORP), MILLIVOLTS		234.7	MV	
39488	PCB - 1221, TOTAL, UG/L	<	1	ug/L	
39492	PCB - 1232, TOTAL, UG/L	<	0.8	ug/L	
39496	PCB - 1242, TOTAL, UG/L	<	0.5	ug/L	
39500	PCB - 1248, TOTAL, UG/L	<	0.5	ug/L	
39504	PCB - 1254, TOTAL, UG/L	<	0.8	ug/L	
39508	PCB - 1260, TOTAL, UG/L	<	0.8	ug/L	
81649	PCB - 1262 (ARACLOR), TOTAL, UG/L	<	0.8	ug/L	
34671	PCB- 1016, TOTAL, UG/L	<	0.6	ug/L	
39032	PENTACHLOROPHENOL (PCP), TOTAL, UG/L	<	2	ug/L	
00400	PH (STANDARD UNITS), FIELD		7.02	SU	
00671	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE (MG/L AS P)		0.01	mg/L as P	

**Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number
79-03-707**

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
39720	PICLORAM, TOTAL, UG/L	<	3	ug/L	
82068	POTASSIUM 40 (K-40), DISSOLVED, PC/L		6.3	PC/L	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		9	mg/L	
09503	RADIUM 226, DISSOLVED, PC/L		0.6	PC/L	0.1
81366	RADIUM 228, DISSOLVED (PC/L AS RA-228)		0.4	PC/L	1.8
82305	RADON 222, DISSOLVED, PC/L		154	PC/L	6
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
01145	SELENIUM, DISSOLVED (UG/L AS SE)		4	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SiO2)		29	mg/L as SiO2	
01075	SILVER, DISSOLVED (UG/L AS AG)	<	10	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		3.03		
00932	SODIUM, CALCULATED, PERCENT		43	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		139	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1478	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		2300	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		32	mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)		25	C	
26403	THORIUM, NATURAL, DISSOLVED PC/L		-0.2	PC/L	0.4
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		799	mg/L	
39400	TOXAPHENE, TOTAL, UG/L	<	5	ug/L	
22703	URANIUM, NATURAL, DISSOLVED (UG/L AS U)		6	ug/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)	<	20	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)		121	ug/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/gwdb rpt.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.

TEXAS DEPARTMENT OF WATER RESOURCES

WELL SCHEDULE

Log #

2897- 343

Aquifer(s) _____ Project No. (7A) State Well No. 79-03-707

Field No./Owner's Well No. 3 County Karnes 138

1. Location: _____, Section _____, Block _____, Survey _____, Lat. 28-52-53 N, Long. 97-42-45 W

2. Owner: City of Runge Address: Box 206 Runge, Tex. 78151

Tenant (other): do Address: do

Driller: Layne Texas Address: P.O. Box 5465 Houston, Tex. 77011

3. Land Surface Elevation: 309 ft. above msl determined by Topo

4. Drilled: 01/31/77 19 77; Dug, Cable Tool, Rotary, Air, _____

5. Depth: Rept. 211 ft. Meas. _____ ft.

6. Borehole Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfr. _____ Type Turb

No. Stages _____, Borehole Diam. _____ in., Setting _____ ft.

Column Diam. _____ in., Length Tailpipe _____ ft.

8. Motor: Mfr. _____ Fuel _____ HP _____

9. Yield: Flow _____ gpm, Pump 125 gpm, Meas., Rept., Est. _____ Date 3/14/77

10. Performance Test: Date 3/14/77 Length of Test 13 hrs Made by Layne Texas

Static Level 180 ft. Pumping Level 155.0 ft. Drawdown 57.0 ft.

Production _____ gpm Specific Capacity _____ gpm/ft.

11. Quality: (Remarks on taste, odor, color, etc.) _____

Analyses

Date 03/14/77 Laboratory Edna Wood TDS _____ Sp Cond _____

78 Date 02/15/82 Laboratory _____ TDS _____ Sp Cond _____

12. Other data available (as circled): Pumping Test, Power & Yield Test, Drillers Log

Formation Samples, Geophysical Log(s) _____ (type) _____

13. Water Level(s): 98.0 ft. rept. 02/14/77 above L.S.D. which is _____ ft. above Land Surface

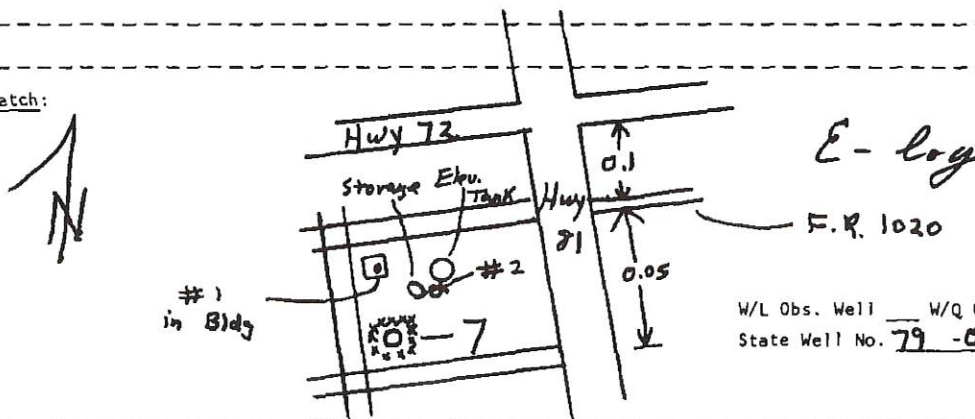
_____ ft. rept. _____ 19 _____ below which is _____ ft. above Land Surface

14. Use: Dom., Stock, Public Supply, Ind., Irr., Observation, Other (Test Hole, Oil Test, etc.) _____

15. Recorded by: D.R. Jones Source of data: Drillers Log Date: 02/15/82

16. Remarks: _____

17. Location or Sketch:



id original copy by
ified mail to the
as Water Development Board
O. Box 12386
rin, Texas 78711

State of Texas
WATER WELL REPORT

For TWDB use only
Well No. 79-03-7A
Located on map YAS
Received: 781
dlc

OWNER:
Person having well drilled C. F. y Rouse Address P.O. Box 206 Rouse Tex 78157
(Name) (Street or RFD) (City) (State)

Landowner _____ Address _____
(Name) (Street or RFD) (City) (State)

LOCATION OF WELL:
County KARNES miles in _____ direction from _____
(N.E., S.W., etc.) (Town)

Locate by sketch map showing landmarks, roads, creeks,
highway number, etc.*

See attached map North
(Use reverse side if necessary)

OR Give legal location with distances and directions from
adjacent sections or survey lines.

Labor _____ League _____
Block _____ Survey _____
Abstract No. _____
(NW, NE, SW, SE) of Section _____

TYPE OF WORK (Check): New Well _____ Deepening _____ Reconditioning _____ Plugging _____	4) PROPOSED USE (Check): Domestic _____ Industrial _____ <u>Municipal</u> _____ Irrigation _____ Test Well _____ Other _____	5) TYPE OF WELL (Check): Driven _____ Dug _____ Cable _____ Jetted _____ Bored _____
--	--	--

WELL LOG:
Diameter of hole _____ in. Depth drilled _____ ft. Depth of completed well _____ ft. Date drilled 1-31-77

All measurements made from _____ ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
9) Casing: Type: Old _____ New _____ Steel _____ Plastic _____ Other _____ Cemented from _____ ft. to _____ ft. Diameter (inches) _____ Setting From (ft.) _____ To (ft.) _____ Casing _____		

10) SCREEN: Type _____ Perforated _____ Slotted _____ Diameter (inches) _____ Setting From (ft.) _____ To (ft.) _____ Slot Size _____		
--	--	--

(Use reverse side if necessary)

COMPLETION (Check): Straight wall _____ Gravel packed _____ Other _____ Under reamed _____ Open Hole _____	11) WELL TESTS: Was a pump test made? Yes _____ No _____ If yes, by whom? _____ Yield: _____ gpm with _____ ft. drawdown after _____ hrs. Bailer test _____ gpm with _____ ft. drawdown after _____ hrs. Artesian flow _____ gpm Temperature of water _____
--	--

WATER LEVEL: Static level _____ ft. below land surface Date _____ Artesian pressure _____ lbs. per square inch Date _____ Depth to pump bowls, cylinder, jet, etc., _____ ft. below land surface.	12) WATER QUALITY: Was a chemical analysis made? Yes _____ No _____ Did any strata contain undesirable water? Yes _____ No _____ Type of water? _____ depth of strata _____
--	--

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME LELAND LAWSON Water Well Drillers Registration No. 24
(Type or Print)
ADDRESS P.O. Box 9466 Houston Tex 77061
(Street or RFD) (City) (State)
Signed Leland Lawson Layton Texas Co.
(Water Well Driller) (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available. PZ 79-03-707

Additional instructions on reverse side.

79-03-7A

LAYNE TEXAS COMPANY,
HOUSTON -:- DALLAS

WELL LOG

REPORT NO.

S. O. 1402-7085

PAGE 1 of 1

FILE NO. 3849

DATE 1/31/77

CUSTOMER LOCATION		WELL DATA	
FOR	City of Runge	NAME WELL	WELL NO. 3
LOCATION WELL	St. Mary St.	ELEVATION	DATUM
SURVEY	FIELD	RT C GR	
COUNTY	Karnes	TEST HOLE SIZE	7-7/8" TD 211'
STATE	Texas	DATE STARTED DRILLING	1/29/77
OTHER LAND MARKS		DATE FINISHED DRILLING	1/31/77
		DRILLER	Atchinson
		RIG NO.	20
		TYPE MUD	Gel
		NO. SACKS	8
		ELECTRIC LOG	yes
		TYPE	Widco
		SURVEY	Eastman
		TYPE	Single Shot
		OTHER	

DEPTH STRATA	EACH STRATUM	DESCRIPTION FORMATION	SAMPLES		
			DEPTH	TYPE	NUMBER
0		Surface			
1'	1'	Top Soil			
6'	5'	Clay			
67'	61'	Yellow Shale			
74'	7'	Sandy shale w/hard stks.			
106'	32'	Shale w/hard stks.			
107'	1'	Rock			
112'	5'	Shale w/hard stks.			
126'	14'	Sandy shale w/hard stks.			
154'	28'	Shale w/hard stks. & sand			
190'	36'	Sand w/shale & hard stks.			
195'	5'	Shale w/sand stks.			
200'	5'	Sand & hard stks.			
211'	11'	Shale w/sandy stks.			
			PZ	79-03-707	707
				79-03-707	707
				79-03-7A	7A

25 March 1977

To: **Layne Texas Company**
P. O. Box 9469
Houston, Texas 77011

20 #1402-7085

Sample marked: **City of Rungo, Karnes County, Texas. Taken: 3-14-77 after**
12 hours pumping at 125 gpm. Static Head: 98'
Pumping Level: 155' Screened: 155' - 190', 195' - 200'
D. E. Atchison

Received: 3-16-77

WATER ANALYSIS
 results in parts per million (mg/l) except as noted

Dissolved Residue at 350°C		842*	Conductance, micromhos/cm, 25°C	1,440
Total Dissolved Solids, actual†		996*	Color, units	4
Total Dissolved Solids, calc.		920	Turbidity, units	0
Silica	SiO ₂	26	As Calcium Carbonate, CaCO ₃ :	
Calcium	Ca	123	Phenolphthalein Alkalinity	0
Magnesium	Mg	27	Total Alkalinity	248
Sodium (diff.) Na + K as	Na	126	Total Hardness	418
Carbonate	CO ₃	0	Free Carbon Dioxide	CO₂ 31
Bicarbonate	HCO ₃	303	pH . . .	7.18
Sulfate	SO ₄	0	HYPOTHETICAL COMBINATIONS	
Chloride	Cl	294	Calcium Bicarbonate	403
Ortho-Phosphate	O-PO ₄	15	Calcium Chloride	65
Total Fluoride	F	0.6	Magnesium Chloride	105
Total Nitrate	NO ₃	5.6	Sodium Chloride	287
Total Manganese	Mn	< 0.02	Sodium Phosphate	26
Total Iron	Fe	0.07	Sodium Fluoride	1
Iron, filtered sample	Fe	-	Sodium Nitrate	7
			Silica	26
			Total Dissolved Solids, calc.	920
*Sample is hygroscopic; giving high values.			KEY PUNCHED	

†Total Dissolved Solids, actual = Dissolved Residue + 50.8% of bicarbonate (HCO₃) ion

EDNA WOOD LABORATORIES, INC.

6020
adp

PZ 79-03-707

By:

Edna Wood
Edna Wood

79.03.70

SWN: 79-03-707
County: KARNES
Aquifer(s): _____

Water Quality Sampling Run
City of ROUGE
City well # 3
GET PUMPED

Sample No. 7CB-1990-069
Date: 5-23-90
By: James D. Seawright

Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6	Bottle 7	Total
1 liter	1 liter	1 gallon	500 ml	1 Qt. (glass)	500 ml	Sub-Samples	
Anions	Cations/HM	Radioactivity	Nitrate/ Phosphate	(TOC) Organics	Cyanide		
	2m1	6m1	Zn1	unfiltered			
Preserve with:	HNO ₃ (Nitric)	HNO ₃ (Nitric)	H ₂ SO ₄ (Sulfuric)	--	NaOH (Sodium Hydroxide)		All filtered unless otherwise stipulated. All on ice.

Water Level _____ LSD
Temperature (00010) 25.3 °C
Specific Conductance (00094) 1478 umhos/cm
pH (00400) 7.02
Eh (00090) 234.7 mv
Phenol ALK (82244) Ø mg/l
Total ALK (00431) 220 mg/l
Carbonate (00452) Ø meq/l
Bicarbonate (00453) 4.4 meq/l
Total Cations (+) _____
Total Anions (-) 398
Total Hardness (46570) 398
Dissolved Solids (70301) 800

AIR TEMP 41.0 °C Notes & Calculations TIME IN 3:00 PM

WEATHER COND Hot Humid Sunny TIME OUT 4:15 PM

PH CAL: PH = 5.8 °C COND CAL: PH = 5.8 °C SOL. PH = 5.8 °C SOL.

TITRATION: PH = 7.15 AT START 30.8 4 DROPS PHENOL
PH = 7.15 AFTER BROMCRESOL 3.0 50 ML OF SAMPLE
30.8

Ø ML H₂SO₄ @ PH Ø FOR CARBONATE IF PRESENT
11.0 ML H₂SO₄ @ PH 4.50 FOR BICARBONATE 32.8

REMARKS:

Pump Start Post:
RADON Sample Time: 3:37 PM
Sample Time: 3:40 PM
Sample Point: Faucet at well head

JORDAN LABORATORIES, INC.
CHEMISTS AND ENGINEERS
CORPUS CHRISTI, TEXAS
JULY 5, 1990

TEXAS WATER DEVELOPMENT BOARD
P.O. BOX 13231
AUSTIN, TEXAS 78711-3231

REPORT OF ANALYSIS

RAD-JLB-1990-069

STATE WELL NUMBER: CITY WELL #3
79-03-707

COUNTY: KARNES

DATE AND TIME: 15:40 5-23-90

OWNER: CITY OF RUNGE

ADDRESS: BOX 206 RUNGE, TX 78151

DATE DRILLED: 1-31-77

SAMPLED AFTER PUMPING P.O.A. HRS.

DEPTH: 211'

YIELD: --- GPM

COLLECTION POINT: WELL HEAD

PH: 7.02

USE: PUBLIC S.

TEMP.: 25.3 DEG.C.

SPEC. COND.: 1478

		ANALYSIS DATE
POTASSIUM 40, PCI/L	6.3	06-29-90
URANIUM (NATURAL), MG/L	0.006	05-29-90
RADON 222, PCI/L	154*	05-25-90
COUNTING ERROR, PCI/L	6*	
RADIUM 226, PCI/L	0.6	06-05-90
COUNTING ERROR, PCI/L	0.1	
THORIUM 232, PCI/L	-0.2	07-02-90
COUNTING ERROR, PCI/L	0.4	
RADIUM 228, PCI/L	-0.4	06-11-90
COUNTING ERROR, PCI/L	1.8	

* VALUE REFLECTS RADON 222 CONTENT AS OF 3:37 PM 5-23-90.

LAB. NO. M28-3649

KEY PUNCHED

RESPECTFULLY SUBMITTED,



CARL F. CROWNOVER

Texas Water Development Board
Chemical Water Analysis Report

HM-JCB 1990 069
HM = Heavy Trace and Alkaline-Earth Metals

Send Reply To:
Ground Water Unit
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711

KEY PUNCHED

TWDB Use Only	
Work No.	320-3202
IAC No.	

City Well #3

Attention: ERIC ADIDAS

State Well Number: 79-03-707

County: KARNES

Date & Time: 05-23-1990 15:40

Owner: CITY OF RUNGE

☒ Send Copy To Owner

Address: BOX 206 RUNGETX 78151

Sampled After Pumping: POA Hours

Date Drilled: 01-31-1977 Depth: 211'

Yield: _____ GPM ☐ Measured ☐ Estimated

Collection Point: WELL HEAD pH 7.02

Use: Publics Temperature: 25.3 °C

By: JMD & Beaumont

Specific Conductance: 1478

Requested Chemical Analysis

Laboratory No.: [REDACTED]

Date Received: MAY 25 1990

Date Reported: JUL 3 1990

		me/l	mg/l			me/l	mg/l
Calcium	(00915)		<u>107</u>	Sodium	(00930)		<u>139</u>
Magnesium	(00925)		<u>32</u>	Potassium	(00935)		<u>9.0</u>
		µg/l				µg/l	
Aluminum	(01106)	<u><50</u>		Manganese	(01056)	<u><20</u>	
Arsenic	(01000)	<u><10</u>		Mercury	(71890)	<u><0.2</u>	
Barium	(01005)	<u>151</u>		✓ Molybdenum*	(01062)	<u><20</u>	
Cadmium	(01025)	<u><10</u>		Selenium	(01145)	<u>4</u>	
Chromium	(01030)	<u><20</u>		Silver	(01075)	<u><10</u>	
Copper	(01040)	<u><20</u>		✓ Strontium*	(01080)	<u>2300</u>	
Iron	(01046)	<u><20</u>		✓ Vanadium*	(01085)	<u><20</u>	
Lead	(01049)	<u><50</u>		Zinc	(01090)	<u>121</u>	

* Do not analyze unless it is checked.

Note: Crossout those elements not to be analyzed.

Texas Water Development Board
Chemical Water Analysis Report

GWR- JCB . PAO 069
(Anions)

TWDB Use Only	
Work No.	<u>370-3702</u>
IAC No.	_____

Send Reply To:
Ground Water Unit
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711

KEY PUNCHED

Attention: ERIC ADIDAS State Well Number: 79-03-707
County: KARNES Date & Time: 05-23-PAO 15:40
Owner: CITY OF RUNGE ☒ Send Copy To Owner
Address: BOX 206 RUNGE TX 78151 Sampled After Pumping: POA Hours
Date Drilled: 0131-PA77 Depth: 211' Yield: _____ GPM ☐ Measured ☐ Estimated
Collection Point: WELLHEAD pH 7.02 Use: ADIDAS Temperature: 25.3 °C
By: James A. Beaulieu Specific Conductance: 1478

Requested Chemical Analysis

Laboratory No.: _____ Date Received: MAY 25 1990 Date Reported: JUN 20 1990

THD-Sample No.	EB0 1297	Date Received	05/25/90	Date Reported	06/18/90
		MEQ/L	MG/L	MEQ/L	MG/L
Silica	(00955)		29		
			Sulfate	(00946)	0.67 32
			Chloride	(00941)	8.52 302
			Fluoride	(00930)	0.04 0.68

P. Alkalinity (00415) 0.00 0
T. Alkalinity (00410) 4.68 234

Iodide (71865) (0.1
Boron (*****) 0.61
Bromide (71870) 0.17

Texas Water Development Board
Chemical Water Analysis Report

GWN JUB 1990 069
(Nitrogen Cycle)

Send Reply To:
Ground Water Unit
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711

KEY PUNCHED

TWDB Use Only	
Work No.	<u>320-3202</u>
IAC No.	_____

Citywell # 3

Attention: ERIC ADIDAS State Well Number: 79-03-707
County: KARNES Date & Time: 05-23-1990 15:40
Owner: CITY OF RUNGE ☒ Send Copy To Owner
Address: BOX 206 RUNGE TX 78151 Sampled After Pumping: POA Hours
Date Drilled: 01-31-1977 Depth: 211' Yield: _____ GPM ☐ Measured ☐ Estimated
Collection Point: WELL HEAD pH 7.02 Use: PUBLIC S Temperature: 25.3 °C
By: James D. Beauchamp Specific Conductance: 1478

Requested Chemical Analysis

Laboratory No.: _____

Date Received: MAY 25 1990

Date Reported: JUN 1 1990

THD-Sample No. EB0 1347

Date Received 05/25/90

Date Reported 06/01/90

Nitrate as N (00618) 1.37 MG/L
KJE as N (00623) < 0.1

Ammonia as N (00608) < 0.02
Nitrite as N (00613) < 0.01
Orthophosphate as P (00671) 0.01

*Note: To convert NO₃-N to NO₃, multiply by 4.427.

Texas Water Development Board
Chemical Water Analysis Report

MISC JLB-PPO 069

Send Reply To:
Ground Water Unit
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711

KEY PUNCHED

TWDB Use Only	
Work No.	<u>320-3202</u>
IAC No.	_____

City Well #3

Attention: ERIC AOLDAS State Well Number: 79-03-707
County: KARNES Date & Time: 05-23-1990 15:40
Owner: CITY OF RUNGE ☒ Send Copy To Owner
Address: BOX 206 RUNGE TX 78151 Sampled After Pumping: POA Hours
Date Drilled: 01-31-1977 Depth: 211' Yield: _____ GPM ☐ Measured ☐ Estimated
Collection Point: WELL HEAD pH 7.02 Use: Publics Temperature: 25.3 °C
By: Jim Beam Specific Conductance: 1478

Requested Chemical Analysis: _____

Laboratory No.: _____

Date Received: _____

MAY 25 1990

Date Reported: _____

JUL 31 1990

CODE 5720
ORGANICS SCREENS GC

Texas Department of Health Pesticide Report Form
Nickel 63 Detector

Analyst	<i>Krista C Bourdeau</i>
Approved	<i>True</i>

Lab ID number	<i>EB0-1318</i>
Submitter ID	

Sample type: water liquid waste sediment tissue other
(circle one)

Units: micrograms/liter micrograms/kilogram other _____

p,p' DDT	<0.15
p,p' DDD	<0.15
p,p' DDE	<0.1
Aldrin	<0.2
Dieldrin	<0.1
Endrin	<0.2
Chlordane	<0.2
Heptachlor	<0.02
Heptachlor epox.	<0.06
Methoxychlor	<0.5
Toxaphene	<5.0
Hexachlorobenzene	<0.02
Malathion	<0.4
Ethyl Parathion	<0.25
Methyl parathion	<0.25
Diazinon	<0.3
Chlorpyrifos	<0.6
Endosulfan	<0.2
Endosulfan sulfate	<0.2
Alachlor	<0.1
Dacthal	<0.05
alpha BHC	<0.03
beta BHC	<0.03
delta BHC	<0.03

Lindane	<0.03

Polychlorinated biphenyls

Aroclor 1016	<0.6
Aroclor 1221	<1.0
Aroclor 1232	<0.8
Aroclor 1242	<0.5
Aroclor 1248	<0.5
Aroclor 1254	<0.8
Aroclor 1260	<0.8
Aroclor 1262	<0.8

Acid extractable herbicides

2,4 - D	<2.0
2,4,5 - T	<5.0
2,4,5 - TP (silvex)	<5.0
Pentachlorophenol	<2.0
Dicamba	<1.0
Picloram	<3.0

Comments:

KEY PUNCHED

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

Texas Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

TDWR ONLY	
Organization No. <u>410</u>	Lab No.
Work No. <u>6040</u>	

CHEMICAL WATER ANALYSIS REPORT

Send report to:

Data Collection and Evaluation Section
Texas Department of Water Resources
P.O. Box 13087
Austin, Texas 78711

County	<u>128</u> <u>Karnes</u>
State Well No.	<u>79</u> - <u>03</u> - <u>707</u>
Well No.	<u>3</u>
Date Collected	<u>09</u> - <u>15</u> - <u>83</u>
Sample No.	<u>1</u> By <u>D.R. Jones</u>

*copy sent
10/20/83
JH*

Owner City of Runge Address Box 206 Runge, Texas 78151
Date Drilled 01/31/77 Depth 211 ft. WBF
Producing intervals Water level ft. Sample depth ft.
Sampled after pumping P.O.A. hrs. Yield GPM ^{max.} _{est.} Temperature 078°F °C
Point of collection Faucet at well Appearance ☒ Clear ☐ turbid ☐ colored ☐ other
Use Public Supply Remarks

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

KEY PUNCHED

LK Laboratory No. [REDACTED]

Date Received SEP 28 1983

Date Reported OCT 12 1983

128
State Well No. 79-03-707

WATER ANALYSIS

Date: 101283

Sample No: EW4-256

	MG/L	ME/L
Silica: 00955:	61	
Calcium: 00910:	118	5.9
Magnesium: 00920:	29	2.42
Sodium: 00929:	129	5.61
T. Cations		14.16
Potassium: 00937:	9	.23
Manganese: 01055:		XNa

XNa

	MG/L	ME/L
Carbonate: 00445:	0	0
Bicarbonate: 00440:	255	4.18
Sulfate: 00945:	36	.75
Chloride: 00940:	314	8.85
Fluoride: 00951:	.6	.03
Nitrate: 71850:	5.89	.1
T. Anions		13.91
pH: 00403:	8	

Boron: 01022:

SAR

180 deq TDS: 70300: 826

Total Iron: 01045:

RSC

P. Alk.: 00415: 0

Other

(Specific Cond.: 00095:

1150

T. Alk.: 00410: 209

T. Hardness: 00900: 416

Diluted Conductance (micromhos/cm³)

11 x149 = 1639

Ammonia-N: 00610:

Nitrite-N: 00615:

Nitrate-N: 00620:

Organic Nitrogen: 00605:

Diluted Conductance (micromhos/cm³):

--	--	--	--	--

X

☐ " items will be analyzed if checked.

¹ The bicarbonate reported in this analysis can be converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure used in the computation of dissolved solids.

² Nitrogen cycle requires separate sample.

³ Total Iron and Manganese require separate sample.

TDWR-0148 (Rev. 6-20-83)

Analyst _____ Checked By _____

KEY PUNCHED

Ammonia - N	00610
Nitrite - N	00615
Nitrate - N	00620
Organic Nitrogen	00605

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

Texas Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

TDWR ONLY

Organization No. _____ Lab No.

Work No. _____

CHEMICAL WATER ANALYSIS REPORT

Send report to:

Data Collection and Evaluation Section
Texas Department of Water Resources
P.O. Box 13087
Austin, Texas 78711

County 120 Kern
State Well No. 79 03 707
Well No. _____
Date Collected 03 14 77

Owner _____ ☐ Send copy to owner Sample No. By _____
Address _____ Well Location _____
Date Drilled _____ Depth 211 ft. WBF _____ Source (type of well) _____
Producing intervals _____ Water level _____ ft. Sample depth ft. °F °C
Sampled after pumping _____ hrs. Yield _____ GPM meas. est. Temperature _____ °F _____ °C
Point of collection _____ Appearance ☐ clear ☐ turbid ☐ colored ☐ other
Use P Remarks _____

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS KEY PUNCHED

Laboratory No. _____ Date Received _____ Date Reported _____

	MG/L	ME/L
Silica . . . 00955 . . .	26	
Calcium . . . 00910 . . .	123	
Magnesium . . . 00920 . . .	27	
Sodium . . . 00929 . . .	126	
Total		

☐ Potassium . 00937 . . .	 	
☒ Manganese . 01055 . . .	0.0	%Na
☐ Boron . . 01022 . . .	 	SAR
☒ Total Iron . 01045 . . .	0.1	RSC

☐ (other) _____ MG/L

Specific Conductance (micromhos/cm³) . 00095 . 1440

Diluted Conductance (micromhos/cm³) _____ x _____

☐ " " items will be analyzed if checked.

	MG/L	ME/L
Carbonate . . 00445 . . .	0	
Bicarbonate . . 00440 . . .	303	
Sulfate . . . 00945 . . .	0	
Chloride . . . 00940 . . .	294	
Fluoride . . . 00951 . . .	0.6	
Nitrate . . . 71850 . . .	5.6	
pH 00403 . . .	7.2	Total
¹ Dissolved Solids (residue at 180°C) . . 70300 . . .		996
Phenolphthalein Alkalinity as CaCO ₃ . . 00415 . . .		0
Total Alkalinity as CaCO ₃ 00410 . . .		248
Total Hardness as CaCO ₃ 00900 . . .		418
² Nitrogen Cycle		
Ammonia - N 00610 . . .		
Nitrite - N 00615 . . .		
Nitrate - N 00620 . . .		
Organic Nitrogen 00605 . . .		

Analyst _____ Checked By _____

¹ The bicarbonate reported in this analysis can be converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure used in the computation of dissolved solids.

² Nitrogen cycle requires separate sample.

³ Total Iron and Manganese require separate sample.

WELL SCHEDULE

Aquifer(s) (Ogishville ss.)

Project No.

State Well No. 79-03-706

Field No./Owner's Well No. 井 3

County (128)

1. Location: _____, _____, Section _____, Block _____, Survey _____, Lat. 38-52-51 N, Long. 97-42-41 W

2. Owner: City of Kane Address: _____

Tenant (other): _____ Address: _____

Driller: Layne Texas Address: _____

3. Land Surface Elevation: 300 ft. above msl determined by Topo

4. Drilled: ~~5/10/~~ 1977; Dug, Cable Tool, Rotary, Air, _____

5. Depth: Rept. 236 ft. Meas. 246 ft.

6. <u>Borehole Completion:</u> Open Hole, Straight Wall, Underreamed, Gravel Packed		
Diam.	Type	Setting (feet)

7. Pump: Mfr. _____ Type urbine

No. Stages _____, Bowls Diam. _____ in., Setting _____ ft.

Column Diam. _____ in., Length Tailpipe _____ ft.

8. Motor: Mfr. _____ Fuel Elec HP. _____

9. Yield: Flow _____ gpm, Pump _____ gpm, Meas., Rept., Est. _____ Date _____

10. Performance Test: Date _____ Length of Test _____ Made by _____

Static Level ft. Pumping Level ft. Drawdown ft.

Production _____ gpm Specific Capacity _____ gpm/ft.

11. Quality: (Remarks on taste, odor, color, etc.) _____

Analyses				

Date 3-14-77 Laboratory Edna Wood TDS 996 Sp Cond 1440

Date	Laboratory	TDS	Sp Cond

12. Other data available (as circled): Pumping Test, Power & Yield Test, Drillers Log,

Formation Samples, Geophysical Log(s) _____

13. Water Level(s): ft. rept. 10 above which is ft. above Land Surface

meas.	below	below
rept.	above	above Land Surface

-----below-----below

1. Name: _____

2. Address: _____

3. City: _____

4. State: _____

5. Zip: _____

6. Phone: _____

7. E-mail: _____

8. Occupation: _____

9. Other (e.g., Hobbies, etc.): _____

DT 7/3/81

[illegible]

— — — — —

17. Location of sketch: Next Page.

RECEIVED

NOV 18 1982

CR/12.000

W/L Obs. Well W/Q Obs. Well

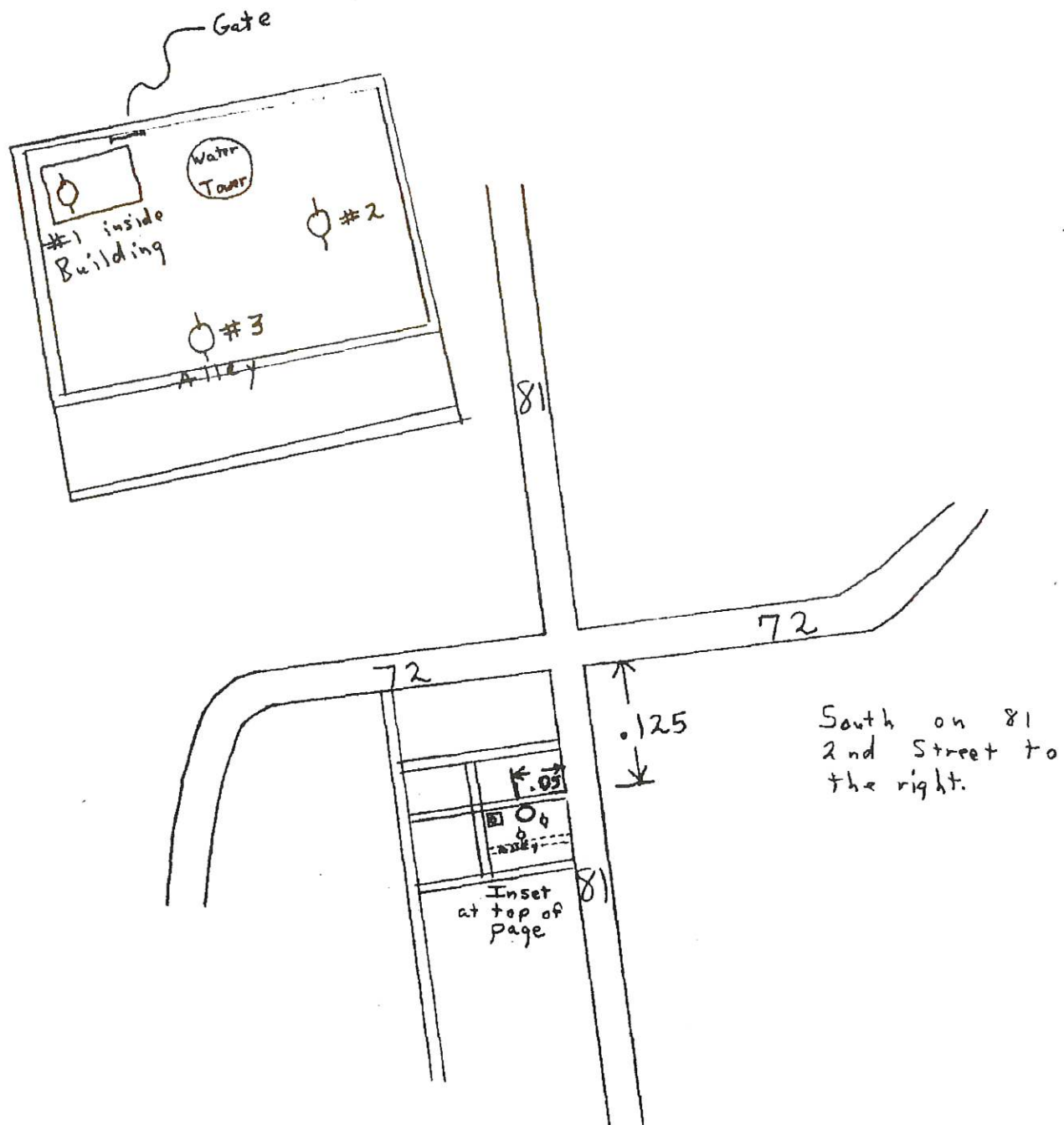
State Well No. 79-03-706

T S DEPARTMENT OF WATER RESOURCES

BY _____ DATE _____ DIVISION _____ SHEET NO. _____ OF _____

CHKD _____ DATE _____ JOB NAME 128- 79-03-706

JOB NO. # 3 PROG. CODE _____



79-03-706

WELL SCHEDULE

Field No./Owner's Well No. # 3 County Karnes (128)

1. Location: 1/4, 1/4, Section , Block , Survey , Lat. 28-52-51 N, Long. 97-42-41 W

Tenant (other): _____ Address: _____

Driller: _____ Address: _____

4. Drilled: 5/10/1977; Dug, Cable Tool, Rotary, Air, _____

5. Depth: Rept. ft. Meas. ft.

6. Borehole Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfr. _____ Type Turbine

No. Stages _____, Bowls Diam. _____ in., Setting _____ ft.

Column Diam. _____ in., Length Tailpipe _____ ft.

8. Motor: Mfr. _____ Fuel Gas HP. _____

9. Yield: Flow _____ gpm, Pump _____ gpm, Meas., Rept., Est. _____ Date _____

10. Performance Test: Date _____ Length of Test _____ Made by _____

Static Level ft. Pumping Level ft. Drawdown ft.

Production	gpm	Specific Capacity	gpm/ft.
------------	-----	-------------------	---------

11. Quality: (Remarks on taste, odor, color, etc.)

Analyses

Date	Laboratory	TDS	Sp Cond
------	------------	-----	---------

Date	Laboratory	TDS	Sp Cond
------	------------	-----	---------

12. Other data available (as circled): Pumping Test, Power & Yield Test, Drillers Log,

Formation Samples, Geophysical Log(s) _____

(type)

13. Water Level(s): _____ ft. ^{rept.} _{meas.} 19 _____ above _{below} _____ which is _____ ft. ^{above} _{below} Land Surface

----- ft. rept. meas. ----- 19 ----- above ----- which is ----- ft. above -----
----- below ----- below ----- Land Surface

14. Use: Dom., Stock, Public Supply, Ind., Irr., Observation, Other (Test Hole, Oil Test, etc.) _____

15. Recorded by: D. J. Fries Source of data: Date: 7/30/81

16. Remarks:

17. Location or Sketch: Next Page

[illegible]

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

Texas Department of Health Laboratories
1100 West 49th Street
Austin, Texas 78756

TDWR ONLY

Program No. _____ Lab No. 05

Work No. _____

CHEMICAL WATER ANALYSIS REPORT

Send report to:

Data Collection and Evaluation Section
Texas Department of Water Resources
P.O. Box 13087
Austin, Texas 78711

County 128 KARNES
State Well No. 79-03-706
Well No. _____
Date Collected 03-14-77

Location Lat 28°52' 51"N Long 97°42' 41" Sample No. By Layne Texas

Source (type of well) _____ Owner City of Runge

Date Drilled 1-31-77 Depth 210 ft. WBF _____

Producing intervals _____ Water level _____ ft. Sample depth _____ ft.

Sampled after pumping _____ hrs. Yield _____ GPM ^{meas.}/_{est.} Temperature _____ °F _____ °C

Point of collection _____ Appearance ☐ clear ☐ turbid ☐ colored ☐ other

Use P.S Remarks Anal. by Edna Woods Loh

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

Laboratory No. _____ Date Received _____ Date Reported _____

	MG/L				ME/L			
Silica				26				
Calcium			1	23				
Magnesium				27				
Sodium			1	26				
Total								

☐ Potassium	<table><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																	<table><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																
³ ☐ Manganese	<table><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																	<table><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																
☐ Boron	<table><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																	<table><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																
³ ☐ Total Iron	<table><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																	<table><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>																
☐ (other) _____	MG/L																																	

Specific Conductance (micromhos/cm³) 1440

Diluted Conductance (micromhos/cm³) _____ X _____

☐ " items will be analyzed if checked.

¹ The bicarbonate reported in this analysis can be converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure used in the computation of dissolved solids.

² Nitrogen cycle requires separate sample.

³ Total Iron and Manganese require separate sample.

	MG/L				ME/L			
Carbonate								
Bicarbonate				303				
Sulfate				0				
Chloride				294				
Fluoride				0.6				
Nitrate				5.6				
pH				7.2	Total			

¹ Dissolved Solids (residue at 180° C)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Analyst _____ Checked By _____

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	7903708
County	Karnes
River Basin	San Antonio
Groundwater Management Area	15
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Evergreen UWCD
Latitude (decimal degrees)	28.881111
Latitude (degrees minutes seconds)	28° 52' 52" N
Longitude (decimal degrees)	-97.712501
Longitude (degrees minutes seconds)	097° 42' 45" W
Coordinate Source	+/- 1 Second
Aquifer Code	122CTHL - Catahoula Formation
Aquifer	Gulf Coast
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	310
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	720
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	10/6/1994
Drilling Method	Mud (Hydraulic) Rotary
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Public Supply
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	City of Runge Well #4
Driller	Cude Drilling Inc.
Other Data Available	Drillers Log
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	G1280003D
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	5/20/1997
Last Update Date	6/6/1997

Remarks Drilled to 1,100 ft. Plugged back to 720 ft.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
12	Blank	Steel			0	315
8	Blank	Steel			315	340
8	Screen	Steel			340	400
8	Blank	Steel			400	620
8	Screen	Steel			620	700
8	Blank	Steel			700	710

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

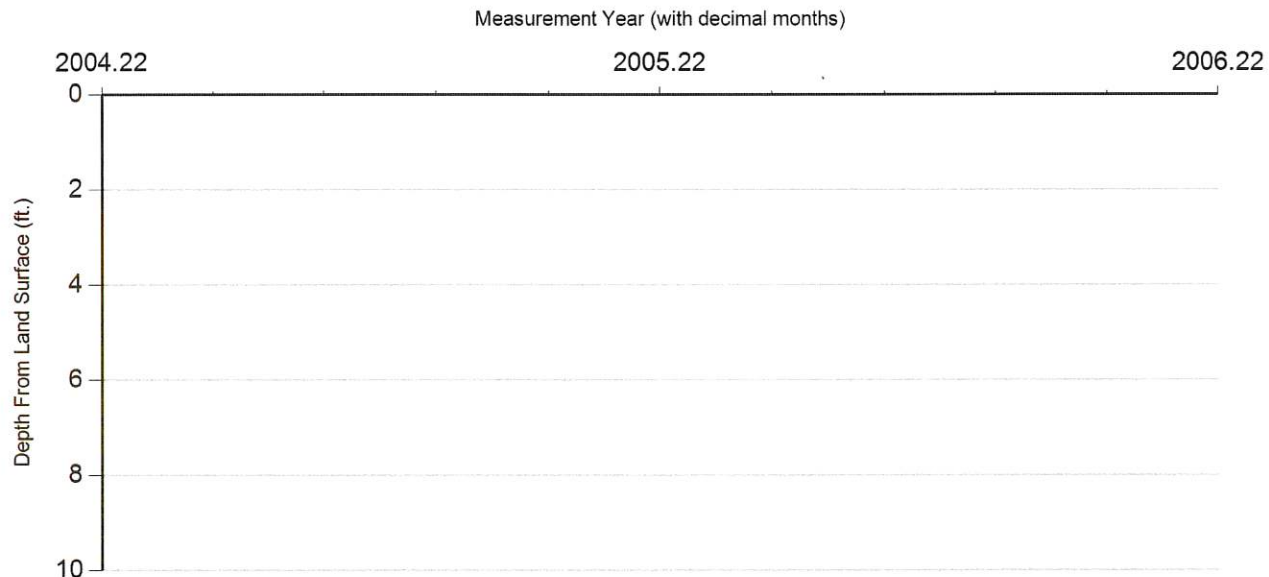
Borehole - No Data

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
X	3/22/2005					1	Texas Water Development Board		20	

Code Descriptions

Status Code	Status Description	Remark ID	Remark Description
X	No Measurement	20	Unable to insert tape into well

Water Quality Analysis

Sample Date: 1/29/1997 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Texas Commission on Environmental Quality

Sampled Aquifer: Catahoula Formation

Analyzed Lab: Texas Department of Health

Reliability: By TCEQ staff with their QA-QC procedures

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 CaCO ₃)		289	mg/L as CaCO ₃	
01105	ALUMINUM, TOTAL (UG/L AS AL)	<	40	ug/L	
01097	ANTIMONY, TOTAL (UG/L AS SB)	<	2	ug/L	
01002	ARSENIC, TOTAL (UG/L AS AS)		13.6	ug/L	
01007	BARIUM, TOTAL (UG/L AS BA)		86.99	ug/L	
01012	BERYLLIUM, TOTAL (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO ₃)		352.68	mg/L	
01027	CADMIUM, TOTAL (UG/L)	<	0.2	ug/L	
00910	CALCIUM (MG/L)		40	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO ₃)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		104	mg/L	
01034	CHROMIUM, TOTAL (UG/L AS CR)		20	ug/L	
01042	COPPER, TOTAL (UG/L AS CU)	<	6	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.5	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO ₃)		149	mg/L as CaCO ₃	
01045	IRON, TOTAL (UG/L AS FE)	<	10	ug/L	
01051	LEAD, TOTAL (UG/L AS PB)	<	1	ug/L	
00920	MAGNESIUM (MG/L)		12	mg/L	
01055	MANGANESE, TOTAL (UG/L AS MN)	<	8	ug/L	
71900	MERCURY, TOTAL (UG/L AS HG)	<	0.27	ug/L	
01067	NICKEL, TOTAL (UG/L AS NI)	<	20	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO ₃)		4.12	mg/L as NO ₃	
00400	PH (STANDARD UNITS), FIELD		7.9	SU	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		2.79		
01147	SELENIUM, TOTAL (UG/L)		5.4	ug/L	
01077	SILVER, TOTAL (UG/L AS AG)	<	10	ug/L	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		5.24		
00932	SODIUM, CALCULATED, PERCENT		68	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)		147	mg/L	

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number
79-03-708

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		994	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		44	mg/L as SO4	
01059	THALLIUM, TOTAL (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		525	mg/L	
01092	ZINC, TOTAL (UG/L AS ZN)	<	20	ug/L	

Water Quality Analysis

Sample Date: 5/20/1997 **Sample Time:** 1550 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Catahoula Formation

Analyzed Lab: LCRA - Lower Colorado River Authority

Reliability: Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
39086	ALKALINITY FIELD DISSOLVED AS CaCO ₃		296	mg/L as CaCO ₃	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CaCO ₃)		296	mg/L as CaCO ₃	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	1.5	ug/L	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)		10.2	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		91	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO ₃)		361.22	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		412	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.58	mg/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		34.6	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO ₃)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		99.2	mg/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)	<	1	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.46	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO ₃)		126	mg/L as CaCO ₃	
71865	IODIDE (MG/L AS I)	<	0.15	mg/L	
01046	IRON, DISSOLVED (UG/L AS FE)	<	15	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		51.7	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		9.5	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)	<	1	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		1.9	ug/L	
01065	NICKEL, DISSOLVED (UG/L AS NI)	<	1	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO ₃)		4.17	mg/L as NO ₃	
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.942	mg/L as N	

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number
79-03-708

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00608	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	<	0.1	mg/L as N	
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	<	0.5	mg/L as N	
00090	OXIDATION REDUCTION POTENTIAL (ORP), MILLIVOLTS		73.3	MV	
00400	PH (STANDARD UNITS), FIELD		7.27	SU	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		7.23	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		3.41		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	6	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		48.7	mg/L as SI02	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		5.87		
00932	SODIUM, CALCULATED, PERCENT		72	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		151	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		863	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		920	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		40.4	mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)		26.6	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		573	mg/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		31.5	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)		38.7	ug/L	

Water Quality Analysis

Sample Date: 3/22/2005 **Sample Time:** 1442 **Sample Number:** 1 **Collection Entity:** Texas Water Development Board

Sampled Aquifer: Catahoula Formation

Analyzed Lab: LCRA - Lower Colorado River Authority

Reliability: Sampled using TWDB protocols

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
39086	ALKALINITY FIELD DISSOLVED AS CaCO ₃		304	mg/L as CaCO ₃	
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CaCO ₃)		292	mg/L as CaCO ₃	
01106	ALUMINUM, DISSOLVED (UG/L AS AL)	<	4.08	ug/L	
01095	ANTIMONY, DISSOLVED (UG/L AS SB)	<	1.02	ug/L	
01000	ARSENIC, DISSOLVED (UG/L AS AS)		12.7	ug/L	
01005	BARIUM, DISSOLVED (UG/L AS BA)		79.3	ug/L	
01010	BERYLLIUM, DISSOLVED (UG/L AS BE)	<	1.02	ug/L	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO ₃)		356.34	mg/L	
01020	BORON, DISSOLVED (UG/L AS B)		697	ug/L	
71870	BROMIDE, DISSOLVED, (MG/L AS BR)		0.4	mg/L	
01025	CADMIUM, DISSOLVED (UG/L AS CD)	<	1.02	ug/L	
00915	CALCIUM, DISSOLVED (MG/L AS CA)		38.1	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO ₃)		0	mg/L	
00941	CHLORIDE, DISSOLVED (MG/L AS CL)		109	mg/L	
01030	CHROMIUM, DISSOLVED (UG/L AS CR)		13	ug/L	
01035	COBALT, DISSOLVED (UG/L AS CO)	<	1.02	ug/L	
01040	COPPER, DISSOLVED (UG/L AS CU)		4.5	ug/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.64	mg/L	
04241	GROSS ALPHA RADIATION, TOTAL, PRODUCED WATER(pCi/L)		16	pCi/L	4
04242	GROSS BETA RADIATION, TOTAL, PRODUCED WATER(pCi/L)		15	pCi/L	2
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO ₃)		139	mg/L as CaCO ₃	
01046	IRON, DISSOLVED (UG/L AS FE)	<	51	ug/L	
01049	LEAD, DISSOLVED (UG/L AS PB)	<	1.02	ug/L	
01130	LITHIUM, DISSOLVED (UG/L AS LI)		54.3	ug/L	
00925	MAGNESIUM, DISSOLVED (MG/L AS MG)		10.4	mg/L	
01056	MANGANESE, DISSOLVED (UG/L AS MN)		2.29	ug/L	
01060	MOLYBDENUM, DISSOLVED (UG/L AS MO)		3.36	ug/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO ₃)		3.82	mg/L as NO ₃	

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number
79-03-708

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00631	NITRITE PLUS NITRATE, DISSOLVED (MG/L AS N)		0.8626	mg/L as N	
00400	PH (STANDARD UNITS), FIELD		7.51	SU	
00935	POTASSIUM, DISSOLVED (MG/L AS K)		9.09	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		3.08		
01145	SELENIUM, DISSOLVED (UG/L AS SE)	<	4.08	ug/L	
00955	SILICA, DISSOLVED (MG/L AS SI02)		50.8	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		6.18		
00932	SODIUM, CALCULATED, PERCENT		72	PCT	
00930	SODIUM, DISSOLVED (MG/L AS NA)		167	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1012	MICR	
01080	STRONTIUM, DISSOLVED (UG/L AS SR)		1180	ug/L	
00946	SULFATE, DISSOLVED (MG/L AS SO4)		56.4	mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)		26.5	C	
01057	THALLIUM, DISSOLVED (UG/L AS TL)	<	1.02	ug/L	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		622	mg/L	
01085	VANADIUM, DISSOLVED (UG/L AS V)		27.3	ug/L	
01090	ZINC, DISSOLVED (UG/L AS ZN)		10.2	ug/L	

Water Quality Analysis

Sample Date: 3/22/2005 **Sample Time:** **Sample Number:** 1 **Collection Entity:** Texas Commission on Environmental Quality

Sampled Aquifer: Catahoula Formation

Analyzed Lab: Immunoassay at TCEQ

Reliability: Sampled using TWDB protocols, but NOT filtered

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
39033	ATRAZINE, TOTAL, UG/L	<	0.05	ug/L	
82612	METOLACHLOR, WHOLE WATER, TOTAL RECOVERABLE, UG/L	<	0.05	ug/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/gwdbbrpt.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.

**Texas Water Development Board
Well Schedule**

State Well No. 29 03 708 Previous Well No. County Karnes 255
 River Basin San Antonio 09 Zone 2 Lat. 28 52 51 Long. 097 42 44 Source of Coord. 1
 Owner's Well No. #4 Location 1/4, 1/4, Section , Block , Survey

Owner City of Runge Driller Cude Drilling Inc

Address 306 N. Helena St Runge TX 78851 Tenant/Oper.
 Date Drilled 08 06 1994 Depth 1100 Source of Depth Datum Altitude 370 Source of Alt. Datum M
 Aquifer Catchoula T&P 122C7AL Well Type W User 253800

Well Construction Const. Method Mud Rotary H Casing Material Steel S

Completion Screened S Screen Material Steel S

Lift Data Pump Mfr. Type Subm S No. Stages

Borehole Diam. in. Setting ft. Column Diam. in.

Motor Mfr. Fuel or Power Elec E Horsepower

Yield Flow GPM Pump GPM Meas., Rept., Est. Date

Performance Test Date Length of Test Production GPM

Static Level ft. Pumping Level ft. Drawdown ft. Sp. Cap. GPM/ft.

Quality (Remarks)

Water Use Primary Public P Secondary Tertiary

Other Data Available Water Level M Water Quality Y Logs D Other Data

Date 09 23 1994 Meas. 91 • 00 Belowsd. By Driller

Water Levels Date Meas. •

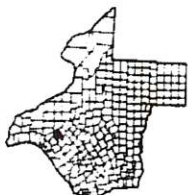
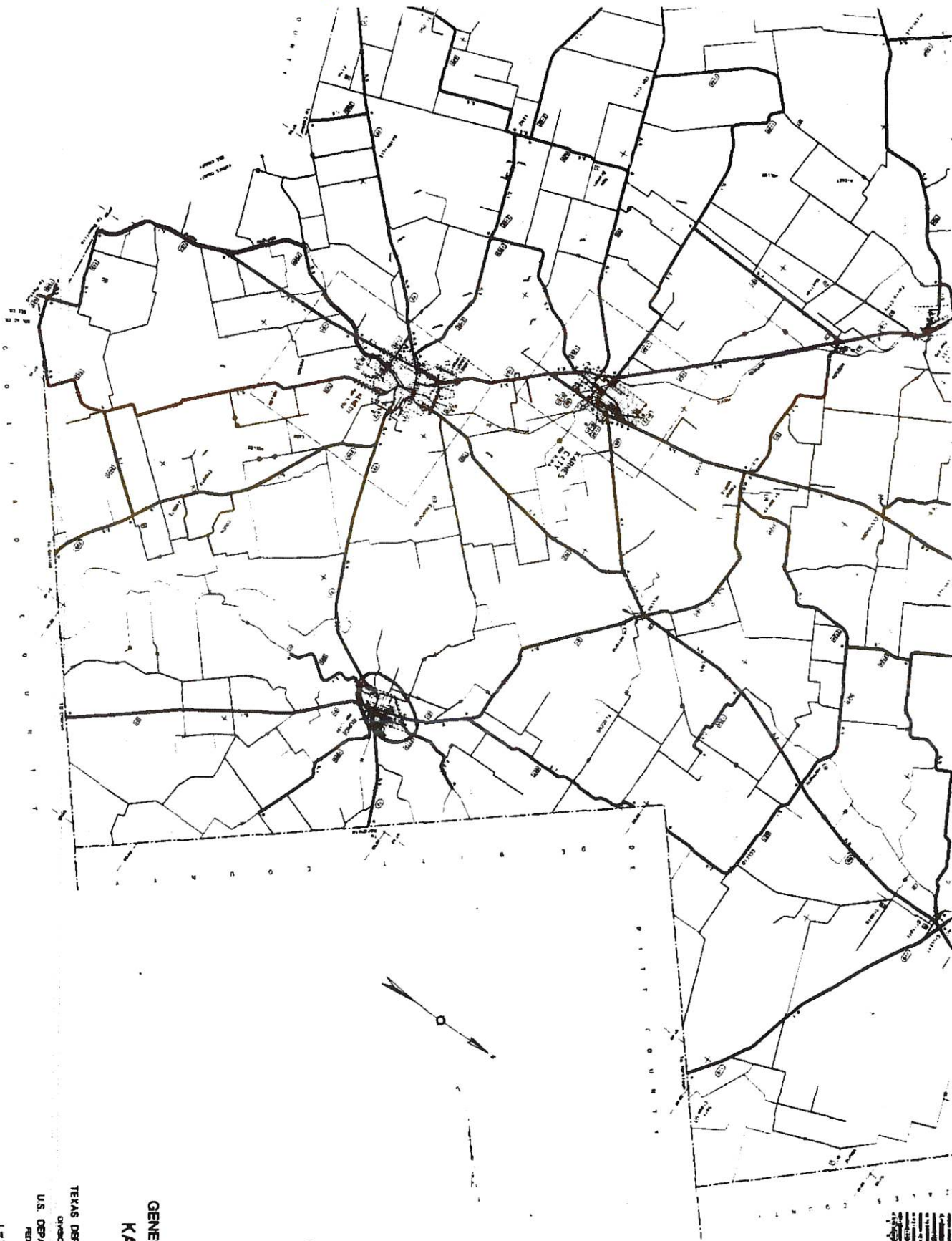
Date Meas. •

Recorded By Ron Mohr Date Recd. Collected or Updated 05 20 1997 (20 max) Reporting Agency 01

Remarks Drilled to 1000 ft Plugged back to 720 ft

Aquifer Catchoula
Well No. 29-03-708

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side		State of Texas WELL REPORT		Texas Water Well Drillers Board P.O. Box 13087 Austin, Texas 78711																																																																														
1) OWNER <u>City of Runge</u> ADDRESS <u>306 N. Helena St., Runge, Texas 78151</u> (Name) (Street or RFD) (City) (State) (Zip)																																																																																		
2) LOCATION OF WELL: County <u>Karnes</u> <u>0</u> miles in <u>-</u> direction from <u>Runge</u> (NE, SW, etc.) (Town)																																																																																		
Driller must complete the legal description below with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form. ☐ LEGAL DESCRIPTION: Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____ Distance and direction from two intersecting section or survey lines _____ ☒ SEE ATTACHED MAP																																																																																		
3) TYPE OF WORK (Check): ☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging		4) PROPOSED USE (Check): ☐ Domestic ☐ Industrial ☐ Monitor ☒ Public Supply ☐ Irrigation ☐ Test Well ☐ Injection ☐ De-Watering		5) DRILLING METHOD (Check): ☐ Driven ☒ Mud Rotary ☐ Air Hammer ☐ Jetted ☐ Bored ☐ Air Rotary ☐ Cable Tool ☐ Other _____																																																																														
6) WELL LOG: Date Drilling: _____ Started <u>8-08</u> 19 <u>94</u> Completed <u>10-06</u> 19 <u>94</u>		DIAMETER OF HOLE <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Dia. (in.)</th> <th>From (ft.)</th> <th>To (ft.)</th> </tr> <tr> <td>18"</td> <td>Surface</td> <td>320</td> </tr> <tr> <td>13"</td> <td>320</td> <td>720</td> </tr> </table>		Dia. (in.)	From (ft.)	To (ft.)	18"	Surface	320	13"	320	720	7) BOREHOLE COMPLETION: ☐ Open Hole ☒ Straight Well ☐ Underreamed ☐ Gravel Packed ☐ Other _____ If Gravel Packed give interval ... from _____ ft. to _____ ft.																																																																					
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13) TYPE PUMP: <u>N/A</u> ☐ Turbine ☐ Jet ☐ Submersible ☐ Other _____ Depth to pump bowls, cylinder, jet, etc., _____ ft.		9) CEMENTING DATA [Rule 287.44(1)] Cemented from <u>315</u> ft. to <u>0</u> ft. No. of Sacks Used <u>195</u> Plug: <u>850</u> ft. to <u>725</u> ft. No. of Sacks Used <u>35</u> Method used <u>Pressure</u> Cemented by <u>Halliburton Services-Pleasanton</u>																																																																																
14) WELL TESTS: Type Test: ☒ Pump ☐ Baller ☐ Jetted ☒ Estimated Yield: <u>458</u> gpm with <u>187</u> ft. drawdown after <u>36</u> hrs.		10) SURFACE COMPLETION ☒ Specified Surface Slab Installed [Rule 287.44(2)(A)] ☐ Specified Steel Sleeve Installed [Rule 287.44(3)(A)] ☐ Pileless Adapter Used: [Rule 287.44(3)(B)] ☐ Approved Alternative Procedure Used [Rule 287.71]																																																																																
15) WATER QUALITY: Did you knowingly penetrate any strata which contained undesirable constituents? ☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER" Type of water? <u>Good</u> Depth of strata <u>340 - 400</u> Was a chemical analysis made? ☒ Yes ☐ No <u>620 - 700</u>		11) WATER LEVEL: Static level <u>91</u> ft. below land surface Date <u>9-23-94</u> Artesian flow _____ gpm. Date _____																																																																																
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I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.																																																																																		
COMPANY NAME <u>Cude Drilling, Inc.</u> (Type or print)		WELL DRILLER'S LICENSE NO. <u>3130 WPKL</u>																																																																																
ADDRESS <u>P.O. Box 8</u> (Street or RFD)		<u>Pleasanton</u> (City)		<u>Texas 78064</u> (State) (Zip)																																																																														
(Signed) <u>[Signature]</u> (Licensed Well Driller)		(Signed) _____ (Registered Driller Trainee)																																																																																
Please attach electric log, chemical analysis, and other pertinent information, if available.																																																																																		
For TWC use only: Well No. <u>7903-7</u> Located on map _____																																																																																		



**GENERAL HIGHWAY MAP
KARNES COUNTY
TEXAS**

DESIGNED BY THE
TEXAS DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION PLANNING
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

1987
1987

NOTES:
1. This map is for general reference only.
2. It is not to be used for legal purposes.
3. It is not to be used for engineering purposes.

REPRODUCTION OF THIS MAP IS PROHIBITED
WITHOUT THE WRITTEN PERMISSION OF THE
TEXAS DEPARTMENT OF TRANSPORTATION
DIVISION OF TRANSPORTATION PLANNING
1987

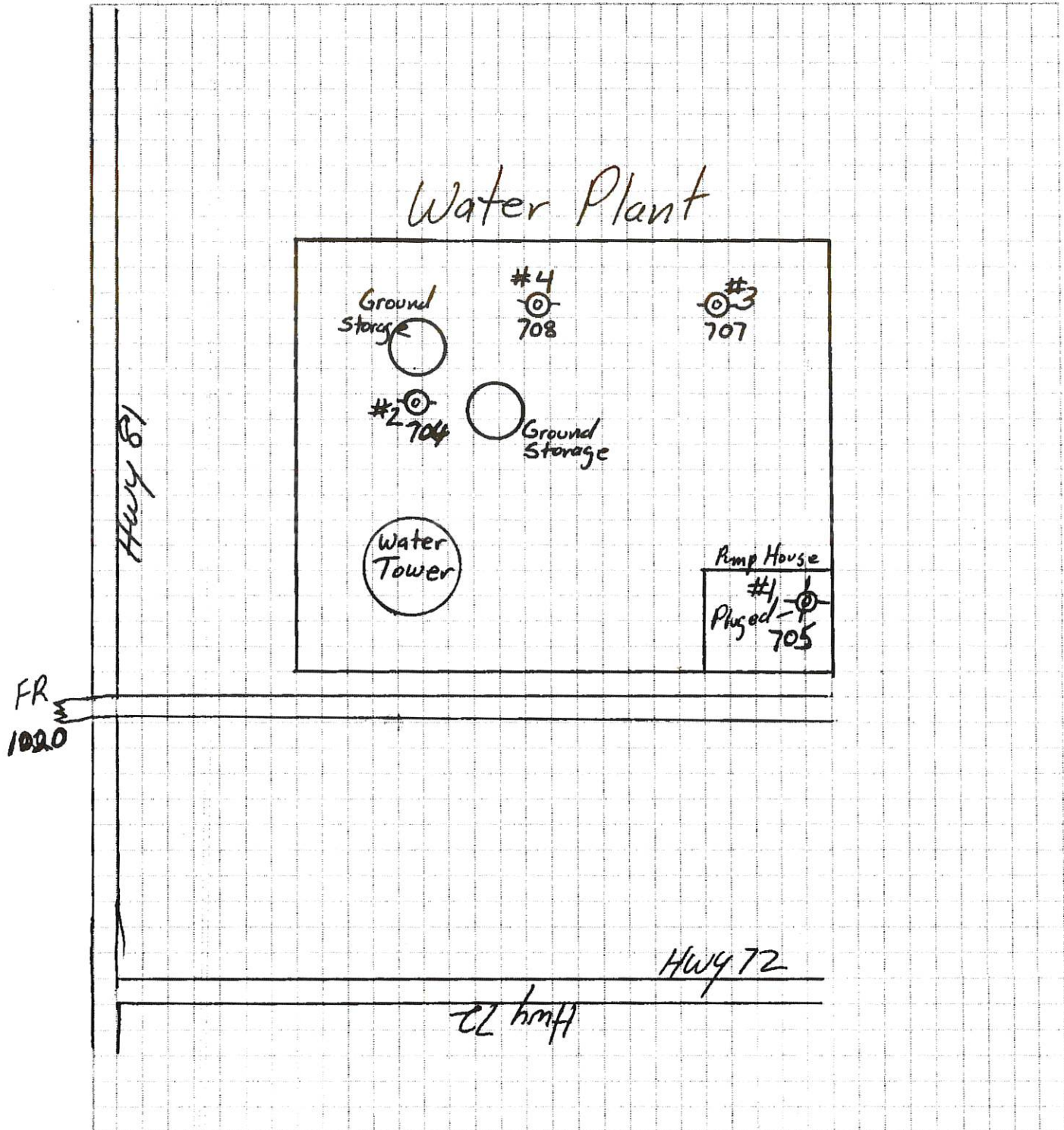
7903-708

Texas Water Development Board

By _____ Date _____ Division _____

Chkd. _____ Date _____ Well Number 79-03-708

County Karnes



08-0502

79-03-
704
705
707
708
Well Number

Water Quality Field Data

New Well

SWN: 79-03-708

County: Karnes

Aquifer(s):

Name: City of Runge

Address: 306 N. Helena

owner's well # 4

Sample No. 581

Date: 5-20-97

By: Ron Mohr

Bottle 1		Bottle 2		Bottle 3		Bottle 4		Bottle 5		Bottle 6		Bottle 7		Total	
500 ml		1 liter		250 ml		1 liter		250 ml		250 ml		250 ml		SUB- Samples 3	
Anions	Cations	Nitrate	Radioactivity	Radiactivity		Radiactivity		Radiactivity		Radiactivity		Radiactivity		Radiactivity	
2 ml	2 ml	0.5 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml	2 ml
HNO (Nitric)	HNO (Nitric)	H SO (Sulfuric)	HNO (Nitric)	HNO (Nitric)	HNO (Nitric)	HNO (Nitric)	HNO (Nitric)	HNO (Nitric)	HNO (Nitric)	HNO (Nitric)	HNO (Nitric)	HNO (Nitric)	HNO (Nitric)	HNO (Nitric)	HNO (Nitric)
Water Level		LSD		Remark		Time in		Time out		Sample time		Starting pH		Ending pH	
Temperature (00010)		26.6 c		863 umhos/cm		1515		1615		1550		14.8 ml. of 0.02N to		50 ml. of Sample	
Specific Conductance (00084)		727		73.3 mv.		Cloudy		Cloudy		15		50		851	
pH (00400)		7.27		73.3		80		80		80		80		80	
Eh (00090)		73.3		73.3		73.3		73.3		73.3		73.3		73.3	
Phenol ALK (82244)		0		0		0		0		0		0		0	
Total ALK (39086)		296		296		296		296		296		296		296	
Carbonate (00452)		0		0		0		0		0		0		0	
Bicarbonate (00453)		592		592		592		592		592		592		592	
Total Cations (+)		0		0		0		0		0		0		0	
Total Anions (-)		0		0		0		0		0		0		0	
Total Hardness (00900)		130		130		130		130		130		130		130	
Dissolved Solids		575		575		575		575		575		575		575	

other notes:

FINAL ANALYSIS REPORT

LAB ID: 9704777
 FACILITY: TWDB
 ACCT NO: TWDB
 TX WATER DEV. BOARD

SAMPLE DESCRIPTION: Groundwater

SAMPLE DATE: 05/20/97
 SAMPLE TIME: 1550

DATE RECEIVED: 05/23/97
 REPORT DATE: 08/19/97

LOCATION ID: 79-03-708

PARAMETER	RESULTS	UNITS	STORET #	PQL in WATER	DATE ANALYZED
Alkalinity, Phenol.	<1	mg/L	00415	1	05/29/97
Alkalinity, Total	268	mg/L	00410	1	05/29/97
Bromide	0.58	mg/L	71870	0.05	05/28/97
Chloride	99.2	mg/L	00941	0.1	05/28/97
Fluoride	0.46	mg/L	00950	0.02	05/28/97
Iodide, Laboratory	<0.15	mg/L	71965	0.05	05/27/97
Nit., Nitrate/Nitrite	0.942	mg/L	00630	0.020	06/06/97
Nitrogen, Kjeldahl	<0.500	mg/L	00623	0.010	06/05/97
Nitrogen, ammonia	<0.100	mg/L	00608	0.010	06/09/97
Silica	48.70	mg/L	00955	0.01	06/02/97
Sulfate	40.40	mg/L	00946	0.10	05/28/97
Aluminum, Dis. ICPMS	<1.5	ug/L	01106	1.0	07/15/97
Antimony, Dis. ICPMS	<1.0	ug/L	01095	1.0	07/15/97
Arsenic, Diss. ICPMS	10.2	ug/L	01000	1.0	07/15/97
Barium, Diss. ICPMS	91.0	ug/L	01005	1.0	07/15/97
Beryllium, Dis ICPMS	<1.0	ug/L	01010	1.0	07/15/97
Boron, Diss. ICPMS	412.0	ug/L	01020	1.0	07/15/97
Calcium, Dissolved	34.60	mg/L	00915	0.50	06/11/97
Cobalt, Diss. ICPMS	<1.0	ug/L	01035	1.0	07/15/97
Copper, Diss. ICPMS	<1.0	ug/L	01040	1.0	07/15/97
Iron-AA, Dissolved	<15.00	ug/L	01046	15.00	06/19/97
Lead, Diss. ICPMS	<1.0	ug/L	01049	1.0	07/15/97
Lithium, Diss. ICPMS	51.7	ug/L	01130	1.0	07/15/97
Magnesium, Dissolved	9.50	mg/L	00925	0.05	06/11/97
Manganese, Dis ICPMS	<1.0	ug/L	01056	1.0	07/15/97
Molybdenum Dis ICPMS	1.9	ug/L	01060	1.0	07/15/97
Nickel, Diss. ICPMS	<1.0	ug/L	01065	1.0	07/15/97
Potassium, Dissolved	7.23	mg/L	00935	1.00	06/11/97
Selenium, Dis. ICPMS	<6.0	ug/L	01145	4.0	07/15/97

FINAL ANALYSIS REPORT

LAB ID: 9704777
 FACILITY: TWDB
 ACCT NO: TWDB
 TX WATER DEV. BOARD

SAMPLE DESCRIPTION: Groundwater

SAMPLE DATE: 05/20/97
 SAMPLE TIME: 1550

DATE RECEIVED: 05/23/97
 REPORT DATE: 08/19/97

LOCATION ID: 79-03-708

PARAMETER	RESULTS	UNITS	STORET #	PQL in WATER	DATE ANALYZED
Sodium, Dissolved	151.00	mg/L	00930	0.10	06/11/97
Strontium, Dis ICPMS	920.0	ug/L	01080	1.0	07/15/97
Thallium, Diss ICPMS	<1.0	ug/L	01057	1.0	07/15/97
Vanadium, Diss ICPMS	31.5	ug/L	01085	1.0	07/15/97
Zinc, Diss. ICPMS	38.7	ug/L	01090	1.0	07/15/97

COMMENTS: Silica, NH3, TKN, NO3/NO2 subcontracted.

TWDB Water Quality Field Data Sheet

Newly Invenoried Well 150

State Well Number: 79-03-108

Name: City of Runge

Sample ID Number: 927

County: KALWES

Address: P.O. Box 206

Date: 3/22/05

County Code: 255

Phone Number: Runge TX. 78151

Sampler(s): D. Wuerch

Aquifer Code: 12C5H

Attention: (850) 239-4121

Aquifer Id: 15

Well Name or #: 4

CIRCLE EACH SAMPLE FRACTION COLLECTED:

1	2	3	4	5	6
500ml (filtered) Anions / Total Alk. Ice	500ml (filtered) Cations Nitric (HNO3)	250ml (filtered) Nutrient Ice + H2SO4	40 ml (unfiltered) Atrazine Ice and in dark	1 L (unfiltered) Tritium None	1 L (unfiltered) Alpha & Beta Nitric (HNO3)

Proper Cation, Nutrient, and Alpha/Beta preservation requires adding enough of the correct acid to each sample fraction to bring the pH below 2.0

Time In: 14:02

Time Out: 14:50

W. L. depth from LSD (ft.): —

W.L. remark: 42

M.P. = —

Pumping Since: 14:08

Sampling Point: FAV (ustal)

Well Use: P

FIELD G.P.S. readings

Lift: 5

Latitude: 28° 52' 52. "

Power: E

Longitude: 97° 42' 46. "

Casing Type: —

Casing Size: "

Sample Time: 14:42

Filter pressure: hand pump/line

Water Quality Stabilization Parameters Table

(at least 3 readings at five minute intervals)

Notes:

Time:	<u>14:18</u>	<u>14:23</u>	<u>14:28</u>						
pH:	<u>7.51</u>	<u>7.51</u>	<u>7.51</u>						
Celsius Temp. (00010)	<u>26.4</u>	<u>26.5</u>	<u>26.5</u>						
Conductivity (uS/cm):	<u>997</u>	<u>1011</u>	<u>1012</u>						

Field Alkalinity Titration:

7.57 Start pH 4.50 End pH —

50.0 mL Sample Size

mL Acid added for Phenol (> 8.3)

15.2 mL Acid added for Total (to pH 4.5)

Items below calculated from: mL acid added x 20 = Alkalinity

Phenol Alkalinity (82244): — mg/L

Total Alkalinity (39088): 304 mg/L

Items Below Calculated Later From Results:

Dissolved Solids (mg/L): 622

Hardness (as CaCO3): 139

Balanced: yes

Date Entered By Sampler Into Database:

Yes / no

LCRA Environmental Laboratory Services

Date: 14-Apr-05

CLIENT: Texas Water Development Board **Client Sample ID:** 79-03-708
Lab Order: 0503486 **File No:** 36899
Project: TWDB FY05 **Collection Date:** 3/22/2005 2:42:00 PM
Lab ID: 0503486-006 **Matrix:** GROUNDWATER

Analyses	Storet	Result	Qual	PQL	Units	DF	Batch ID	Date Analyzed
----------	--------	--------	------	-----	-------	----	----------	---------------

ICP METALS DISSOLVED

E200.7

Analyst: TH

Calcium	38.1	0.204	mg/L	1	32938	4/11/2005 4:25:35 PM
Magnesium	10.4	0.204	mg/L	1	32938	4/11/2005 4:25:35 PM
Potassium	9.09	0.204	mg/L	1	32938	4/11/2005 4:25:35 PM
Sodium	167	0.714	mg/L	1	32938	4/11/2005 4:25:35 PM

ICP METALS DISSOLVED

E200.7

Analyst: TH

Boron	697	51	µg/L	1	32939	4/11/2005 4:25:35 PM
Iron	ND	51	µg/L	1	32939	4/11/2005 4:25:35 PM
Strontium	1180	20	µg/L	1	32939	4/11/2005 4:25:35 PM

ICPMS DISSOLVED METALS

E200.8

Analyst: SW

Aluminum	ND	4.08	µg/L	1	32738	3/30/2005
Antimony	ND	1.02	µg/L	1	32738	3/30/2005
Arsenic	12.7	2.04	µg/L	1	32738	3/30/2005
Barium	79.3	1.02	µg/L	1	32738	3/30/2005
Beryllium	ND	1.02	µg/L	1	32738	3/30/2005
Cadmium	ND	1.02	µg/L	1	32738	3/30/2005
Chromium	13.0	1.02	µg/L	1	32738	3/30/2005
Cobalt	ND	1.02	µg/L	1	32738	3/30/2005
Copper	4.50	1.02	µg/L	1	32738	3/30/2005
Lead	ND	1.02	µg/L	1	32738	3/30/2005
Lithium	54.3	2.04	µg/L	1	32738	3/30/2005
Manganese	2.29	1.02	µg/L	1	32738	3/30/2005
Molybdenum	3.36	1.02	µg/L	1	32738	3/30/2005
Selenium	ND	4.08	µg/L	1	32738	3/30/2005
Thallium	ND	1.02	µg/L	1	32738	3/30/2005
Vanadium	27.3	1.02	µg/L	1	32738	3/30/2005
Zinc	10.2	4.08	µg/L	1	32738	3/30/2005

CATION/ANION BALANCES

CALCULATION

Analyst: AMJ

Cation/Anion Balance	Balanced	0	Date	1	32978	4/13/2005
----------------------	----------	---	------	---	-------	-----------

ANIONS BY ION CHROMATOGRAPHY, DISSOLVE

E300

Analyst: WR

Bromide Dissolved	0.40	0.10	mg/L	5	32861	4/7/2005 1:06:00 AM
Chloride Dissolved	109	5.00	mg/L	5	32861	4/7/2005 1:06:00 AM
Fluoride Dissolved	0.64	0.05	mg/L	5	32861	4/7/2005 1:06:00 AM
Sulfate Dissolved	56.4	5.00	mg/L	5	32861	4/7/2005 1:06:00 AM

ALKALINITY

M2320 B

Analyst: WR

Alkalinity, Phenolphthalein	ND	0	mg/L CaCO3	1	32774	4/1/2005
Alkalinity, Total (As CaCO3)	292	2	mg/L CaCO3	1	32774	4/1/2005

NITRATE AND NITRITE

E353.2

Analyst: LW

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

LCRA Environmental Laboratory Services

Date: 14-Apr-05

CLIENT:	Texas Water Development Board	Client Sample ID:	79-03-708
Lab Order:	0503486	File No:	36899
Project:	TWDB FY05	Collection Date:	3/22/2005 2:42:00 PM
Lab ID:	0503486-006	Matrix:	GROUNDWATER

Analyses	Storet	Result	Qual	PQL	Units	DF	Batch ID	Date Analyzed
NITRATE AND NITRITE								
Nitrogen, Nitrate & Nitrite		0.8626	E353.2	0.0200	mg/L	1	32719	Analyst: LW 3/31/2005
SILICA								
Silica, Dissolved (as SiO ₂)		50.8	E370.1	0.50	mg/L	1	32714	Analyst: LW 3/30/2005

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

LCRA Environmental Laboratory Services

Date: 13-Apr-05

CLIENT:	Texas Water Development Board	Client Sample ID:	79-03-708
Lab Order:	0503497	File No:	36910
Project:	TWDB FY05	Collection Date:	3/22/2005 2:42:00 PM
Lab ID:	0503497-006	Matrix:	GROUNDWATER

Analyses	Storet	Result Qual	PQL	Units	DF Batch ID	Date Analyzed
----------	--------	-------------	-----	-------	-------------	---------------

RADIOLOGICALS**RADIOCHEM**

Analyst: SB

ALPHA, Gross	Subcontracted	0	pci/L	1	32946	3/31/2005
BETA, Gross	Subcontracted	0	pci/L	1	32946	3/31/2005

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 6 of 14

KARNES
7903708

LCRA Environmental Laboratory Services

Date: 13-Apr-05

CLIENT: Texas Water Development Board
Project: TWDB FY05
Lab Order: 0503497

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
0503497-001A	79-10-408		3/21/2005 1:32:00 PM	3/25/2005
0503497-002A	78-16-609		3/21/2005 2:52:00 PM	3/25/2005
0503497-003A	66-33-510		3/22/2005 9:56:00 AM	3/25/2005
0503497-004A	67-47-607		3/22/2005 11:09:00 AM	3/25/2005
0503497-005A	67-54-204		3/22/2005 12:50:00 PM	3/25/2005
0503497-006A	79-03-708		3/22/2005 2:42:00 PM	3/25/2005
0503497-007A	67-40-503		3/23/2005 9:46:00 AM	3/25/2005
0503497-008A	67-39-517		3/23/2005 11:22:00 AM	3/25/2005
0503497-009A	67-31-602		3/23/2005 1:38:00 PM	3/25/2005
0503497-010A	67-32-704		3/23/2005 2:40:00 PM	3/25/2005
0503497-011A	67-40-301		3/23/2005 3:51:00 PM	3/25/2005
0503497-012A	66-43-812		3/24/2005 10:22:00 AM	3/25/2005
0503497-013A	66-34-207		3/24/2005 11:42:00 AM	3/25/2005
0503497-014A	66-25-103		3/24/2005 2:11:00 PM	3/25/2005

79 03 708

JORDAN LABORATORIES, INCORPORATED
ANALYTICAL & ENVIRONMENTAL CHEMISTS
CORPUS CHRISTI, TEXAS
April 05, 2005

LCRA ENVIRONMENTAL LAB
3505 Montopolis, EL 101
Austin, Texas 78744-1417

Report of Analysis

STORET

04241

04242

Lab. No.	Identification	Date Time (05)	*Gross Alpha Activity pci/L	*Gross Beta Activity pci/L
79 10 408	M43-1176	0503497-001A 1:32 PM 3-21	25 +/- 8	28 +/- 5
78 16 609	M43-1177	0503497-002A 2:52 PM 3-21	24 +/- 6	28 +/- 3
66 33 510	M43-1178	0503497-003A 9:56 AM 3-22	3.0 +/- 4.0	4.8 +/- 2.5
67 47 607	M43-1179	0503497-004A 11:09 AM 3-22	6.1 +/- 3.7	8.8 +/- 2.4
67 54 204	M43-1180	0503497-005A 12:50 PM 3-22	4.5 +/- 3.1	11 +/- 2
79 03 708	M43-1181	0503497-006A 2:42 PM 3-22	16 +/- 4	15 +/- 2
67 40 503	M43-1182	0503497-007A 9:46 AM 3-23	1.2 +/- 2.6	7.2 +/- 2.1
67 39 517	M43-1183	0503497-008A 11:20 AM 3-23	4.7 +/- 4.1	12 +/- 3
67 31 602	M43-1184	0503497-009A 1:38 PM 3-23	6.9 +/- 3.6	16 +/- 3
67 32 704	M43-1185	0503497-010A 2:40 PM 3-23	10 +/- 5	11 +/- 2
67 40 301	M43-1186	0503497-011A 3:51 PM 3-23	17 +/- 4	5.5 +/- 1.7
66 43 812	M43-1187	0503497-012A 10:22 AM 3-24	4.6 +/- 2.1	3.3 +/- 1.1
66 34 207	M43-1188	0503497-013A 11:42 AM 3-24	6.6 +/- 3.8	4.6 +/- 2.8
66 25 103	M43-1189	0503497-014A 2:11 PM 3-24	9.0 +/- 3.4	5.3 +/- 1.7

Analysts: Nixon/Moore

Analysis Date: 3-30-05, 3-31-05

Method: 900.0 Calibration: Alpha - Th230 Beta - Cs137

*Note: EPA Method 900.0 is a drinking water screening procedure.
Its application to waters of high total dissolved solids
may result in unacceptably high counting errors due to
limitation on sample size. Recommended max is 500 mg/L.

Alternate method for determining activity may be considered.

Respectfully Submitted,

CFC

Carl F. Crownover, Pres.

form: S1-50

79 03 708

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	7911204
County	Karnes
River Basin	San Antonio
Groundwater Management Area	15
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Evergreen UWCD
Latitude (decimal degrees)	28.8725
Latitude (degrees minutes seconds)	28° 52' 21" N
Longitude (decimal degrees)	-97.705834
Longitude (degrees minutes seconds)	097° 42' 21" W
Coordinate Source	+/- 10 Seconds
Aquifer Code	122OKVL - Oakville Sandstone
Aquifer	Gulf Coast
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	300
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	57
Well Depth Source	Another Government Agency
Drilling Start Date	
Drilling End Date	
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Domestic
Water Level Observation	Miscellaneous Measurements
Water Quality Available	Yes
Pump	Piston
Pump Depth (feet below land surface)	
Power Type	Windmill
Annular Seal Method	
Surface Completion	
Owner	Paul Natho
Driller	
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	9/9/1999
Last Update Date	9/9/1999

Remarks

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

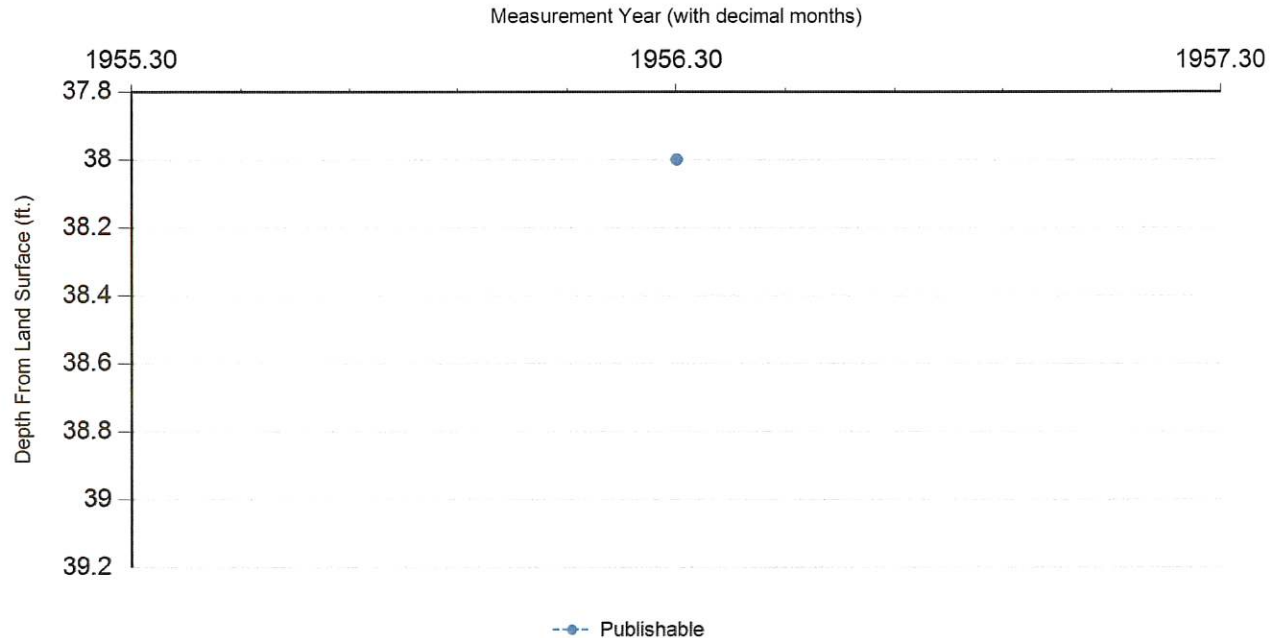
Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements



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	4/21/1956		38		262	1	U.S. Geological Survey	Steel Tape		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis

Sample Date: 4/6/1937 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** Other Federal Agencies

Sampled Aquifer: Oakville Sandstone

Analyzed Lab: WPA

Reliability: From a report; unknown sample collection & preservation

Collection Remarks: Analysis taken from M-151

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)			0 mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CaCO3)		299.91	mg/L as CaCO 3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		366	mg/L	
00910	CALCIUM (MG/L)		121	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		250	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CaCO3)		380	mg/L as CaCO 3	
00920	MAGNESIUM (MG/L)		19	mg/L	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		3.35		
00932	SODIUM, CALCULATED, PERCENT		46	PCT	
00929	SODIUM, TOTAL (MG/L AS Na)	calculate d	150	mg/L	
00945	SULFATE, TOTAL (MG/L AS SO4)		54	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		773	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/gwdb rpt.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 Well No. 79 11 204 Previous Well No. E-37 396 County Karnes 255
River Basin San Antonio T9 Zone 2 Lat. 28 52 20 Long. 097 42 20 3
Owner's Well No. _____ Location _____ 1/4. _____ 1-4. Section _____, Block _____, Survey _____

Aquifer Oakville
Well No. 7911204

ATTACHMENT No. 13

**DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0
LAND DISPOSAL OF EFFLUENT**

SECTION 7

GROUND WATER QUALITY TECHNICAL REPORT

DOMESTIC WORKSHEET 3.0
SECTION 7

GROUND WATER QUALITY TECHNICAL REPORT

The nearby private water wells are outside the 250' buffer zone required by 30 TAC Section 309.13(c). The nearest well is +/-550' from the land disposal site; however, the land disposal site does not drain to the well. The storage pond liner consists of two feet of clay meeting liner permeability requirements in 30 TAC 217.203(d). Therefore, the impact of the waste disposal site on the groundwater is negligible.

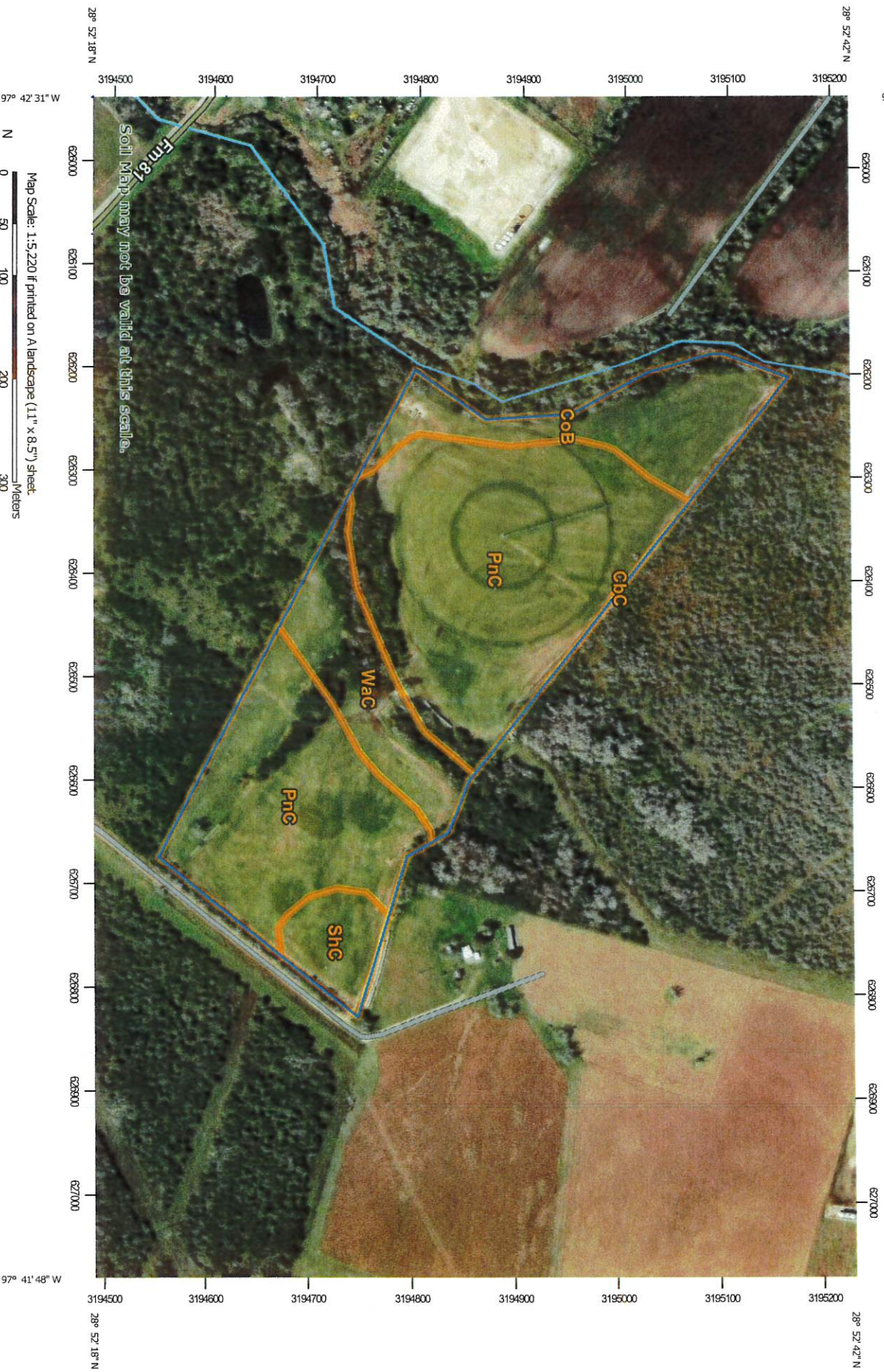
ATTACHMENT No. 14

**DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0
LAND DISPOSAL OF EFFLUENT**

SECTION 8

USDA SOIL SURVEY MAP

Soil Map—Karnes County, Texas
(Irrigation Area - Runge, TX.)



MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Area of Interest (AOI)	 Stony Spot
 Soils	 Very Stony Spot
 Soil Map Unit Polygons	 Wet Spot
 Soil Map Unit Lines	 Other
 Soil Map Unit Points	 Special Line Features
 Special Point Features	 Water Features
 Blowout	 Streams and Canals
 Borrow Pit	 Transportation
 Clay Spot	 Rails
 Closed Depression	 Interstate Highways
 Gravel Pit	 US Routes
 Gravelly Spot	 Major Roads
 Landfill	 Local Roads
 Lava Flow	 Background
 Marsh or swamp	 Aerial Photography
 Mine or Quarry	
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

Date(s) aerial images were photographed: May 28, 2010—Oct 17, 2017

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
CbC	Colibro sandy clay loam, 3 to 5 percent slopes	0.0	0.0%
CoB	Coy clay loam, 1 to 3 percent slopes	5.8	14.7%
PnC	Pernitas sandy clay loam, 2 to 5 percent slopes	26.4	67.5%
ShC	Schattel clay loam, 2 to 5 percent slopes	2.0	5.2%
WaC	Weesatche fine sandy loam, 2 to 5 percent slopes	4.9	12.5%
Totals for Area of Interest		39.1	100.0%

ATTACHMENT No. 15

**DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0
LAND DISPOSAL OF EFFLUENT**

SECTION 8

SOIL ANALYSIS

October 11, 2024

Brian Cope

Klein & Cope Engineering

8611 Botts Lane, Ste. 101

San Antonio, TX 78217

SATL Report No.: 2410011

RE: City of Runge Irrigation Site

Dear Brian Cope

SATL received 9 Sample(s) on 10/01/2024 for analyses identified on the chain of custody. The analyses were performed using methods indicated on the laboratory report. Any deviations observed at sample receiving are notated on the Sample Receipt Checklist and/or Chain of Custody documents attached as part of this analytical report.

Sincerely,

For San Antonio Testing Laboratory, Inc.



Marcela G. Hawk,
President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

1610 S. Laredo Street, San Antonio, Texas 78207-7029 (210) 229-9920 Fax (210) 229-9921

www.satestinglab.com

Project Number: [none] Additional Notes: 10/01/24 11:24

Report No. 2410011

Klein & Cope Engineering
 8611 Botts Lane, Ste. 101
 San Antonio TX, 78217

Project Manager: Brian Cope
 Project: City of Runge Irrigation Site

Reported:
 10/11/24 14:30
Received:

SAMPLE SUMMARY

Total Samples received in this work order: 9

The following samples were requested for analysis as per the CoC. Any re-runs or re-analyses requested are identified as such.

Sample ID	Laboratory ID	Matrix	Sampling Method	Date Sampled	Date Received
Schattel Clay Shc 0-6"	2410011-01	Solid	Grab	10/01/24 08:00	10/01/24 11:24
Schattel Clay Shc 6-18"	2410011-02	Solid	Grab	10/01/24 08:05	10/01/24 11:24
Schattel Clay Shc 18-30"	2410011-03	Solid	Grab	10/01/24 08:10	10/01/24 11:24
Pernitas Sandy Clay 0-6"	2410011-04	Solid	Grab	10/01/24 08:15	10/01/24 11:24
Pernitas Sandy Clay 6-18"	2410011-05	Solid	Grab	10/01/24 08:20	10/01/24 11:24
Pernitas Sandy Clay 18-30"	2410011-06	Solid	Grab	10/01/24 08:25	10/01/24 11:24
Coy Clay Loam 0-6"	2410011-07	Solid	Grab	10/01/24 08:30	10/01/24 11:24
Coy Clay Loam 6-18"	2410011-08	Solid	Grab	10/01/24 08:35	10/01/24 11:24
Coy Clay Loam 18-30"	2410011-09	Solid	Grab	10/01/24 08:40	10/01/24 11:24

Notes

All quality control samples and checks are within acceptance limits unless otherwise indicated.
 Test results pertain only to those items tested.
 All samples were in good condition when received by the laboratory unless otherwise noted.

Page 2 of 16

Project Number: [none]

Additional Notes:

Magnesium * 427 mg/kg dry 20.0
 Magnesium, Available 427 mg/kg dry 20.0 Phosphorus, Available <20.0 mg/kg dry 20.0
 Potassium, Available 196 mg/kg dry 100
 Sodium * 433 mg/kg dry 20.0
 Sodium, Available * 433 mg/kg dry 20.0
 Sulfur 204 mg/kg dry 20.0
 Sulfur, Available 204 mg/kg dry 20.0

Sample ID #: Schattel Clay Shc 0-6" Sample Matrix: Solid

Analyte	Result	Units	PQL						
General Chemistry									
% Solids	93.7	% by Wt.	0.100	% Calc	B441163	10/08/24 09:35	ASTM D2216	TW	
Conductivity (@25C)	521	umhos/cm	1.00	SM2510B	B441263	10/07/24 12:10	USDAHB60	JA	
Ammonia-Nitrogen *	50.4	mg/kg	10.0	SM4500NH3B	B441261	10/10/24 13:00	SM4500NH3C	SG	
Total Kjeldahl Nitrogen	975	mg/kg	1.00	EPA 351.3	B441275	10/10/24 12:03	EPA 351.3	SG	
Total Nitrogen	1040	mg/kg dry	1.20	[CALC]	[CALC]	10/10/24 12:03	CALC	SG	
SoilpH measured in H2O@ Cbelow	7.46	pH Units	0.10	EPA 9045D	B441167	10/07/24 12:10	EPA 9045D	DD	H
pH measured @Temperature >>	20	C	0.10	EPA 9045D	B441167	10/07/24 12:10	EPA 170.1	DD	H

Anions by Ion Chromatography

Nitrite as N *	0.16	mg/kg	0.10	EPA 300.0	B441221	10/08/24 21:11	EPA 300.0	JA
Nitrate as N *	2.53	mg/kg	0.10	EPA 300.0	B441221	10/08/24 21:11	EPA 300.0	JA

Available Metals by Mehlich III Extraction

Calcium *	20000	mg/kg dry	20.0
Calcium, Available	20000	mg/kg dry	20.0

Report No. 2410011

LABORATORY REPORT



Klein & Cope Engineering
 8611 Botts Lane, Ste. 101
 San Antonio TX, 78217

Project Manager: Brian Cope
 Project: City of Runge Irrigation Site

Reported:
 10/11/24 14:30
Received:

Sampling Method: Grab **Lab Sample ID #:** 2410011-01
Date/Time Collected: 10/01/24 08:00

Prep Method	Batch	Analyzed	Method	Analyst	Notes
-------------	-------	----------	--------	---------	-------

General Chemistry

Calcium *	21300	mg/kg dry	20.0
Calcium, Available	21300	mg/kg dry	20.0
Magnesium *	443	mg/kg dry	20.0
Magnesium, Available	443	mg/kg dry	20.0
Phosphorus, Available	<20.0	mg/kg dry	20.0
Potassium, Available	186	mg/kg dry	100
Sodium *	524	mg/kg dry	20.0
Sodium, Available *	524	mg/kg dry	20.0
Sulfur	273	mg/kg dry	20.0
Sulfur, Available	273	mg/kg dry	20.0

10/01/24 11:24

Report No. 2410011

Page 3 of 16

Mehlich-III	B441192	10/08/24 16:34	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 16:34	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 16:34	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 16:34	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 16:34	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 16:34	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 16:34	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 16:34	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 16:34	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 16:34	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 16:34	M-III/6010	SJ

Project Number: [none]

Additional Notes:

Sampling Method: Grab **Lab Sample ID #:** 2410011-02 **Date/Time Collected:** 10/01/24 08:05

Prep Method	Batch	Analyzed	Method	Analyst	Notes
-------------	-------	----------	--------	---------	-------

Sample ID #: Schattel Clay Shc 6-18" **Sample Matrix:** Solid

Analyte	Result	Units	PQL
% Solids	91.5	% by Wt.	0.100
Conductivity (@25C)	387	umhos/cm	1.00
Ammonia-Nitrogen *	44.8	mg/kg	10.0
Total Kjeldahl Nitrogen	846	mg/kg	1.00
Total Nitrogen	927	mg/kg dry	1.20
SoilpH measured in H2O@ Cbelow	8.34	pH Units	0.10
pH measured @Temperature >>	21	C	0.10

Mehlich-III	B441192	10/08/24 17:07	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:07	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:07	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:07	M-III/6010	SJ

Anions by Ion Chromatography

Nitrite as N *	0.20	mg/kg	0.10	EPA 300.0	B441221	10/08/24 21:29	EPA 300.0	JA
Nitrate as N *	2.06	mg/kg	0.10	EPA 300.0	B441221	10/08/24 21:29	EPA 300.0	JA

Available Metals by Method: 1610 SIL Freda Street, San Antonio, Texas 78207-7029 (210) 229-9920 Fax (210) 229-9921

Klein & Cope Engineering
8611 Botts Lane, Ste. 101
San Antonio TX, 78217

Project Manager: Brian Cope
Project: City of Runge Irrigation Site

Reported:
10/11/24 14:30
Received:

Mehlich-III	B441192	10/08/24 17:07	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:07	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:07	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:07	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:07	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:07	M-III/6010	SJ

Sampling Method: Grab **Lab Sample ID #: 2410011-03** **Date/Time**
Collected: 10/01/24 08:10

Prep Method	Batch	Analyzed	Method	Analyst	Notes
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Page 4 of 16

Project Number: [none]

Additional Notes:

Sample ID #: Schattel Clay Shc 18-30" Sample Matrix: Solid

Analyte	Result	Units	PQL
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General Chemistry

% Solids	90.6	% by Wt.	0.100	% Calc	B441163	10/08/24 09:35	ASTM D2216	TW
Conductivity (@25C)	336	umhos/cm	1.00	SM2510B	B441263	10/07/24 12:12	USDAHB60	JA
Ammonia-Nitrogen *	28.0	mg/kg	10.0	SM4500NH3B	B441261	10/10/24 13:20	SM4500NH3C	SG
Total Kjeldahl Nitrogen	549	mg/kg	1.00	EPA 351.3	B441275	10/10/24 12:08	EPA 351.3	SG
Total Nitrogen	607	mg/kg dry	1.20	[CALC]	[CALC]	10/10/24 12:08	CALC	SG
SoilpH measured in H2O@ Cbelow	8.27	pH Units	0.10	EPA 9045D	B441167	10/07/24 12:12	EPA 9045D	DD H
pH measured @Temperature >>	21	C	0.10	EPA 9045D	B441167	10/07/24 12:12	EPA 170.1	DD H

Anions by Ion Chromatography

Nitrite as N *	0.18	mg/kg	0.10	EPA 300.0	B441221	10/08/24 21:47	EPA 300.0	JA
Nitrate as N *	0.80	mg/kg	0.10	EPA 300.0	B441221	10/08/24 21:47	EPA 300.0	JA

Available Metals by Mehlich III Extraction

Calcium *	26200	mg/kg dry	20.0	Mehlich-III	B441192	10/08/24 17:13	M-III/6010	SJ
Calcium, Available	26200	mg/kg dry	20.0	Mehlich-III	B441192	10/08/24 17:13	M-III/6010	SJ
Magnesium *	400	mg/kg dry	20.0	Mehlich-III	B441192	10/08/24 17:13	M-III/6010	SJ
Magnesium, Available 400 mg/kg dry 20.0 Phosphorus, Available <20.0 mg/kg dry 20.0				Mehlich-III	B441192	10/08/24 17:13	M-III/6010	SJ
Potassium, Available	130	mg/kg dry	100	Mehlich-III	B441192	10/08/24 17:13	M-III/6010	SJ
Sodium *	594	mg/kg dry	20.0	Mehlich-III	B441192	10/08/24 17:13	M-III/6010	SJ
Sodium, Available *	594	mg/kg dry	20.0	Mehlich-III	B441192	10/08/24 17:13	M-III/6010	SJ
Sulfur	266	mg/kg dry	20.0	Mehlich-III	B441192	10/08/24 17:13	M-III/6010	SJ
Sulfur, Available	266	mg/kg dry	20.0	Mehlich-III	B441192	10/08/24 17:13	M-III/6010	SJ

Page 5 of 16

10/01/24 11:24

Project Number: [none]

Report No. 2410011

Additional Notes:

Klein & Cope Engineering
8611 Botts Lane, Ste. 101
San Antonio TX, 78217

Project Manager: Brian Cope
Project: City of Runge Irrigation Site

Reported:
10/11/24 14:30
Received:

Project Number: [none]

Sample ID #: Pernitas Sandy Clay 0-6" Sample Matrix: Solid

Page 6 of 16

Analyte	Result	Units	PQL	Additional Notes:				
General Chemistry								
% Solids	92.3	% by Wt.	0.100	% Calc	B441163	10/08/24 09:35	ASTM D2216	TW
Conductivity (@25C)	259	umhos/cm	1.00	SM2510B	B441263	10/07/24 12:13	USDAHB60	JA
Ammonia-Nitrogen *	50.4	mg/kg	10.0	SM4500NH3B	B441261	10/10/24 13:40	SM4500NH3C	SG
Total Kjeldahl Nitrogen	1290	mg/kg	1.00	EPA 351.3	B441275	10/10/24 12:09	EPA 351.3	SG
Total Nitrogen	1400	mg/kg dry	1.20	[CALC]	[CALC]	10/10/24 12:09	CALC	SG
SoilpH measured in H2O@ Cbelow	7.85	pH Units	0.10	EPA 9045D	B441167	10/07/24 12:13	EPA 9045D	DD H
pH measured @Temperature >>	21	C	0.10	EPA 9045D	B441167	10/07/24 12:13	EPA 170.1	DD H
Anions by Ion Chromatography								
Nitrite as N *	0.16	mg/kg	0.10	EPA 300.0	B441221	10/08/24 22:04	EPA 300.0	JA
Nitrate as N *	4.03	mg/kg	0.10	EPA 300.0	B441221	10/08/24 22:04	EPA 300.0	JA

Available Metals by Mehlich III Extraction

Calcium *	3820	mg/kg dry	20.0
Calcium, Available 3820 mg/kg dry 20.0 Magnesium * 162 mg/kg dry 20.0			
Magnesium, Available 162 mg/kg dry 20.0 Phosphorus, Available 46.9 mg/kg dry 20.0			
Potassium, Available	364	mg/kg dry	100
Sodium *	352	mg/kg dry	20.0
Sodium, Available *	352	mg/kg dry	20.0
Sulfur	316	mg/kg dry	20.0
Sulfur, Available	316	mg/kg dry	20.0

10/01/24 11:24

Sample ID #: Pernitas Sandy Clay 6-18" Sample Matrix: Solid

Analyte Result Units PQL

Report No. 2410011

Sampling Method: Grab Lab Sample ID #: 2410011-04

Date/Time Collected: 10/01/24 08:15

Prep Method Notes	Batch	Analyzed	Method	Analyst
Mehlich-III	B441192	10/08/24 17:19	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:19	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:19	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:19	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:19	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:19	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:19	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:19	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:19	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:19	M-III/6010	SJ

1610 S. Laredo Street, San Antonio, Texas 78207-7029 (210) 229-9920 Fax (210) 229-9921

Klein & Cope Engineering
8611 Botts Lane, Ste. 101
San Antonio TX, 78217

Project Manager: Brian Cope
Project: City of Runge Irrigation Site

Reported:
10/11/24 14:30
Received:

General Chemistry
Additional Notes:

% Solids	92.5	% by Wt.	0.100	% Calc	B441163	10/08/24 09:35	ASTM D2216	TW	
Conductivity (@25C)	247	umhos/cm	1.00	SM2510B	B441263	10/07/24 12:14	USDAHB60	JA	
Ammonia-Nitrogen *	50.4	mg/kg	10.0	SM4500NH3B	B441261	10/10/24 13:50	SM4500NH3C	SG	
Total Kjeldahl Nitrogen	863	mg/kg	1.00	EPA 351.3	B441275	10/10/24 12:10	EPA 351.3	SG	
Total Nitrogen	936	mg/kg dry	1.20	[CALC]	[CALC]	10/10/24 12:10	CALC	SG	
SoilpH measured in H2O@ Cbelow	7.49	pH Units	0.10	EPA 9045D	B441167	10/07/24 12:14	EPA 9045D	DD	H
pH measured @Temperature >>	20	C	0.10	EPA 9045D	B441167	10/07/24 12:14	EPA 170.1	DD	H

Anions by Ion Chromatography

Nitrite as N *	0.17	mg/kg	0.10	EPA 300.0	B441221	10/08/24 22:22	EPA 300.0	JA	
Nitrate as N *	2.96	mg/kg	0.10	EPA 300.0	B441221	10/08/24 22:22	EPA 300.0	JA	

Available Metals by Mehlich III Extraction

Calcium *	4840	mg/kg dry	20.0
Calcium, Available 4840 mg/kg dry 20.0 Magnesium * 165 mg/kg dry 20.0			
Magnesium, Available 165 mg/kg dry 20.0 Phosphorus, Available 34.5 mg/kg dry 20.0			
Potassium, Available	380	mg/kg dry	100
Sodium *	346	mg/kg dry	20.0
Sodium, Available *	346	mg/kg dry	20.0
Sulfur	335	mg/kg dry	20.0
Sulfur, Available	335	mg/kg dry	20.0

Sample ID #: Pernitas Sandy Clay 18-30" Sample Matrix: Solid

Analyte Result Units PQL

10/01/24 11:24

Report No. 2410011

Sampling Method: Grab Lab Sample ID #: 2410011-05

Date/Time Collected: 10/01/24 08:20

Prep Method Notes	Batch	Analyzed	Method	Analyst
Mehlich-III	B441192	10/08/24 17:41	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:41	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:41	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:41	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:41	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:41	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:41	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:41	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:41	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:41	M-III/6010	SJ

Page 7 of 16

Project Number: [none]
1610 S. Laredo Street, San Antonio, Texas 78207-7029 (210) 229-9920 Fax (210) 229-9921

Klein & Cope Engineering
8611 Botts Lane, Ste. 101
San Antonio TX, 78217

Project Manager: Brian Cope
Project: City of Runge Irrigation Site

Reported:
10/11/24 14:30
Received:

General Chemistry
Additional Notes:

% Solids	91.2	% by Wt.	0.100	% Calc	B441163	10/08/24 09:35	ASTM D2216	TW	
Conductivity (@25C)	196	umhos/cm	1.00	SM2510B	B441263	10/07/24 12:15	USDAHB60	JA	
Ammonia-Nitrogen *	28.0	mg/kg	10.0	SM4500NH3B	B441261	10/10/24 14:00	SM4500NH3C	SG	
Total Kjeldahl Nitrogen	1140	mg/kg	1.00	EPA 351.3	B441275	10/10/24 12:11	EPA 351.3	SG	
Total Nitrogen	1250	mg/kg dry	1.20	[CALC]	[CALC]	10/10/24 12:11	CALC	SG	
SoilpH measured in H2O@ Cbelow	7.97	pH Units	0.10	EPA 9045D	B441167	10/07/24 12:15	EPA 9045D	DD	H
pH measured @Temperature >>	20	C	0.10	EPA 9045D	B441167	10/07/24 12:15	EPA 170.1	DD	H

Anions by Ion Chromatography

Nitrite as N *	0.13	mg/kg	0.10	EPA 300.0	B441221	10/08/24 22:40	EPA 300.0	JA	
Nitrate as N *	1.07	mg/kg	0.10	EPA 300.0	B441221	10/08/24 22:40	EPA 300.0	JA	

Available Metals by Mehlich III Extraction

Calcium *	5430	mg/kg dry	20.0	Sample ID #: Coy Clay Loam 0-6" Sample Matrix: Solid					
Calcium, Available 5430 mg/kg dry 20.0				Analyte		Result	Units	PQL	
Magnesium * 155 mg/kg dry 20.0									
Magnesium, Available 155 mg/kg dry 20.0									
Potassium, Available	407	mg/kg dry	100						
Sodium *	352	mg/kg dry	20.0						
Sodium, Available *	352	mg/kg dry	20.0						
Sulfur	473	mg/kg dry	20.0						
Sulfur, Available	473	mg/kg dry	20.0						

10/01/24 11:24

Report No. 2410011

Sampling Method: Grab Lab Sample ID #: 2410011-06

Date/Time Collected: 10/01/24 08:25

Prep Method Notes	Batch	Analyzed	Method	Analyst
Mehlich-III	B441192	10/08/24 17:46	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:46	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:46	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:46	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:46	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:46	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:46	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:46	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:46	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:46	M-III/6010	SJ

Page 8 of 16

Project Number: [none]
1610 S. Laredo Street, San Antonio, Texas 78207-7029 (210) 229-9920 Fax (210) 229-9921

Klein & Cope Engineering
 8611 Botts Lane, Ste. 101
 San Antonio TX, 78217

Project Manager: Brian Cope
 Project: City of Runge Irrigation Site

Reported:
 10/11/24 14:30
Received:

General Chemistry
Additional Notes:

% Solids	93.6	% by Wt.	0.100	% Calc	B441163	10/08/24 09:35	ASTM D2216	TW
Conductivity (@25C)	247	umhos/cm	1.00	SM2510B	B441263	10/07/24 12:16	USDAHB60	JA
Ammonia-Nitrogen *	50.4	mg/kg	10.0	SM4500NH3B	B441261	10/10/24 14:10	SM4500NH3C	SG
Total Kjeldahl Nitrogen	605	mg/kg	1.00	EPA 351.3	B441275	10/10/24 12:12	EPA 351.3	SG
Total Nitrogen	648	mg/kg dry	1.20	[CALC]	[CALC]	10/10/24 12:12	CALC	SG
SoilpH measured in H2O@ Cbelow	7.42	pH Units	0.10	EPA 9045D	B441167	10/07/24 12:16	EPA 9045D	DD H
pH measured @Temperature >>	20	C	0.10	EPA 9045D	B441167	10/07/24 12:16	EPA 170.1	DD H
Anions by Ion Chromatography								
Nitrite as N *	0.19	mg/kg	0.10	EPA 300.0	B441221	10/08/24 22:58	EPA 300.0	JA
Nitrate as N *	0.66	mg/kg	0.10	EPA 300.0	B441221	10/08/24 22:58	EPA 300.0	JA

Available Metals by Mehlich III Extraction

Calcium *	4080	mg/kg dry	20.0
Calcium, Available 4080 mg/kg dry 20.0 Magnesium * 167 mg/kg dry 20.0			
Magnesium, Available 167 mg/kg dry 20.0 Phosphorus, Available <20.0 mg/kg dry 20.0			
Potassium, Available	232	mg/kg dry	100
Sodium *	338	mg/kg dry	20.0
Sodium, Available *	338	mg/kg dry	20.0
Sulfur	297	mg/kg dry	20.0
Sulfur, Available	297	mg/kg dry	20.0

Sample ID #: Coy Clay Loam 6-18" Sample Matrix: Solid

Analyte Result Units PQL

10/01/24 11:24

Report No. 2410011

Sampling Method: Grab Lab Sample ID #: 2410011-07

Date/Time Collected: 10/01/24 08:30

Prep Method Notes	Batch	Analyzed	Method	Analyst
Mehlich-III	B441192	10/08/24 17:52	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:52	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:52	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:52	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:52	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:52	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:52	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:52	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:52	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:52	M-III/6010	SJ

Page 9 of 16

Project Number: [none]
 1610 S. Laredo Street, San Antonio, Texas 78207-7029 (210) 229-9920 Fax (210) 229-9921

Klein & Cope Engineering
 8611 Botts Lane, Ste. 101
 San Antonio TX, 78217

Project Manager: Brian Cope
 Project: City of Runge Irrigation Site

Reported:
 10/11/24 14:30
Received:

General Chemistry
Additional Notes:

% Solids	91.0	% by Wt.	0.100	% Calc	B441163	10/08/24 09:35	ASTM D2216	TW	
Conductivity (@25C)	156	umhos/cm	1.00	SM2510B	B441263	10/07/24 12:17	USDAHB60	JA	
Ammonia-Nitrogen *	44.8	mg/kg	10.0	SM4500NH3B	B441261	10/10/24 14:20	SM4500NH3C	SG	
Total Kjeldahl Nitrogen	840	mg/kg	1.00	EPA 351.3	B441275	10/10/24 12:13	EPA 351.3	SG	
Total Nitrogen	924	mg/kg dry	1.20	[CALC]	[CALC]	10/10/24 12:13	CALC	SG	
SoilpH measured in H2O@ Cbelow	7.86	pH Units	0.10	EPA 9045D	B441206	10/07/24 12:17	EPA 9045D	DD	H
pH measured @Temperature >>	21	C	0.10	EPA 9045D	B441206	10/07/24 12:17	EPA 170.1	DD	H

Anions by Ion Chromatography

Nitrite as N *	0.14	mg/kg	0.10	EPA 300.0	B441221	10/08/24 23:16	EPA 300.0	JA	
Nitrate as N *	0.17	mg/kg	0.10	EPA 300.0	B441221	10/08/24 23:16	EPA 300.0	JA	

Available Metals by Mehlich III Extraction

Calcium *	5090	mg/kg dry	20.0
Calcium, Available 5090 mg/kg dry 20.0 Magnesium * 228 mg/kg dry 20.0			
Magnesium, Available 228 mg/kg dry 20.0 Phosphorus, Available <20.0 mg/kg dry 20.0			
Potassium, Available	238	mg/kg dry	100
Sodium *	351	mg/kg dry	20.0
Sodium, Available *	351	mg/kg dry	20.0
Sulfur	315	mg/kg dry	20.0
Sulfur, Available	315	mg/kg dry	20.0

Sample ID #: Coy Clay Loam 18-30" Sample Matrix: Solid

Analyte Result Units PQL

10/01/24 11:24

Report No. 2410011

Sampling Method: Grab Lab Sample ID #: 2410011-08

Date/Time Collected: 10/01/24 08:35

Prep Method Notes	Batch	Analyzed	Method	Analyst
Mehlich-III	B441192	10/08/24 17:57	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:57	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:57	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:57	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:57	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:57	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:57	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:57	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:57	M-III/6010	SJ
Mehlich-III	B441192	10/08/24 17:57	M-III/6010	SJ

Page 10 of 16

Project Number: [none]
 1610 S. Laredo Street, San Antonio, Texas 78207-7029 (210) 229-9920 Fax (210) 229-9921

Klein & Cope Engineering
 8611 Botts Lane, Ste. 101
 San Antonio TX, 78217

Project Manager: Brian Cope
 Project: City of Runge Irrigation Site

Reported:
 10/11/24 14:30
Received:

General Chemistry
Sampling Method: Grab Lab Sample ID #: 2410011-09 Date/Time

% Solids	90.6	% by Wt.	0.100	% Calc	B441163	10/08/24 09:35	ASTM D2216	TW
Conductivity (@25C)	169	umhos/cm	1.00	SM2510B	B441263	10/07/24 12:19	USDAHB60	JA
Ammonia-Nitrogen *	11.2	mg/kg	10.0	SM4500NH3B	B441261	10/10/24 14:30	SM4500NH3C	SG
Total Kjeldahl Nitrogen	650	mg/kg	1.00	EPA 351.3	B441275	10/10/24 12:14	EPA 351.3	SG
Total Nitrogen	718	mg/kg dry	1.20	[CALC]	[CALC]	10/10/24 12:14	CALC	SG
SoilpH measured in H2O@ Cbelow	7.53	pH Units	0.10	EPA 9045D	B441206	10/07/24 12:19	EPA 9045D	DD H
pH measured @Temperature >>	20	C	0.10	EPA 9045D	B441206	10/07/24 12:19	EPA 170.1	DD H

Anions by Ion Chromatography

Nitrite as N *	0.12	mg/kg	0.10	EPA 300.0	B441221	10/08/24 23:34	EPA 300.0	JA
Nitrate as N *	<0.10	mg/kg	0.10	EPA 300.0	B441221	10/08/24 23:34	EPA 300.0	JA

Available Metals by Mehlich III Extraction

Calcium * 6820 mg/kg dry 20.0
 Calcium, Available 6820 mg/kg dry 20.0 Magnesium * 186 mg/kg dry 20.0
 Magnesium, Available 186 mg/kg dry 20.0 Phosphorus, Available <20.0 mg/kg dry 20.0

Collected: 10/01/24 08:40

Potassium, Available 156 mg/kg dry 100
 Sodium * 358 mg/kg dry 20.0
 Sodium, Available * 358 mg/kg dry 20.0
 Sulfur 495 mg/kg dry 20.0
 Sulfur, Available 495 mg/kg dry 20.0

Prep Method	Batch	Analyzed	Method	Analyst	Notes
Mehlich-III	B441192	10/08/24 18:03	M-III/6010	SJ	
Mehlich-III	B441192	10/08/24 18:03	M-III/6010	SJ	
Mehlich-III	B441192	10/08/24 18:03	M-III/6010	SJ	
Mehlich-III	B441192	10/08/24 18:03	M-III/6010	SJ	
Mehlich-III	B441192	10/08/24 18:03	M-III/6010	SJ	
Mehlich-III	B441192	10/08/24 18:03	M-III/6010	SJ	
Mehlich-III	B441192	10/08/24 18:03	M-III/6010	SJ	
Mehlich-III	B441192	10/08/24 18:03	M-III/6010	SJ	
Mehlich-III	B441192	10/08/24 18:03	M-III/6010	SJ	
Mehlich-III	B441192	10/08/24 18:03	M-III/6010	SJ	

Report No. 2410011

Page 11 of 16

Project Number: [none] Additional Notes: 10/01/24 11:24

Report No. 2410011
General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------

Batch B441167 - EPA 9045D

Prepared: 10/07/24 08:45 Analyzed: 10/07/24 08:45

LCS (B441167-BS1)

SoilpH measured in H2O@ Cbelow	7.05	0.10	pH Units	17.5	40	97.5-102.5	L
pH measured @Temperature >>	20.2	0.10	C			0-200	

Duplicate (B441167-DUP1)

Source: 2409443-17

Prepared: 10/07/24 12:00 Analyzed: 10/07/24 12:01

1610 S. Laredo Street, San Antonio, Texas 78207-7029 (210) 229-9920 Fax (210) 229-9921

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 San Antonio TX, 78217

Project Manager: Brian Cope
 Project: City of Runge Irrigation Site

Reported:
 10/11/24 14:30
Received:

SoilpH measured in H2O@ Cbelow	9.70	0.10	pH Units	9.69	0.1	20	H
pH measured @Temperature >>	20.5	0.10	C	20.5	0	30	H

Batch B441206 - EPA 9045D

Prepared: 10/07/24 08:45 Analyzed: 10/07/24 08:45

LCS (B441206-BS1)

SoilpH measured in H2O@ Cbelow	7.05	0.10	pH Units	7.00	101	97.5-102.5
pH measured @Temperature >>	20.2	0.10	C			0-200

Duplicate (B441206-DUP1)

Source: 2410011-08

Prepared: 10/07/24 12:00 Analyzed: 10/07/24 12:18

SoilpH measured in H2O@ Cbelow	7.87	0.10	pH Units	7.86	0.1	20	H
pH measured @Temperature >>	20.6	0.10	C	20.6	0	30	H

Batch B441261 - SM4500NH3B

Prepared: 10/09/24 10:00 Analyzed: 10/10/24 12:00

Blank (B441261-BLK1)

Ammonia-Nitrogen	<10.0	10.0	mg/kg			
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LCS (B441261-BS1)

Prepared: 10/09/24 10:00 Analyzed: 10/10/24 12:30

Ammonia-Nitrogen	202	10.0	mg/kg	200	101	80-120
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LCS Dup (B441261-BSD1)

Prepared: 10/09/24 10:00 Analyzed: 10/10/24 12:40

Ammonia-Nitrogen	213	10.0	mg/kg	200	106	80-120	5	20
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Duplicate (B441261-DUP1)

Source: 2410011-01

Prepared: 10/09/24 10:00 Analyzed: 10/10/24 12:50

Ammonia-Nitrogen	56.0	10.0	mg/kg	50.4		11	20
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Matrix Spike (B441261-MS1)

Source: 2410011-01

Prepared: 10/09/24 10:00 Analyzed: 10/10/24 14:40

Ammonia-Nitrogen	241	10.0	mg/kg	200	50.4	95	80-120
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Matrix Spike Dup (B441261-MSD1)

Source: 2410011-01

Prepared: 10/09/24 10:00 Analyzed: 10/10/24 14:50

Ammonia-Nitrogen	241	10.0	mg/kg	200	50.4	95	80-120	0	20
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Batch B441263 - SM2510B

Prepared: 10/07/24 08:45 Analyzed: 10/07/24 08:45

LCS (B441263-BS1)

Page 12 of 16

Project Number: [none] Additional Notes: 10/01/24 11:24

Report No. 2410011

General Chemistry - Quality Control

Analyte	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1610 S. Laredo Street, San Antonio, Texas 78207-7029					(210) 229-9920			Fax (210) 229-9921

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8611 Botts Lane, Ste. 101
San Antonio TX, 78217

Project Manager: Brian Cope
Project: City of Runge Irrigation Site

Reported:
10/11/24 14:30
Received:

Batch B441263 - SM2510B

LCS (B441263-BS1)				Prepared: 10/07/24 08:45 Analyzed: 10/07/24 08:45		
Conductivity (@25C)	1030	1.00	umhos/cm	1000	103	80-120
Duplicate (B441263-DUP1)		Source: 2410011-08		Prepared: 10/07/24 08:45 Analyzed: 10/10/24 12:18		
Conductivity (@25C)	190	1.00	umhos/cm	156	20	20

Batch B441275 - EPA 351.3

Blank (B441275-BLK1)				Prepared: 10/09/24 11:13 Analyzed: 10/10/24 12:00					
Total Kjeldahl Nitrogen	<1.00	1.00	mg/kg						
LCS (B441275-BS1)				Prepared: 10/09/24 11:13 Analyzed: 10/10/24 12:01					
Total Kjeldahl Nitrogen	224	1.00	mg/kg	200	112	80-120			
LCS Dup (B441275-BSD1)				Prepared: 10/09/24 11:13 Analyzed: 10/10/24 12:02					
Total Kjeldahl Nitrogen	224	1.00	mg/kg	200	112	80-120	0	20	
Duplicate (B441275-DUP1)		Source: 2410011-01		Prepared: 10/09/24 11:13 Analyzed: 10/10/24 12:04					
Total Kjeldahl Nitrogen	1010	1.00	mg/kg	975			3	20	
Matrix Spike (B441275-MS1)		Source: 2410011-01		Prepared: 10/09/24 11:13 Analyzed: 10/10/24 12:06					
Total Kjeldahl Nitrogen	1200	1.00	mg/kg	200	975	112	80-120		
Matrix Spike Dup (B441275-MSD1)		Source: 2410011-01		Prepared: 10/09/24 11:13 Analyzed: 10/10/24 12:07					
Total Kjeldahl Nitrogen	1290	1.00	mg/kg	200	975	157	80-120	7	20

Anions by Ion Chromatography - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B441221 - EPA 300.0									
Blank (B441221-BLK1)				Prepared: 10/08/24 16:00 Analyzed: 10/08/24 17:54					
Nitrite as N	<0.10	0.10	mg/kg						
Nitrate as N	<0.10	0.10	mg/kg						
LCS (B441221-BS1)				Prepared: 10/08/24 16:00 Analyzed: 10/08/24 18:12					
Nitrite as N	46.1	0.10	mg/kg	50.0	92	90-110			
Nitrate as N	48.4	0.10	mg/kg	50.0	97	90-110			

Page 13 of 16

Project Number: [none] Additional Notes: 10/01/24 11:24

1610 S. Laredo Street, San Antonio, Texas 78207-7029 (210) 229-9920 Fax (210) 229-9921 Report No. 2410011

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San Antonio TX, 78217

Project Manager: Brian Cope
Project: City of Runge Irrigation Site

Reported:
10/11/24 14:30
Received:

Anions by Ion Chromatography - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B441221 - EPA 300.0
LCS Dup (B441221-BS1)

Prepared: 10/08/24 16:00 Analyzed: 10/08/24 18:30

Nitrite as N	46.7	0.10	mg/kg	50.0		93	90-110	1	30
Nitrate as N	48.5	0.10	mg/kg	50.0		97	90-110	0.3	30

Duplicate (B441221-DUP1)

Source: 2410170-01

Prepared: 10/08/24 16:00 Analyzed: 10/08/24 19:06

Nitrite as N	<5.00	5.00	mg/kg	<5.00					20
Nitrate as N	<5.00	5.00	mg/kg	<5.00					20

Matrix Spike (B441221-MS1)

Source: 2410170-01

Prepared: 10/08/24 16:00 Analyzed: 10/08/24 19:24

Nitrite as N	43.5	0.10	mg/kg	50.0	<0.10	87	80-120		
Nitrate as N	49.3	0.10	mg/kg	50.0	<0.10	99	80-120		

Matrix Spike Dup (B441221-MSD1)

Source: 2410170-01

Prepared: 10/08/24 16:00 Analyzed: 10/08/24 19:42

Nitrite as N	43.9	0.10	mg/kg	50.0	<0.10	88	80-120	0.9	20
Nitrate as N	49.4	0.10	mg/kg	50.0	<0.10	99	80-120	0.1	20

Page 14 of 16

Project Number: [none] Additional Notes: 10/01/24 11:24

Report No. 2410011

SAMPLE QUALIFIERS

H This parameter should be analyzed within 15 minutes of sample collection. Due to transportation, hold time has been exceeded.

DEFINITIONS

* TNI / NELAC accredited analyte

PQL Practical Quantitation Limit MCL
Maximum Contaminant Level

mg/Kg Milligrams per Kilogram (Parts per Million) mg/L
Milligrams per Liter (Parts per Million)

PPM Parts per Million

L LCS recovery is outside QC acceptance limits, the results may have a slight bias.

M MS recovery is outside QC limits, the results may have a slight bias due to possible matrix interferences.

NR Not Recovered due to source sample concentration exceeds spiked concentration.

RMCCCL Recommended Maximum Concentration of Contaminants Level Surr L

Surrogate recovery is low outside QC limits.

Surr H Surrogate recovery is high outside QC limits.

HT Sample received past holdtime

IC Improper Container for this analyte(s)

IP Improper preservation for this analyte(s) IT

Improper Temperature

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Project Manager: Brian Cope
Project: City of Runge Irrigation Site

Reported:
10/11/24 14:30
Received:

V Insufficient Volume
B Sample collected in Bulk
S RPD is outside QC limits.
AB VOA Vial contained air bubbles.
OP ortho-Phosphate was not filtered in the field within 15minutes of collection.
CCV Continuing Calibration Verification Standard. ICV
Initial Calibration Verification Standard.

Test Methods followed by the laboratory are referenced in the following approved methodology, unless otherwise specified.

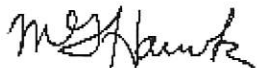
Standard Methods for the Examination of Water and Wastewater, 23rd Edition, 2017
Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Rev. March 1983
EPA SW Test Methods for the Examination of Solid Waste, SW-846, 1996

Page 15 of 16

Project Number: [none] Additional Notes: 10/01/24 11:24

Report No. 2410011

Aimee Landon For Marcela Gracia Hawk, President For



Marcela G. Hawk, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Klein & Cope Engineering
8611 Botts Lane, Ste. 101
San Antonio TX, 78217

Project Manager: Brian Cope
Project: City of Runge Irrigation Site

Reported:
10/11/24 14:30
Received:

Page 16 of 16

1610 S. Laredo Street, San Antonio, Texas 78207
Phone (210) 229-9920
Fax (210) 229-9921
www.salestinglab.com

CHAIN-OF-CUSTODY RECORD

[illegible]

ATTACHMENT No. 16

ADMINISTRATIVE REPORT 1.0

SECTION 7

EFFLUENT ANALYSIS

January 23, 2025

Brian Cope

Cope Engineering

8611 Bott Lane

San Antonio, TX 78217

SATL Report No.: 2501201

RE: Pollutant Analysis for Wastewater Treatment

Project Number: Facilities

Dear Brian Cope

SATL received 8 Sample(s) on 01/14/2025 for analyses identified on the chain of custody. The analyses were performed using methods indicated on the laboratory report. Any deviations observed at sample receiving are notated on the Sample Receipt Checklist and/or Chain of Custody documents attached as part of this analytical report.

Sincerely,

For San Antonio Testing Laboratory, Inc.



Marcela G. Hawk,
President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Cope Engineering
 8611 Bott Lane
 San Antonio TX, 78217

Project Manager: Brian Cope
 Project: Pollutant Analysis for Wastewater Treatment
 Project Number: Facilities

Reported:
 01/23/25 17:19
Received:
 01/14/25 11:20

Additional Notes:

Report No. 2501201

SAMPLE SUMMARY

Total Samples received in this work order: 8

The following samples were requested for analysis as per the CoC. Any re-runs or re-analyses requested are identified as such.

<u>Sample ID</u>	<u>Laboratory ID</u>	<u>Matrix</u>	<u>Sampling Method</u>	<u>Date Sampled</u>	<u>Date Received</u>
001, TSS	2501201-01	Liquid	Grab	01/14/25 08:30	01/14/25 11:20
002, TDS	2501201-02	Liquid	Grab	01/14/25 08:40	01/14/25 11:20
003, Chem / Metals	2501201-03	Liquid	Grab	01/14/25 08:50	01/14/25 11:20
004, TKN Amm N T Phosph	2501201-04	Liquid	Grab	01/14/25 09:00	01/14/25 11:20
005, Ecoli	2501201-05	Liquid	Grab	01/14/25 09:15	01/14/25 11:20
0-6"	2501201-06	Solid	Grab	01/14/25 09:30	01/14/25 11:20
6"-18"	2501201-07	Solid	Grab	01/14/25 09:45	01/14/25 11:20
18"-30"	2501201-08	Solid	Grab	01/14/25 10:00	01/14/25 11:20

Notes

All quality control samples and checks are within acceptance limits unless otherwise indicated.
 Test results pertain only to those items tested.
 All samples were in good condition when received by the laboratory unless otherwise noted.

Cope Engineering
8611 Bott Lane
San Antonio TX, 78217

Project Manager: Brian Cope
Project: Pollutant Analysis for Wastewater Treatment
Project Number: Facilities

Reported:
01/23/25 17:19
Received:
01/14/25 11:20

Additional Notes:

Report No. 2501201

Sample ID #: 001, TSS

Sampling Method: Grab

Lab Sample ID #: 2501201-01

Sample Matrix: Liquid

Date/Time Collected: 01/14/25 08:30

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
General Chemistry									
Total Suspended Solids *	39.0	mg/L	12.5	SM2540D	B503151	01/14/25 14:30	SM2540D	DD	

Cope Engineering
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San Antonio TX, 78217
Additional Notes:

Project Manager: Brian Cope
Project: Pollutant Analysis for Wastewater Treatment
Project Number: Facilities

Reported:
01/23/25 17:19
Received:
01/14/25 11:20

Report No. 2501201

Sample ID #: 002, TDS

Sampling Method: Grab

Lab Sample ID #: 2501201-02

Sample Matrix: Liquid

Date/Time Collected: 01/14/25 08:40

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
General Chemistry									
Total Dissolved Solids *	856	mg/L	5.00	SM2540C	B503203	01/14/25 17:04	SM2540C	DD	

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 San Antonio TX, 78217

Project Manager: Brian Cope
 Project: Pollutant Analysis for Wastewater Treatment
 Project Number: Facilities

Reported:
 01/23/25 17:19
Received:
 01/14/25 11:20

Additional Notes:

Report No. 2501201

Sample ID #: 003, Chem / Metals

Sampling Method: Grab

Lab Sample ID #: 2501201-03

Sample Matrix: Liquid

Date/Time Collected: 01/14/25 08:50

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
General Chemistry									
Total Alkalinity *	283	mg/L as CaCO ₃	20.0	SM2320B	B503275	01/17/25 15:12	SM2320B	DD	
Conductivity (@25C) *	1550	umhos/cm	1.00	SM2510B	B504199	01/15/25 10:12	SM2510B	JA	
CBOD *	14.8	mg/L	2.00	SM5210B	B504174	01/20/25 10:18	SM5210B	JA	
Anions by Ion Chromatography									
Fluoride *	0.294	mg/L	0.020	EPA 300.0	B503274	01/15/25 14:37	EPA 300.0	JA	
Chloride *	276	mg/L	2.50	EPA 300.0	B503274	01/15/25 14:37	EPA 300.0	JA	
Nitrate as N *	0.989	mg/L	0.100	EPA 300.0	B503274	01/15/25 14:37	EPA 300.0	JA	
Sulfate *	43.4	mg/L	2.50	EPA 300.0	B503274	01/15/25 14:37	EPA 300.0	JA	
Total Metals By ICP									
Aluminum *	0.147	mg/L	0.050	EPA 200.7	B503226	01/23/25 13:25	EPA 200.7	SJ	
Field Parameters									
pH	7.8	s.u.							

P1

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Project Manager: Brian Cope
 Project: Pollutant Analysis for Wastewater Treatment
 Project Number: Facilities

Reported:
 01/23/25 17:19
Received:
 01/14/25 11:20

Additional Notes:

Report No. 2501201

Sample ID #: 004, TKN Amm N T Phosph

Sampling Method: Grab

Lab Sample ID #: 2501201-04

Sample Matrix: Liquid

Date/Time Collected: 01/14/25 09:00

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
General Chemistry									
Ammonia-Nitrogen *	3.36	mg/L	1.00	SM4500NH3B	B504213	01/23/25 13:36	SM4500NH3C	DD	
Total Kjeldahl Nitrogen *	4.48	mg/L	1.00	EPA 351.3	B504212	01/23/25 16:08	EPA 351.3	DD	
Total Phosphorous *	1.58	mg/L	0.05	EPA 365.3	B504210	01/22/25 15:10	EPA 365.3	JA	

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San Antonio TX, 78217

Project Manager: Brian Cope
Project: Pollutant Analysis for Wastewater Treatment
Project Number: Facilities

Reported:
01/23/25 17:19
Received:
01/14/25 11:20

Additional Notes:

Report No. 2501201

Sample ID #: 005, Ecoli

Sampling Method: Grab

Lab Sample ID #: 2501201-05

Sample Matrix: Liquid

Date/Time Collected: 01/14/25 09:15

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
Microbiological Parameters									
E. Coli *	770	MPN/100 mL	1.00	Start 01/14/25 12:39/End 01/15/25 13:36			Colilert-QTray	DD	

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 San Antonio TX, 78217

Project Manager: Brian Cope
 Project: Pollutant Analysis for Wastewater Treatment
 Project Number: Facilities

Reported:
 01/23/25 17:19
Received:
 01/14/25 11:20

Additional Notes:

Report No. 2501201

Sample ID #: 0-6"

Sampling Method: Grab

Lab Sample ID #: 2501201-06

Sample Matrix: Solid

Date/Time Collected: 01/14/25 09:30

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
General Chemistry									
% Solids	79.5	% by Wt.	0.100	% Calc	B503204	01/16/25 08:27	ASTM D2216	TW	
Conductivity (@25C)	2230	umhos/cm	1.00	USDA60	B504232	01/23/25 11:34	USDAHB60	JA	
Ammonia-Nitrogen *	<10.0	mg/kg	10.0	SM4500NH3B	B504243	01/23/25 16:03	SM4500NH3C	DD	
Total Kjeldahl Nitrogen	314	mg/kg	1.00	EPA 351.3	B504233	01/23/25 13:04	EPA 351.3	DD	
Total Nitrogen	396	mg/kg dry	1.40	[CALC]	[CALC]	01/23/25 13:04	CALC	DD	
SoilpH measured in H2O@°Cbelow	7.93	pH Units	0.10	EPA 9045D	B504230	01/23/25 11:34	EPA 9045D	JA	H
pH measured @Temperature >>	20	°C	0.10	EPA 9045D	B504230	01/23/25 11:34	EPA 170.1	JA	H
Anions by Ion Chromatography									
Nitrite as N *	0.44	mg/kg	0.20	EPA 300.0	B504192	01/21/25 14:39	EPA 300.0	JA	
Nitrate as N *	1.05	mg/kg	0.20	EPA 300.0	B504192	01/21/25 14:39	EPA 300.0	JA	
Available Metals by Mehlich III Extraction									
Calcium *	2950	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:27	M-III/6010	SJ	
Calcium, Available	2950	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:27	M-III/6010	SJ	
Magnesium *	144	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:27	M-III/6010	SJ	
Magnesium, Available	144	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:27	M-III/6010	SJ	
Phosphorus, Available	<10.0	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:27	M-III/6010	SJ	
Potassium, Available	90.7	mg/kg dry	50.0	Mehlich-III	B503229	01/17/25 12:27	M-III/6010	SJ	
Sodium *	934	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:27	M-III/6010	SJ	
Sodium, Available *	934	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:27	M-III/6010	SJ	
Sulfur	14.1	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:27	M-III/6010	SJ	
Sulfur, Available	14.1	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:27	M-III/6010	SJ	

Cope Engineering
 8611 Bott Lane
 San Antonio TX, 78217

Project Manager: Brian Cope
 Project: Pollutant Analysis for Wastewater Treatment
 Project Number: Facilities

Reported:
 01/23/25 17:19
Received:
 01/14/25 11:20

Additional Notes:

Report No. 2501201

Sample ID #: 6"-18"

Sampling Method: Grab

Lab Sample ID #: 2501201-07

Sample Matrix: Solid

Date/Time Collected: 01/14/25 09:45

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
General Chemistry									
% Solids	80.5	% by Wt.	0.100	% Calc	B503204	01/16/25 08:27	ASTM D2216	TW	
Conductivity (@25C)	1450	umhos/cm	1.00	USDA60	B504232	01/23/25 11:36	USDAHB60	JA	
Ammonia-Nitrogen *	22.4	mg/kg	10.0	SM4500NH3B	B504243	01/23/25 16:06	SM4500NH3C	DD	
Total Kjeldahl Nitrogen	521	mg/kg	1.00	EPA 351.3	B504233	01/23/25 13:06	EPA 351.3	DD	
Total Nitrogen	649	mg/kg dry	1.40	[CALC]	[CALC]	01/23/25 13:06	CALC	DD	
SoilpH measured in H2O@°Cbelow	8.11	pH Units	0.10	EPA 9045D	B504230	01/23/25 11:35	EPA 9045D	JA	H
pH measured @Temperature >>	20	°C	0.10	EPA 9045D	B504230	01/23/25 11:35	EPA 170.1	JA	H
Anions by Ion Chromatography									
Nitrite as N *	0.82	mg/kg	0.20	EPA 300.0	B504192	01/21/25 14:56	EPA 300.0	JA	
Nitrate as N *	0.57	mg/kg	0.20	EPA 300.0	B504192	01/21/25 14:56	EPA 300.0	JA	
Available Metals by Mehlich III Extraction									
Calcium *	3950	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:33	M-III/6010	SJ	
Calcium, Available	3950	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:33	M-III/6010	SJ	
Magnesium *	217	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:33	M-III/6010	SJ	
Magnesium, Available	217	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:33	M-III/6010	SJ	
Phosphorus, Available	<10.0	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:33	M-III/6010	SJ	
Potassium, Available	104	mg/kg dry	50.0	Mehlich-III	B503229	01/17/25 12:33	M-III/6010	SJ	
Sodium *	1060	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:33	M-III/6010	SJ	
Sodium, Available *	1060	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:33	M-III/6010	SJ	
Sulfur	12.5	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:33	M-III/6010	SJ	
Sulfur, Available	12.5	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:33	M-III/6010	SJ	

Cope Engineering
 8611 Bott Lane
 San Antonio TX, 78217

Project Manager: Brian Cope
 Project: Pollutant Analysis for Wastewater Treatment
 Project Number: Facilities

Reported:
 01/23/25 17:19
Received:
 01/14/25 11:20

Additional Notes:

Report No. 2501201

Sample ID #: 18"-30"

Sampling Method: Grab

Lab Sample ID #: 2501201-08

Sample Matrix: Solid

Date/Time Collected: 01/14/25 10:00

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst	Notes
General Chemistry									
% Solids	83.5	% by Wt.	0.100	% Calc	B503204	01/16/25 08:27	ASTM D2216	TW	
Conductivity (@25C)	1210	umhos/cm	1.00	USDA60	B504232	01/23/25 11:38	USDAHB60	JA	
Ammonia-Nitrogen *	16.8	mg/kg	10.0	SM4500NH3B	B504243	01/23/25 16:07	SM4500NH3C	DD	
Total Kjeldahl Nitrogen	448	mg/kg	1.00	EPA 351.3	B504233	01/23/25 13:07	EPA 351.3	DD	
Total Nitrogen	540	mg/kg dry	1.40	[CALC]	[CALC]	01/23/25 13:07	CALC	DD	
SoilpH measured in H2O@°Cbelow	8.43	pH Units	0.10	EPA 9045D	B504230	01/23/25 11:38	EPA 9045D	JA	H
pH measured @Temperature >>	20	°C	0.10	EPA 9045D	B504230	01/23/25 11:38	EPA 170.1	JA	H
Anions by Ion Chromatography									
Nitrite as N *	1.54	mg/kg	0.20	EPA 300.0	B504192	01/21/25 15:14	EPA 300.0	JA	
Nitrate as N *	1.21	mg/kg	0.20	EPA 300.0	B504192	01/21/25 15:14	EPA 300.0	JA	
Available Metals by Mehlich III Extraction									
Calcium *	829	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:38	M-III/6010	SJ	
Calcium, Available	829	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:38	M-III/6010	SJ	
Magnesium *	129	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:38	M-III/6010	SJ	
Magnesium, Available	129	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:38	M-III/6010	SJ	
Phosphorus, Available	<10.0	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:38	M-III/6010	SJ	
Potassium, Available	<50.0	mg/kg dry	50.0	Mehlich-III	B503229	01/17/25 12:38	M-III/6010	SJ	
Sodium *	795	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:38	M-III/6010	SJ	
Sodium, Available *	795	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:38	M-III/6010	SJ	
Sulfur	15.0	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:38	M-III/6010	SJ	
Sulfur, Available	15.0	mg/kg dry	10.0	Mehlich-III	B503229	01/17/25 12:38	M-III/6010	SJ	

Cope Engineering
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Additional Notes:

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Reported:
 01/23/25 17:19
Received:
 01/14/25 11:20

Report No. 2501201

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B503151 - SM2540D									
Blank (B503151-BLK1)				Prepared: 01/13/25 10:45 Analyzed: 01/13/25 12:50					
Total Suspended Solids	<2.50	2.50	mg/L						
LCS (B503151-BS1)				Prepared: 01/13/25 10:45 Analyzed: 01/13/25 12:51					
Total Suspended Solids	86.0	25.0	mg/L	100		86	80-120		
LCS Dup (B503151-BSD1)				Prepared: 01/13/25 10:45 Analyzed: 01/13/25 12:52					
Total Suspended Solids	92.0	25.0	mg/L	100		92	80-120	7	20
Duplicate (B503151-DUP1)				Source: 2501146-02		Prepared: 01/13/25 10:45 Analyzed: 01/13/25 12:55			
Total Suspended Solids	160	16.7	mg/L		166			4	20
Batch B503203 - SM2540C									
Blank (B503203-BLK1)				Prepared: 01/13/25 11:00 Analyzed: 01/14/25 14:00					
Total Dissolved Solids	<2.50	2.50	mg/L						
LCS (B503203-BS1)				Prepared: 01/13/25 11:00 Analyzed: 01/14/25 14:01					
Total Dissolved Solids	99.0	2.50	mg/L	100		99	80-120		
LCS Dup (B503203-BSD1)				Prepared: 01/13/25 11:00 Analyzed: 01/14/25 14:02					
Total Dissolved Solids	111	2.50	mg/L	100		111	80-120	11	20
Duplicate (B503203-DUP1)				Source: 2501193-01		Prepared: 01/14/25 10:00 Analyzed: 01/14/25 17:05			
Total Dissolved Solids	942	2.50	mg/L		884			6	20
Batch B503275 - SM2320B									
Blank (B503275-BLK1)				Prepared: 01/17/25 12:20 Analyzed: 01/17/25 12:27					
Total Alkalinity	<20.0	20.0	mg/L as CaCO ₃						
LCS (B503275-BS1)				Prepared: 01/17/25 12:30 Analyzed: 01/17/25 13:10					
Total Alkalinity	108	20.0	mg/L as CaCO ₃	100		108	80-120		
LCS Dup (B503275-BSD1)				Prepared: 01/17/25 12:30 Analyzed: 01/17/25 13:12					
Total Alkalinity	104	20.0	mg/L as CaCO ₃	100		104	80-120	4	20
Duplicate (B503275-DUP1)				Source: 2501201-03		Prepared: 01/17/25 12:30 Analyzed: 01/17/25 15:14			
Total Alkalinity	260	20.0	mg/L as CaCO ₃		283			8	20
Batch B504174 - SM5210B									

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 Additional Notes:

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 01/23/25 17:19
Received:
 01/14/25 11:20

Report No. 2501201

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B504174 - SM5210B									
Blank (B504174-BLK1)				Prepared: 01/15/25 09:30 Analyzed: 01/20/25 10:00					
CBOD	<2.00	2.00	mg/L						
LCS (B504174-BS1)				Prepared: 01/15/25 09:30 Analyzed: 01/20/25 10:10					
CBOD	195	2.00	mg/L	200		98	80-120		
LCS (B504174-BS2)				Prepared: 01/15/25 09:30 Analyzed: 01/20/25 10:12					
CBOD	188	2.00	mg/L	200		94	80-120		
LCS (B504174-BS3)				Prepared: 01/15/25 09:30 Analyzed: 01/20/25 10:14					
CBOD	198	2.00	mg/L	200		99	80-120		
Duplicate (B504174-DUP1)				Source: 2501201-03		Prepared: 01/15/25 09:30 Analyzed: 01/20/25 10:16			
CBOD	12.1	2.00	mg/L		14.8			20	20
Batch B504199 - SM2510B									
LCS (B504199-BS1)				Prepared: 01/15/25 10:00 Analyzed: 01/15/25 10:00					
Conductivity (@25C)	1030	1.00	umhos/cm	1000		103	80-120		
Duplicate (B504199-DUP1)				Source: 2501201-03		Prepared: 01/15/25 10:00 Analyzed: 01/15/25 10:14			
Conductivity (@25C)	1540	1.00	umhos/cm		1550			0.8	20
Batch B504210 - EPA 365.3									
Blank (B504210-BLK1)				Prepared: 01/22/25 12:00 Analyzed: 01/22/25 15:00					
Total Phosphorous	<0.05	0.05	mg/L						
LCS (B504210-BS1)				Prepared: 01/22/25 12:00 Analyzed: 01/22/25 15:00					
Total Phosphorous	0.478	0.05	mg/L	0.500		96	80-120		
LCS Dup (B504210-BSD1)				Prepared: 01/22/25 12:00 Analyzed: 01/22/25 15:00					
Total Phosphorous	0.476	0.05	mg/L	0.500		95	80-120	0.4	20
Duplicate (B504210-DUP1)				Source: 2501201-04		Prepared: 01/22/25 12:00 Analyzed: 01/22/25 15:20			
Total Phosphorous	1.54	0.05	mg/L		1.58			3	20
Matrix Spike (B504210-MS1)				Source: 2501201-04		Prepared: 01/22/25 12:00 Analyzed: 01/22/25 15:20			
Total Phosphorous	1.20	0.05	mg/L	0.500	1.58	NR	80-120		M
Matrix Spike Dup (B504210-MSD1)				Source: 2501201-04		Prepared: 01/22/25 12:00 Analyzed: 01/22/25 15:20			

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 01/23/25 17:19
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 01/14/25 11:20

Report No. 2501201

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B504210 - EPA 365.3

Matrix Spike Dup (B504210-MSD1)		Source: 2501201-04		Prepared: 01/22/25 12:00		Analyzed: 01/22/25 15:20			
Total Phosphorous	1.21	0.05	mg/L	0.500	1.58	NR	80-120	1	20 M

Batch B504212 - EPA 351.3

Blank (B504212-BLK1)				Prepared: 01/22/25 08:30 Analyzed: 01/22/25 15:00					
Total Kjeldahl Nitrogen	<1.00	1.00	mg/L						
LCS (B504212-BS1)				Prepared: 01/22/25 08:30 Analyzed: 01/22/25 15:02					
Total Kjeldahl Nitrogen	19.1	1.00	mg/L	20.0	95	80-120			
LCS Dup (B504212-BSD1)				Prepared: 01/22/25 08:30 Analyzed: 01/22/25 15:04					
Total Kjeldahl Nitrogen	21.9	1.00	mg/L	20.0	109	80-120	14	20	
Duplicate (B504212-DUP1)		Source: 2501146-02		Prepared: 01/22/25 08:30 Analyzed: 01/22/25 15:07					
Total Kjeldahl Nitrogen	9.53	1.00	mg/L	9.53	0				20
Matrix Spike (B504212-MS1)		Source: 2501146-02		Prepared: 01/22/25 08:30 Analyzed: 01/22/25 15:10					
Total Kjeldahl Nitrogen	35.3	1.00	mg/L	20.0	9.53	129	80-120	M	

Batch B504213 - SM4500NH3B

Blank (B504213-BLK1)				Prepared: 01/22/25 08:30 Analyzed: 01/22/25 16:30					
Ammonia-Nitrogen	<1.00	1.00	mg/L						
LCS (B504213-BS1)				Prepared: 01/22/25 08:30 Analyzed: 01/22/25 16:32					
Ammonia-Nitrogen	20.7	1.00	mg/L	20.0	104	80-120			
LCS Dup (B504213-BSD1)				Prepared: 01/22/25 08:30 Analyzed: 01/22/25 16:34					
Ammonia-Nitrogen	20.7	1.00	mg/L	20.0	104	80-120	0	20	
Duplicate (B504213-DUP1)		Source: 2501144-01		Prepared: 01/22/25 08:30 Analyzed: 01/22/25 16:36					
Ammonia-Nitrogen	<1.00	1.00	mg/L	<1.00					20
Matrix Spike (B504213-MS1)		Source: 2501144-01		Prepared: 01/22/25 08:30 Analyzed: 01/22/25 16:40					
Ammonia-Nitrogen	20.2	1.00	mg/L	20.0	<1.00	101	80-120		

Batch B504230 - EPA 9045D

LCS (B504230-BS1)				Prepared: 01/23/25 10:00		Analyzed: 01/23/25 10:00			
SoilpH measured in H2O@°Cbelow	7.01	0.10	pH Units	7.00		100	97.5-102.5		

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 01/23/25 17:19
Received:
 01/14/25 11:20

Report No. 2501201

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch B504230 - EPA 9045D

LCS (B504230-BS1)				Prepared: 01/23/25 10:00 Analyzed: 01/23/25 10:00					
pH measured @Temperature >>	17.4	0.10	°C				0-200		
Duplicate (B504230-DUP1)				Source: 2501201-08 Prepared: 01/23/25 10:00 Analyzed: 01/23/25 12:00					
SoilpH measured in H2O@°Cbelow	8.31	0.10	pH Units		8.43			1	20
pH measured @Temperature >>	20.1	0.10	°C		20.1			0	30

Batch B504232 - USDA60

LCS (B504232-BS1)				Prepared: 01/23/25 10:00 Analyzed: 01/23/25 10:00					
Conductivity (@25C)	1040	1.00	umhos/cm		1000	104	80-120		
Duplicate (B504232-DUP1)				Source: 2501201-08 Prepared: 01/23/25 10:00 Analyzed: 01/23/25 11:40					
Conductivity (@25C)	1140	1.00	umhos/cm		1210			6	20

Batch B504233 - EPA 351.3

Blank (B504233-BLK1)				Prepared: 01/22/25 08:30 Analyzed: 01/23/25 13:00					
Total Kjeldahl Nitrogen	<1.00	1.00	mg/kg						
LCS (B504233-BS1)				Prepared: 01/22/25 08:30 Analyzed: 01/23/25 13:01					
Total Kjeldahl Nitrogen	196	1.00	mg/kg		200	98	80-120		
LCS Dup (B504233-BSD1)				Prepared: 01/22/25 08:30 Analyzed: 01/23/25 13:02					
Total Kjeldahl Nitrogen	219	1.00	mg/kg		200	109	80-120	11	20
Duplicate (B504233-DUP1)				Source: 2501201-06 Prepared: 01/22/25 08:30 Analyzed: 01/23/25 13:03					
Total Kjeldahl Nitrogen	336	1.00	mg/kg		314			7	20
Matrix Spike (B504233-MS1)				Source: 2501201-06 Prepared: 01/22/25 08:30 Analyzed: 01/23/25 13:05					
Total Kjeldahl Nitrogen	560	1.00	mg/kg		200	314	123	80-120	M

Batch B504243 - SM4500NH3B

Blank (B504243-BLK1)				Prepared: 01/22/25 08:30 Analyzed: 01/23/25 16:00					
Ammonia-Nitrogen	<10.0	10.0	mg/kg						
LCS (B504243-BS1)				Prepared: 01/22/25 08:30 Analyzed: 01/23/25 16:01					
Ammonia-Nitrogen	196	10.0	mg/kg		200	98	80-120		
LCS Dup (B504243-BSD1)				Prepared: 01/22/25 08:30 Analyzed: 01/23/25 16:02					

Cope Engineering
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 Additional Notes:

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 01/23/25 17:19
Received:
 01/14/25 11:20

Report No. 2501201

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B504243 - SM4500NH3B									
LCS Dup (B504243-BSD1)				Prepared: 01/22/25 08:30 Analyzed: 01/23/25 16:02					
Ammonia-Nitrogen	202	10.0	mg/kg	200		101	80-120	3	20
Duplicate (B504243-DUP1)				Source: 2501201-06 Prepared: 01/22/25 08:30 Analyzed: 01/23/25 16:04					
Ammonia-Nitrogen	11.2	10.0	mg/kg	5.60		67		20	S
Matrix Spike (B504243-MS1)				Source: 2501201-06 Prepared: 01/22/25 08:30 Analyzed: 01/23/25 16:05					
Ammonia-Nitrogen	224	10.0	mg/kg	200	5.60	109	80-120		

Anions by Ion Chromatography - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B503274 - EPA 300.0									
Blank (B503274-BLK1)				Prepared: 01/14/25 16:00 Analyzed: 01/14/25 17:33					
Fluoride	<0.020	0.020	mg/L						
Chloride	<0.100	0.100	mg/L						
Nitrate as N	<0.100	0.100	mg/L						
Sulfate	<0.10	0.10	mg/L						
LCS (B503274-BS1)				Prepared: 01/14/25 16:00 Analyzed: 01/14/25 17:51					
Fluoride	1.01	0.020	mg/L	1.00		101	90-110		
Chloride	4.83	0.100	mg/L	5.00		97	90-110		
Nitrate as N	5.09	0.100	mg/L	5.00		102	90-110		
Sulfate	4.93	0.10	mg/L	5.00		99	90-110		
LCS Dup (B503274-BSD1)				Prepared: 01/14/25 16:00 Analyzed: 01/14/25 18:09					
Fluoride	1.01	0.020	mg/L	1.00		101	90-110	0.02	20
Chloride	4.85	0.100	mg/L	5.00		97	90-110	0.3	20
Nitrate as N	5.11	0.100	mg/L	5.00		102	90-110	0.3	20
Sulfate	4.94	0.10	mg/L	5.00		99	90-110	0.3	20
Duplicate (B503274-DUP1)				Source: 2501201-03 Prepared: 01/14/25 16:00 Analyzed: 01/15/25 14:55					
Fluoride	0.281	0.020	mg/L	0.294				4	20
Chloride	278	2.50	mg/L	276				0.6	20
Nitrate as N	0.968	0.100	mg/L	0.989				2	20

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 Project Number: Facilities

Reported:
 01/23/25 17:19
Received:
 01/14/25 11:20

Report No. 2501201

Anions by Ion Chromatography - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B503274 - EPA 300.0									
Duplicate (B503274-DUP1)		Source: 2501201-03		Prepared: 01/14/25 16:00 Analyzed: 01/15/25 14:55					
Sulfate	43.8	2.50	mg/L		43.4			0.9	20
Matrix Spike (B503274-MS1)		Source: 2501201-03		Prepared: 01/14/25 16:00 Analyzed: 01/15/25 15:13					
Fluoride	1.25	0.020	mg/L	1.00	0.294	95	80-120		
Chloride	192	0.100	mg/L	5.00	276	NR	80-120		M
Nitrate as N	6.11	0.100	mg/L	5.00	0.989	102	80-120		
Sulfate	56.4	0.10	mg/L	5.00	43.4	261	80-120		M
Matrix Spike Dup (B503274-MSD1)		Source: 2501201-03		Prepared: 01/14/25 16:00 Analyzed: 01/15/25 15:31					
Fluoride	1.25	0.020	mg/L	1.00	0.294	96	80-120	0.4	20
Chloride	192	0.100	mg/L	5.00	276	NR	80-120	0.1	20
Nitrate as N	6.11	0.100	mg/L	5.00	0.989	102	80-120	0.04	20
Sulfate	56.4	0.10	mg/L	5.00	43.4	260	80-120	0.1	20
Batch B504192 - EPA 300.0									
Blank (B504192-BLK1)		Prepared: 01/20/25 16:00 Analyzed: 01/20/25 16:43							
Nitrite as N	<0.10	0.10	mg/kg						
Nitrate as N	<0.10	0.10	mg/kg						
LCS (B504192-BS1)		Prepared: 01/20/25 16:00 Analyzed: 01/20/25 17:01							
Nitrite as N	45.4	0.10	mg/kg	50.0		91	90-110		
Nitrate as N	50.3	0.10	mg/kg	50.0		101	90-110		
LCS Dup (B504192-BSD1)		Prepared: 01/20/25 16:00 Analyzed: 01/20/25 17:19							
Nitrite as N	45.6	0.10	mg/kg	50.0		91	90-110	0.4	30
Nitrate as N	48.8	0.10	mg/kg	50.0		98	90-110	3	30
Duplicate (B504192-DUP1)		Source: 2501281-01		Prepared: 01/20/25 16:00 Analyzed: 01/20/25 20:35					
Nitrite as N	<2.50	2.50	mg/kg		<2.50				20
Nitrate as N	6.48	2.50	mg/kg		5.80			11	20
Matrix Spike (B504192-MS1)		Source: 2501281-01		Prepared: 01/20/25 16:00 Analyzed: 01/20/25 21:47					
Nitrite as N	41.7	0.10	mg/kg	50.0	<0.10	83	80-120		
Nitrate as N	53.9	0.10	mg/kg	50.0	5.80	96	80-120		
Matrix Spike Dup (B504192-MSD1)		Source: 2501281-01		Prepared: 01/20/25 16:00 Analyzed: 01/20/25 22:05					
Nitrite as N	41.7	0.10	mg/kg	50.0	<0.10	83	80-120	0.01	20
Nitrate as N	53.8	0.10	mg/kg	50.0	5.80	96	80-120	0.1	20

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01/23/25 17:19
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01/14/25 11:20

Additional Notes:

Report No. 2501201

Total Metals By ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B503226 - EPA 200.7									
Blank (B503226-BLK1)					Prepared: 01/16/25 08:55 Analyzed: 01/17/25 11:37				
Aluminum	<0.050	0.050	mg/L						
LCS (B503226-BS1)					Prepared: 01/16/25 08:55 Analyzed: 01/17/25 11:48				
Aluminum	1.93	0.050	mg/L	2.00		97	85-115		
LCS Dup (B503226-BSD1)					Prepared: 01/16/25 08:55 Analyzed: 01/17/25 11:54				
Aluminum	1.91	0.050	mg/L	2.00		96	85-115	1	20
Duplicate (B503226-DUP1)					Source: 2501201-03 Prepared: 01/16/25 08:55 Analyzed: 01/23/25 13:31				
Aluminum	0.153	0.050	mg/L		0.147			4	20
Matrix Spike (B503226-MS1)					Source: 2501201-03 Prepared: 01/16/25 08:55 Analyzed: 01/23/25 13:37				
Aluminum	2.44	0.050	mg/L	2.00	0.147	115	75-125		
Matrix Spike Dup (B503226-MSD1)					Source: 2501201-03 Prepared: 01/16/25 08:55 Analyzed: 01/23/25 13:43				
Aluminum	2.51	0.050	mg/L	2.00	0.147	118	75-125	3	20

Cope Engineering
8611 Bott Lane
San Antonio TX, 78217

Project Manager: Brian Cope
Project: Pollutant Analysis for Wastewater Treatment
Project Number: Facilities

Reported:
01/23/25 17:19
Received:
01/14/25 11:20

Additional Notes:

Report No. 2501201

SAMPLE QUALIFIERS

PI Sample was received at a pH of greater 2.0.
H This parameter should be analyzed within 15 minutes of sample collection. Due to transportation, hold time has been exceeded.

DEFINITIONS

* TNI / NELAC accredited analyte
PQL Practical Quantitation Limit
MCL Maximum Contaminant Level
mg/Kg Milligrams per Kilogram (Parts per Million)
mg/L Milligrams per Liter (Parts per Million)
PPM Parts per Million
L LCS recovery is outside QC acceptance limits, the results may have a slight bias.
M MS recovery is outside QC limits, the results may have a slight bias due to possible matrix interferences.
NR Not Recovered due to source sample concentration exceeds spiked concentration.
RMCCCL Recommended Maximum Concentration of Contaminants Level
Surr L Surrogate recovery is low outside QC limits.
Surr H Surrogate recovery is high outside QC limits.
HT Sample received past holdtime
IC Improper Container for this analyte(s)
IP Improper preservation for this analyte(s)
IT Improper Temperature
V Insufficient Volume
B Sample collected in Bulk
S RPD is outside QC limits.
AB VOA Vial contained air bubbles.
OP ortho-Phosphate was not filtered in the field within 15 minutes of collection.
CCV Continuing Calibration Verification Standard.
ICV Initial Calibration Verification Standard.

Test Methods followed by the laboratory are referenced in the following approved methodology, unless otherwise specified.

Standard Methods for the Examination of Water and Wastewater, 23rd Edition, 2017
Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Rev. March 1983
EPA SW Test Methods for the Examination of Solid Waste, SW-846, 1996



LABORATORY REPORT



Cope Engineering
8611 Bott Lane
San Antonio TX, 78217
Additional Notes:

Project Manager: Brian Cope
Project: Pollutant Analysis for Wastewater Treatment
Project Number: Facilities

Reported:
01/23/25 17:19
Received:
01/14/25 11:20

Report No. 2501201

Aimee Landon For Marissa Esquivel, Lab Manager For

A handwritten signature in black ink, appearing to read 'MG Hawk'.

Marcela G. Hawk, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SAN ANTONIO TESTING LABORATORY, LLC

1610 S. Laredo Street, San Antonio, Texas 78207
Phone (210) 229-9920
Fax (210) 229-9921
www.santestinglab.com



CHAIN-OF-CUSTODY RECORD

REPORT TO:		INVOICE TO:		P.O. #	
COMPANY Cape Engineering Inc		COMPANY City Of Range		REPORT NUMBER 250/201	
ADDRESS 8611 Bott Lane		ADDRESS P.O. Box 206		E-MAIL	
CITY San Antonio		CITY Range		STATE TX	
PHONE # 210-828-7007		PHONE # 817-781-7194		ZIP 78119	
ATTN: Brian Cape		ATTN: Homer Lott		PHONE # 830-339-4131	
REQUESTED TURNAROUND TIME IN BUSINESS DAYS & SURCHARGE		REG 7-10 Days		3 Days	
		REG 11-15 Days		4 Days	
		REG 16-20 Days		5 Days	
		REG 21-25 Days		6 Days	
		REG 26-30 Days		7 Days	
		REG 31-35 Days		8 Days	
		REG 36-40 Days		9 Days	
		REG 41-45 Days		10 Days	
		REG 46-50 Days		11 Days	
		REG 51-55 Days		12 Days	
		REG 56-60 Days		13 Days	
		REG 61-65 Days		14 Days	
		REG 66-70 Days		15 Days	
		REG 71-75 Days		16 Days	
		REG 76-80 Days		17 Days	
		REG 81-85 Days		18 Days	
		REG 86-90 Days		19 Days	
		REG 91-95 Days		20 Days	
		REG 96-100 Days		21 Days	
		REG 101-105 Days		22 Days	
		REG 106-110 Days		23 Days	
		REG 111-115 Days		24 Days	
		REG 116-120 Days		25 Days	
		REG 121-125 Days		26 Days	
		REG 126-130 Days		27 Days	
		REG 131-135 Days		28 Days	
		REG 136-140 Days		29 Days	
		REG 141-145 Days		30 Days	
		REG 146-150 Days		31 Days	
		REG 151-155 Days		32 Days	
		REG 156-160 Days		33 Days	
		REG 161-165 Days		34 Days	
		REG 166-170 Days		35 Days	
		REG 171-175 Days		36 Days	
		REG 176-180 Days		37 Days	
		REG 181-185 Days		38 Days	
		REG 186-190 Days		39 Days	
		REG 191-195 Days		40 Days	
		REG 196-200 Days		41 Days	
		REG 201-205 Days		42 Days	
		REG 206-210 Days		43 Days	
		REG 211-215 Days		44 Days	
		REG 216-220 Days		45 Days	
		REG 221-225 Days		46 Days	
		REG 226-230 Days		47 Days	
		REG 231-235 Days		48 Days	
		REG 236-240 Days		49 Days	
		REG 241-245 Days		50 Days	
		REG 246-250 Days		51 Days	
		REG 251-255 Days		52 Days	
		REG 256-260 Days		53 Days	
		REG 261-265 Days		54 Days	
		REG 266-270 Days		55 Days	
		REG 271-275 Days		56 Days	
		REG 276-280 Days		57 Days	
		REG 281-285 Days		58 Days	
		REG 286-290 Days		59 Days	
		REG 291-295 Days		60 Days	
		REG 296-300 Days		61 Days	
		REG 301-305 Days		62 Days	
		REG 306-310 Days		63 Days	
		REG 311-315 Days		64 Days	
		REG 316-320 Days		65 Days	
		REG 321-325 Days		66 Days	
		REG 326-330 Days		67 Days	
		REG 331-335 Days		68 Days	
		REG 336-340 Days		69 Days	
		REG 341-345 Days		70 Days	
		REG 346-350 Days		71 Days	
		REG 351-355 Days		72 Days	
		REG 356-360 Days		73 Days	
		REG 361-365 Days		74 Days	
		REG 366-370 Days		75 Days	
		REG 371-375 Days		76 Days	
		REG 376-380 Days		77 Days	
		REG 381-385 Days		78 Days	
		REG 386-390 Days		79 Days	
		REG 391-395 Days		80 Days	
		REG 396-400 Days		81 Days	
		REG 401-405 Days		82 Days	
		REG 406-410 Days		83 Days	
		REG 411-415 Days		84 Days	
		REG 416-420 Days		85 Days	
		REG 421-425 Days		86 Days	
		REG 426-430 Days		87 Days	
		REG 431-435 Days		88 Days	
		REG 436-440 Days		89 Days	
		REG 441-445 Days		90 Days	
		REG 446-450 Days		91 Days	
		REG 451-455 Days		92 Days	
		REG 456-460 Days		93 Days	
		REG 461-465 Days		94 Days	
		REG 466-470 Days		95 Days	
		REG 471-475 Days		96 Days	
		REG 476-480 Days		97 Days	
		REG 481-485 Days		98 Days	
		REG 486-490 Days		99 Days	
		REG 491-495 Days		100 Days	
		REG 496-500 Days		101 Days	
		REG 501-505 Days		102 Days	
		REG 506-510 Days		103 Days	
		REG 511-515 Days		104 Days	
		REG 516-520 Days		105 Days	
		REG 521-525 Days		106 Days	
		REG 526-530 Days		107 Days	
		REG 531-535 Days		108 Days	
		REG 536-540 Days		109 Days	
		REG 541-545 Days		110 Days	
		REG 546-550 Days		111 Days	
		REG 551-555 Days		112 Days	
		REG 556-560 Days		113 Days	
		REG 561-565 Days		114 Days	
		REG 566-570 Days		115 Days	
		REG 571-575 Days		116 Days	
		REG 576-580 Days		117 Days	
		REG 581-585 Days		118 Days	
		REG 586-590 Days		119 Days	
		REG 591-595 Days		120 Days	
		REG 596-600 Days		121 Days	
		REG 601-605 Days		122 Days	
		REG 606-610 Days		123 Days	
		REG 611-615 Days		124 Days	
		REG 616-620 Days		125 Days	
		REG 621-625 Days		126 Days	
		REG 626-630 Days		127 Days	
		REG 631-635 Days		128 Days	
		REG 636-640 Days		129 Days	
		REG 641-645 Days		130 Days	
		REG 646-650 Days		131 Days	
		REG 651-655 Days		132 Days	
		REG 656-660 Days		133 Days	
		REG 661-665 Days		134 Days	
		REG 666-670 Days		135 Days	
		REG 671-675 Days		136 Days	
		REG 676-680 Days		137 Days	
		REG 681-685 Days		138 Days	
		REG 686-690 Days		139 Days	
		REG 691-695 Days		140 Days	
		REG 696-700 Days		141 Days	
		REG 701-705 Days		142 Days	
		REG 706-710 Days		143 Days	
		REG 711-715 Days		144 Days	
		REG 716-720 Days		145 Days	
		REG 721-725 Days		146 Days	
		REG 726-730 Days		147 Days	
		REG 731-735 Days		148 Days	
		REG 736-740 Days		149 Days	
		REG 741-745 Days		150 Days	
		REG 746-750 Days		151 Days	
		REG 751-755 Days		152 Days	
		REG 756-760 Days		153 Days	
		REG 761-765 Days		154 Days	
		REG 766-770 Days		155 Days	
		REG 771-775 Days		156 Days	
		REG 776-780 Days		157 Days	
		REG 781-785 Days		158 Days	
		REG 786-790 Days		159 Days	
		REG 791-795 Days		160 Days	
		REG 796-800 Days		161 Days	
		REG 801-805 Days		162 Days	
		REG 806-810 Days		163 Days	
		REG 811-815 Days		164 Days	
		REG 816-820 Days		165 Days	
		REG 821-825 Days		166 Days	
		REG 826-830 Days		167 Days	
		REG 831-835 Days		168 Days	
		REG 836-840 Days		169 Days	
		REG 841-845 Days		170 Days	
		REG 846-850 Days		171 Days	
		REG 851-855 Days		172 Days	
		REG 856-860 Days		173 Days	
		REG 861-865 Days		174 Days	
		REG 866-870 Days		175 Days	
		REG 871-875 Days		176 Days	
		REG 876-880 Days		177 Days	
		REG 881-885 Days		178 Days	
		REG 886-890 Days		179 Days	
		REG 891-895 Days		180 Days	
		REG 896-900 Days		181 Days	
		REG 901-905 Days		182 Days	
		REG 906-910 Days		183 Days	
		REG 911-915 Days		184 Days	
		REG 916-920 Days		185 Days	
		REG 921-925 Days		186 Days	
		REG 926-930 Days		187 Days	
		REG 931-935 Days		188 Days	
		REG 936-940 Days		189 Days	
		REG 941-945 Days		190 Days	
		REG 946-950 Days		191 Days	
		REG 951-955 Days		192 Days	
		REG 956-960 Days		193 Days	
		REG 961-965 Days		194 Days	
		REG 966-970 Days		195 Days	
		REG 971-975 Days		196 Days	
		REG 976-980 Days		197 Days	
		REG 981-985 Days		198 Days	
		REG 986-990 Days		199 Days	
		REG 991-995 Days		200 Days	
		REG 996-1000 Days		201 Days	

Table 1.0(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 * TAKE IN FIELD					
Dissolved Oxygen*, mg/l					
✓ Chlorine Residual, mg/l * TAKE IN FIELD					
✓ E.coli (CFU/100ml) freshwater					
Enterococci (CFU/100ml) saltwater					
✓ Total Dissolved Solids, mg/l					
✓ Electrical Conductivity, µmohs/cm, †					
Oil & Grease, mg/l					
Alkalinity (CaCO₃)*, mg/l					

*TPDES permits only

†TLAP permits only

Table 1.0(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: [Click to enter text.](#)Facility Operator's License Classification and Level: [Click to enter text.](#)Facility Operator's License Number: [Click to enter text.](#)



LABORATORY REPORT



Cert. No. T104704360-13-9

Klein & Cope Engineering
8611 Botts Lane, Ste. 101
San Antonio TX. 78217

Project: City of Runge Irrigation Area
Project Number: [none]
Project Manager: Nadia Sanchez

Reported:
04/17/15 17:45
Received:
04/02/15 17:14

Report No. 1504058

Solid Samples (like 2410011)

Sample ID #: Schattel Clay 0-6"

Sampling Method: Grab

Lab Sample ID #: 1504058-01

Date/Time Collected: 04/02/15 14:05

Sample Matrix: Solid

Analyte	Result	Units	PQL	Prep Method	Batch	Analyzed	Method	Analyst Notes
General Chemistry								
% Solids	86.4	% by Weight	1.00	% Solids	B516055	04/14/15 13:19	% Calc	XF
Ammonia	<10.0	mg/kg	10.0		B515145	04/10/15 17:12	4500NH3CB	SS
Nitrite as N *	<1.00	mg/kg	1.00	EPA 300.0	B515110	04/09/15 14:33	EPA 300.0	SS
Nitrate as N *	9.78	mg/kg	1.00	EPA 300.0	B515110	04/09/15 14:33	EPA 300.0	SS
Specific conductance	730	umhos/cm	1.00		B516037	04/13/15 16:40	SM2510B	JL
pH *	9.02	pH Units	1.00		B514173	04/03/15 15:00	9045C	SS 11
pH measured @ Temperature >>	22	°C	1.0		B514173	04/03/15 15:00	EPA 170.1	SS 11
Total Kjeldahl Nitrogen	11.2	mg/kg	1.00		B515133	04/08/15 16:35	151.3	SS
Total Nitrogen	21.0	mg/kg	3.00	[CALC]	[CALC]	04/09/15 14:33	T-Nitrogen	SS
Available Metals by Mehlich III Extraction								
Sodium, Available *	172000	mg/kg dry	2500	3050B	B516063	04/15/15 12:34	M-III/6010	xc
Potassium, Available	618	mg/kg dry	200	3050B	B516063	04/14/15 16:02	M-III/6010	xc
Sulfur	83.7	mg/kg dry	20.0	3050B	B516063	04/14/15 16:02	M-III/6010	xc
Magnesium, Available	<20.0	mg/kg dry	20.0	3050B	B516063	04/14/15 16:02	M-III/6010	xc
Calcium, Available	1190	mg/kg dry	500	3050B	B516063	04/14/15 16:02	M-III/6010	xc
Phosphorus, Available	341	mg/kg dry	20.0	3050B	B516063	04/14/15 16:02	M-III/6010	xc



Sample Receipt Checklist

Client: Cope Engineering

Project Manager: Marissa Esquivel

Project: Pollutant Analysis for Wastewater Treatment

Project Number: Facilites

Report To:

Brian Cope

SATL Report Number: 2501201

Work Order Due by: 01/23/25 17:00 (7 day TAT)

Received By: Aimee Landon

Date Received: 01/14/25 11:20

Logged In By: Aimee Landon

Date Logged In: 01/14/25 12:17

Sample(s) Received on ICE/evidence of Ice (cooler with melted ice, etc):	Yes
Sample temperature at receipt *:	1.1°C
Custody Seals Present:	No
All containers intact:	Yes
Sample labels/COC agree:	Yes
Samples Received within Holding time :	Yes
Samples appropriately preserved **:	Yes
Containers received broken/damaged/leaking:	No
Air bubbles present in VOA vials for VOC/TPH analyses, if applicable:	Not Applicable
TRRP 13 Reporting requested?	No
BacT Sample bottles filled to volume (100mL mark), if applicable:	Not Applicable
LCR Sample bottles filled to volume (1 Liter mark), if applicable:	Not Applicable
Subcontracting required for any analyses:	No
RUSH turnaround time requested:	No
Requested Turnaround Time:	No
Samples delivered via :	Hand Delivered
Air bill included if Samples were shipped:	No
Other deviations not meeting SATL sample acceptance criteria notated on CoC:	Notated on CoC, if any

Notes:

* Samples delivered to the laboratory on the same day that they are collected may not meet thermal preservation criteria ($>0^{\circ}\text{C}$ but $<6^{\circ}\text{C}$) but are acceptable, if they arrive on ice.

** If improperly preserved, notate client authorization on CoC to proceed with analysis.

Checked By: Aimee Landon

Date: 01/14/25 11:20

SATL#FO001
Revised 09/15/2022

Francesca Findlay

From: Kyle Stoner <kyle@copeengineeringtx.com>
Sent: Friday, February 21, 2025 1:58 PM
To: Francesca Findlay
Cc: Brian Cope
Subject: WQ0010266001 City of Runge WWTP Renewal Application
Attachments: Municipal Disposal Renewal Spanish NORI.docx; Plain Language Summary - Spanish.pdf; Comment Response Letter - TCEQ.pdf

Good afternoon,

Per your request, please find attached the completed Spanish NORI in Microsoft Word, a copy of the plain language summary in Spanish and a comment response letter.

Let me know if you have any questions or need anything else.

Thank you,

Kyle Stoner E.I.T.
Graduate Engineer



Tex. Frm. Reg. # F-16078
8611 Botts Lane
San Antonio, Texas 78217
210.828.7070 (phone)
210.828.7076 (fax)

February 21, 2025

Texas Commission on Environmental Quality
Applications Review and Processing Team (MC148)
Water Quality Division
P.O. Box 13087
Austin, Texas 78711-3087

Re: Application to Renew Permit No. WQ0010266001
Issued to City of Runge
CN600737357; RN101917839

Ms. Francesca Findlay:

The following responses have been completed in reference to the TCEQ comment letter dated February 20, 2025:

1. Please provide the Plain Language Summary in Spanish.

Plain Language Summary in Spanish is attached.

2. The following is a portion of the NORI which contains information relevant to your application. Please read it carefully and indicate if it contains any errors or omissions. The complete notice will be sent to you once the application is declared administratively complete.

APPLICATION. City of Runge, P.O. Box 206, Runge, Texas 78151, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Land Application Permit (TLAP) No. WQ0010266001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 110,000 gallons per day via surface irrigation on 42 acres. The domestic wastewater treatment facility and disposal site is located at 400 West Lyons, in the city of Runge, in Karnes County, Texas 78151. TCEQ received this application on February 14, 2025. The permit application will be available for viewing and copying at Runge City Hall, 109 North Helena Street, Runge, in Karnes 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=-97.707777,28.881111&level=18>

Further information may also be obtained from City of Runge at the address stated above or by calling **Mr. Homer Lott, Major**, at 830-239-4121.

*I found one error and it is highlighted in red. It should read **Mayor, Homer Lott**.*

3. The application indicates that public notices in Spanish are required. After confirming the portion of the NORI above does not contain any errors or omissions, please use the attached template to translate the NORI into Spanish. Only the first and last paragraphs are unique to this application and require translation. Please provide the translated Spanish NORI in a Microsoft Word document.

With the correction made above in red, the NORI has been translated into Spanish and is attached as a Word document.

If you have any further questions and/or comments, please let us know.

Thank You,

A handwritten signature in blue ink, appearing to read "Kyle Stoner".

Kyle Stoner, E.I.T.
Cope Engineering, Inc.

/attachments

Francesca Findlay

From: city of runge <city.of.runge@sbcglobal.net>
Sent: Tuesday, March 18, 2025 12:10 PM
To: Kyle Stoner; Francesca Findlay; Homer Lott; Lola Wozniak
Subject: Re: Nori WQ0010266001 City of Runge

Follow Up Flag: Follow up
Flag Status: Flagged

To be Corrected:

English

The domestic wastewater treatment facility and disposal site is located at 301 E. Cleveland St.

Spanish

(La solicitud para el permiso estará disponible para leerla y copiarla en 109 N. Helena St.)

Please give me a call.

Thanks,

Esmeralda B. Castro
City Secretary

City of Runge
P. O. Box 206
Runge, TX 78151
830-239-4121
830-239-4804
830-299-8006 cell

[IMPORTANT]: The information contained within this email may contain confidential information and is meant solely for the individual or entity which it is addressed. Accessing this email by anyone else is strictly prohibited. If you are not the intended recipient or feel you have received this email in error, please notify the sender and delete this email from your system.

From: city of runge <city.of.runge@sbcglobal.net>
Sent: Tuesday, March 18, 2025 9:50 AM
To: Kyle Stoner <kyle@copeengineeringtx.com>
Cc: Francesca Findlay <Francesca.Findlay@tceq.texas.gov>; Homer Lott <patronlott@att.net>; Lola Wozniak <lola.wozniak@yahoo.com>
Subject: Re: Nori WQ0010266001 City of Runge

Received the Spanish notice with correct address, English notice needs correction as well.

Thanks,

Esmeralda B. Castro
City Secretary

City of Runge
P.O. Box 206
Runge, TX 78151
830-239-4121

[IMPORTANT]: The information contained within this email may contain confidential information and is meant solely for the individual or entity which it is addressed. Accessing this email by anyone else is strictly prohibited. If you are not the intended recipient or feel you have received this email in error, please notify the sender and delete this email from your system.

From: Kyle Stoner <kyle@copeengineeringtx.com>
Sent: Tuesday, March 18, 2025 9:00 AM
To: Francesca Findlay <Francesca.Findlay@tceq.texas.gov>; city.of.runge@sbcglobal.net <city.of.runge@sbcglobal.net>
Cc: Brian Cope <brian@copeengineeringtx.com>; Homer Lott <patronlott@att.net>
Subject: RE: Nori WQ0010266001 City of Runge

Good morning Francesca,
It was brought to my attention that the address of 400 W. Lyons listed for the wastewater treatment plant is incorrect. The correct address is 301 East Cleveland St. I have corrected the Spanish NORI, see attached. Please let me know if I need to correct and send over additional documents or if you need assistance with anything else.
Thank you,
Kyle Stoner, E.I.T.
Cope Engineering, Inc.

From: Francesca Findlay <Francesca.Findlay@tceq.texas.gov>
Sent: Thursday, March 13, 2025 5:43 PM
To: city.of.runge@sbcglobal.net
Cc: Brian Cope <brian@copeengineeringtx.com>; Kyle Stoner <kyle@copeengineeringtx.com>
Subject: FW: Nori WQ0010266001 City of Runge
Importance: High

Good afternoon,

Permit No. WQ0010266001

Applicants are required to publish the Notice of Receipt of Application and Intent to Obtain a Water Quality Permit within 30 days of the application being declared administratively complete.

Attached is:

- Letter of Declaration of Administrative Completeness
- Instructions of Public Notice
- Notice of Receipt of Application and Intent to Obtain a Water Quality Permit
- Affidavit of Publication
- Public Notice Verification Form
- Notice of Receipt of Application and Intent to Obtain a Water Quality Permit in Spanish Language (if applicable)

Thank you,

Francesca Findlay
License & Permit Specialist
ARP Team | Water Quality Division
512-239-2441
Texas Commission on Environmental Quality



Please consider whether it is necessary to print this e-mail

How is our customer service? Fill out our online customer satisfaction survey at <http://www.tceq.texas.gov/customersurvey>.

From: [Andrew Gorton](#)
To: [Kyle Stoner](#)
Cc: [Sara Holmes](#)
Subject: Re: City of Runge WWTF, Application for Renewal, Permit No. WQ0010266001
Date: Friday, March 7, 2025 2:17:57 PM

Thank you Kyle, we will take a look at what you sent as soon as we can and let you know if we have additional questions or need more information. Have a good weekend also!

Thank you,

-Andy

Andrew Gorton, P.G.
Texas Commission on Environmental Quality
MC-150
PO Box 13087
Austin, TX 78711-3087
512.239.4585
Andrew.Gorton@tceq.texas.gov

From: Kyle Stoner <kyle@copeengineeringtx.com>
Sent: Friday, March 7, 2025 2:12 PM
To: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Cc: Sara Holmes <Sara.Holmes@tceq.texas.gov>
Subject: RE: City of Runge WWTF, Application for Renewal, Permit No. WQ0010266001

Good afternoon Andrew,

Please see attached a comment response letter for the comments issued by you and Sara. The revised pages are attached to the letter. Please let me know if I need to address anything further and I will be happy to do so. Enjoy your weekend!

Thank you,

Kyle Stoner, E.I.T.

Cope Engineering, Inc.

From: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Sent: Friday, February 21, 2025 11:19 AM
To: Brian Cope <brian@copeengineeringtx.com>; Kyle Stoner <kyle@copeengineeringtx.com>
Cc: Sara Holmes <Sara.Holmes@tceq.texas.gov>
Subject: City of Runge WWTF, Application for Renewal, Permit No. WQ0010266001

Good morning Mr. Cope and Mr. Stoner,

The Water Quality Assessment (WQA) Team of the Texas Commission on Environmental Quality has completed a preliminary review of the permit application information and identified deficiencies (attached) that must be addressed before the WQA Team can continue with the technical review. The deficient item(s) will require your response in a timely, complete, and accurate manner.

An accurate and complete revised permit application is essential for making recommendations to the commission regarding whether this permit should be issued. Based on the information provided in the application, the executive director does not have sufficient information to make a recommendation. Therefore, you must send updated technically complete and accurate information within **14 days** (March 7, 2025) of the date of this email.

Any revisions can be sent electronically to me (WQA Team Geologist) or Sara Holmes (WQA Team Agronomist). If you have any questions, please feel free to contact either me or Sara.

Thank you,

-Andy

Andrew Gorton, P.G.
Texas Commission on Environmental Quality
MC-150
PO Box 13087
Austin, TX 78711-3087
512.239.4585
Andrew.Gorton@tceq.texas.gov

March 07, 2025

Texas Commission on Environmental Quality
Applications Review and Processing Team (MC148)
Water Quality Division
P.O. Box 13087
Austin, Texas 78711-3087

Re: Application to Renew Permit No. WQ0010266001
Issued to City of Runge
CN600737357; RN101917839

Andrew Gorton & Sara Holmes:

The following responses have been completed in reference to the TCEQ comment letter dated February 21, 2025:

Geology:

1. Domestic Worksheet 3.0, Section 6 and Attachment A – Well and Map Information: This reviewer identified approximately 12 water wells within one mile of the facility wastewater ponds and irrigation fields (with 6 being within one-half mile of the facility wastewater ponds and irrigation fields). Please confirm (or deny) this. If confirmed, please include these wells on the USGS topographic map or well map. Note that monitor wells and rig supply wells were not included in this count. Complete Table 3.0(3) and provide the well logs for wells within one-half mile of the facility wastewater ponds and irrigation fields. Note – the “TWDB Groundwater” and “Well Reports” layers must be activated to see each water well. See the Texas Water Development Board Water Data Interactive website for water well information:
<https://www3.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer#>.

12 water wells were identified also and Table 3.0(3) has been updated to reflect the additional well inside the half mile radius. See the revised table in the attachments.

2. Domestic Worksheet 3.0, Section 6 and Attachment 11 – USGS Well Map: The well map is not readable as presented in the application. It is acceptable to submit a portion of the well map that clearly identifies each well.

The USGS Well Map has been updated to reflect the 12 water wells identified and zoomed in to be readable for the application. See revised map in the attachments.

3. Domestic Worksheet 3.0, Section 7 and Attachment 13 – Groundwater Technical Report: This Report must assess the impact (if any) of the wastewater disposal system on

groundwater. This report shall include an evaluation of water wells in the area (e.g., depth to groundwater, etc.), the aquifer(s) under the proposed facility, and use of groundwater in the area (e.g., irrigation public supply, domestic, etc.), the wastewater application rate, and any wastewater pond liners. An example Groundwater Quality Technical Report can be provided upon request.

The groundwater technical report has been revised to address the topics listed above. See report in attachment.

SOILS & AGRONOMY

1. Domestic Worksheet 3.0, Section 2. Land Application Site(s) – Although the facility is currently operating at 0.065MGD, please replace this with the flow the permittee is approved for (0.110MGD).

Land application has been updated from 0.065MGD to 0.110MGD. See revised Section 2 in the attachments.

2. Domestic Worksheet 3.0, Section 5. Annual Cropping Plan – Please include the following information into the cropping plan:
 - a. Please note that if year-round irrigation is intended, a cool season crop must be maintained on the irrigation site.
 - b. Crop nutrient requirements - A TCEQ recommended source for obtaining this information: [Nutrient Management Planning Tools \(tamu.edu\)](http://nutrientmanagement.tamu.edu). Please refer to the S Crops Table provided by the Texas A&M AgriLife Extension on Nutrient Management.

The information listed above in bullet point a. and bullet point b. has been included in the revised Annual Cropping Plan. See revised Annual Cropping Plan in the attachments.

I have attached only the revised pages that pertain to the comments above. If I need to include these revised pages in the entire report and send that over I can do that as well.

If you have any further questions and/or comments, please let us know.

Thank You,



Kyle Stoner, E.I.T.
Cope Engineering, Inc.

/attachments

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:** No. 10

- 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:** No. 11

- 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
7903704	Public	Y	Open	Outside buffer
7903705	Public	N	Plugged	Outside buffer
7903707	Public	Y	Cased	Outside buffer
7903708	Public	Y	Cased	Outside buffer
7911204	Private	Y	Open	Outside buffer

Well ID	Well Use	Producing? Y/N	Open, cased, capped, or plugged?	Proposed Best Management Practice
422793	Private	Y	Cased	Outside buffer

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

Attachment: No. 12

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: No. 13

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: N/A

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: No. 14

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: No. 15

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
Schattel Clay Shc	0-80"	Slow	low	71
Coy Clay Loam	0-80"	Very slow	high	71
Pernitas Sandy Clay Loam	0-80"	Moderate	moderate	58
Weesatche Fine Sandy Loam	0-80"	Moderate	high	58

Soil Series	Depth from Surface	Permeability	Available Water Capacity	Curve Number
Colibro Sandy Clay Loam	0-80"	High	moderate	30

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
June 2022	.0061	24	N/A	8.9	N/A	42
July 2022	.0261	19	N/A	9.0	N/A	42
Aug. 2022	.0218	19	N/A	8.4	N/A	42
Sept. 2022	.0385	38	N/A	7.3	N/A	42
Oct. 2022	.0192	25	N/A	8.8	N/A	42
Nov. 2022	.0351	53	N/A	8.8	N/A	42
Dec. 2022	.0366	76	N/A	8.6	N/A	42
Feb. 2023	.0399	96	N/A	6.8	N/A	42
April 2023	.0649	15	N/A	9.3	N/A	42
May 2023	.0752	21	N/A	9.8	N/A	42
July 2023	.0392	15	N/A	8.3	N/A	42
Aug. 2023	.0437	20	N/A	8.2	N/A	42
Oct. 2023	.0316	35	N/A	8.8	N/A	42
Nov. 2023	.0162	24	N/A	8.7	N/A	42
Dec. 2023	.0494	44	N/A	8.3	N/A	42
Jan. 2024	.0475	25	N/A	8.8	N/A	42
Feb. 2024	.0479	17	N/A	8.9	N/A	42
Mar. 2024	.0409	21	N/A	9.0	N/A	42

Date	30 Day Avg Flow MGD	BOD5 mg/l	TSS mg/l	pH	Chlorine Residual mg/l	Acres irrigated
April 2024	.0522	21	N/A	9.1	N/A	42
May 2024	.0470	12	N/A	8.6	N/A	42
June 2024	.0422	13	N/A	8.1	N/A	42
July 2024	.0343	13	N/A	8.5	N/A	42
Aug. 2024	.0312	20	N/A	9.0	N/A	42
Oct. 2024	.0000	18	N/A	9.0	N/A	42

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

Click to enter text.

STATE OF TEXAS WELL REPORT for Tracking #422793

Owner:	Robert & Erica Jones	Owner Well #:	1
Address:	1221 S. Fm81 Runge, TX 78141	Grid #:	79-11-2
Well Location:	corner of fm81 & cr118 travel on cr 118 for about 100' to gate on left with new house. well is located 50' to the north of the house. Runge, TX 78141	Latitude:	28° 52' 13.14" N
		Longitude:	097° 42' 12.12" W
		Elevation:	326 ft. above sea level
Well County:	Karnes		

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

Drilling Start Date: **3/25/2016** Drilling End Date: **3/30/2016**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	7.875	0	10
	6.75	10	168

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Straight Wall**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	-2	10	Cement 5 Bags/Sacks

Seal Method: **Slurry**

Sealed By: **Driller**

Distance to Property Line (ft.): **150+**

Distance to Septic Field or other
concentrated contamination (ft.): **150+**

Distance to Septic Tank (ft.): **150+**

Method of Verification: **visuale**

Surface Completion:	Surface Sleeve Installed	Surface Completion by Driller
---------------------	---------------------------------	--------------------------------------

Water Level: **90 ft. below land surface on 2016-03-30** Measurement Method: **Weighted Line**

Packers: **Plastic at 10 ft.
Plastic at 135 ft.**

Type of Pump: **Submersible** Pump Depth (ft.): **150**

Well Tests: **Pump** Yield: **8 GPM with 50 ft. drawdown after 1/2 hours**

	Strata Depth (ft.)	Water Type
Water Quality:	135 - 165	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: **Borth Water Well**
PO Box 954
Yorktown, TX 78164

Driller Name: **Joe D. Cliffe II** License Number: **58208**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	1	sand
1	5	colletche
5	65	sand
65	130	sand/clay mix
130	168	sand

Casing:
BLANK PIPE & WELL SCREEN DATA

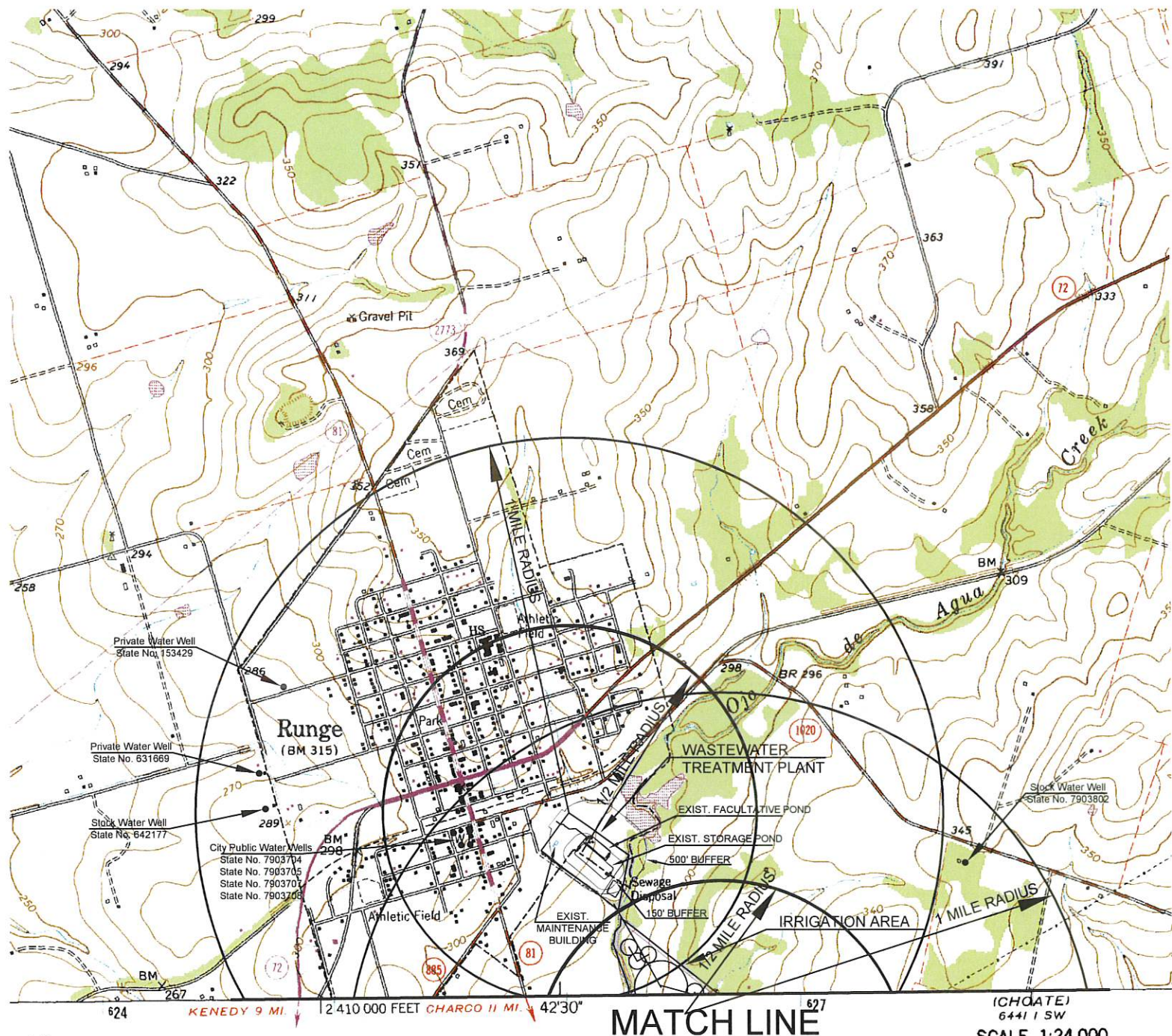
Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5		New Plastic (PVC)		-2.5	140
4.5		New Plastic (PVC)	0.016	135	165
4		New Plastic (PVC)		165	168

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.

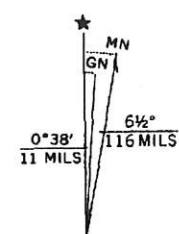
Please include the report's Tracking Number on your written request.

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



cal Survey

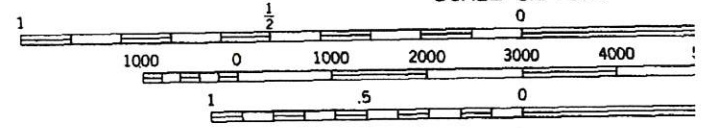
entral zone



UTM GRID AND 1987 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

MATCH LINE

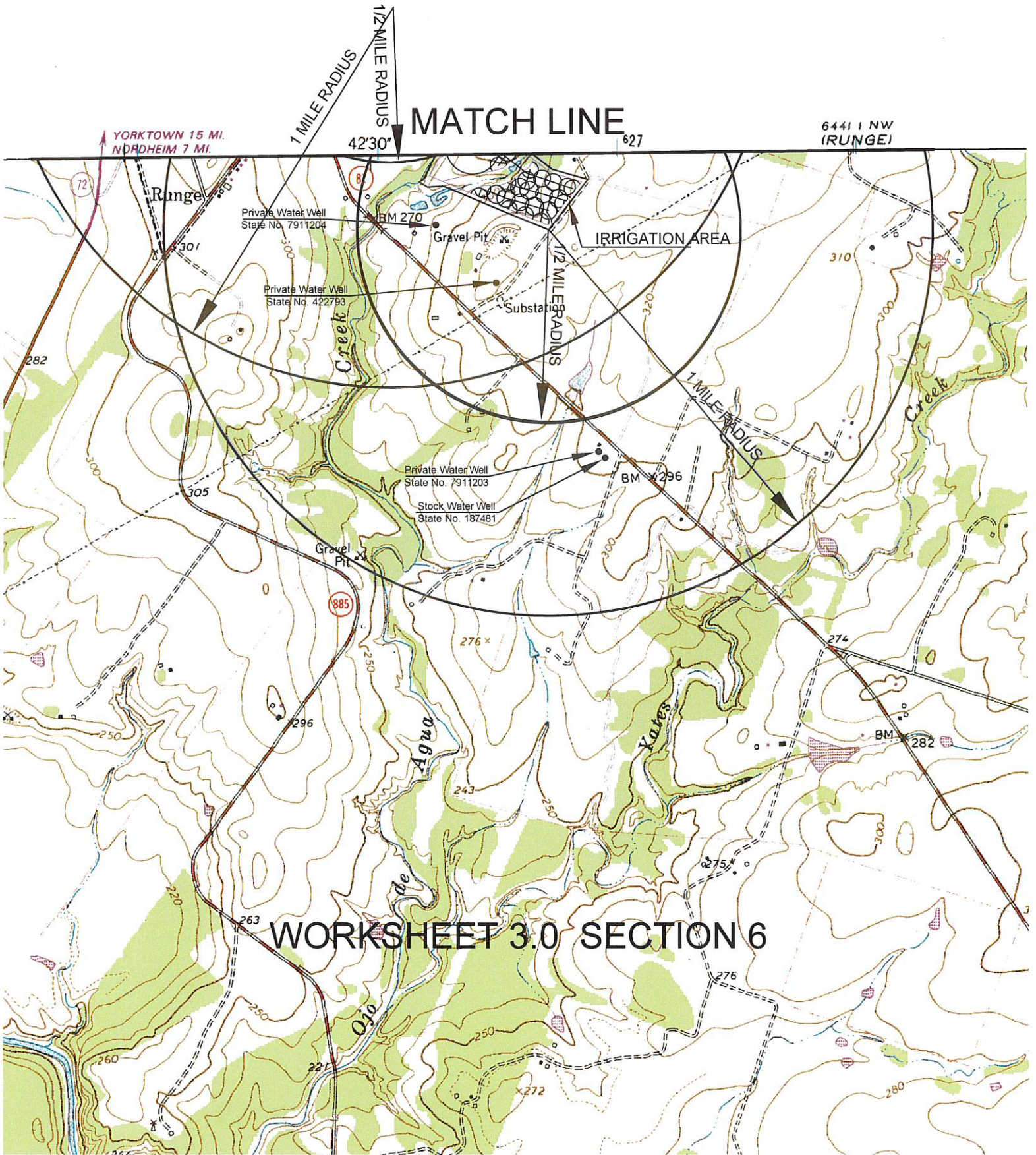
(CHDATE)
6441 I SW
SCALE 1:24 000



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1983

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA. A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE.

WORKSHEET 3.0 SECTION 6



DOMESTIC WORKSHEET 3.0
ITEM 6

WATER QUALITY ASSESSMENT

The City of Runge's wastewater treatment plant and irrigation field are in Karnes County and located southeast of town. They sit over two major aquifers, the southern edge of the Carrizo-Wilcox Aquifer and the northern edge of the Gulf Coast Aquifer. However, the nearby wells in the area have all been drilled into the Gulf Coast Aquifer. The depth of these wells ranged from 57 feet to 720 feet deep with a water surface elevation of 38 feet below ground to 95 feet below ground.

There is a total of twelve water wells located within the one-mile radius of the wastewater treatment plant and the irrigation fields. Of those twelve water wells, five are used as domestic wells for private residences, four public supply wells used by the City of Runge (only two are in production), and three are used for livestock purposes. Within the one-half mile radius, there are six nearby wells consisting of four public supply wells owned by the City of Runge and two private domestic wells. The nearby private water wells are outside the 250' buffer zone required by 30 TAC Section 309.13(c). The nearest well is +/-550' from the land disposal site; however, the land disposal site does not drain to the nearest well.

The wastewater treatment plant contains a facultative lagoon and effluent storage pond. The effluent storage pond has a liner consisting of two feet of clay meeting liner permeability requirements in 30 TAC 217.203(d) to prevent treated effluent from percolating into the groundwater below. The current wastewater application rate is 65,000 GPD, although the site is permitted for an application rate of 110,000 GPD. Therefore, with the nearest water wells being 550 feet away, upstream of the treatment area, and the facility operating at nearly half of the application rate than allowed the impact of the waste disposal site on the groundwater is negligible.

DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND DISPOSAL OF EFFLUENT

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

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

Identify the method of land disposal:

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

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

For existing authorizations, provide Registration Number: N/A

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
Agricultural Land – Bermuda grass	42	110,000	N

DOMESTIC WORKSHEET 3.0

Section 5

ANNUAL CROPPING PLAN

The irrigation site is composed of 42 acres used for agricultural pasture land.

The predominant soil on the surface at the irrigation site is Pernitas sandy clay loam (PnC). See attached USDA NRCS Soil Map in the attachments of this application.

The predominant cover is Coastal Bermuda grass. The minimum harvest height is 4" and the maximum harvest height is 24". It is harvested twice a year for the typical hay bailing activity. It has high salt tolerance and requires no supplemental watering. The growing season 8 out of 10 years is about 350 days per year for temperature above 24°F. No additional fertilizers are required.

The crop nutrient requirements for Coastal Bermuda grass with a hay cutting of 3 is 300 lbs of Nitrogen, 125 lbs of P205, and a crop removal rate of 238 of Nitrogen and 74 of P205.

Since irrigation is performed on the site year-round, when the Coastal Bermuda grass is dormant, wild clover and winter rye grass provide cover across the field before the weather becomes warm enough for the coastal to grow again.

From: [Kyle Stoner](#)
To: [Sara Holmes](#); [Andrew Gorton](#)
Subject: RE: City of Runge WWTF, Application for Renewal, Permit No. WQ0010266001
Date: Monday, March 10, 2025 3:52:00 PM
Attachments: [Worksheet 3.0 Table 3.0\(1\).pdf](#)

Hi Sara,
Please find attached the page containing Table 3.01(1) updated to reflect the cool season crops.
Thank you for the prompt response.
-Kyle

From: Sara Holmes <Sara.Holmes@tceq.texas.gov>
Sent: Monday, March 10, 2025 2:06 PM
To: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>; Kyle Stoner <kyle@copeengineeringtx.com>
Subject: RE: City of Runge WWTF, Application for Renewal, Permit No. WQ0010266001

Hi Kyle,

Thank you for those responses. I just have one follow-up comment. With the addition of the winter ryegrass and wild clover during the cooler months, could you please update and submit page 1 of Worksheet 3.0 to include these as additional crop types along with the Bermuda grass in Table 3.01(1)? That is all I need to continue my review.

Thank you,

Sara Holmes
Natural Resource Specialist II
Water Quality Assessment Team
12100 Park 35 Circle
Austin, TX 78753
512-239-4534

From: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Sent: Friday, March 7, 2025 2:18 PM
To: Kyle Stoner <kyle@copeengineeringtx.com>
Cc: Sara Holmes <Sara.Holmes@tceq.texas.gov>
Subject: Re: City of Runge WWTF, Application for Renewal, Permit No. WQ0010266001

Thank you Kyle, we will take a look at what you sent as soon as we can and let you know if

we have additional questions or need more information. Have a good weekend also!

Thank you,

-Andy

Andrew Gorton, P.G.

Texas Commission on Environmental Quality

MC-150

PO Box 13087

Austin, TX 78711-3087

512.239.4585

Andrew.Gorton@tceq.texas.gov

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Sent: Friday, March 7, 2025 2:12 PM

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Cc: Sara Holmes <Sara.Holmes@tceq.texas.gov>

Subject: RE: City of Runge WWTF, Application for Renewal, Permit No. WQ0010266001

Good afternoon Andrew,

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Thank you,

Kyle Stoner, E.I.T.

Cope Engineering, Inc.

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Cc: Sara Holmes <Sara.Holmes@tceq.texas.gov>

Subject: City of Runge WWTF, Application for Renewal, Permit No. WQ0010266001

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continue with the technical review. The deficient item(s) will require your response in a timely, complete, and accurate manner.

An accurate and complete revised permit application is essential for making recommendations to the commission regarding whether this permit should be issued. Based on the information provided in the application, the executive director does not have sufficient information to make a recommendation. Therefore, you must send updated technically complete and accurate information within **14 days** (March 7, 2025) of the date of this email.

Any revisions can be sent electronically to me (WQA Team Geologist) or Sara Holmes (WQA Team Agronomist). If you have any questions, please feel free to contact either me or Sara.

Thank you,

-Andy

Andrew Gorton, P.G.

Texas Commission on Environmental Quality

MC-150

PO Box 13087

Austin, TX 78711-3087

512.239.4585

Andrew.Gorton@tceq.texas.gov

DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND DISPOSAL OF EFFLUENT

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

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|---|--|
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| ☐ Drip irrigation system | ☐ Subsurface area drip dispersal system |
| ☐ Evaporation | ☐ Evapotranspiration beds |
| ☐ Other (describe in detail): Click to enter text. | |

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

For existing authorizations, provide Registration Number: N/A

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
Agricultural Land - Bermuda Grass	42	110,000	N
Agricultural Land - Winter Rye Grass (Cool Season)	42	110,000	N
Agricultural Land - Wild Clover (Cool Season)	42	110,000	N



PERMIT NO. WQ0010266001

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

This is a renewal of Permit No.
WQ0010266001 issued on
August 22, 2005.

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

City of Runge

whose mailing address is

P.O. Box 206
Runge, Texas 78151

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

General Description and Location of Waste Disposal System:

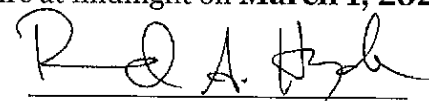
Description: The City of Runge Wastewater Treatment Facility consists of a primary settling pond system. Treatment units include a facultative lagoon with a surface area of 1.01 acres and volume of 10.1 acre-feet. The permittee is authorized to dispose of treated domestic wastewater effluent at a daily average flow not to exceed 0.110 million gallons per day (MGD) via surface irrigation of 42 acres of non-public access agricultural land. The facility includes a storage pond with a total surface area of 2.21 acres and total capacity of 13.02 acre-feet for storage of treated effluent prior to irrigation. Application rates to the irrigated land shall not exceed 2.93 acre-feet per year per acre irrigated.

Location: The wastewater treatment facility and disposal site are located approximately 2,300 feet south and 1,600 feet east of the intersection of U.S. Highway 81 and U.S. Highway 72, in the City of Runge, in Karnes County, Texas 78151. (See Attachment A.)

Drainage Area: The wastewater treatment facility and disposal site are located in the drainage basin of the Lower San Antonio River in Segment No. 1901 of the San Antonio River Basin. No discharge of pollutants into water in the State is authorized by this permit.

This permit and the authorization contained herein shall expire at midnight on **March 1, 2025**.

ISSUED DATE: September 4, 2015


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 – 0.110 MGD from the treatment system

Quality: The following effluent limitations are required:

<u>Parameter</u>	<u>Effluent Concentrations</u>	
	(Not to Exceed)	
	<u>Daily Average</u> mg/l	<u>Single Grab</u> mg/l
Biochemical Oxygen Demand (5-day)	N/A	100

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

B. Monitoring Requirements:

<u>Parameter</u>	<u>Monitoring Frequency</u>	<u>Sample Type</u>
Flow	Five/week	Instantaneous
Biochemical Oxygen Demand (5-day)	One/month	Grab
pH	One/month	Grab

The monitoring shall be done after the final treatment unit and prior to irrigation. 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 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. 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 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. 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 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 169) 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 Environmental Cleanup 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.

TCEQ Revision 06/2008

SLUDGE PROVISIONS

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

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.
2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.
3. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

B. Testing Requirements

1. Sewage sludge shall be tested 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 failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 13) within seven (7) days after failing the TCLP Test.

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

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

TABLE 1

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

* Dry weight basis

3. Pathogen Control

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

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

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information.

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

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

- b. For sewage sludge to be classified as Class AB with respect to pathogens, the density of fecal coliform in the sewage sludge 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%.

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.

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

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

Alternative 1

- i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.
- ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

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

- i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;
- ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;
- iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;
- iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and
- v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

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

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

- ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;
- iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;
- iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and
- v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition, the following site restrictions must be met if Class B sludge is land applied:

- i. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.
- ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for 4 months or longer prior to incorporation into the soil.
- iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 months prior to incorporation into the soil.
- iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.
- v. Animals shall not be allowed to graze on the land for 30 days after application of sewage sludge.
- vi. Turf grown on land where sewage sludge is applied shall not be harvested for 1 year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.
- vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of sewage sludge.

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

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

4. Vector Attraction Reduction Requirements

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

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

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

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

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

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

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

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

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

Alternative 9 -

- i. Sewage sludge shall be injected below the surface of the land.
- ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.
- iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10 -

- i. Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.
- ii. When sewage sludge that is incorporated into the soil is Class A or Class AB with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- 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):

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

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

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

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

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

A. Pollutant Limits

Table 2

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

Table 3

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

*Dry weight basis

B. Pathogen Control

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

C. Management Practices

1. Bulk sewage sludge shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.
2. Bulk sewage sludge not meeting Class A requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.
3. Bulk sewage sludge shall be applied at or below the agronomic rate of the cover crop.
4. An information sheet shall be provided to the person who receives bulk sewage sludge sold or given away. The information sheet shall contain the following information:
 - a. The name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land.
 - b. A statement that application of the sewage sludge to the land is prohibited except in accordance with the instruction on the label or information sheet.
 - c. The annual whole sludge application rate for the sewage sludge application rate for the sewage sludge that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk sewage sludge is applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk sewage sludge is proposed to be applied. The notice shall include:
 - a. The location, by street address, and specific latitude and longitude, of each land application site.
 - b. The approximate time period bulk sewage sludge will be applied to the site.
 - c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk sewage sludge.
2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

E. Record keeping Requirements

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

the facility site and/or shall be readily available for review by a TCEQ representative for a period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.
2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B sludge, if applicable).
3. A description of how the vector attraction reduction requirements are met.
4. A description of how the management practices listed above in Section II.C are being met.
5. The following certification statement:

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

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:
 - a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.
 - b. The location, by street address, and specific latitude and longitude, of each site on which sludge is applied.
 - c. The number of acres in each site on which bulk sludge is applied.
 - d. The date and time sludge is applied to each site.

- e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.
- f. The total amount of sludge applied to each site in dry tons.

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

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 13) and Water Quality Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year the following information:

- 1. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.
- 2. The frequency of monitoring listed in Section I.C. that applies to the permittee.
- 3. Toxicity Characteristic Leaching Procedure (TCLP) results.
- 4. Identity of hauler(s) and TCEQ transporter number.
- 5. PCB concentration in sludge in mg/kg.
- 6. Date(s) of disposal.
- 7. Owner of disposal site(s).
- 8. Texas Commission on Environmental Quality registration number, if applicable.
- 9. Amount of sludge disposal dry weight (lbs/acre) at each disposal site.
- 10. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.
- 11. Level of pathogen reduction achieved (Class A, Class AB or Class B).
- 12. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B sludge, include information on how site restrictions were met.
- 13. Vector attraction reduction alternative used as listed in Section I.B.4.
- 14. Annual sludge production in dry tons/year.
- 15. Amount of sludge land applied in dry tons/year.
- 16. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge treatment activities, shall be attached to the annual reporting form.

17. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.
 - a. The location, by street address, and specific latitude and longitude.
 - b. The number of acres in each site on which bulk sewage sludge is applied.
 - c. The date and time bulk sewage sludge is applied to each site.
 - d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk sewage sludge applied to each site.
 - e. The amount of sewage sludge (i.e., dry tons) applied to each site.

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

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

- A. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.
- B. If the permittee generates sewage sludge and supplies that sewage sludge to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.
- C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.
- D. Sewage sludge shall be tested 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 failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

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

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

- E. Sewage sludge shall be tested as needed, in accordance with the requirements of 30 TAC § 330.
- F. Record keeping Requirements

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

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

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

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 13) and Water Quality Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30th of each year the following information:

1. Toxicity Characteristic Leaching Procedure (TCLP) results.
2. Annual sludge production in dry tons/year.
3. Amount of sludge disposed in a municipal solid waste landfill in dry tons/year.
4. Amount of sludge transported interstate in dry tons/year.
5. A certification that the sewage sludge meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.
6. Identity of hauler(s) and transporter registration number.
7. Owner of disposal site(s).
8. Location of disposal site(s).
9. Date(s) of disposal.

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

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

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

A. General Requirements

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

B. Record Keeping Requirements

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:
 - a. the amount of sludge transported;
 - b. the date of transport;
 - c. the name and TCEQ permit number of the receiving facility or facilities;
 - d. the location of the receiving facility or facilities;
 - e. the name and TCEQ permit number of the facility that generated the waste; and
 - f. copy of the written agreement between the permittee and the receiving facility to accept sludge.
2. For sludge transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge transported.
3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall report the following information annually to the TCEQ Regional Office (MC Region 13) and Water Quality Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30th of each year:

1. the annual sludge production;
2. the amount of sludge transported;
3. the owner of each receiving facility;
4. the location of each receiving facility; and
5. the date(s) of disposal at each receiving facility.

TCEQ Revision 2/2015

SPECIAL PROVISIONS:

1. This permit is granted subject to the policy of the Commission to encourage the development of areawide 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 areawide system, if an areawide system is developed; to require the delivery of the wastes authorized to be collected in, treated by, or discharged from the system, to an areawide 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 § 30, Occupational Licenses and Registrations and in particular 30 TAC § 30, Subchapter J, Wastewater Operators and Operations Companies.

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

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. Irrigation practices shall be designed and managed so as to prevent ponding of effluent or contamination of ground and surface waters and to prevent the occurrence of nuisance conditions in the area. Tailwater control facilities shall be provided as necessary to prevent the discharge of any effluent from the irrigated land.
5. Waste water shall not be applied for irrigation during rainfall events or when the ground is frozen or saturated.
6. Application rates to the irrigated land shall not exceed 2.93 acre-feet per year per acre irrigated. The permittee is responsible for providing equipment to determine application rates and maintaining accurate records of the volume of effluent applied. These records shall be made available for review by the Texas Commission on Environmental Quality and shall be maintained for at least three years.
7. Holding ponds shall conform to the Texas Commission on Environmental Quality "Design Criteria for Sewerage Systems" requirement for stabilization ponds with regard to construction and levee design, and a minimum of 2 feet of freeboard shall be maintained.

8. The permittee shall obtain representative soil samples from the root zones of the land application area receiving wastewater. Composite sampling techniques shall be used. Each composite sample shall represent no more than 42 acres subsamples representing each composite sample. Subsamples shall be composited by like sampling depth 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 inches to 18 inches and 18 inches to 30 inches below ground level. The permittee shall sample and analyze soils in September of each year. Soil samples shall be analyzed within 30 days of sample procurement.

The permittee shall provide annual soil analyses of the land application area 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 <u>N</u> KCl soil extract	1	mg/kg (dry weight basis)
Ammonium-nitrogen			
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 + nitrate-nitrogen (same as, organic-nitrogen + ammonium-nitrogen + nitrate-nitrogen)		mg/kg (dry weight basis)
Plant-available: Phosphorus	Mehlich III with inductively coupled plasma	1	mg/kg (dry weight basis)
Plant-available: Potassium	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	Recommendation from analytical laboratory		Report in <i>short tons/acre</i> in the year effected

The permittee shall provide a copy of this plan to the analytical laboratory prior to sample

analysis. The permittee shall submit the results of the annual soil sample analyses with copies of the laboratory reports and a map depicting the areas that have received wastewater within the permanent land application fields to the TCEQ Regional Office (MC Region 13) and the Water Quality Compliance Monitoring Team (MC 224) of the Enforcement Division no later than end of September following the sampling date of each year. If wastewater is not applied in a particular year, the permittee shall notify the same TCEQ offices and indicate that wastewater and/or sludge has not been applied on the approved land disposal sites during that year.

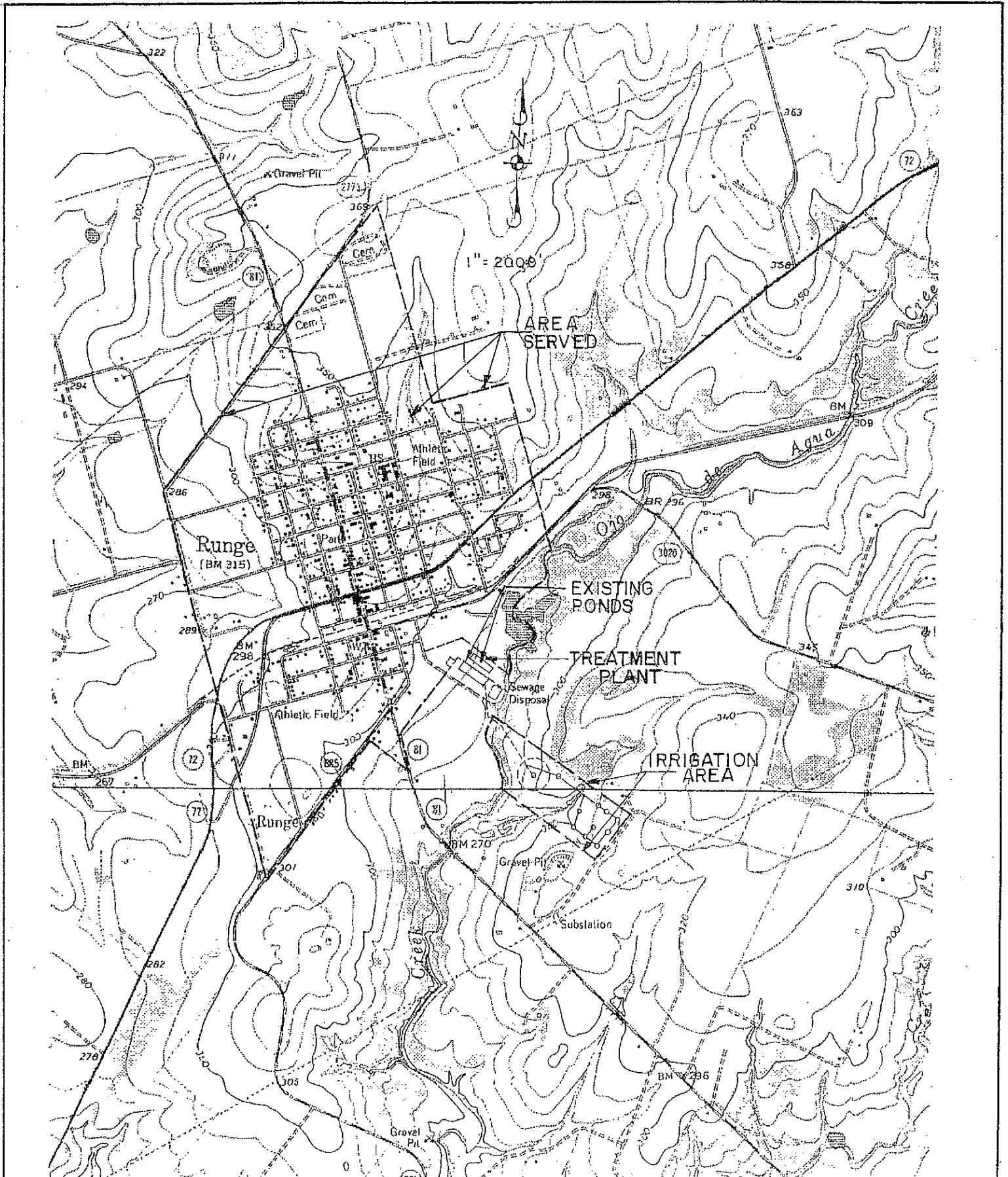
9. The permittee shall maintain a long term contract with the owner(s) of the land application site which is authorized for use in this permit, or own the land authorized for land application of treated effluent.
10. The permittee shall erect adequate signs stating that the irrigation water is from a 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.
11. Spray fixtures for the irrigation system shall be of such design that they cannot be operated by unauthorized personnel.
12. Irrigation with effluent shall be accomplished only when the area specified is not in use.
13. Permanent transmission lines shall be installed from the holding pond to each tract of the land to be irrigated utilizing effluent from that pond
14. Facilities for the retention or storage of treated or untreated wastewater shall be adequately lined to control seepage. The following methods of pond lining are acceptable.
 - a. In-situ clay soils or placed and compacted clay soils meeting the following requirements:
 - 1) More than 30% passing a No. 200 mesh sieve
 - 2) Liquid limit greater than 30%
 - 3) Plasticity index greater than 15%
 - 4) A minimum thickness of 2 feet
 - 5) Permeability equal to or less than 1×10^{-7} cm/sec (*)
 - 6) Soil compaction will be 95% standard proctor at optimum moisture content (*)

(*) For new and/or modified ponds only
 - b. Membrane lining with a minimum thickness of 20 mils, and an underdrain leak detection system.
 - c. An alternate method of pond lining may be utilized with prior approval from the Executive Director.

The permittee submitted certification by a Texas Licensed Professional Engineer that the completed pond lining meets the appropriate above criteria. A copy of the certification is on the file.

15. By ownership, the permittee shall maintain a minimum buffer zone of 500 feet from lagoons with zones of anaerobic activity (e.g. facultative lagoons) and 150 feet from all other wastewater treatment plant structures or process units, excluding lift stations, to the nearest property.
16. 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).
17. The permittee shall provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

ATTACHMENT A
SITE MAP



TECHNICAL SUMMARY AND EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

DESCRIPTION OF APPLICATION

Applicant:	City of Runge TCEQ Permit No. WQ0010266001
Regulated Activity:	Domestic Wastewater Permit
Type of Application:	Renewal
Request:	Renewal with no changes
Authority:	Texas Water Code (TWC) § 26.027; 30 Texas Administrative Code (TAC) Chapters 305, 309, 312, 319, and 30; and Commission policies.

EXECUTIVE DIRECTOR RECOMMENDATION

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

REASON FOR PROJECT PROPOSED

The City of Runge has applied to the Texas Commission on Environmental Quality (TCEQ) for a renewal of Permit No. WQ0010266001 to authorize the disposal of treated domestic wastewater at a daily average flow not to exceed 0.110 million gallons per day (MGD) via surface irrigation of 42 acres of non-public access agricultural land. The facility includes a storage pond with a total surface area of 2.21 acres and total capacity of 13.02 acre-feet for storage of treated effluent prior to irrigation. The existing wastewater treatment facility serves the City of Runge.

PROJECT DESCRIPTION AND LOCATION

The City of Runge Wastewater Treatment Facility consists of a primary settling pond system. Treatment units include a bar screen and a facultative lagoon with a surface area of 1.0 acre and volume of 10.1 acre-feet. The facility is in operation.

The facility is a pond system and sludge from the ponds has not been removed for sludge disposal to date. 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 are located approximately 2,300 feet south and 1,600 feet east of the intersection of U.S. Highway 81 and U.S. Highway 71, in the City of Runge in Karnes County, Texas 78151. The wastewater treatment facility and disposal site are located in the drainage basin of Lower San Antonio River in Segment No. 1901 of the San Antonio River Basin. No discharge of pollutants into water in the state is authorized by this

City of Runge

Permit No. WQ0010266001

Statement of Basis/Technical Summary and Executive Director's Preliminary Decision

permit.

SUMMARY OF EFFLUENT DATA

The following is a summary of the applicant's effluent monitoring data for the period June 2022 to October 2024. The average of Daily Average value is computed by averaging of all 30-day average values for the reporting period for each parameter: flow and five-day biochemical oxygen demand (BOD₅).

<u>Parameter</u>	<u>Average of Daily Average</u>
Flow, MGD	0.038
BOD ₅ , mg/l	34

DRAFT PERMIT CONDITIONS

The draft permit authorizes the disposal of treated domestic wastewater effluent at a daily average flow not to exceed 0.110 MGD via surface irrigation of 42 acres of non-public access agricultural land. Treatment units include a facultative lagoon with a surface area of 1.01 acres and an effluent storage pond with a capacity of 13.02 acre-feet. Application rates to the irrigated land shall not exceed 2.93 acre-feet per year per acre irrigated. The irrigated crops include non-public access agricultural land consisting of Coastal Bermuda grass, Winter Rye grass (cool season) or Wild Clover (cool season).

The effluent limitation in the draft permit, based on a single grab, is 100 mg/l biochemical oxygen demand (BOD₅).

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 or co-disposal landfill.

SUMMARY OF CHANGES FROM APPLICATION

None.

SUMMARY OF CHANGES FROM EXISTING PERMIT

Special provisions 4, 8, 10 and 14 have been revised. Special provisions 15-17 in the existing permit were renumbered to 19-21 to allow for the addition of special provisions now numbered as 15-18 for additional geologic requirements. Special provisions 22 and 23 were added for additional agronomic requirements.

Certain accidental discharges or spills of treated or untreated wastewater from wastewater treatment facilities or collection systems owned or operated by a local government may be reported on a monthly basis in accordance with 30 TAC § 305.132.

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

BASIS FOR DRAFT PERMIT

The following items were considered in developing the draft permit:

1. Application received on February 14, 2025, and additional information received on August 5, 2025.
2. Existing TCEQ permit: Permit No. WQ0010266001 issued on September 4, 2015.
3. Interoffice Memorandum from the Water Quality Assessment Team, Water Quality Assessment & Standards Section, Water Quality Division.

PROCEDURES FOR FINAL DECISION

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

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

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

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director's response to comments and final decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that if a person is not satisfied with the Executive Director's response and decision, they can request a contested case hearing or file a request to reconsider the Executive Director's decision within 30 days after the notice is mailed.

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

City of Runge

Permit No. WQ0010266001

Statement of Basis/Technical Summary and Executive Director's Preliminary Decision

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 Chris Graf, P.E. at (512) 239-4541.

Chris Graf

Chris Graf, P.E.

Municipal Permits Team

Wastewater Permitting Section (MC 148)

August 6, 2025

Date