



Technical Package Cover Page

This file contains the following documents:

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



Portada de Paquete Técnico

Este archivo contiene los siguientes documentos:

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

ENGLISH LANGUAGE TEMPLATE FOR CAFO 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 the TCEQ Public Participation Plan and Language Access Plan. 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.

- 1) Applicant's Name: Oene Keuning
- 2) Enter Customer Number: CN602622854
- 3) Name of facility: Okee Dairy
- 4) Enter Regulated Entity Number: RN102004272
- 5) Provide your permit Number: WQ0004108000
- 6) Facility Business: The facility confines 2,000 head of cattle in which 1,500 are milking. The facility has six (6) land management units (LMUs) with the following acreages: LMU #1 - 46, LMU #2 - 26, LMU#3 - 45, LMU #4 - 72, LMU #5 - 24 and LMU #6 - 100 acres. Two (2) retention control structures (RCSs), one (1) slurry pit and two (2) settling ponds. The required capacities are: RCS #1 - 9.19 ac-ft and RCS #2 - 26.46 ac-ft. There are nine (9) onsite wells of which three are plugged. The facility is located in the North Bosque River in Segment No. 1226 of the Brazos River Basin.
- 7) Facility Location: The facility is located at 4745 County Road 207, Hico, Hamilton County, Texas.
- 8) Application Type: Individual Permit Major Amendment
- 9) Description of your request: Reconfigure LMUs, addition of land, addition of new LMUs, reconfigure the drainage area, addition of a freestall barn, remove the slurry pit, expansion of the hospital barn, addition of a pen located to the East of the freestall barn and addition of Wells #10, #11 and #12.
- 10) Potential pollutant sources at the facility include (list the pollutant sources): Manure, manure stockpiles, wastewater, sludge, slurry, compost, feed & bedding, silage stockpiles, dead animals, dust, lubricants, parlor chemicals, pesticides and fuel storage tanks.
- 11) The following best management practices will be implemented at the site to manage pollutants from the listed pollutant sources (describe the best management practices that are used): stormwater is stored in the lagoon (RCS) until land applied through irrigation and manure and sludge are stockpiled in the drainage area of the RCS until land applied or hauled offsite for beneficial use. Manure and sludge generated by the CAFO will be retained and used in an appropriate and beneficial manner in accordance with a certified site-specific nutrient management plan. Wastewater will be contained in the RCS properly designed ((25-year frequency 10-day duration (25 year/10 day), constructed, operated and maintained according to the provision of the permit. Maintain 100-foot buffer for all irrigation wells or 150-foot for all supply wells. Dust - control speed and regular pen maintenance. Fertilizers - store under roof and handle according to specified label directions. Fuel Tanks - provide secondary containment and prevent overfills/spills. Dead

animals - dispose by a third-party rendering service, buried on-site or compost on-site. Collected within 24 hours of death and disposed within three days.

12) Unless otherwise limited, manure, sludge, or wastewater will not be discharged from a land management unit (LMU) or a retention control structure (RCS) into or adjacent to water in the state from a CAFO except resulting from any of the following conditions:

1) a discharge of manure, sludge, or wastewater that the permittee cannot reasonably prevent or control resulting from a catastrophic condition other than a rainfall event;

2) overflow of manure, sludge, or wastewater from a RCS resulting from a chronic/catastrophic rainfall event; or

3) a chronic/catastrophic rainfall discharge from a LMU that occurs because the permittee takes measures to de-water the RCS if the RCS is in danger of imminent overflow.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



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

PERMIT NO. WQ0004108000

APPLICATION. Oene Keuning, 4745 County Road 207, Hico, Texas 76457, who owns a dairy cattle facility, has applied to the Texas Commission on Environmental Quality (TCEQ) to amend Wastewater Permit No. WQ0004108000 (EPA I.D. No. TX0128619) for a Concentrated Animal Feeding Operation (CAFO) to authorize reconfiguring the LMUs, adding land, adding new LMUs, reconfiguring the drainage area, adding a freestall barn, removing the slurry pit, expansion of the hospital barn, adding a pen located to the East of the freestall barn and adding wells #10, #11, & #12. The facility is located at 4745 County Road 207, near the city of Hico, in Hamilton County, Texas 76457. TCEQ received this application on July 8, 2025. The permit application will be available for viewing and copying at Hamilton County Ag Extension Office, 101 East Henry Street, Hamilton, 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/cafo-applications>. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application.

<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-98.031944,31.881388&level=18>

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

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

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

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

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

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

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

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

AGENCY CONTACTS AND INFORMATION. All public comments and requests must be submitted either electronically at <https://www14.tceq.texas.gov/epic/eComment/>, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105,

P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Oene Keuning at the address stated above or by calling Mr. Oene Keuning, Owner, at 254-796-4991.

Issuance Date: August 1, 2025

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



NOTICE OF APPLICATION AND PRELIMINARY DECISION FOR CAFO WATER QUALITY PERMIT

MAJOR AMENDMENT

PERMIT NO. WQ0004108000

APPLICATION AND PRELIMINARY DECISION. Oene Keuning, 4745 County Road 207, Hico, Texas 76457 has applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment of Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004108000, for a Concentrated Animal Feeding Operation (CAFO), to authorize the applicant to reconfigure land management units (LMUs) and increase the acreage of LMU #1 from 46 to 51 acres, LMU #4 from 72 to 155 acres and LMU #5 from 24 to 53 acres; and add new LMU #7 – 33 acres. The total land application area will increase from 313 to 463 acres. Other proposed changes include reconfiguration of the drainage area to add a new freestall barn; remove the slurry pit and use the location as part of the proposed freestall barn; expand the hospital barn; and add pens and Wells #10, #11 and #12. TCEQ received this application on July 8, 2025.

The facility is located at 4745 County Road 207, Hico, Hamilton County, Texas 76457. The facility is located in the drainage area of the North Bosque River in Segment No. 1226 of the Brazos River Basin. This link to an electronic map of the site or facility's general location is provided as a public courtesy and is not part of the application or notice.
<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-98.031944,31.881388&level=18>.
For the exact location, refer to the application.

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. This permit is consistent with the requirements of the antidegradation implementation procedures in 30 Texas Administrative Code §307.5 (c)(2)(G) of the Texas Surface Water Quality Standards and no lowering of water quality is anticipated. The TCEQ 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 the **Hamilton County Agricultural Extension Office, 101 E. Henry, Hamilton, Texas 76531**.

The application, including any updates, and associated notices are available electronically at the following webpage: <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/cafo-applications>.

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

CHANGE IN LAW. The Texas Legislature enacted Senate Bill 709, effective September 1, 2015, amending the requirements for comments and contested case hearings. This application is subject to those changes in law.

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 permit number, the location and distance of your property/activities relative to the 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 germane 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 will only grant a contested case hearing on disputed issues of fact that are relevant and material to the Commission's decision on the application. Further, the Commission will only grant a hearing on issues that were raised in timely filed comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period.**

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

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

All written public comments and public meeting requests must be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 78711-3087 or electronically at <https://www14.tceq.texas.gov/epic/eComment/> 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 <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. 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 Mr. Oene Keuning at the address stated above or by calling Mr. Corey Mullin, Enviro-Ag Engineering, Inc. at (254) 965-3500.

Issuance Date: October 23, 2025

COMISIÓN DE CALIDAD AMBIENTAL DE TEXAS



ANUNCIO DE SOLICITUD Y DECISIÓN PRELIMINAR PARA CAFO PERMISO DE CALIDAD DEL AGUA

ENMIENDA IMPORTANTE

PERMISO N° WQ0004108000

SOLICITUD Y DECISIÓN PRELIMINAR. Oene Keuning, 4745 County Road 207, Hico, Texas 76457 ha solicitado a la Comisión de Calidad Ambiental de Texas (TCEQ) una enmienda importante del Permiso No. WQ0004108000, para una Operación Concentrada de Alimentación Animal (CAFO), autorizar al solicitante a reconfigurar las unidades de manejo de tierras (LMU) y aumentar la superficie de LMU #1 de 46 a 51 acres, LMU #4 de 72 a 155 acres y LMU #5 de 24 a 53 acres; y agregue una nueva LMU # 7 - 33 acres. El área total de aplicación de tierra aumentará de 313 a 463 acres. Otros cambios propuestos incluyen la reconfiguración del área de drenaje para agregar un nuevo establo libre; retire el pozo de purín y use la ubicación como parte del establo libre propuesto; ampliar el establo del hospital; y agregue bolígrafos y Wells # 10, # 11 y # 12. La TCEQ recibió esta solicitud el 8 de julio de 2025.

La instalación está ubicada en 4745 County Road 207, Hico, Condado de Hamilton, Texas 76457. La instalación está ubicada en el área de drenaje del río Bosque Norte en el Segmento No. 1226 de la Cuenca del Río Brazos. Este enlace a un mapa electrónico de la ubicación general del sitio o instalación se proporciona como cortesía pública y no es parte de la solicitud o aviso. <https://gisweb.tceq.texas.gov/LocationMapper/?marker=-98.031944,31.881388&level=18>. Para conocer la ubicación exacta, consulte la solicitud.

El Director Ejecutivo de la TCEQ ha concluido el examen técnico de la solicitud y ha preparado un bosquejo de permiso. El bosquejo de permiso, de ser aprobado, establecería las condiciones bajo las cuales la instalación debe operar. Este permiso es consistente con los requisitos de los procedimientos de implementación antidegradación en 30 Código Administrativo de Texas §307.5 (c) (2) (G) de los Estándares de Calidad de Aguas Superficiales de Texas y no se anticipa una disminución de la calidad del agua. El Director Ejecutivo de la TCEQ ha tomado una decisión preliminar de que este permiso, si se emite, cumple con todos los requisitos legales y reglamentarios. La solicitud de permiso, la Decisión Preliminar del Director Ejecutivo y el bosquejo del permiso están disponibles para su visualización y copia en la **Oficina de Extensión Agrícola del Condado de Hamilton, 101 E. Henry, Hamilton, Texas 76531.**

La solicitud, incluidas las actualizaciones, y los avisos asociados están disponibles electrónicamente en la siguiente página web:

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

CAMBIO EN LA LEY. La Legislatura de Texas promulgó el Proyecto de Ley del Senado 709, efectivo el 1 de septiembre de 2015, que modifica los requisitos para comentarios y audiencias de casos impugnados. Esta solicitud está sujeta a esos cambios en la ley.

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

COMENTARIO PÚBLICO / REUNIÓN PÚBLICA: Puede enviar comentarios públicos o solicitar una reunión pública sobre esta solicitud. El propósito de una reunión pública es para brindar la oportunidad de enviar comentarios o hacer preguntas sobre la solicitud. La TCEQ celebra una reunión pública si el Director Ejecutivo determina que existe un grado significativo de interés público en la solicitud o si lo solicita un legislador local. Una reunión pública no es una audiencia de caso impugnado.

OPORTUNIDAD PARA UNA AUDIENCIA DE CASO IMPUGNADO. Después de la fecha límite para presentar comentarios públicos, el Director Ejecutivo considerará todos los comentarios oportunos y preparará una respuesta a todos los comentarios públicos relevantes y materiales o significativos. **A menos que la solicitud sea remitida directamente para una audiencia de caso impugnado, la respuesta a los comentarios se enviará por correo a todos los que enviaron comentarios públicos y a aquellas personas que estén en la lista de correo para esta solicitud. Si se reciben comentarios, el correo también proporcionará instrucciones para solicitar una audiencia de caso impugnado o reconsiderar la decisión del Director Ejecutivo.** Una audiencia de caso impugnado es un procedimiento legal similar a un juicio civil en un tribunal de distrito estatal.

PARA SOLICITAR UNA AUDIENCIA DE CASO IMPUGNADO, DEBE INCLUIR LOS SIGUIENTES ELEMENTOS EN SU SOLICITUD: su nombre; dirección, teléfono; nombre y número de permiso del solicitante; la ubicación y distancia de su propiedad / actividades en relación con la instalación; una descripción específica de cómo se vería afectado negativamente por la instalación de una manera que no es común para el público en general; una lista de todas las cuestiones de hecho controvertidas que usted planteó durante el periodo de comentarios y la declaración "[Yo/nosotros] solicito/amos una audiencia de caso impugnado". Si la solicitud de audiencia de caso impugnado se presenta en nombre de un grupo o asociación, la solicitud debe designar al representante del grupo para recibir correspondencia futura; identificar por nombre y dirección física a un miembro individual del grupo que se vería afectado negativamente por la instalación o actividad; proporcionar la información discutida anteriormente con respecto a la ubicación y distancia del miembro afectado de la instalación o actividad; explicar cómo y por qué se vería afectado el miembro; y explicar cómo los intereses que el grupo busca proteger son relevantes para el propósito del grupo.

Tras el cierre de todos los periodos de comentarios y solicitudes aplicables, el Director Ejecutivo remitirá la solicitud y cualquier solicitud de reconsideración o de una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración en una reunión programada de la Comisión.

La Comisión sólo concederá una audiencia de caso impugnando sobre cuestiones de hecho controvertidas que sean relevantes y materiales para la decisión de la Comisión sobre la solicitud. Además, la Comisión sólo concederá una audiencia sobre cuestiones que se plantearon en comentarios presentados oportunamente que no fueron retirados posteriormente. **Si se concede una audiencia, el tema de una audiencia se limitará a cuestiones de hecho en disputa o cuestiones mixtas de hecho y de derecho relacionadas con preocupaciones relevantes y materiales sobre la calidad del agua presentadas durante el periodo de comentarios.**

ACCIÓN DEL DIRECTOR EJECUTIVO. El Director Ejecutivo puede emitir la aprobación final de la solicitud a menos que se presente una solicitud de audiencia de caso impugnado oportunamente o una solicitud de reconsideración. Si se presenta una solicitud de audiencia oportuna o una solicitud de reconsideración, el Director Ejecutivo no emitirá la aprobación final del permiso y enviará la solicitud y la petición a los Comisionados de la TCEQ para su consideración en una reunión programada de la Comisión.

LISTA DE CORREO. Si envía comentarios públicos, una solicitud de una audiencia de caso impugnado o una reconsideración de la decisión del Director Ejecutivo, se le agregará a la lista de correo para que esta solicitud reciba avisos públicos futuros enviadas por correo por la Oficina del Secretario Oficial. Además, puede solicitar ser colocado en: (1) la lista de correo permanente para un nombre de solicitante específico y número de permiso; y/o (2) la lista de correo para un condado específico. Para ser colocado en la lista de correo permanente y / o del condado, especifique claramente qué lista(s) y envíe su solicitud a la Oficina del Secretario Oficial de la TCEQ a la dirección a continuación.

Todos los comentarios públicos escritos y las solicitudes de reunión pública deben enviarse a la Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, TX 787113087 -o electrónicamente a <https://www14.tceq.texas.gov/epic/eComment/> dentro de los 30 días a partir de la fecha de publicación de este aviso en el periódico.

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

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

También se puede obtener más información de Sr. Oene Keuning en la dirección indicada anteriormente o llamando a Sr. Corey Mullin, Enviro-Ag Engineering, Inc. a (254) 965-3500.

Fecha de Emisión: 23 de octubre de 2025



Corporate Office:
3404 Airway Blvd.
Amarillo TX 79118

Central Texas:
9855 FM 847
Dublin TX 76446

New Mexico:
203 East Main Street
Artesia NM 88210

July 2, 2025

TCEQ
Registration, Review and Reporting Division
Permits Administration Review Section
Water Quality Applications Team, MC-148
12100 Park 35 Circle
Austin, TX 78753

Re: Okee Dairy – Permit No. WQ0004108000
Hamilton County, Texas.

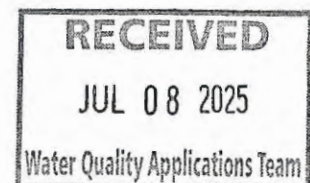
Dear Administrative Review Section,

Enclosed please find the Major Amendment application for the above-mentioned facility. The \$350 application fee was paid electronically, and the voucher is attached. Should you have any questions please do not hesitate to contact me.

Respectfully Submitted,

Jourdan Mullin
Enviro-Ag Engineering, Inc.

Cc: TCEQ Region 4, Stephenville
Okee Dairy
EAE file



30 TAC 321, SUBCHAPTER B APPLICATION, POLLUTION PREVENTION PLAN & CNMP

Okee Dairy
Major Amendment

Prepared For:

Oene Keuning
4745 County Road 207
Hico, TX 76457

June 18, 2025

Prepared By:





TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

ELECTRONIC WAIVER REQUEST FOR A CONCENTRATED ANIMAL FEEDING OPERATION (CAFO)

A Large CAFO, as defined in the CAFO rules at 30 TAC 321.32(14)(A), must request a waiver from e-reporting requirements codified in 40 Code of Federal Regulations §127.15 OR be required to submit CAFO annual reports electronically.

Are you requesting a waiver from e-reporting requirements?

☒ Yes, Indicate the type of waiver below.

☒ Temporary Waiver

☐ Permanent Waiver (available to facilities and entities owned or operated by members of religious communities that choose not to use certain modern technologies (e.g., computers, electricity))

☐ No, you must submit your application electronically through TCEQ ePermits system (STEERS) at <https://www3.tceq.texas.gov/steers/index.cfm>. Check [How to Apply through STEERS](#).

If an electronic waiver request is granted, the Applicant(s) seeking authorization, or an authorized permittee(s) may continue to submit CAFO annual reports to TCEQ in a paper format.

Note:

- An approved waiver is not transferrable.
- Each Owner or Operator must request his own waiver.
- Temporary waiver will not extend beyond five years. However, permittees may re-apply for a new temporary waiver, if needed.

State Only CAFOs are exempt from this requirement.



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDIVIDUAL PERMIT APPLICATION FOR A CONCENTRATED ANIMAL FEEDING OPERATION (CAFO)

If you have questions about completing this form, please contact the Applications Review and Processing Team at 512-239-4671.

SECTION 1. APPLICATION FEE

Minor Amendment - \$150.00

Renewal - \$315.00

New or Major Amendment - \$350.00

Mailed

Check/Money Order Number: [REDACTED]

Check/Money Order Amount: [REDACTED]

Name Printed on Check: [REDACTED]

EPAY

Voucher Number: 773604 & 773605

Copy of Payment Voucher enclosed? Yes ☒

SECTION 2. TYPE OF APPLICATION

A. Coverage: State Only ☐ TPDES ☒

B. Media Type: Water Quality ☐ Air and Water Quality ☒

C. Application Type: New ☐ Major Amendment ☒

Renewal ☐ Minor Amendment ☐

D. For amendments, describe the proposed changes: Reconfigure LMUs, addition of land, addition of new LMUs, reconfigure the drainage area, addition of a freestall barn, remove the slurry pit, expansion of the hospital barn, addition of a pen located to the East of the freestall barn and addition of Wells #10, #11, & #12.

E. For existing permits:

What is the permit number? WQ0004108000

What is the EPA I.D. Number? TX 0128619

SECTION 3. FACILITY OWNER (APPLICANT) INFORMATION

A. What is the legal name of the facility owner?

Oene Keuning

Print this voucher for your records. If you are sending the TCEQ hardcopy documents related to this payment, include a copy of this voucher.

Transaction Information

Voucher Number: 773604
Trace Number: 582EA000675011
Date: 07/03/2025 09:29 AM
Payment Method: CC - Authorization 000007993G
Voucher Amount: \$300.00
Fee Type: CAFO PERMIT - NEW OR MAJOR AMENDMENT
ePay Actor: JOURDAN MULLIN
Actor Email: jmullin@enviroag.com
IP: 156.146.244.233

Payment Contact Information

Name: JOURDAN MULLIN
Company: ENVIRO-AG ENGINEERING INC
Address: 3404 AIRWAY BLVD, AMARILLO, TX 79118
Phone: 806-679-5570

Site Information

Site Name: OKEE DAIRY
Site Location: 4745 CR 207 HICO TX 76457

Customer Information

Customer Name: OENE KEUNING
Customer Address: 4745 CR 207, HICO, TX 76457

[Close](#)

[Site Help](#) | [Disclaimer](#) | [Web Policies](#) | [Accessibility](#) | [Our Compact with Texans](#) | [TCEQ Homeland Security](#) | [Contact Us](#)
[Statewide Links: Texas.gov](#) | [Texas Homeland Security](#) | [TRAIL Statewide Archive](#) | [Texas Veterans Portal](#)

© 2002-2025 Texas Commission on Environmental Quality

Print this voucher for your records. If you are sending the TCEQ hardcopy documents related to this payment, include a copy of this voucher.

Transaction Information

Voucher Number: 773605
Trace Number: 582EA000675011
Date: 07/03/2025 09:29 AM
Payment Method: CC - Authorization 000007993G
Voucher Amount: \$50.00
Fee Type: 30 TAC 305.53B WQ NOTIFICATION FEE
ePay Actor: JOURDAN MULLIN
Actor Email: jmullin@enviroag.com
IP: 156.146.244.233

Payment Contact Information

Name: JOURDAN MULLIN
Company: ENVIRO-AG ENGINEERING INC
Address: 3404 AIRWAY BLVD, AMARILLO, TX 79118
Phone: 806-679-5570

[Close](#)

[Site Help](#) | [Disclaimer](#) | [Web Policies](#) | [Accessibility](#) | [Our Compact with Texans](#) | [TCEQ Homeland Security](#) | [Contact Us](#)
[Statewide Links:](#) [Texas.gov](#) | [Texas Homeland Security](#) | [TRAIL Statewide Archive](#) | [Texas Veterans Portal](#)

© 2002-2025 Texas Commission on Environmental Quality

B. If the applicant is an existing TCEQ customer, provide the Customer Number (CN) issued to this entity? CN 602622854

C. What is the contact information for the owner?

Mailing Address: 4745 CR 207

City, State and Zip Code: Hico, TX 76457

Phone Number: 254/796-4991 Fax Number: n/a

E-mail Address: n/a

D. Indicate the type of customer:

- | | |
|---|---|
| ☒ Individual | ☐ Federal Government |
| ☐ Limited Partnership | ☐ County Government |
| ☐ General Partnership | ☐ State Government |
| ☐ Trust | ☐ City Government |
| ☐ Sole Proprietorship (D.B.A.) | ☐ Other Government |
| ☐ Corporation | ☐ Other, specify: <u>Click here to enter text.</u> |
| ☐ Estate | |

E. If the customer type is individual, complete Attachment 1.

F. Is this customer an independent entity?

- ☒ Yes ☐ No government, subsidiary, or part of a larger corporation

G. Number of employees:

- ☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 or higher

H. For Corporations and Limited Partnerships:

What is the Tax Identification Number issued by the State Comptroller: Click here to enter text.

What is the Charter Filing Number issued by the Texas Secretary of State: Click here to enter text.

SECTION 4. CO-APPLICANT INFORMATION

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

A. What is the legal name of the co-applicant?

Click here to enter text.

B. If the applicant is an existing TCEQ customer, provide the Customer Number (CN) issued to this entity? CN Click here to enter text.

C. What is the contact information for the co-applicant?

Mailing Address: Click here to enter text.

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

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

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

D. Indicate the type of customer:

- | | |
|---|--|
| ☐ Individual | ☐ Federal Government |
| ☐ Limited Partnership | ☐ County Government |
| ☐ General Partnership | ☐ State Government |
| ☐ Trust | ☐ City Government |
| ☐ Sole Proprietorship (D.B.A.) | ☐ Other Government |
| ☐ Corporation | ☐ Other, specify: Click here to enter text. |
| ☐ Estate | |

E. If the customer type is individual, complete Attachment 1.

F. Is this customer an independent entity?

- ☐ Yes ☐ No government, subsidiary, or part of a larger corporation

G. Number of employees:

- ☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 or higher

H. For Corporations and Limited Partnerships:

What is the Tax Identification Number issued by the State Comptroller: [Click here to enter text.](#)

What is the Charter Filing Number issued by the Texas Secretary of State: [Click here to enter text.](#)

SECTION 5. APPLICATION CONTACT INFORMATION

This is the person TCEQ will contact if additional information is needed about this application.

Prefix (Mr., Ms., Miss): Mr.

Application Contact First and Last Name: Corey Mullin

Title: Consultant Credentials: [Click here to enter text](#)

Company Name: Enviro-Ag Engineering, Inc.

Mailing Address: 9855 FM 847

City, State and Zip Code: Dublin, TX 76446

Phone Number: 254/965-3500 Fax Number: 254/965-8000

E-mail Address: cmullin@enviroag.com

SECTION 6. PERMIT CONTACT INFORMATION

Provide two names of individuals that TCEQ can contact during the term of the permit.

A. Prefix (Mr., Ms., Miss): Mr.

Permit Contact First and Last Name: Corey Mullin

Title: Consultant Credentials: Click here to enter text.

Company Name: Enviro-Ag Engineering, Inc.

Mailing Address: 9855 FM 847

City, State and Zip Code: Dublin, TX 76446

Phone Number: 254/965-3500 Fax Number: 254/965-8000 E-mail Address:
cmullin@enviroag.com

B. Prefix (Mr., Ms., Miss): Mr.

Permit Contact First and Last Name: Oene Keuning

Title: Owner Credentials: Click here to enter text.

Company Name: Okee Dairy

Mailing Address: 4745 CR 207

City, State and Zip Code: Hico, TX 76457

Phone Number: 254/796-4991 Fax Number: n/a E-mail Address: n/a

SECTION 7. ANNUAL BILLING CONTACT INFORMATION

Please identify the individual for receiving the annual fee invoices.

Is the billing contact and contact information the same as the Owner or the Co-Applicant identified in Section 3) or Section 4) above?

☒ Yes, specify which applicant on the line below and go to Section 8)

Owner, Oene Keuning

☐ No, complete this section

Prefix (Mr., Ms., Miss): Click here to enter text.

First and Last Name: Click here to enter text.

Title: Click here to enter text. Credentials: Click here to enter text.

Company Name: Click here to enter text.

Mailing Address: Click here to enter text.

City, State and Zip Code: Click here to enter text.

Phone Number: Click here to enter text. Fax Number: Click here to enter text. E-mail

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

SECTION 8. LANDOWNER INFORMATION

A. Landowner where the production area is or will be located

Landowner Name: Oene Keuning

B. Landowner of the land management units (LMUs)

Landowner Name: Oene Keuning

SECTION 9. PUBLIC NOTICE INFORMATION

A. Individual responsible for publishing the notices in the newspaper

Prefix (Mr., Ms., Miss): Mrs. First and Last Name: Jourdan Mullin

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

Company Name: Enviro-Ag Engineering, Inc.

Mailing Address: 9855 FM 847

City, State and Zip Code: Dublin, TX 76446

Phone Number: 254/965-3500 Fax Number: 254/965-8000 E-mail Address:

jmullin@enviroag.com

B. Method for receiving the notice package for the Notice of Receipt and Intent

☒ E-mail: jmullin@enviroag.com

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

☒ Regular Mail:

Mailing Address: 9855 FM 847

City, State and Zip Code: Dublin, TX 76446

C. Contact person to be listed in the notice

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Oene Keuning

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

Company Name: Okee Dairy

Phone Number: 254/796-4991

D. Public viewing location

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

Public Building Name: Hamilton County Ag Extension Office

Physical Address of Building: 101 E Henry St.

City: Hamilton County: Hamilton County

Phone Number: 254/386-3919

E. Bilingual Notice Requirement

For new, major amendment, and renewal applications. This information can be obtained by contacting the bilingual/ESL coordinator at the nearest elementary or middle school.

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

Yes ☐ No ☒

(If No, alternative language notice publication is not required; skip to Section 10. Regulated Entity (Site) Information.)

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 1, 2, 3, or 4, public notice in an alternative language is required. Which language is required by the bilingual program? English

6. Complete the [CAFO Plain Language Summary Template](#) (English) for CAFO Permit Applications for a new, renewal, major or minor amendment and submit with this application.

If a bilingual education program is required by the Texas Education Code at the nearest elementary or middle school to the facility or proposed facility, also complete the [CAFO Plain Language Summary Template](#) (Spanish) or provide a translated copy of the completed English plain language summary in the appropriate alternative language if different from Spanish.

F. Public Involvement Plan Form

Complete and attach one Public Involvement Plan (PIP) Form (TCEQ Form 20960) for each application for a new permit or major amendment to a permit.

SECTION 10. REGULATED ENTITY (SITE) INFORMATION

- A. Site Name as known by the local community: Okee Dairy

- B. If this is an existing permitted site, provide the Regulated Entity Number (RN) issued to this site? RN 102004272

- C. Site Address/Location:

If the site has a physical address such as 12100 Park 35 Circle, Austin, TX 78753, complete Item 1.

ENGLISH LANGUAGE TEMPLATE FOR CAFO 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 the TCEQ Public Participation Plan and Language Access Plan. 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.

- 1) Applicant's Name: Oene Keuning
- 2) Enter Customer Number: CN602622854
- 3) Name of facility: Okee Dairy
- 4) Enter Regulated Entity Number: RN102004272
- 5) Provide your permit Number: WQ0004108000
- 6) Facility Business: The facility confines 2,000 head of cattle in which 1,500 are milking. The facility has six (6) land management units (LMUs) with the following acreages: LMU #1 - 46, LMU #2 - 26, LMU#3 - 45, LMU #4 - 72, LMU #5 - 24 and LMU #6 - 100 acres. Two (2) retention control structures (RCSs), one (1) slurry pit and two (2) settling ponds. The required capacities are: RCS #1 - 9.19 ac-ft and RCS #2 - 26.46 ac-ft. There are nine (9) onsite wells of which three are plugged. The facility is located in the North Bosque River in Segment No. 1226 of the Brazos River Basin.
- 7) Facility Location: The facility is located at 4745 County Road 207, Hico, Hamilton County, Texas.
- 8) Application Type: Individual Permit Major Amendment
- 9) Description of your request: Reconfigure LMUs, addition of land, addition of new LMUs, reconfigure the drainage area, addition of a freestall barn, remove the slurry pit, expansion of the hospital barn, addition of a pen located to the East of the freestall barn and addition of Wells #10, #11 and #12.
- 10) Potential pollutant sources at the facility include (list the pollutant sources): Manure, manure stockpiles, wastewater, sludge, slurry, compost, feed & bedding, silage stockpiles, dead animals, dust, lubricants, parlor chemicals, pesticides and fuel storage tanks.
- 11) The following best management practices will be implemented at the site to manage pollutants from the listed pollutant sources (describe the best management practices that are used): stormwater is stored in the lagoon (RCS) until land applied through irrigation and manure and sludge are stockpiled in the drainage area of the RCS until land applied or hauled offsite for beneficial use. Manure and sludge generated by the CAFO will be retained and used in an appropriate and beneficial manner in accordance with a certified site-specific nutrient management plan. Wastewater will be contained in the RCS properly designed ((25-year frequency 10-day duration (25 year/10 day), constructed, operated and maintained according to the provision of the permit. Maintain 100-foot buffer for all irrigation wells or 150-foot for all supply wells. Dust - control speed and regular pen maintenance. Fertilizers - store under roof and handle according to specified label directions. Fuel Tanks - provide secondary containment and prevent overfills/spills. Dead

animals - dispose by a third-party rendering service, buried on-site or compost on-site. Collected within 24 hours of death and disposed within three days.

12) Unless otherwise limited, manure, sludge, or wastewater will not be discharged from a land management unit (LMU) or a retention control structure (RCS) into or adjacent to water in the state from a CAFO except resulting from any of the following conditions:

1) a discharge of manure, sludge, or wastewater that the permittee cannot reasonably prevent or control resulting from a catastrophic condition other than a rainfall event;

2) overflow of manure, sludge, or wastewater from a RCS resulting from a chronic/catastrophic rainfall event; or

3) a chronic/catastrophic rainfall discharge from a LMU that occurs because the permittee takes measures to de-water the RCS if the RCS is in danger of imminent overflow.



Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

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

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

Section 1. Preliminary Screening

- ☐ New Permit or Registration Application
☒ New Activity - modification, registration, amendment, facility, etc. (see instructions)

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

Section 2. Secondary Screening

- ☒ Requires public notice,
☐ Considered to have significant public interest, and
☐ Located within any of the following geographical locations:

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

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

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

Section 3. Application Information

Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☐ Standard Permit ☐ Title V
Waste ☐ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire
☐ Radioactive Material Licensing ☐ Underground Injection Control

Water Quality

☒ Texas Pollutant Discharge Elimination System (TPDES)
☐ Texas Land Application Permit (TLAP)
☒ State Only Concentrated Animal Feeding Operation (CAFO)
☐ Water Treatment Plant Residuals Disposal Permit
☐ Class B Biosolids Land Application Permit
☐ Domestic Septage Land Application Registration

Water Rights New Permit

☐ New Appropriation of Water
☐ New or existing reservoir

Amendment to an Existing Water Right

☐ Add a New Appropriation of Water
☐ Add a New or Existing Reservoir
☐ Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Okee Dairy is a dairy milking facility.

Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.

Hico

(City)

Hamilton

(County)

(Census Tract)

Please indicate which of these three is the level used for gathering the following information.

☐

City

☐

County

☒

Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

88.9%

(b) Per capita income for population near the specified location

\$24,810

(c) Percent of minority population and percent of population by race within the specified location

White - 75.6%. Black or African American - 3.29%. Hispanic - 12.7%. Two or More Races - 2.11%.
Other - 2.68%. Asian - 1.3%. Indian - 1.6%. Multiracial - 0.72%

(d) Percent of Linguistically Isolated Households by language within the specified location

0%

(e) Languages commonly spoken in area by percentage

English - 89.4%

Spanish -

10.6%

(f) Community and/or Stakeholder Groups

N/A

(g) Historic public interest or involvement

N/A

Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☒ Yes ☐ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☐ No

If Yes, please describe.

If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.

(c) Will you provide notice of this application in alternative languages?

☐ Yes ☐ No

Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.

If yes, how will you provide notice in alternative languages?

- ☐ Publish in alternative language newspaper
- ☐ Posted on Commissioner's Integrated Database Website
- ☐ Mailed by TCEQ's Office of the Chief Clerk
- ☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☐ Yes ☐ No

(e) If a public meeting is held, will a translator be provided if requested?

☐ Yes ☐ No

(f) Hard copies of the application will be available at the following (check all that apply):

- ☐ TCEQ Regional Office ☐ TCEQ Central Office
- ☐ Public Place (specify)

Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☐ Yes ☐ No

What types of notice will be provided?

- ☒ Publish in alternative language newspaper
- ☐ Posted on Commissioner's Integrated Database Website
- ☐ Mailed by TCEQ's Office of the Chief Clerk
- ☐ Other (specify)

If the site does not have a physical address, provide a location description in Item 2.
Example: located on the north side of FM 123, 2 miles west of the intersection of FM 123 and Highway 1.

Item 1: Physical Address of Project or Site:

Street Number and Name: 4745 CR 207

City, State and Zip Code: Hico, TX 76457

Item 2: Site Location Description:

Location description: Click here to enter text.

City where the site is located or, if not in a city, what is the nearest city: Click here to enter text.

Zip Code where the site is located: Click here to enter text.

D. County or counties if more than 1: Hamilton

E. Latitude: 31 52' 52.81" N Longitude: 98 01' 55.18" W

F. Animal Type:

- | | |
|--|---|
| ☒ Dairy-0241 | ☐ Sheep/Goats-0214 |
| ☐ Beef Cattle- 0211 | ☐ Auction-5154 |
| ☐ Swine-0213 | ☐ Other, specify: <u>Click here to enter text.</u> |
| ☐ Broiler-0251 | |
| ☐ Laying Hens-0252 | |

G. Existing Maximum Number of Animals: 2,000 Total; 1,500 Milking

Proposed Maximum Number of Animals: 2,000 Total; 1,500 Milking

H. What is the total LMU acreage? 463

SECTION 11. MISCELLANEOUS INFORMATION

A. Did any person who was formerly employed by the TCEQ represent your company and get paid for service regarding this application? Yes ☐ No ☒

If yes, provide the name(s) of the former TCEQ employee(s): Click here to enter text.

B. Is the facility located on Indian Country Lands? Yes ☐ No ☒

If yes, do not submit this application. You must obtain authorization through EPA Region 6.

C. Is the production area located within the protection zone of a sole source drinking water supply? Yes ☐ No ☒

D. 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 here to enter text.

E. Delinquent Fees and Penalties:

Do you owe fees to the TCEQ? Yes ☐ No ☒

Do you owe any penalties to the TCEQ? Yes ☐ No ☒

If you answered yes to either of the above questions, provide the amount owed, the type of fee or penalty, and an identifying number.

[Click here to enter text.](#)

SECTION 12. AFFECTED LANDOWNER INFORMATION

This section must be completed if the application type is new or major amendment. If the application type is renewal or minor amendment, skip to Section 13.

- A. Landowner map. Attach a landowner map or drawing, with scale, that includes the following. Each landowner should be designated by a letter or number on both the list and the map.
- The applicant's property boundaries, including onsite and offsite LMUs; and
 - The property boundaries of all landowners within 500 feet of the applicant's property.
- B. Landowner list. Attach a separate list of the landowners' names and mailing addresses. The list must be cross-referenced to the landowners map.
- C. Landowner list media. Indicate the format of the landowners list.
- ☒ Read/Writeable CD
- ☐ 4 sets of mailing labels
- D. Landowner data source. Provide the source of the landowners' names and mailing addresses.

Hamilton County Appraisal District

SECTION 13. ATTACHMENTS

A. All applications

- Supplemental Permit Information Form, if required by instructions on that form
- Current copy of tax records or deed showing ownership of the land
- Lease agreement, if LMUs are not owned by the applicant or co-applicant

B. New, Major amendment, or Renewal

- Completed Technical Information Packet (TCEQ-00760).

C. New and Major amendment

- Public Involvement Plan Form (TCEQ-20960)

D. Minor Amendment

Attach the following items if applicable:

- Current vicinity map, site map, runoff control map, and LMU map

- RCS design calculations
- Nutrient Management Plan or Land application rate calculations
- Other technical documents affected by the proposed amendment

SIGNATURE PAGE

If co-applicants are required, each co-applicant must submit an original, separate signature page.

Permit Number: WQ0004108000

Applicant: Oene Keuning

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: Oene Keuning

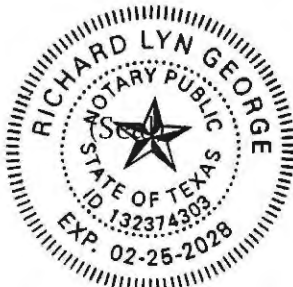
Title: Owner

Signature:  Date: 7-2-25

SUBSCRIBED AND SWORN to before me by the said Oene Keuning on

this 2nd day of July, 20 25

My commission expires on the 25th day of February, 20 28




Notary Public

Hamilton County
County, Texas

Attachment 1
Individual Information

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

Prefix (Mr., Ms., Miss): Mr.

Full Legal Name, including middle name: Oene Keuning

Driver's License or State Identification Number: XXXXXXXX

State that Issued the License or Identification Number: Texas

Date of Birth: XX/XX/XXXX

Mailing Address: 4745 CR 207

City, State and Zip Code: Hico, TX 76457

Phone Number: 254/796-4991 Fax Number: n/a

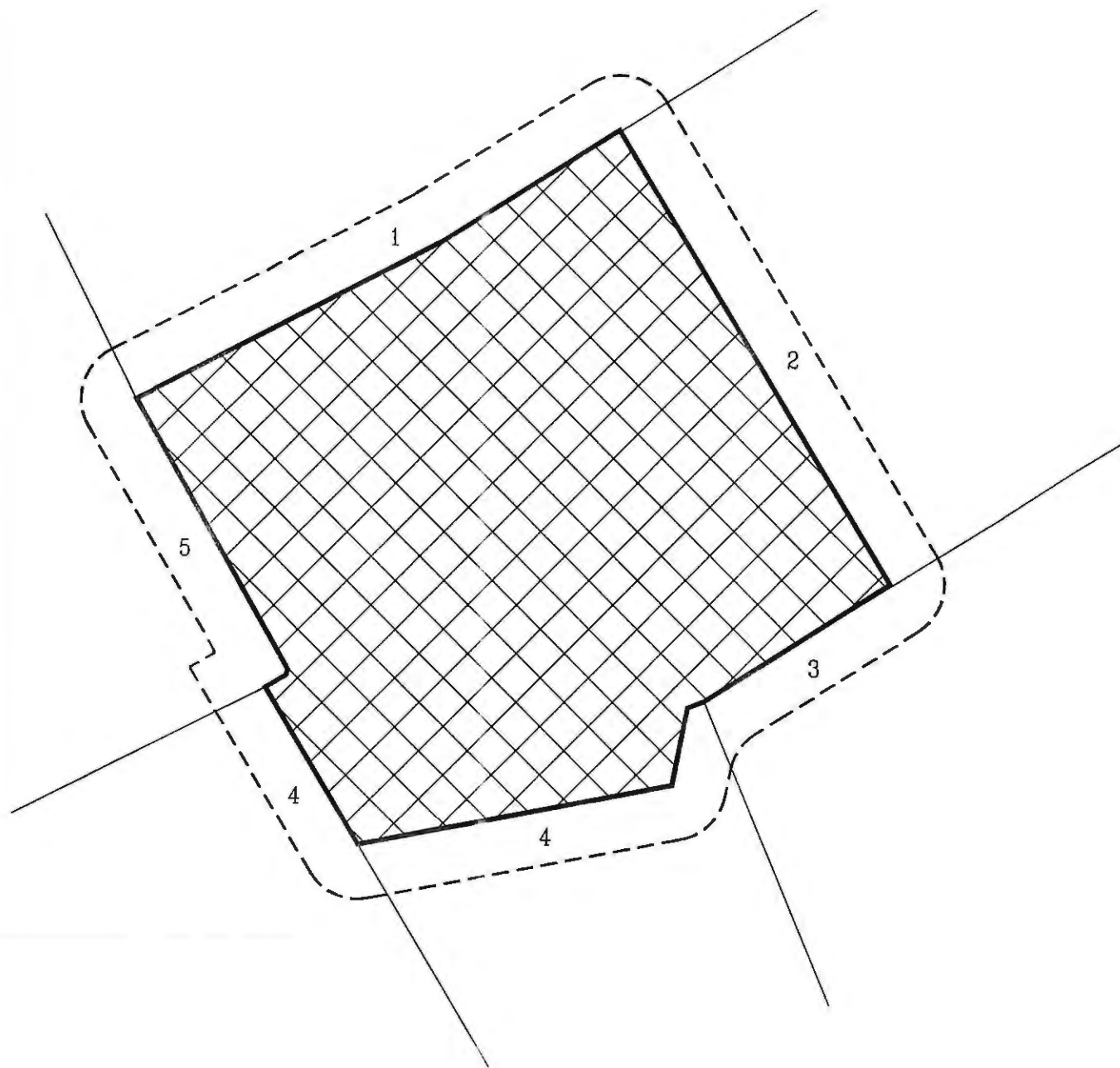
E-mail Address: n/a

For TCEQ Use Only

Customer Number _____

Regulated Entity Number _____

Permit Number _____



Map Generated 6/16/2025

LEGEND:

-  Denotes Okee Dairy Property
-  Denotes 500' Radius
-  Denotes Adjacent Landowner Tract



SCALED AS SHOWN

Source: Hamilton County Appraisal District

Okee Dairy
Hico, Texas
Hamilton County

Adjacent Landowner Map



Enviro-Ag Engineering, Inc.
ENGINEERING CONSULTANTS
3404 Airway Blvd.
AMARILLO, TEXAS 79118
TEL (806) 353-6123 FAX (806) 353-4132

ADJACENT LANDOWNERS LIST

Name <u>Lake M. Davis</u> Number on Map <u>1</u> Address <u>P.O. Box 466</u> Address <u>Hico, TX 76457</u>	Name <u>David & Leslie DeJong</u> Number on Map <u>5</u> Address <u>4483 E FM 219</u> Address <u>Hico, TX 76457</u>
Name <u>Joseph Hennessy</u> Number on Map <u>2</u> Address <u>6135 CR 207</u> Address <u>Hico, TX 76457</u>	
Name <u>Gary & Jana Crabtree</u> Number on Map <u>3</u> Address <u>P.O. Box 690</u> Address <u>Glen Rose, TX 76043</u>	
Name <u>4P Pastures, LLC</u> Number on Map <u>4</u> Address <u>4483 E. FM 219</u> Address <u>Hico, TX 76457</u>	

Please identify where you obtained the landowner information.

Hamilton County Appraisal District; June 2025

Facility Name Okee Dairy

Hamilton CAD Property Search

Property Details

Account		
Property ID:	19945	Geographic ID: 2600000000790001
Type:	R	Zoning:
Property Use:		
Location		
Site Address:	4745 CR 207 FAIRY, TX	
Map ID:	HIS	Mapaco:
Legal Description:	468 R KENNEDY, ACRES: 176.5	
Abstract/Subdivision:	A00468	
Neighborhood:	(HICO) HICO STUDY	
Owner		
Owner ID:	20609	
Name:	KEUNING OENE	
Agent:		
Mailing Address:	4745 CR 207 HICO, TX 76457	
% Ownership:	100.0%	
Exemptions:	AB - For privacy reasons not all exemptions are shown online.	

Property Values

Improvement Homesite Value:	\$141,700 (+)
Improvement Non-Homesite Value:	\$0 (+)
Land Homesite Value:	\$0 (+)
Land Non-Homesite Value:	\$5,000 (+)
Agricultural Market Valuation:	\$877,500 (+)
Market Value:	\$1,024,200 (=)
Agricultural Value Loss: ②	\$558,980 (-)
Appraised Value: ②	\$165,220 (=)
HS Cap Loss: ②	\$0 (-)

<https://research.hamiltoncad.org/property/view/19945?printView=detail>

1/10

Circuit Breaker: ②

\$0 (-)

Assessed Value:

\$165,220

Ag Use Value:

\$18,520

The 2025 appraisal roll values are subject to change and are not certified. Information provided for research purposes only. Legal descriptions and acreage amounts are for Appraisal District use only and should be verified prior to using for legal purpose and or documents. Please contact the Appraisal District to verify all information for accuracy.

Property Taxing Jurisdiction

Owner: KEUNING OENE %Ownership: 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	\$1,024,200	\$165,220	\$140.92	
GHA	HAMILTON COUNTY	0.430000	\$1,024,200	\$164,811	\$708.69	
SHI	HICO ISD	0.855200	\$1,024,200	\$165,220	\$1,412.95	
CAD	County Appraisal District	0.000000	\$1,024,200	\$165,220	\$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: \$2,262.57

Estimated Taxes Without Exemptions: \$14,036.61

<https://research.hamiltoncad.org/property/view/19945?printView=detail>

2/10

Property Improvement - Building

Type: Mobile Home Living Area: 2324.0 sqft Value: \$141,700

Type	Description	Class CD	Year Built	SQFT
MH	MH	MH2	2019	728
MH	MH	MH2	2019	858
MH	MH	MH2	2022	728
GPT	CARPORT	CPT1	2022	480
CPT	CARPORT	CPT1	2022	600
CPT	CARPORT	CPT1	2022	576

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	175.50	7,644,780.00	0.00	0.00	\$877,500	\$18,520
RES	RESIDENTIAL LAND	1.00	43,560.00	0.00	0.00	\$5,000	\$0

<https://research.hamiltoncad.org/property/view/19945?printView=detail>

3/10

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	\$141,700	\$882,500	\$18,520	\$165,220	\$0	\$165,220
2024	\$145,870	\$885,800	\$13,730	\$167,900	\$0	\$167,900
2023	\$109,260	\$706,000	\$12,890	\$122,150	\$0	\$122,150
2022	\$109,260	\$811,900	\$12,890	\$122,150	\$0	\$122,150
2021	\$90,410	\$529,500	\$12,890	\$103,300	\$0	\$103,300
2020	\$0	\$423,600	\$12,890	\$12,890	\$0	\$12,890
2019	\$0	\$529,500	\$12,890	\$12,890	\$0	\$12,890
2018	\$0	\$441,250	\$12,890	\$12,890	\$0	\$12,890
2017	\$0	\$441,250	\$12,890	\$12,890	\$0	\$12,890

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
3/20/2008	OT	OWNER TRANSFER	ALT JEWEL	KEUNING OENE	423	836	0
2/8/2002	WD	WARRANTY DEED	MULDER BAUKE	ALT JEWEL	346	19	0
2/23/1994	OT	OWNER TRANSFER	ALT RUSSELL	MULDER BAUKE			0

<https://research.hamiltoncad.org/property/view/19945?printView=detail>

4/10

Estimated Tax Due

If Paid: 

Year	Taxing Jurisdiction	Tax Rate	Market Value	Taxable Value	Base Tax	Base Taxes Paid	Base Tax Due	Discount/Penalty & Interest	Attorney Fees
2024	HICO EMERGENCY SERVICE DISTRICT	0.065295	\$1,031,670	\$167,900	\$143.21	\$143.21	\$0.00	\$0.00	\$0.00
2024	HAMILTON COUNTY	0.430000	\$1,031,670	\$167,491	\$720.21	\$720.21	\$0.00	\$0.00	\$0.00
2024	HICO ISD	0.855200	\$1,031,670	\$167,900	\$1,435.88	\$1,435.88	\$0.00	\$0.00	\$0.00
2024	Total	1.370495			\$2,299.30	\$2,299.30	\$0.00	\$0.00	\$0.00
2023	HICO EMERGENCY SERVICE DISTRICT	0.062379	\$815,260	\$122,150	\$76.20	\$76.20	\$0.00	\$0.00	\$0.00
2023	HAMILTON COUNTY	0.400500	\$815,260	\$121,741	\$487.57	\$487.57	\$0.00	\$0.00	\$0.00
2023	HICO ISD	0.902300	\$815,260	\$122,150	\$1,102.16	\$1,102.16	\$0.00	\$0.00	\$0.00
2023	Total	1.365179			\$1,665.93	\$1,665.93	\$0.00	\$0.00	\$0.00
2022	HICO EMERGENCY SERVICE DISTRICT	0.068878	\$921,160	\$122,150	\$139.16	\$139.16	\$0.00	\$0.00	\$0.00
2022	HAMILTON COUNTY	0.378300	\$921,160	\$121,741	\$762.82	\$762.82	\$0.00	\$0.00	\$0.00
2022	HICO ISD	1.042900	\$921,160	\$122,150	\$2,107.20	\$2,107.20	\$0.00	\$0.00	\$0.00
2022	Total	1.490078			\$3,009.18	\$3,009.18	\$0.00	\$0.00	\$0.00
2021	HICO EMERGENCY SERVICE DISTRICT	0.084900	\$619,910	\$103,300	\$87.70	\$87.70	\$0.00	\$0.00	\$0.00
2021	HAMILTON COUNTY	0.455400	\$619,910	\$102,891	\$468.57	\$468.57	\$0.00	\$0.00	\$0.00
2021	HICO ISD	1.110300	\$619,910	\$103,300	\$1,146.94	\$1,146.94	\$0.00	\$0.00	\$0.00
2021	Total	1.650600			\$1,703.21	\$1,703.21	\$0.00	\$0.00	\$0.00

<https://research.hamiltoncad.org/property/view/199457print/viewdetail>

5/10

2020	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$423,600	\$12,890	\$12.65	\$12.65	\$0.00	\$0.00	\$0.00
2020	HAMILTON COUNTY	0.532800	\$423,600	\$12,481	\$66.44	\$66.44	\$0.00	\$0.00	\$0.00
2020	HICO ISD	1.194700	\$423,600	\$12,890	\$153.99	\$153.99	\$0.00	\$0.00	\$0.00
2020	Total	1.825100			\$233.08	\$233.08	\$0.00	\$0.00	\$0.00
2019	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$529,500	\$12,890	\$12.65	\$12.65	\$0.00	\$0.00	\$0.00
2019	HAMILTON COUNTY	0.560500	\$529,500	\$12,481	\$69.96	\$69.96	\$0.00	\$0.00	\$0.00
2019	HICO ISD	1.258300	\$529,500	\$12,890	\$162.19	\$162.19	\$0.00	\$0.00	\$0.00
2019	Total	1.916900			\$244.80	\$244.80	\$0.00	\$0.00	\$0.00
2018	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$441,250	\$12,890	\$12.65	\$12.65	\$0.00	\$0.00	\$0.00
2018	HAMILTON COUNTY	0.560500	\$441,250	\$12,481	\$69.96	\$69.96	\$0.00	\$0.00	\$0.00
2018	HICO ISD	1.360000	\$441,250	\$12,890	\$175.30	\$175.30	\$0.00	\$0.00	\$0.00
2018	Total	2.018600			\$257.91	\$257.91	\$0.00	\$0.00	\$0.00
2017	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$441,250	\$12,890	\$12.65	\$12.65	\$0.00	\$0.00	\$0.00
2017	HAMILTON COUNTY	0.560500	\$441,250	\$12,481	\$69.96	\$69.96	\$0.00	\$0.00	\$0.00
2017	HICO ISD	1.360000	\$441,250	\$12,890	\$175.30	\$175.30	\$0.00	\$0.00	\$0.00
2017	Total	2.018600			\$257.91	\$257.91	\$0.00	\$0.00	\$0.00
2016	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$441,250	\$12,890	\$12.65	\$12.65	\$0.00	\$0.00	\$0.00
2016	HAMILTON COUNTY	0.560500	\$441,250	\$12,481	\$69.96	\$69.96	\$0.00	\$0.00	\$0.00
2016	HICO ISD	1.360000	\$441,250	\$12,890	\$175.30	\$175.30	\$0.00	\$0.00	\$0.00

<https://research.hamiltoncad.org/property/view/199457print/viewdetail>

6/10

2016	Total	2.018600			\$257.91	\$257.91	\$0.00	\$0.00	\$0.00
2015	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$441,250	\$12,890	\$12.65	\$12.65	\$0.00	\$0.00	\$0.00
2015	HAMILTON COUNTY	0.540500	\$441,250	\$12,481	\$67.46	\$67.46	\$0.00	\$0.00	\$0.00
2015	HICO ISD	1.360000	\$441,250	\$12,890	\$175.30	\$175.30	\$0.00	\$0.00	\$0.00
2015	Total	1.998600			\$255.41	\$255.41	\$0.00	\$0.00	\$0.00
2014	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$441,250	\$12,890	\$12.65	\$12.65	\$0.00	\$0.00	\$0.00
2014	HAMILTON COUNTY	0.572400	\$441,250	\$12,481	\$71.44	\$71.44	\$0.00	\$0.00	\$0.00
2014	HICO ISD	1.360000	\$441,250	\$12,890	\$175.30	\$175.30	\$0.00	\$0.00	\$0.00
2014	Total	2.030500			\$259.39	\$259.39	\$0.00	\$0.00	\$0.00
2013	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$441,250	\$12,890	\$12.65	\$12.65	\$0.00	\$0.00	\$0.00
2013	HAMILTON COUNTY	0.522000	\$441,250	\$12,481	\$65.15	\$65.15	\$0.00	\$0.00	\$0.00
2013	HICO ISD	1.320000	\$441,250	\$12,890	\$170.15	\$170.15	\$0.00	\$0.00	\$0.00
2013	Total	1.940100			\$247.95	\$247.95	\$0.00	\$0.00	\$0.00
2012	HICO EMERGENCY SERVICE DISTRICT	0.096500	\$441,250	\$12,890	\$12.44	\$12.44	\$0.00	\$0.00	\$0.00
2012	HAMILTON COUNTY	0.557900	\$441,250	\$12,481	\$68.63	\$68.63	\$0.00	\$0.00	\$0.00
2012	HICO ISD	1.300000	\$441,250	\$12,890	\$167.57	\$167.57	\$0.00	\$0.00	\$0.00
2012	Total	1.954400			\$248.64	\$248.64	\$0.00	\$0.00	\$0.00
2011	HICO EMERGENCY SERVICE DISTRICT	0.096500	\$441,250	\$12,720	\$12.27	\$12.27	\$0.00	\$0.00	\$0.00
2011	HAMILTON COUNTY	0.559900	\$441,250	\$12,311	\$68.93	\$68.93	\$0.00	\$0.00	\$0.00

<https://research.hamiltoncad.org/property/view/199457print/viewdetail>

7/10

2011	HICO ISD	1.240000	\$441,250	\$12,720	\$157.72	\$157.72	\$0.00	\$0.00	\$0.00
2011	Total	1.898400			\$238.92	\$238.92	\$0.00	\$0.00	\$0.00
2010	HICO EMERGENCY SERVICE DISTRICT	0.088600	\$441,250	\$12,720	\$11.27	\$11.27	\$0.00	\$0.00	\$0.00
2010	HAMILTON COUNTY	0.561600	\$441,250	\$12,311	\$69.14	\$69.14	\$0.00	\$0.00	\$0.00
2010	HICO ISD	1.240000	\$441,250	\$12,720	\$157.72	\$157.72	\$0.00	\$0.00	\$0.00
2010	Total	1.890200			\$238.13	\$238.13	\$0.00	\$0.00	\$0.00
2009	HICO EMERGENCY SERVICE DISTRICT	0.088300	\$441,250	\$12,720	\$11.23	\$11.23	\$0.00	\$0.00	\$0.00
2009	HAMILTON COUNTY	0.565500	\$441,250	\$12,311	\$69.82	\$69.82	\$0.00	\$0.00	\$0.00
2009	HICO ISD	1.210000	\$441,250	\$12,720	\$151.37	\$151.37	\$0.00	\$0.00	\$0.00
2009	Total	1.863800			\$232.22	\$232.22	\$0.00	\$0.00	\$0.00
2008	HICO EMERGENCY SERVICE DISTRICT	0.090000	\$441,250	\$12,720	\$11.45	\$11.45	\$0.00	\$0.00	\$0.00
2008	HAMILTON COUNTY	0.555500	\$441,250	\$12,311	\$68.39	\$68.39	\$0.00	\$0.00	\$0.00
2008	HICO ISD	1.190000	\$441,250	\$12,720	\$151.37	\$151.37	\$0.00	\$0.00	\$0.00
2008	Total	1.835500			\$231.21	\$231.21	\$0.00	\$0.00	\$0.00
2007	HICO EMERGENCY SERVICE DISTRICT	0.093200	\$317,700	\$12,720	\$11.86	\$11.86	\$0.00	\$0.00	\$0.00
2007	HAMILTON COUNTY	0.516800	\$317,700	\$12,311	\$63.62	\$63.62	\$0.00	\$0.00	\$0.00
2007	HICO ISD	1.190000	\$317,700	\$12,720	\$151.37	\$151.37	\$0.00	\$0.00	\$0.00
2007	Total	1.800000			\$226.85	\$226.85	\$0.00	\$0.00	\$0.00
2006	HICO EMERGENCY SERVICE DISTRICT	0.093200	\$167,680	\$12,880	\$12.00	\$12.00	\$0.00	\$0.00	\$0.00

<https://research.hamiltoncad.org/property/view/199457print/viewdetail>

8/10

6/16/25, 3:37 PM

Hamilton CAD Property Search

2005	HAMILTON COUNTY	0.530000	\$167,680	\$12,880	\$68.26	\$68.26	\$0.00	\$0.00
2006	HICO ISD	1.420000	\$167,680	\$12,880	\$182.90	\$182.90	\$0.00	\$0.00
	2006 Total	2.043200			\$263.16	\$263.16	\$0.00	\$0.00
2005	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$97,575	\$12,880	\$12.88	\$12.88	\$0.00	\$0.00
2005	HAMILTON COUNTY	0.530000	\$97,575	\$12,880	\$68.26	\$68.26	\$0.00	\$0.00
2005	HICO ISD	1.540000	\$97,575	\$12,880	\$198.35	\$198.35	\$0.00	\$0.00
	2005 Total	2.170000			\$279.49	\$279.49	\$0.00	\$0.00
2004	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$12,880	\$12.88	\$12.88	\$0.00	\$0.00
2004	HAMILTON COUNTY	0.544600	\$0	\$12,880	\$70.17	\$70.17	\$0.00	\$0.00
2004	HICO ISD	1.540000	\$0	\$12,880	\$198.35	\$198.35	\$0.00	\$0.00
	2004 Total	2.184600			\$281.40	\$281.40	\$0.00	\$0.00
2003	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$12,880	\$12.88	\$12.88	\$0.00	\$0.00
2003	HAMILTON COUNTY	0.538900	\$0	\$12,880	\$69.41	\$69.41	\$0.00	\$0.00
2003	HICO ISD	1.540000	\$0	\$12,880	\$198.35	\$198.35	\$0.00	\$0.00
	2003 Total	2.178900			\$280.64	\$280.64	\$0.00	\$0.00
2002	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$12,880	\$12.88	\$12.88	\$0.00	\$0.00
2002	HAMILTON COUNTY	0.543000	\$0	\$12,880	\$69.94	\$69.94	\$0.00	\$0.00
2002	HICO ISD	1.540000	\$0	\$12,880	\$198.35	\$198.35	\$0.00	\$0.00
	2002 Total	2.183000			\$281.17	\$281.17	\$0.00	\$0.00

<https://research.hamiltoncad.org/property/view/159457/print/view=detail>

9/10

6/16/25, 3:37 PM

Hamilton CAD Property Search

2001	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$11,930	\$11.93	\$11.93	\$0.00	\$0.00
2001	HAMILTON COUNTY	0.567800	\$0	\$11,930	\$67.74	\$67.74	\$0.00	\$0.00
2001	HICO ISD	1.470000	\$0	\$11,930	\$175.37	\$175.37	\$0.00	\$0.00
	2001 Total	2.137800			\$255.04	\$255.04	\$0.00	\$0.00

<https://research.hamiltoncad.org/property/view/159457/print/view=detail>

10/10

Hamilton CAD Property Search

Property Details

Account		
Property ID:	21721	Geographic ID: 26000810010132001
Type:	R	Zoning:
Property Use:		
Location		
Situs Address:	4745 CR 207 FAIRY, TX	
Map ID:	HIS	Mapscs:
Legal Description:	468 R KENNEDY, ACRES: 129.85	
Abstract/Subdivision:	A00468	
Neighborhood:	(HICO) HICO STUDY	
Owner		
Owner ID:	20609	
Name:	KEUNING OENE	
Agent:		
Mailing Address:	4745 CR 207 HICO, TX 76457	
% Ownership:	100.0%	
Exemptions:	AB - For privacy reasons not all exemptions are shown online.	

Property Values

Improvement Homesite Value:	\$0 (+)
Improvement Non-Homesite Value:	\$0 (+)
Land Homesite Value:	\$0 (+)
Land Non-Homesite Value:	\$0 (+)
Agricultural Market Valuation:	\$649,750 (+)
Market Value:	\$649,750 (=)
Agricultural Value Loss:	\$636,030 (-)
Appraised Value:	\$13,720 (=)
HS Cap Loss:	\$0 (-)

<https://research.hamiltoncad.org/property/view/21721/printViewDetail>

1/10

Circuit Breaker: 0

\$0 (-)

Assessed Value:

\$13,720

Ag Use Value:

\$13,720

The 2025 appraisal roll values are subject to change and are not certified. Information provided for research purposes only. Legal descriptions and acreage amounts are for Appraisal District use only and should be verified prior to using for legal purpose and or documents. Please contact the Appraisal District to verify all information for accuracy.

Property Taxing Jurisdiction

Owner: KEUNING OENE %Ownership: 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	\$649,750	\$13,720	\$11.70	
GHA	HAMILTON COUNTY	0.430000	\$649,750	\$13,583	\$58.41	
SHI	HICO ISD	0.855200	\$649,750	\$13,720	\$117.33	
CAD	County Appraisal District	0.000000	\$649,750	\$13,720	\$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: \$187.44

Estimated Taxes Without Exemptions: \$8,904.78

<https://research.hamiltoncad.org/property/view/21721/printViewDetail>

2/10

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	129.85	5,660,622.00	0.00	0.00	\$649,750	\$13,720

<https://research.hamiltoncad.org/property/view/21721/printViewDetail>

3/10

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	\$0	\$649,750	\$13,720	\$13,720	\$0	\$13,720
2024	\$0	\$974,630	\$10,160	\$10,160	\$0	\$10,160
2023	\$0	\$649,750	\$9,490	\$9,490	\$0	\$9,490
2022	\$0	\$604,270	\$9,490	\$9,490	\$0	\$9,490
2021	\$0	\$369,850	\$9,490	\$9,490	\$0	\$9,490
2020	\$0	\$311,880	\$9,490	\$9,490	\$0	\$9,490
2019	\$0	\$369,850	\$9,490	\$9,490	\$0	\$9,490
2018	\$0	\$324,880	\$9,490	\$9,490	\$0	\$9,490
2017	\$0	\$324,880	\$9,490	\$9,490	\$0	\$9,490

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
3/20/2008	OT	OWNER TRANSFER	ALT JEWEL	KEUNING OENE	423	836	0
3/26/2004	WD	WARRANTY DEED	PRUITT JOHN W TRUSTEE	ALT JEWEL	370	298	0
1/30/2004	OT	OWNER TRANSFER	ANTHONY ALFRED E & SHIRLEY A	PRUITT JOHN W TRUSTEE	368	33	0

<https://research.hamiltoncad.org/property/view/21721/printViewDetail>

4/10

Estimated Tax Due

If Paid: 

Year	Taxing Jurisdiction	Tax Rate	Market Value	Taxable Value	Base Tax	Base Taxes Paid	Base Tax Due	Discount/Penalty & Interest	Attorney Fees
2024	HICO EMERGENCY SERVICE DISTRICT	0.085285	\$974,630	\$10,160	\$8.67	\$8.67	\$0.00	\$0.00	\$0.00
2024	HAMILTON COUNTY	0.430000	\$974,630	\$10,023	\$43.10	\$43.10	\$0.00	\$0.00	\$0.00
2024	HICO ISD	0.855200	\$974,630	\$10,160	\$86.89	\$86.89	\$0.00	\$0.00	\$0.00
2024	Total	1.370485			\$138.66	\$138.66	\$0.00	\$0.00	\$0.00
2023	HICO EMERGENCY SERVICE DISTRICT	0.062378	\$649,750	\$9,490	\$5.92	\$5.92	\$0.00	\$0.00	\$0.00
2023	HAMILTON COUNTY	0.400500	\$649,750	\$9,353	\$37.46	\$37.46	\$0.00	\$0.00	\$0.00
2023	HICO ISD	0.902300	\$649,750	\$9,490	\$85.63	\$85.63	\$0.00	\$0.00	\$0.00
2023	Total	1.365178			\$129.01	\$129.01	\$0.00	\$0.00	\$0.00
2022	HICO EMERGENCY SERVICE DISTRICT	0.068878	\$604,270	\$9,490	\$47.51	\$47.51	\$0.00	\$0.00	\$0.00
2022	HAMILTON COUNTY	0.378300	\$604,270	\$9,353	\$260.39	\$260.39	\$0.00	\$0.00	\$0.00
2022	HICO ISD	1.042900	\$604,270	\$9,490	\$719.27	\$719.27	\$0.00	\$0.00	\$0.00
2022	Total	1.490078			\$1,027.17	\$1,027.17	\$0.00	\$0.00	\$0.00
2021	HICO EMERGENCY SERVICE DISTRICT	0.084900	\$389,850	\$9,490	\$8.06	\$8.06	\$0.00	\$0.00	\$0.00
2021	HAMILTON COUNTY	0.455400	\$389,850	\$9,353	\$42.59	\$42.59	\$0.00	\$0.00	\$0.00
2021	HICO ISD	1.110300	\$389,850	\$9,490	\$105.37	\$105.37	\$0.00	\$0.00	\$0.00
2021	Total	1.650600			\$156.02	\$156.02	\$0.00	\$0.00	\$0.00

<https://search.hamiltoncad.org/property/view/217217/print/viewdetail>

5/10

2020	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$311,880	\$9,490	\$9.31	\$9.31	\$0.00	\$0.00	\$0.00
2020	HAMILTON COUNTY	0.532300	\$311,880	\$9,353	\$49.79	\$49.79	\$0.00	\$0.00	\$0.00
2020	HICO ISD	1.194700	\$311,880	\$9,490	\$113.38	\$113.38	\$0.00	\$0.00	\$0.00
2020	Total	1.825100			\$172.48	\$172.48	\$0.00	\$0.00	\$0.00
2019	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$389,850	\$9,490	\$9.31	\$9.31	\$0.00	\$0.00	\$0.00
2019	HAMILTON COUNTY	0.560500	\$389,850	\$9,353	\$52.42	\$52.42	\$0.00	\$0.00	\$0.00
2019	HICO ISD	1.258300	\$389,850	\$9,490	\$119.41	\$119.41	\$0.00	\$0.00	\$0.00
2019	Total	1.916900			\$181.14	\$181.14	\$0.00	\$0.00	\$0.00
2018	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$324,880	\$9,490	\$9.31	\$9.31	\$0.00	\$0.00	\$0.00
2018	HAMILTON COUNTY	0.560500	\$324,880	\$9,353	\$52.42	\$52.42	\$0.00	\$0.00	\$0.00
2018	HICO ISD	1.360000	\$324,880	\$9,490	\$129.06	\$129.06	\$0.00	\$0.00	\$0.00
2018	Total	2.018600			\$190.79	\$190.79	\$0.00	\$0.00	\$0.00
2017	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$324,880	\$9,490	\$9.31	\$9.31	\$0.00	\$0.00	\$0.00
2017	HAMILTON COUNTY	0.560500	\$324,880	\$9,353	\$52.42	\$52.42	\$0.00	\$0.00	\$0.00
2017	HICO ISD	1.360000	\$324,880	\$9,490	\$129.06	\$129.06	\$0.00	\$0.00	\$0.00
2017	Total	2.018600			\$190.79	\$190.79	\$0.00	\$0.00	\$0.00
2016	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$324,880	\$9,490	\$9.31	\$9.31	\$0.00	\$0.00	\$0.00
2016	HAMILTON COUNTY	0.560500	\$324,880	\$9,353	\$52.42	\$52.42	\$0.00	\$0.00	\$0.00
2016	HICO ISD	1.360000	\$324,880	\$9,490	\$129.06	\$129.06	\$0.00	\$0.00	\$0.00

<https://search.hamiltoncad.org/property/view/217217/print/viewdetail>

6/10

2016	Total	2.018500			\$190.79	\$190.79	\$0.00	\$0.00	\$0.00
2015	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$324,880	\$9,490	\$9.31	\$9.31	\$0.00	\$0.00	\$0.00
2015	HAMILTON COUNTY	0.540500	\$324,880	\$9,353	\$50.55	\$50.55	\$0.00	\$0.00	\$0.00
2015	HICO ISD	1.380000	\$324,880	\$9,490	\$129.06	\$129.06	\$0.00	\$0.00	\$0.00
2015	Total	1.998600			\$188.92	\$188.92	\$0.00	\$0.00	\$0.00
2014	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$324,880	\$9,490	\$9.31	\$9.31	\$0.00	\$0.00	\$0.00
2014	HAMILTON COUNTY	0.572400	\$324,880	\$9,353	\$53.53	\$53.53	\$0.00	\$0.00	\$0.00
2014	HICO ISD	1.360000	\$324,880	\$9,490	\$129.06	\$129.06	\$0.00	\$0.00	\$0.00
2014	Total	2.030500			\$191.90	\$191.90	\$0.00	\$0.00	\$0.00
2013	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$324,880	\$9,490	\$9.31	\$9.31	\$0.00	\$0.00	\$0.00
2013	HAMILTON COUNTY	0.522000	\$324,880	\$9,353	\$48.82	\$48.82	\$0.00	\$0.00	\$0.00
2013	HICO ISD	1.320000	\$324,880	\$9,490	\$125.27	\$125.27	\$0.00	\$0.00	\$0.00
2013	Total	1.940100			\$183.40	\$183.40	\$0.00	\$0.00	\$0.00
2012	HICO EMERGENCY SERVICE DISTRICT	0.098500	\$324,880	\$9,490	\$9.16	\$9.16	\$0.00	\$0.00	\$0.00
2012	HAMILTON COUNTY	0.557900	\$324,880	\$9,353	\$52.18	\$52.18	\$0.00	\$0.00	\$0.00
2012	HICO ISD	1.300000	\$324,880	\$9,490	\$123.37	\$123.37	\$0.00	\$0.00	\$0.00
2012	Total	1.954400			\$184.71	\$184.71	\$0.00	\$0.00	\$0.00
2011	HICO EMERGENCY SERVICE DISTRICT	0.096500	\$324,880	\$9,360	\$8.03	\$8.03	\$0.00	\$0.00	\$0.00
2011	HAMILTON COUNTY	0.559900	\$324,880	\$9,223	\$51.64	\$51.64	\$0.00	\$0.00	\$0.00

<https://search.hamiltoncad.org/property/view/217217/print/viewdetail>

7/10

2011	HICO ISD	1.240000	\$324,880	\$9,360	\$116.06	\$116.06	\$0.00	\$0.00	\$0.00
2011	Total	1.895400			\$176.73	\$176.73	\$0.00	\$0.00	\$0.00
2010	HICO EMERGENCY SERVICE DISTRICT	0.089600	\$324,880	\$9,360	\$8.29	\$8.29	\$0.00	\$0.00	\$0.00
2010	HAMILTON COUNTY	0.561600	\$324,880	\$9,223	\$51.79	\$51.79	\$0.00	\$0.00	\$0.00
2010	HICO ISD	1.240000	\$324,880	\$9,360	\$116.06	\$116.06	\$0.00	\$0.00	\$0.00
2010	Total	1.890200			\$176.14	\$176.14	\$0.00	\$0.00	\$0.00
2009	HICO EMERGENCY SERVICE DISTRICT	0.088300	\$324,880	\$9,360	\$8.26	\$8.26	\$0.00	\$0.00	\$0.00
2009	HAMILTON COUNTY	0.565500	\$324,880	\$9,223	\$52.16	\$52.16	\$0.00	\$0.00	\$0.00
2009	HICO ISD	1.210000	\$324,880	\$9,360	\$111.38	\$111.38	\$0.00	\$0.00	\$0.00
2009	Total	1.853800			\$171.80	\$171.80	\$0.00	\$0.00	\$0.00
2008	HICO EMERGENCY SERVICE DISTRICT	0.090000	\$324,880	\$9,360	\$8.42	\$8.42	\$0.00	\$0.00	\$0.00
2008	HAMILTON COUNTY	0.555500	\$324,880	\$9,223	\$51.23	\$51.23	\$0.00	\$0.00	\$0.00
2008	HICO ISD	1.190000	\$324,880	\$9,360	\$111.38	\$111.38	\$0.00	\$0.00	\$0.00
2008	Total	1.835000			\$171.03	\$171.03	\$0.00	\$0.00	\$0.00
2007	HICO EMERGENCY SERVICE DISTRICT	0.093200	\$233,910	\$9,360	\$8.72	\$8.72	\$0.00	\$0.00	\$0.00
2007	HAMILTON COUNTY	0.516900	\$233,910	\$9,223	\$47.66	\$47.66	\$0.00	\$0.00	\$0.00
2007	HICO ISD	1.190000	\$233,910	\$9,360	\$111.38	\$111.38	\$0.00	\$0.00	\$0.00
2007	Total	1.800000			\$167.76	\$167.76	\$0.00	\$0.00	\$0.00
2006	HICO EMERGENCY SERVICE DISTRICT	0.093200	\$123,450	\$9,490	\$8.84	\$8.84	\$0.00	\$0.00	\$0.00

<https://search.hamiltoncad.org/property/view/217217/print/viewdetail>

8/10

6/16/25, 3:37 PM

Hamilton CAD Property Search

2006	HAMILTON COUNTY	0.530000	\$123,450	\$9,490	\$50.30	\$50.30	\$0.00	\$0.00	\$0.00	\$0.00
2006	HICO ISD	1.420000	\$123,450	\$9,490	\$134.76	\$134.76	\$0.00	\$0.00	\$0.00	\$0.00
2006	Total	2.043200			\$193.90	\$193.90	\$0.00	\$0.00	\$0.00	\$0.00
2005	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$123,450	\$9,490	\$9.49	\$9.49	\$0.00	\$0.00	\$0.00	\$0.00
2005	HAMILTON COUNTY	0.530000	\$123,450	\$9,490	\$50.30	\$50.30	\$0.00	\$0.00	\$0.00	\$0.00
2005	HICO ISD	1.540000	\$123,450	\$9,490	\$146.15	\$146.15	\$0.00	\$0.00	\$0.00	\$0.00
2005	Total	2.170000			\$205.94	\$205.94	\$0.00	\$0.00	\$0.00	\$0.00
2004	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$9,490	\$9.49	\$9.49	\$0.00	\$0.00	\$0.00	\$0.00
2004	HAMILTON COUNTY	0.544800	\$0	\$9,490	\$51.70	\$51.70	\$0.00	\$0.00	\$0.00	\$0.00
2004	HICO ISD	1.540000	\$0	\$9,490	\$146.15	\$146.15	\$0.00	\$0.00	\$0.00	\$0.00
2004	Total	2.184800			\$207.34	\$207.34	\$0.00	\$0.00	\$0.00	\$0.00
2003	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$9,490	\$9.49	\$9.49	\$0.00	\$0.00	\$0.00	\$0.00
2003	HAMILTON COUNTY	0.538900	\$0	\$9,490	\$51.14	\$51.14	\$0.00	\$0.00	\$0.00	\$0.00
2003	HICO ISD	1.540000	\$0	\$9,490	\$146.15	\$146.15	\$0.00	\$0.00	\$0.00	\$0.00
2003	Total	2.178900			\$206.78	\$206.78	\$0.00	\$0.00	\$0.00	\$0.00
2002	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$9,490	\$9.49	\$9.49	\$0.00	\$0.00	\$0.00	\$0.00
2002	HAMILTON COUNTY	0.543000	\$0	\$9,490	\$51.53	\$51.53	\$0.00	\$0.00	\$0.00	\$0.00
2002	HICO ISD	1.540000	\$0	\$9,490	\$146.15	\$146.15	\$0.00	\$0.00	\$0.00	\$0.00
2002	Total	2.183000			\$207.17	\$207.17	\$0.00	\$0.00	\$0.00	\$0.00

<https://research.hamiltoncad.org/property/view/217217/printView=detail>

9/10

6/16/25, 3:37 PM

Hamilton CAD Property Search

2001	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$8,840	\$8.84	\$8.84	\$0.00	\$0.00	\$0.00	\$0.00
2001	HAMILTON COUNTY	0.557800	\$0	\$8,840	\$50.19	\$50.19	\$0.00	\$0.00	\$0.00	\$0.00
2001	HICO ISD	1.470000	\$0	\$8,840	\$129.95	\$129.95	\$0.00	\$0.00	\$0.00	\$0.00
2001	Total	2.137800			\$188.98	\$188.98	\$0.00	\$0.00	\$0.00	\$0.00

<https://research.hamiltoncad.org/property/view/217217/printView=detail>

10/10

Hamilton CAD Property Search

Property Details

Account		
Property ID:	21722	Geographic ID: 26000810010134001
Type:	R	Zoning:
Property Use:		
Location		
Situs Address:	4745 CR 207 FAIRY, TX	
Map ID:	H15	Mapsc0:
Legal Description:	918 JOHN WATSON, Acres 79.04	
Abstract/Subdivision:	A00918	
Neighborhood:	(HICO) HICO STUDY	
Owner		
Owner ID:	20609	
Name:	KEUNING OEENE	
Agent:		
Mailing Address:	4745 CR 207 HICO, TX 76457	
% Ownership:	100.0%	
Exemptions:	For privacy reasons not all exemptions are shown online.	

Property Values

Improvement Homesite Value:	\$0 (+)
Improvement Non-Homesite Value:	\$0 (+)
Land Homesite Value:	\$0 (+)
Land Non-Homesite Value:	\$0 (+)
Agricultural Market Valuation:	\$395,200 (+)
Market Value:	\$395,200 (+)
Agricultural Value Loss: 0	\$386,850 (-)
Appraised Value: 0	\$8,340 (=)
HS Cap Loss: 0	\$0 (-)
Circuit Breaker: 0	\$0 (-)

<https://research.hamiltoncad.org/property/view/21722?print/viewdetail>

1/10

Assessed Value: \$8,340

Ag Use Value: \$8,340

The 2025 appraisal roll values are subject to change and are not certified. Information provided for research purposes only. Legal descriptions and acreage amounts are for Appraisal District use only and should be verified prior to using for legal purpose and or documents. Please contact the Appraisal District to verify all information for accuracy.

Property Taxing Jurisdiction

Owner: KEUNING OEENE %Ownership: 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085285	\$395,200	\$8,340	\$7.11	
GHA	HAMILTON COUNTY	0.430000	\$395,200	\$8,340	\$35.86	
SHI	HICO ISD	0.855200	\$395,200	\$8,340	\$71.32	
CAD	County Appraisal District	0.000000	\$395,200	\$8,340	\$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: \$114.29

Estimated Taxes Without Exemptions: \$5,416.20

<https://research.hamiltoncad.org/property/view/21722?print/viewdetail>

2/10

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	79.04	3,442,982.40	0.00	0.00	\$395,200	\$8,340

<https://research.hamiltoncad.org/property/view/21722?print/viewdetail>

3/10

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	\$0	\$395,200	\$8,340	\$8,340	\$0	\$8,340
2024	\$0	\$395,200	\$6,180	\$6,180	\$0	\$6,180
2023	\$0	\$316,160	\$5,770	\$5,770	\$0	\$5,770
2022	\$0	\$276,640	\$5,770	\$5,770	\$0	\$5,770
2021	\$0	\$237,120	\$5,770	\$5,770	\$0	\$5,770
2020	\$0	\$189,700	\$5,770	\$5,770	\$0	\$5,770
2019	\$0	\$237,120	\$5,770	\$5,770	\$0	\$5,770
2018	\$0	\$197,600	\$5,770	\$5,770	\$0	\$5,770
2017	\$0	\$197,600	\$5,770	\$5,770	\$0	\$5,770

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
3/20/2008	OT	OWNER TRANSFER	ALT JEWEL	KEUNING OEENE	423	836	0
3/26/2004	WD	WARRANTY DEED	PRUITT JOHN W TRUSTEE	ALT JEWEL	370	298	0
1/30/2004	OT	OWNER TRANSFER	ANTHONY ALFRED E & SHIRLEY A	PRUITT JOHN W TRUSTEE	368	33	0

<https://research.hamiltoncad.org/property/view/21722?print/viewdetail>

4/10

Estimated Tax Due

If Paid:

Year	Taxing Jurisdiction	Tax Rate	Market Value	Taxable Value	Base Tax	Base Taxes Paid	Base Tax Due	Discount/Penalty & Interest	Attorney Fees	Amor D
2024	HICO EMERGENCY SERVICE DISTRICT	0.085295	\$395,200	\$6,180	\$5.27	\$5.27	\$0.00	\$0.00	\$0.00	\$0
2024	HAMILTON COUNTY	0.430000	\$395,200	\$6,180	\$26.57	\$26.57	\$0.00	\$0.00	\$0.00	\$0
2024	HICO ISD	0.855200	\$395,200	\$6,180	\$52.85	\$52.85	\$0.00	\$0.00	\$0.00	\$0
2024	2024 Total	1.370495			\$84.69	\$84.69	\$0.00	\$0.00	\$0.00	\$0
2023	HICO EMERGENCY SERVICE DISTRICT	0.062379	\$316,160	\$5,770	\$3.60	\$3.60	\$0.00	\$0.00	\$0.00	\$0
2023	HAMILTON COUNTY	0.400500	\$316,160	\$5,770	\$23.11	\$23.11	\$0.00	\$0.00	\$0.00	\$0
2023	HICO ISD	0.902300	\$316,160	\$5,770	\$52.06	\$52.06	\$0.00	\$0.00	\$0.00	\$0
2023	2023 Total	1.365179			\$78.77	\$78.77	\$0.00	\$0.00	\$0.00	\$0
2022	HICO EMERGENCY SERVICE DISTRICT	0.068878	\$276,640	\$5,770	\$22.63	\$22.63	\$0.00	\$0.00	\$0.00	\$0
2022	HAMILTON COUNTY	0.378300	\$276,640	\$5,770	\$124.30	\$124.30	\$0.00	\$0.00	\$0.00	\$0
2022	HICO ISD	1.042900	\$276,640	\$5,770	\$342.67	\$342.67	\$0.00	\$0.00	\$0.00	\$0
2022	2022 Total	1.490078			\$489.60	\$489.60	\$0.00	\$0.00	\$0.00	\$0
2021	HICO EMERGENCY SERVICE DISTRICT	0.084900	\$237,120	\$5,770	\$4.90	\$4.90	\$0.00	\$0.00	\$0.00	\$0
2021	HAMILTON COUNTY	0.455400	\$237,120	\$5,770	\$26.28	\$26.28	\$0.00	\$0.00	\$0.00	\$0
2021	HICO ISD	1.110300	\$237,120	\$5,770	\$64.07	\$64.07	\$0.00	\$0.00	\$0.00	\$0
2021	2021 Total	1.650600			\$95.25	\$95.25	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/21722?printView=detail>

5/10

2020	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$189,700	\$5,770	\$5.66	\$5.66	\$0.00	\$0.00	\$0.00	\$0
2020	HAMILTON COUNTY	0.532300	\$189,700	\$5,770	\$30.71	\$30.71	\$0.00	\$0.00	\$0.00	\$0
2020	HICO ISD	1.194700	\$189,700	\$5,770	\$68.94	\$68.94	\$0.00	\$0.00	\$0.00	\$0
2020	2020 Total	1.825100			\$105.31	\$105.31	\$0.00	\$0.00	\$0.00	\$0
2019	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$237,120	\$5,770	\$5.66	\$5.66	\$0.00	\$0.00	\$0.00	\$0
2019	HAMILTON COUNTY	0.560500	\$237,120	\$5,770	\$32.34	\$32.34	\$0.00	\$0.00	\$0.00	\$0
2019	HICO ISD	1.258300	\$237,120	\$5,770	\$72.60	\$72.60	\$0.00	\$0.00	\$0.00	\$0
2019	2019 Total	1.916900			\$110.60	\$110.60	\$0.00	\$0.00	\$0.00	\$0
2018	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$197,600	\$5,770	\$5.66	\$5.66	\$0.00	\$0.00	\$0.00	\$0
2018	HAMILTON COUNTY	0.560500	\$197,600	\$5,770	\$32.34	\$32.34	\$0.00	\$0.00	\$0.00	\$0
2018	HICO ISD	1.360000	\$197,600	\$5,770	\$78.47	\$78.47	\$0.00	\$0.00	\$0.00	\$0
2018	2018 Total	2.018600			\$116.47	\$116.47	\$0.00	\$0.00	\$0.00	\$0
2017	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$197,600	\$5,770	\$5.66	\$5.66	\$0.00	\$0.00	\$0.00	\$0
2017	HAMILTON COUNTY	0.560500	\$197,600	\$5,770	\$32.34	\$32.34	\$0.00	\$0.00	\$0.00	\$0
2017	HICO ISD	1.390000	\$197,600	\$5,770	\$78.47	\$78.47	\$0.00	\$0.00	\$0.00	\$0
2017	2017 Total	2.018600			\$116.47	\$116.47	\$0.00	\$0.00	\$0.00	\$0
2016	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$197,600	\$5,770	\$5.66	\$5.66	\$0.00	\$0.00	\$0.00	\$0
2016	HAMILTON COUNTY	0.560500	\$197,600	\$5,770	\$32.34	\$32.34	\$0.00	\$0.00	\$0.00	\$0
2016	HICO ISD	1.360000	\$197,600	\$5,770	\$78.47	\$78.47	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/21722?printView=detail>

6/10

2016	2016 Total	2.018600			\$116.47	\$116.47	\$0.00	\$0.00	\$0.00	\$0
2015	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$197,600	\$5,770	\$5.66	\$5.66	\$0.00	\$0.00	\$0.00	\$0
2015	HAMILTON COUNTY	0.540500	\$197,600	\$5,770	\$31.19	\$31.19	\$0.00	\$0.00	\$0.00	\$0
2015	HICO ISD	1.360000	\$197,600	\$5,770	\$78.47	\$78.47	\$0.00	\$0.00	\$0.00	\$0
2015	2015 Total	1.998600			\$115.32	\$115.32	\$0.00	\$0.00	\$0.00	\$0
2014	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$197,600	\$5,770	\$5.66	\$5.66	\$0.00	\$0.00	\$0.00	\$0
2014	HAMILTON COUNTY	0.572400	\$197,600	\$5,770	\$33.03	\$33.03	\$0.00	\$0.00	\$0.00	\$0
2014	HICO ISD	1.360000	\$197,600	\$5,770	\$78.47	\$78.47	\$0.00	\$0.00	\$0.00	\$0
2014	2014 Total	2.030500			\$117.16	\$117.16	\$0.00	\$0.00	\$0.00	\$0
2013	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$197,600	\$5,770	\$5.66	\$5.66	\$0.00	\$0.00	\$0.00	\$0
2013	HAMILTON COUNTY	0.522000	\$197,600	\$5,770	\$30.12	\$30.12	\$0.00	\$0.00	\$0.00	\$0
2013	HICO ISD	1.320000	\$197,600	\$5,770	\$76.17	\$76.17	\$0.00	\$0.00	\$0.00	\$0
2013	2013 Total	1.940100			\$111.95	\$111.95	\$0.00	\$0.00	\$0.00	\$0
2012	HICO EMERGENCY SERVICE DISTRICT	0.096500	\$197,600	\$5,770	\$5.57	\$5.57	\$0.00	\$0.00	\$0.00	\$0
2012	HAMILTON COUNTY	0.557900	\$197,600	\$5,770	\$32.19	\$32.19	\$0.00	\$0.00	\$0.00	\$0
2012	HICO ISD	1.300000	\$197,600	\$5,770	\$75.01	\$75.01	\$0.00	\$0.00	\$0.00	\$0
2012	2012 Total	1.954400			\$112.77	\$112.77	\$0.00	\$0.00	\$0.00	\$0
2011	HICO EMERGENCY SERVICE DISTRICT	0.096500	\$197,600	\$5,700	\$5.50	\$5.50	\$0.00	\$0.00	\$0.00	\$0
2011	HAMILTON COUNTY	0.559900	\$197,600	\$5,700	\$31.91	\$31.91	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/21722?printView=detail>

7/10

2011	HICO ISD	1.240000	\$197,600	\$5,700	\$70.68	\$70.68	\$0.00	\$0.00	\$0.00	\$0
2011	2011 Total	1.895400			\$108.09	\$108.09	\$0.00	\$0.00	\$0.00	\$0
2010	HICO EMERGENCY SERVICE DISTRICT	0.088600	\$197,600	\$5,700	\$5.05	\$5.05	\$0.00	\$0.00	\$0.00	\$0
2010	HAMILTON COUNTY	0.561600	\$197,600	\$5,700	\$32.01	\$32.01	\$0.00	\$0.00	\$0.00	\$0
2010	HICO ISD	1.240000	\$197,600	\$5,700	\$70.68	\$70.68	\$0.00	\$0.00	\$0.00	\$0
2010	2010 Total	1.890200			\$107.74	\$107.74	\$0.00	\$0.00	\$0.00	\$0
2009	HICO EMERGENCY SERVICE DISTRICT	0.088300	\$142,270	\$5,700	\$5.03	\$5.03	\$0.00	\$0.00	\$0.00	\$0
2009	HAMILTON COUNTY	0.565500	\$142,270	\$5,700	\$32.23	\$32.23	\$0.00	\$0.00	\$0.00	\$0
2009	HICO ISD	1.210000	\$142,270	\$5,700	\$67.83	\$67.83	\$0.00	\$0.00	\$0.00	\$0
2009	2009 Total	1.863800			\$105.09	\$105.09	\$0.00	\$0.00	\$0.00	\$0
2008	HICO EMERGENCY SERVICE DISTRICT	0.090000	\$142,270	\$5,700	\$5.13	\$5.13	\$0.00	\$0.00	\$0.00	\$0
2008	HAMILTON COUNTY	0.555500	\$142,270	\$5,700	\$31.66	\$31.66	\$0.00	\$0.00	\$0.00	\$0
2008	HICO ISD	1.190000	\$142,270	\$5,700	\$67.83	\$67.83	\$0.00	\$0.00	\$0.00	\$0
2008	2008 Total	1.835500			\$104.62	\$104.62	\$0.00	\$0.00	\$0.00	\$0
2007	HICO EMERGENCY SERVICE DISTRICT	0.093200	\$142,270	\$5,700	\$5.31	\$5.31	\$0.00	\$0.00	\$0.00	\$0
2007	HAMILTON COUNTY	0.516800	\$142,270	\$5,700	\$29.46	\$29.46	\$0.00	\$0.00	\$0.00	\$0
2007	HICO ISD	1.190000	\$142,270	\$5,700	\$67.83	\$67.83	\$0.00	\$0.00	\$0.00	\$0
2007	2007 Total	1.800000			\$102.60	\$102.60	\$0.00	\$0.00	\$0.00	\$0
2006	HICO EMERGENCY SERVICE DISTRICT	0.093200	\$75,090	\$5,770	\$5.38	\$5.38	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/21722?printView=detail>

8/10

6/16/25, 3:37 PM

Hamilton CAD Property Search

2006	HAMILTON COUNTY	0.530000	\$75,090	\$5,770	\$30.58	\$30.58	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2006	HICO ISD	1.420000	\$75,090	\$5,770	\$81.93	\$81.93	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2006 Total	2.043200			\$117.89	\$117.89	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2005	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$75,090	\$5,770	\$5.77	\$5.77	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2005	HAMILTON COUNTY	0.530000	\$75,090	\$5,770	\$30.58	\$30.58	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2005	HICO ISD	1.540000	\$75,090	\$5,770	\$88.86	\$88.86	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2005 Total	2.170000			\$125.21	\$125.21	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2004	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$5,770	\$5.77	\$5.77	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2004	HAMILTON COUNTY	0.544800	\$0	\$5,770	\$31.44	\$31.44	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2004	HICO ISD	1.540000	\$0	\$5,770	\$88.86	\$88.86	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2004 Total	2.184800			\$126.07	\$126.07	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2003	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$5,770	\$5.77	\$5.77	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2003	HAMILTON COUNTY	0.538900	\$0	\$5,770	\$31.09	\$31.09	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2003	HICO ISD	1.540000	\$0	\$5,770	\$88.86	\$88.86	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2003 Total	2.178900			\$125.72	\$125.72	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2002	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$5,770	\$5.77	\$5.77	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2002	HAMILTON COUNTY	0.543000	\$0	\$5,770	\$31.33	\$31.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2002	HICO ISD	1.540000	\$0	\$5,770	\$88.86	\$88.86	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2002 Total	2.183000			\$125.96	\$125.96	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

6/16/25, 3:37 PM

Hamilton CAD Property Search

2001	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$5,370	\$5.37	\$5.37	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2001	HAMILTON COUNTY	0.667800	\$0	\$5,370	\$30.49	\$30.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2001	HICO ISD	1.470000	\$0	\$5,370	\$78.94	\$78.94	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2001 Total	2.137800			\$114.80	\$114.80	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Hamilton CAD Property Search

Property Details

Account		
Property ID:	19503	Geographic ID: 26000000000328001
Type:	R	Zoning:
Property Use:		
Location		
Situs Address:	5245 CR 207 HICO, TX 76457	
Map ID:	H15	Mapscn:
Legal Description:	466 R KENNEDY, ACRES: 99.12	
Abstract/Subdivision:	A00468	
Neighborhood:	(HICO) HICO STUDY	
Owner		
Owner ID:	20609	
Name:	KEUNING OEENE	
Agent:		
Mailing Address:	4745 CR 207 HICO, TX 76457	
% Ownership:	100.0%	
Exemptions:	For privacy reasons not all exemptions are shown online.	

Property Values

Improvement Homesite Value:	\$0 (+)
Improvement Non-Homesite Value:	\$14,080 (+)
Land Homesite Value:	\$0 (+)
Land Non-Homesite Value:	\$0 (+)
Agricultural Market Valuation:	\$195,600 (+)
Market Value:	\$109,680 (=)
Agricultural Value Loss: 0	\$485,140 (-)
Appraised Value: 0	\$24,540 (=)
HS Cap Loss: 0	\$0 (-)
Circuit Breaker: 0	\$0 (-)

<https://research.hamiltoncad.org/property/view/19503?printView=detail>

1/10

Assessed Value:	\$24,540
Ag Use Value:	\$10,460

The 2025 appraisal roll values are subject to change and are not certified. Information provided for research purposes only. Legal descriptions and acreage amounts are for Appraisal District use only and should be verified prior to using for legal purpose and or documents. Please contact the Appraisal District to verify all information for accuracy.

Property Taxing Jurisdiction

Owner: KEUNING OEENE %Ownership: 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	\$509,680	\$24,540	\$20.93	
GHA	HAMILTON COUNTY	0.430000	\$509,680	\$24,540	\$105.52	
SHI	HICO ISD	0.855200	\$509,680	\$24,540	\$209.87	
CAD	County Appraisal District	0.000000	\$509,680	\$24,540	\$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: \$336.32

Estimated Taxes Without Exemptions: \$6,985.13

<https://research.hamiltoncad.org/property/view/19503?printView=detail>

2/10

Property Improvement - Building

Description: SHEDS Type: Misc Imp Living Area: 0 sqft Value: \$14,080

Type	Description	Class CD	Year Built	SQFT
SHED	MA	SHED1	1990	1168
CPT	OPEN POLE DT	CPT2	1980	900
SHED	SHEDS	SHED1	1990	400

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	99.12	4,317,667.20	0.00	0.00	\$495,600	\$10,460

<https://research.hamiltoncad.org/property/view/19503?printView=detail>

3/10

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	\$14,080	\$495,600	\$10,460	\$24,540	\$0	\$24,540
2024	\$14,300	\$495,600	\$7,750	\$22,050	\$0	\$22,050
2023	\$18,850	\$405,600	\$7,400	\$26,250	\$0	\$26,250
2022	\$19,130	\$465,440	\$7,400	\$26,530	\$0	\$26,530
2021	\$10,000	\$304,200	\$8,730	\$18,730	\$0	\$18,730
2020	\$11,210	\$268,560	\$8,730	\$19,940	\$0	\$19,940
2019	\$10,340	\$304,200	\$8,730	\$19,070	\$0	\$19,070
2018	\$4,720	\$253,500	\$8,730	\$13,450	\$0	\$13,450
2017	\$4,720	\$253,500	\$8,510	\$13,230	\$0	\$13,230

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
9/12/2024	WDL	WARRANTY DEED W/VENDOR'S LIEN	LEWIS LINDA KAYE	KEUNING OEENE	648	349	20241651
8/21/2024	AFF	AFFIDAVIT OF HEIRSHIP	LEWIS LONNIE D & LINDA KAYE	LEWIS LINDA KAYE	648	339	20241650
8/14/2009	OT	OWNER TRANSFER	BULLARD ROY P	LEWIS LONNIE D & LINDA KAYE	438	715	0

<https://research.hamiltoncad.org/property/view/19503?printView=detail>

4/10

Estimated Tax Due

If Paid:

Year	Taxing Jurisdiction	Tax Rate	Market Value	Taxable Value	Base Tax	Base Taxes Paid	Base Tax Due	Discount/Penalty & Interest	Attorney Fees	Amount
2024	HICO EMERGENCY SERVICE DISTRICT	0.085295	\$509,900	\$22,050	\$18.81	\$18.81	\$0.00	\$0.00	\$0.00	\$0
2024	HAMILTON COUNTY	0.430000	\$509,900	\$22,050	\$94.82	\$94.82	\$0.00	\$0.00	\$0.00	\$0
2024	HICO ISD	0.855200	\$509,900	\$22,050	\$188.57	\$188.57	\$0.00	\$0.00	\$0.00	\$0
2024	2024 Total	1.370495			\$302.20	\$302.20	\$0.00	\$0.00	\$0.00	\$0
2023	HICO EMERGENCY SERVICE DISTRICT	0.082379	\$424,450	\$26,250	\$16.37	\$16.37	\$0.00	\$0.00	\$0.00	\$0
2023	HAMILTON COUNTY	0.400500	\$424,450	\$26,195	\$104.91	\$104.91	\$0.00	\$0.00	\$0.00	\$0
2023	HICO ISD	0.902300	\$424,450	\$26,250	\$236.85	\$236.85	\$0.00	\$0.00	\$0.00	\$0
2023	2023 Total	1.365179			\$358.13	\$358.13	\$0.00	\$0.00	\$0.00	\$0
2022	HICO EMERGENCY SERVICE DISTRICT	0.068878	\$485,570	\$26,530	\$18.27	\$18.27	\$0.00	\$0.00	\$0.00	\$0
2022	HAMILTON COUNTY	0.378300	\$485,570	\$26,475	\$100.15	\$100.15	\$0.00	\$0.00	\$0.00	\$0
2022	HICO ISD	1.042800	\$485,570	\$26,530	\$276.68	\$276.68	\$0.00	\$0.00	\$0.00	\$0
2022	2022 Total	1.490078			\$395.10	\$395.10	\$0.00	\$0.00	\$0.00	\$0
2021	HICO EMERGENCY SERVICE DISTRICT	0.084900	\$314,200	\$18,730	\$15.90	\$15.90	\$0.00	\$0.00	\$0.00	\$0
2021	HAMILTON COUNTY	0.455400	\$314,200	\$18,675	\$85.05	\$85.05	\$0.00	\$0.00	\$0.00	\$0
2021	HICO ISD	1.110300	\$314,200	\$18,730	\$207.96	\$207.96	\$0.00	\$0.00	\$0.00	\$0
2021	2021 Total	1.650600			\$308.91	\$308.91	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/196037/print/viewdetail>

5/10

2020	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$279,770	\$19,940	\$19.56	\$19.56	\$0.00	\$0.00	\$0.00	\$0
2020	HAMILTON COUNTY	0.522300	\$279,770	\$19,885	\$105.85	\$105.85	\$0.00	\$0.00	\$0.00	\$0
2020	HICO ISD	1.194700	\$279,770	\$19,940	\$238.22	\$238.22	\$0.00	\$0.00	\$0.00	\$0
2020	2020 Total	1.825100			\$363.63	\$363.63	\$0.00	\$0.00	\$0.00	\$0
2019	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$314,540	\$19,070	\$18.71	\$18.71	\$0.00	\$0.00	\$0.00	\$0
2019	HAMILTON COUNTY	0.560500	\$314,540	\$19,015	\$106.58	\$106.58	\$0.00	\$0.00	\$0.00	\$0
2019	HICO ISD	1.258300	\$314,540	\$19,070	\$239.95	\$239.95	\$0.00	\$0.00	\$0.00	\$0
2019	2019 Total	1.916900			\$365.24	\$365.24	\$0.00	\$0.00	\$0.00	\$0
2018	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$258,220	\$13,450	\$13.19	\$13.19	\$0.00	\$0.00	\$0.00	\$0
2018	HAMILTON COUNTY	0.560500	\$258,220	\$13,395	\$75.08	\$75.08	\$0.00	\$0.00	\$0.00	\$0
2018	HICO ISD	1.360000	\$258,220	\$13,450	\$182.93	\$182.93	\$0.00	\$0.00	\$0.00	\$0
2018	2018 Total	2.018600			\$271.20	\$271.20	\$0.00	\$0.00	\$0.00	\$0
2017	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$258,220	\$13,230	\$12.98	\$12.98	\$0.00	\$0.00	\$0.00	\$0
2017	HAMILTON COUNTY	0.560500	\$258,220	\$13,175	\$73.85	\$73.85	\$0.00	\$0.00	\$0.00	\$0
2017	HICO ISD	1.360000	\$258,220	\$13,230	\$179.93	\$179.93	\$0.00	\$0.00	\$0.00	\$0
2017	2017 Total	2.018600			\$266.76	\$266.76	\$0.00	\$0.00	\$0.00	\$0
2016	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$258,220	\$13,230	\$12.98	\$12.98	\$0.00	\$0.00	\$0.00	\$0
2016	HAMILTON COUNTY	0.560500	\$258,220	\$13,175	\$73.85	\$73.85	\$0.00	\$0.00	\$0.00	\$0
2016	HICO ISD	1.360000	\$258,220	\$13,230	\$179.93	\$179.93	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/196037/print/viewdetail>

6/10

2016	2016 Total	2.018600			\$266.76	\$266.76	\$0.00	\$0.00	\$0.00	\$0
2015	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$258,220	\$13,230	\$12.98	\$12.98	\$0.00	\$0.00	\$0.00	\$0
2015	HAMILTON COUNTY	0.540500	\$258,220	\$13,175	\$71.21	\$71.21	\$0.00	\$0.00	\$0.00	\$0
2015	HICO ISD	1.360000	\$258,220	\$13,230	\$179.93	\$179.93	\$0.00	\$0.00	\$0.00	\$0
2015	2015 Total	1.998600			\$264.12	\$264.12	\$0.00	\$0.00	\$0.00	\$0
2014	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$258,220	\$13,230	\$12.98	\$12.98	\$0.00	\$0.00	\$0.00	\$0
2014	HAMILTON COUNTY	0.572400	\$258,220	\$13,175	\$75.42	\$75.42	\$0.00	\$0.00	\$0.00	\$0
2014	HICO ISD	1.360000	\$258,220	\$13,230	\$179.93	\$179.93	\$0.00	\$0.00	\$0.00	\$0
2014	2014 Total	2.030500			\$268.33	\$268.33	\$0.00	\$0.00	\$0.00	\$0
2013	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$258,220	\$13,230	\$12.98	\$12.98	\$0.00	\$0.00	\$0.00	\$0
2013	HAMILTON COUNTY	0.522000	\$258,220	\$13,175	\$68.77	\$68.77	\$0.00	\$0.00	\$0.00	\$0
2013	HICO ISD	1.320000	\$258,220	\$13,230	\$174.64	\$174.64	\$0.00	\$0.00	\$0.00	\$0
2013	2013 Total	1.940100			\$256.39	\$256.39	\$0.00	\$0.00	\$0.00	\$0
2012	HICO EMERGENCY SERVICE DISTRICT	0.096500	\$258,220	\$13,230	\$12.77	\$12.77	\$0.00	\$0.00	\$0.00	\$0
2012	HAMILTON COUNTY	0.557900	\$258,220	\$13,175	\$73.51	\$73.51	\$0.00	\$0.00	\$0.00	\$0
2012	HICO ISD	1.300000	\$258,220	\$13,230	\$171.99	\$171.99	\$0.00	\$0.00	\$0.00	\$0
2012	2012 Total	1.954400			\$258.27	\$258.27	\$0.00	\$0.00	\$0.00	\$0
2011	HICO EMERGENCY SERVICE DISTRICT	0.096500	\$258,220	\$12,840	\$12.39	\$12.39	\$0.00	\$0.00	\$0.00	\$0
2011	HAMILTON COUNTY	0.559900	\$258,220	\$12,785	\$71.59	\$71.59	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/196037/print/viewdetail>

7/10

2011	HICO ISD	1.240000	\$258,220	\$12,840	\$159.22	\$159.22	\$0.00	\$0.00	\$0.00	\$0
2011	2011 Total	1.896400			\$243.20	\$243.20	\$0.00	\$0.00	\$0.00	\$0
2010	HICO EMERGENCY SERVICE DISTRICT	0.088500	\$258,050	\$12,670	\$11.23	\$11.23	\$0.00	\$0.00	\$0.00	\$0
2010	HAMILTON COUNTY	0.501600	\$258,050	\$12,615	\$70.85	\$70.85	\$0.00	\$0.00	\$0.00	\$0
2010	HICO ISD	1.240000	\$258,050	\$12,670	\$157.11	\$157.11	\$0.00	\$0.00	\$0.00	\$0
2010	2010 Total	1.890200			\$239.19	\$239.19	\$0.00	\$0.00	\$0.00	\$0
2009	HICO EMERGENCY SERVICE DISTRICT	0.088300	\$258,050	\$12,660	\$11.18	\$11.18	\$0.00	\$0.00	\$0.00	\$0
2009	HAMILTON COUNTY	0.565500	\$258,050	\$12,605	\$71.28	\$71.28	\$0.00	\$0.00	\$0.00	\$0
2009	HICO ISD	1.210000	\$258,050	\$12,660	\$150.65	\$150.65	\$0.00	\$0.00	\$0.00	\$0
2009	2009 Total	1.863800			\$233.11	\$233.11	\$0.00	\$0.00	\$0.00	\$0
2008	HICO EMERGENCY SERVICE DISTRICT	0.090000	\$258,050	\$12,660	\$11.39	\$11.39	\$0.00	\$0.00	\$0.00	\$0
2008	HAMILTON COUNTY	0.555500	\$258,050	\$12,605	\$70.02	\$70.02	\$0.00	\$0.00	\$0.00	\$0
2008	HICO ISD	1.190000	\$258,050	\$12,660	\$150.65	\$150.65	\$0.00	\$0.00	\$0.00	\$0
2008	2008 Total	1.835500			\$232.06	\$232.06	\$0.00	\$0.00	\$0.00	\$0
2007	HICO EMERGENCY SERVICE DISTRICT	0.093200	\$187,070	\$12,660	\$11.80	\$11.80	\$0.00	\$0.00	\$0.00	\$0
2007	HAMILTON COUNTY	0.516300	\$187,070	\$12,605	\$65.14	\$65.14	\$0.00	\$0.00	\$0.00	\$0
2007	HICO ISD	1.190000	\$187,070	\$12,660	\$150.65	\$150.65	\$0.00	\$0.00	\$0.00	\$0
2007	2007 Total	1.800000			\$227.59	\$227.59	\$0.00	\$0.00	\$0.00	\$0
2006	HICO EMERGENCY SERVICE DISTRICT	0.093200	\$156,650	\$12,730	\$11.86	\$11.86	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/196037/print/viewdetail>

8/10

6/16/25, 3:38 PM

Hamilton CAD Property Search

2005	HAMILTON COUNTY	0.530000	\$156,650	\$12,730	\$67.47	\$67.47	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2006	HICO ISD	1.420000	\$156,650	\$12,730	\$180.77	\$180.77	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2006 Total	2.043200			\$260.10	\$260.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2005	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$80,600	\$12,730	\$12.73	\$12.73	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2005	HAMILTON COUNTY	0.530000	\$80,600	\$12,730	\$67.47	\$67.47	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2005	HICO ISD	1.540000	\$80,600	\$12,730	\$196.04	\$196.04	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2005 Total	2.170000			\$276.24	\$276.24	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2004	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$12,730	\$12.73	\$12.73	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2004	HAMILTON COUNTY	0.544800	\$0	\$12,730	\$69.35	\$69.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2004	HICO ISD	1.540000	\$0	\$12,730	\$196.04	\$196.04	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2004 Total	2.184800			\$278.12	\$278.12	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2003	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$12,730	\$12.73	\$12.73	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2003	HAMILTON COUNTY	0.538900	\$0	\$12,730	\$68.60	\$68.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2003	HICO ISD	1.540000	\$0	\$12,730	\$196.04	\$196.04	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2003 Total	2.178900			\$277.37	\$277.37	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2002	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$11,500	\$11.50	\$11.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2002	HAMILTON COUNTY	0.543000	\$0	\$11,500	\$62.45	\$62.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2002	HICO ISD	1.540000	\$0	\$11,500	\$177.10	\$177.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2002 Total	2.183000			\$251.05	\$251.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

<https://search.hamiltoncad.org/property/view/195037/print/view-detail>

9/10

6/16/25, 3:38 PM

Hamilton CAD Property Search

2001	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$11,170	\$11.17	\$11.17	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2001	HAMILTON COUNTY	0.557800	\$0	\$11,170	\$63.42	\$63.42	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2001	HICO ISD	1.470000	\$0	\$11,170	\$164.20	\$164.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	2001 Total	2.137800			\$238.79	\$238.79	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

<https://search.hamiltoncad.org/property/view/195037/print/view-detail>

10/10

Hamilton CAD Property Search

Property Details

Account
Property ID: 19604 Geographic ID: 2600000000329001
Type: R Zoning:
Property Use:
Location
Situation Address: 5245 CR 207 FAIRY, TX
Map ID: H15 Mapsco:
Legal Description: 468 R KENNEDY ACRES: 102.4
Abstract/Subdivision: A00468
Neighborhood: (HICO) HICO STUDY
Owner
Owner ID: 20609
Name: KEUNING OENE
Agent:
Mailing Address: 4745 CR 207
HICO, TX 76457
% Ownership: 100.0%
Exemptions: For privacy reasons not all exemptions are shown online.

Property Values

Improvement Homesite Value: \$0 (+)
Improvement Non-Homesite Value: \$0 (+)
Land Homesite Value: \$0 (+)
Land Non-Homesite Value: \$0 (+)
Agricultural Market Valuation: \$512,000 (+)
Market Value: \$512,000 (=)
Agricultural Value Loss: \$501,190 (-)
Appraised Value: \$10,810 (=)
HS Cap Loss: \$0 (-)
Circuit Breaker: \$0 (-)

<https://research.hamiltoncad.org/property/view/19604?printView=detail>

1/10

Assessed Value:

\$10,810

Ag Use Value:

\$10,810

The 2025 appraisal roll values are subject to change and are not certified. Information provided for research purposes only. Legal descriptions and acreage amounts are for Appraisal District use only and should be verified prior to using for legal purpose and or documents. Please contact the Appraisal District to verify all information for accuracy.

Property Taxing Jurisdiction

Owner: KEUNING OENE %Ownership: 100.0%

Entity	Description	Tax Rate	Market Value	Taxable Value	Estimated Tax	Freeze Ceiling
EHI	HICO EMERGENCY SERVICE DISTRICT	0.085295	\$512,000	\$10,810	\$9.22	
GHA	HAMILTON COUNTY	0.430000	\$512,000	\$10,810	\$46.48	
SHI	HICO ISD	0.855200	\$512,000	\$10,810	\$92.45	
CAD	County Appraisal District	0.000000	\$512,000	\$10,810	\$0.00	

Total Tax Rate: 1.370495

Estimated Taxes With Exemptions: \$148.15

Estimated Taxes Without Exemptions: \$7,016.93

<https://research.hamiltoncad.org/property/view/19604?printView=detail>

2/10

Property Land

Type	Description	Acreage	Sqft	Eff Front	Eff Depth	Market Value	Prod. Value
NP	NATIVE PASTURE	102.40	4,460,544.00	0.00	0.00	\$512,000	\$10,810

<https://research.hamiltoncad.org/property/view/19604?printView=detail>

3/10

Property Roll Value History

Year	Improvements	Land Market	Ag Valuation	Appraised	HS Cap Loss	Assessed
2025	\$0	\$512,000	\$10,810	\$10,810	\$0	\$10,810
2024	\$0	\$512,000	\$8,010	\$8,010	\$0	\$8,010
2023	\$0	\$409,600	\$7,480	\$7,480	\$0	\$7,480
2022	\$0	\$471,040	\$7,480	\$7,480	\$0	\$7,480
2021	\$0	\$307,200	\$7,480	\$7,480	\$0	\$7,480
2020	\$0	\$245,760	\$7,480	\$7,480	\$0	\$7,480
2019	\$0	\$307,200	\$7,480	\$7,480	\$0	\$7,480
2018	\$0	\$256,000	\$7,480	\$7,480	\$0	\$7,480
2017	\$0	\$256,000	\$7,480	\$7,480	\$0	\$7,480

Property Deed History

Deed Date	Type	Description	Grantor	Grantee	Volume	Page	Number
9/12/2024	WDVL	WARRANTY DEED W/VENDOR'S LIEN	LEWIS LINDA KAYE	KEUNING OENE	648	349	20241651
6/21/2024	AFF	AFFIDAVIT OF HEIRSHIP	LEWIS LONNIE D & LINDA KAYE	LEWIS LINDA KAYE	648	339	20241650
8/14/2009	OT	OWNER TRANSFER	BULLARD ROY P	LEWIS LONNIE D & LINDA KAYE	438	715	0

<https://research.hamiltoncad.org/property/view/19604?printView=detail>

4/10

Estimated Tax Due

If Paid:

Year	Taxing Jurisdiction	Tax Rate	Market Value	Taxable Value	Base Tax	Base Taxes Paid	Base Tax Due	Discount/Penalty & Interest	Attorney Fees	Amount
2024	HICO EMERGENCY SERVICE DISTRICT	0.085285	\$512,000	\$8,010	\$6.83	\$6.83	\$0.00	\$0.00	\$0.00	\$0
2024	HAMILTON COUNTY	0.430000	\$512,000	\$8,010	\$34.44	\$34.44	\$0.00	\$0.00	\$0.00	\$0
2024	HICO ISD	0.855200	\$512,000	\$8,010	\$68.50	\$68.50	\$0.00	\$0.00	\$0.00	\$0
2024	2024 Total:	1.370495			\$109.77	\$109.77	\$0.00	\$0.00	\$0.00	\$0
2023	HICO EMERGENCY SERVICE DISTRICT	0.062379	\$409,600	\$7,480	\$4.67	\$4.67	\$0.00	\$0.00	\$0.00	\$0
2023	HAMILTON COUNTY	0.400500	\$409,600	\$7,435	\$29.78	\$29.78	\$0.00	\$0.00	\$0.00	\$0
2023	HICO ISD	0.902300	\$409,600	\$7,480	\$67.49	\$67.49	\$0.00	\$0.00	\$0.00	\$0
2023	2023 Total:	1.365179			\$101.94	\$101.94	\$0.00	\$0.00	\$0.00	\$0
2022	HICO EMERGENCY SERVICE DISTRICT	0.068878	\$471,040	\$7,480	\$5.15	\$5.15	\$0.00	\$0.00	\$0.00	\$0
2022	HAMILTON COUNTY	0.378300	\$471,040	\$7,435	\$28.13	\$28.13	\$0.00	\$0.00	\$0.00	\$0
2022	HICO ISD	1.042900	\$471,040	\$7,480	\$78.01	\$78.01	\$0.00	\$0.00	\$0.00	\$0
2022	2022 Total:	1.490078			\$111.29	\$111.29	\$0.00	\$0.00	\$0.00	\$0
2021	HICO EMERGENCY SERVICE DISTRICT	0.084900	\$307,200	\$7,480	\$6.35	\$6.35	\$0.00	\$0.00	\$0.00	\$0
2021	HAMILTON COUNTY	0.455400	\$307,200	\$7,435	\$33.86	\$33.86	\$0.00	\$0.00	\$0.00	\$0
2021	HICO ISD	1.110300	\$307,200	\$7,480	\$83.05	\$83.05	\$0.00	\$0.00	\$0.00	\$0
2021	2021 Total:	1.650600			\$123.26	\$123.26	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/195047print/viewdetail>

5/10

2020	HICO EMERGENCY SERVICE DISTRICT	0.068100	\$245,760	\$7,480	\$7.34	\$7.34	\$0.00	\$0.00	\$0.00	\$0
2020	HAMILTON COUNTY	0.532300	\$245,760	\$7,435	\$39.58	\$39.58	\$0.00	\$0.00	\$0.00	\$0
2020	HICO ISD	1.194700	\$245,760	\$7,480	\$89.36	\$89.36	\$0.00	\$0.00	\$0.00	\$0
2020	2020 Total:	1.825100			\$136.28	\$136.28	\$0.00	\$0.00	\$0.00	\$0
2019	HICO EMERGENCY SERVICE DISTRICT	0.099100	\$307,200	\$7,480	\$7.34	\$7.34	\$0.00	\$0.00	\$0.00	\$0
2019	HAMILTON COUNTY	0.560500	\$307,200	\$7,435	\$41.67	\$41.67	\$0.00	\$0.00	\$0.00	\$0
2019	HICO ISD	1.258300	\$307,200	\$7,480	\$94.12	\$94.12	\$0.00	\$0.00	\$0.00	\$0
2019	2019 Total:	1.916900			\$143.13	\$143.13	\$0.00	\$0.00	\$0.00	\$0
2018	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$256,000	\$7,480	\$7.34	\$7.34	\$0.00	\$0.00	\$0.00	\$0
2018	HAMILTON COUNTY	0.560500	\$256,000	\$7,435	\$41.67	\$41.67	\$0.00	\$0.00	\$0.00	\$0
2018	HICO ISD	1.360000	\$256,000	\$7,480	\$101.73	\$101.73	\$0.00	\$0.00	\$0.00	\$0
2018	2018 Total:	2.018600			\$150.74	\$150.74	\$0.00	\$0.00	\$0.00	\$0
2017	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$256,000	\$7,480	\$7.34	\$7.34	\$0.00	\$0.00	\$0.00	\$0
2017	HAMILTON COUNTY	0.560500	\$256,000	\$7,435	\$41.67	\$41.67	\$0.00	\$0.00	\$0.00	\$0
2017	HICO ISD	1.360000	\$256,000	\$7,480	\$101.73	\$101.73	\$0.00	\$0.00	\$0.00	\$0
2017	2017 Total:	2.018600			\$150.74	\$150.74	\$0.00	\$0.00	\$0.00	\$0
2016	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$256,000	\$7,480	\$7.34	\$7.34	\$0.00	\$0.00	\$0.00	\$0
2016	HAMILTON COUNTY	0.560500	\$256,000	\$7,435	\$41.67	\$41.67	\$0.00	\$0.00	\$0.00	\$0
2016	HICO ISD	1.360000	\$256,000	\$7,480	\$101.73	\$101.73	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/195047print/viewdetail>

6/10

2016	2016 Total:	2.018600			\$150.74	\$150.74	\$0.00	\$0.00	\$0.00	\$0
2015	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$256,000	\$7,480	\$7.34	\$7.34	\$0.00	\$0.00	\$0.00	\$0
2015	HAMILTON COUNTY	0.540500	\$256,000	\$7,435	\$40.19	\$40.19	\$0.00	\$0.00	\$0.00	\$0
2015	HICO ISD	1.360000	\$256,000	\$7,480	\$101.73	\$101.73	\$0.00	\$0.00	\$0.00	\$0
2015	2015 Total:	1.998600			\$149.26	\$149.26	\$0.00	\$0.00	\$0.00	\$0
2014	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$256,000	\$7,480	\$7.34	\$7.34	\$0.00	\$0.00	\$0.00	\$0
2014	HAMILTON COUNTY	0.572400	\$256,000	\$7,435	\$42.56	\$42.56	\$0.00	\$0.00	\$0.00	\$0
2014	HICO ISD	1.360000	\$256,000	\$7,480	\$101.73	\$101.73	\$0.00	\$0.00	\$0.00	\$0
2014	2014 Total:	2.030500			\$151.63	\$151.63	\$0.00	\$0.00	\$0.00	\$0
2013	HICO EMERGENCY SERVICE DISTRICT	0.098100	\$256,000	\$7,480	\$7.34	\$7.34	\$0.00	\$0.00	\$0.00	\$0
2013	HAMILTON COUNTY	0.522000	\$256,000	\$7,435	\$38.81	\$38.81	\$0.00	\$0.00	\$0.00	\$0
2013	HICO ISD	1.320000	\$256,000	\$7,480	\$98.74	\$98.74	\$0.00	\$0.00	\$0.00	\$0
2013	2013 Total:	1.940100			\$144.89	\$144.89	\$0.00	\$0.00	\$0.00	\$0
2012	HICO EMERGENCY SERVICE DISTRICT	0.096500	\$256,000	\$7,480	\$7.22	\$7.22	\$0.00	\$0.00	\$0.00	\$0
2012	HAMILTON COUNTY	0.557900	\$256,000	\$7,435	\$41.48	\$41.48	\$0.00	\$0.00	\$0.00	\$0
2012	HICO ISD	1.300000	\$256,000	\$7,480	\$97.24	\$97.24	\$0.00	\$0.00	\$0.00	\$0
2012	2012 Total:	1.954400			\$145.94	\$145.94	\$0.00	\$0.00	\$0.00	\$0
2011	HICO EMERGENCY SERVICE DISTRICT	0.096500	\$256,000	\$7,380	\$7.12	\$7.12	\$0.00	\$0.00	\$0.00	\$0
2011	HAMILTON COUNTY	0.559900	\$256,000	\$7,335	\$41.07	\$41.07	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/195047print/viewdetail>

7/10

2011	HICO ISD	1.240000	\$256,000	\$7,380	\$91.52	\$91.52	\$0.00	\$0.00	\$0.00	\$0
2011	2011 Total:	1.895400			\$139.71	\$139.71	\$0.00	\$0.00	\$0.00	\$0
2010	HICO EMERGENCY SERVICE DISTRICT	0.088600	\$256,000	\$7,380	\$6.54	\$6.54	\$0.00	\$0.00	\$0.00	\$0
2010	HAMILTON COUNTY	0.561600	\$256,000	\$7,335	\$41.19	\$41.19	\$0.00	\$0.00	\$0.00	\$0
2010	HICO ISD	1.240000	\$256,000	\$7,380	\$91.52	\$91.52	\$0.00	\$0.00	\$0.00	\$0
2010	2010 Total:	1.890200			\$139.25	\$139.25	\$0.00	\$0.00	\$0.00	\$0
2009	HICO EMERGENCY SERVICE DISTRICT	0.088300	\$256,000	\$7,380	\$6.52	\$6.52	\$0.00	\$0.00	\$0.00	\$0
2009	HAMILTON COUNTY	0.565500	\$256,000	\$7,335	\$41.48	\$41.48	\$0.00	\$0.00	\$0.00	\$0
2009	HICO ISD	1.210000	\$256,000	\$7,380	\$87.82	\$87.82	\$0.00	\$0.00	\$0.00	\$0
2009	2009 Total:	1.863900			\$135.82	\$135.82	\$0.00	\$0.00	\$0.00	\$0
2008	HICO EMERGENCY SERVICE DISTRICT	0.090000	\$256,000	\$7,380	\$6.64	\$6.64	\$0.00	\$0.00	\$0.00	\$0
2008	HAMILTON COUNTY	0.555500	\$256,000	\$7,335	\$40.75	\$40.75	\$0.00	\$0.00	\$0.00	\$0
2008	HICO ISD	1.190000	\$256,000	\$7,380	\$87.82	\$87.82	\$0.00	\$0.00	\$0.00	\$0
2008	2008 Total:	1.835500			\$135.21	\$135.21	\$0.00	\$0.00	\$0.00	\$0
2007	HICO EMERGENCY SERVICE DISTRICT	0.093200	\$184,320	\$7,390	\$6.88	\$6.88	\$0.00	\$0.00	\$0.00	\$0
2007	HAMILTON COUNTY	0.516800	\$184,320	\$7,335	\$37.91	\$37.91	\$0.00	\$0.00	\$0.00	\$0
2007	HICO ISD	1.190000	\$184,320	\$7,380	\$87.82	\$87.82	\$0.00	\$0.00	\$0.00	\$0
2007	2007 Total:	1.800000			\$132.61	\$132.61	\$0.00	\$0.00	\$0.00	\$0
2006	HICO EMERGENCY SERVICE DISTRICT	0.093200	\$153,600	\$7,480	\$6.97	\$6.97	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/195047print/viewdetail>

8/10

6/19/25, 3:38 PM

Hamilton CAD Property Search

2006	HAMILTON COUNTY	0.530000	\$153,600	\$7,480	\$39.64	\$39.64	\$0.00	\$0.00	\$0.00	\$0
2006	HICO ISD	1.420000	\$153,600	\$7,480	\$106.22	\$106.22	\$0.00	\$0.00	\$0.00	\$0
	2006 Total:	2.043200			\$152.83	\$152.83	\$0.00	\$0.00	\$0.00	\$0
2005	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$76,800	\$7,480	\$7.48	\$7.48	\$0.00	\$0.00	\$0.00	\$0
2005	HAMILTON COUNTY	0.530000	\$76,800	\$7,480	\$39.64	\$39.64	\$0.00	\$0.00	\$0.00	\$0
2005	HICO ISD	1.540000	\$76,800	\$7,480	\$115.19	\$115.19	\$0.00	\$0.00	\$0.00	\$0
	2005 Total:	2.170000			\$162.31	\$162.31	\$0.00	\$0.00	\$0.00	\$0
2004	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$7,480	\$7.48	\$7.48	\$0.00	\$0.00	\$0.00	\$0
2004	HAMILTON COUNTY	0.544600	\$0	\$7,480	\$40.75	\$40.75	\$0.00	\$0.00	\$0.00	\$0
2004	HICO ISD	1.540000	\$0	\$7,480	\$115.19	\$115.19	\$0.00	\$0.00	\$0.00	\$0
	2004 Total:	2.184800			\$163.42	\$163.42	\$0.00	\$0.00	\$0.00	\$0
2003	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$7,480	\$7.48	\$7.48	\$0.00	\$0.00	\$0.00	\$0
2003	HAMILTON COUNTY	0.538900	\$0	\$7,480	\$40.31	\$40.31	\$0.00	\$0.00	\$0.00	\$0
2003	HICO ISD	1.540000	\$0	\$7,480	\$115.19	\$115.19	\$0.00	\$0.00	\$0.00	\$0
	2003 Total:	2.178900			\$162.98	\$162.98	\$0.00	\$0.00	\$0.00	\$0
2002	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$7,480	\$7.48	\$7.48	\$0.00	\$0.00	\$0.00	\$0
2002	HAMILTON COUNTY	0.543000	\$0	\$7,480	\$40.62	\$40.62	\$0.00	\$0.00	\$0.00	\$0
2002	HICO ISD	1.540000	\$0	\$7,480	\$115.19	\$115.19	\$0.00	\$0.00	\$0.00	\$0
	2002 Total:	2.183000			\$163.29	\$163.29	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/155047printView=detail>

9/10

6/19/25, 3:38 PM

Hamilton CAD Property Search

2001	HICO EMERGENCY SERVICE DISTRICT	0.100000	\$0	\$6,960	\$6.96	\$6.96	\$0.00	\$0.00	\$0.00	\$0
2001	HAMILTON COUNTY	0.567800	\$0	\$6,960	\$39.52	\$39.52	\$0.00	\$0.00	\$0.00	\$0
2001	HICO ISD	1.470000	\$0	\$6,960	\$102.31	\$102.31	\$0.00	\$0.00	\$0.00	\$0
	2001 Total:	2.137800			\$148.79	\$148.79	\$0.00	\$0.00	\$0.00	\$0

<https://research.hamiltoncad.org/property/view/155047printView=detail>

10/10

TCEQ USE ONLY

Application type: ☐ Renewal ☐ Major Amendment ☐ Minor Amendment ☐ New County: _____ Admin Complete Date: _____ Agency Receiving SPIF: ☐ Texas Historical Commission ☐ U.S. Fish and Wildlife ☐ Texas Parks and Wildlife ☐ Army Corps of Engineers
--

SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

This form is required for all TPDES applications

1. Applicant: Oene Keuning
2. Permit Number: WQ0004108000 EPA ID Number: TX0128619
3. Address of the project (location description that includes street/highway, city/vicinity, and county). The facility is located approximately 3.8 miles West of the intersection of US Hwy 281 and County Road 207 in Hamilton County, Texas.
4. Provide the name, address, telephone and fax number of an individual that can be contacted to answer specific questions about the property.
 First and Last Name: Corey Mullin
 Company Name: Enviro-Ag Engineering, Inc.
 Mailing Address: 9855 FM 847
 City, State, and Zip Code: Dublin, TX 76446
 Phone Number: 254/965-3500 Fax Number: 254/965-8000
5. County where the facility is located: Hamilton
6. If the property is publicly owned and the owner is different than the permittee/applicant, please identify the owner. n/a
7. Identify the name of the water body (receiving waters) and TCEQ segment number that will receive the discharge. North Bosque River in Segment No. 1226 of the Brazos River Basin
8. Provide a 7.5-minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. (This map is required in addition to the map in the administrative report.)
9. Provide photographs of any structures 50 years or older on the property.
10. Does your project involve any of the following? Select all that apply.
 - ☐ Proposed access roads, utility lines, and construction easements
 - ☐ Visual effects that could damage or detract from a historic property's integrity
 - ☐ Vibration effects during construction or as a result of project design
 - ☐ Additional phases of development that are planned for the future
 - ☐ Sealing of caves, fractures, sinkholes, or other karst features
 - ☐ Disturbance of vegetation or wetlands
11. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves or other karst features): Click here to enter text.

12. Describe existing disturbances, vegetation & land use (plowing, other ground disturbances):
n/a

The following applies to New TPDES and Major Amendment to TPDES Permits:

13. List construction dates of any buildings or structures on the property: The Land Management Units (LMUs) at the facility are planted in Corn and Coastal Bermuda grass and normal expected farming practices to maintain the crops will be utilized.

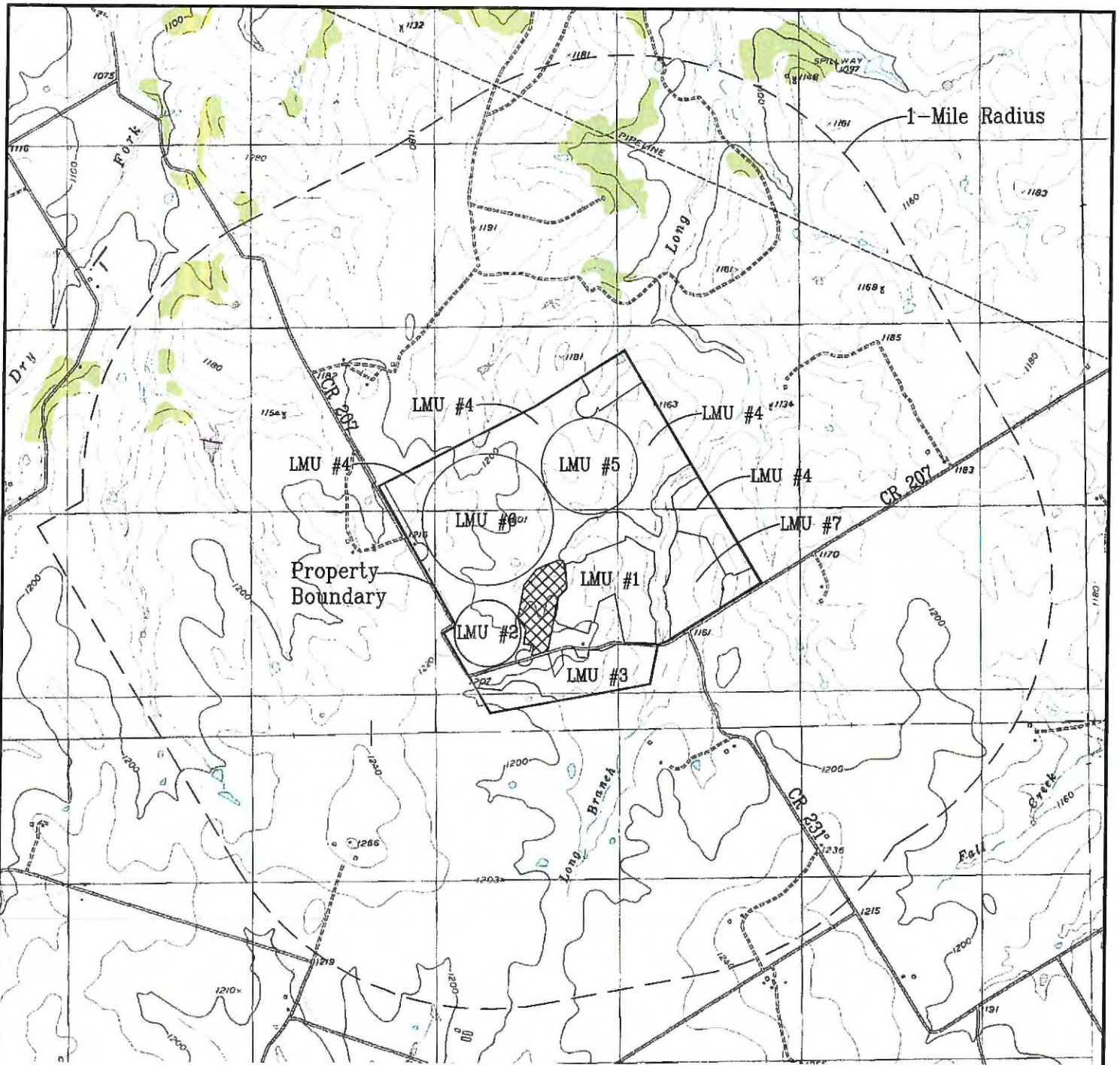
14. Provide a brief history of the property, and name of the architect/builder, if known:
unknown

The following applies to New, Amended and Renewal TPDES applications:

15. List each Retention Control Structure and its required capacity (Acre Feet). unknown

16. Provide the location and number of acres where wastewater and manure are land applied:
The facility has 463 acres available for waste and wastewater application. See attached Figure 1.3 for exact locations of the LMUs.

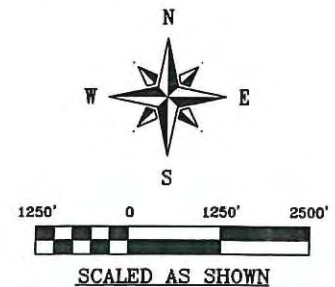
17. List the maximum number of head to be permitted. 2,000



LEGEND:

 Denotes Production Area

Map Generated 7/2/2025



Source: USDA-NRCS. Geospatial Data Gateway. Available at:
<http://datagateway.nrcs.usda.gov/>. Digital Raster
 Graphic County Mosaic by NRCS - Accessed July, 2017.

Note: Refer to Figures 1.3 & 1.4 for overall facility maps.

Okee Dairy
 Hico, Texas
 Hamilton County

SPIF Map



Enviro-Ag Engineering, Inc.
 ENGINEERING CONSULTANTS
 3404 Airway Blvd.
 AMARILLO, TEXAS 79118
 TEL (806) 353-6123 FAX (806) 353-4132



TECHNICAL INFORMATION PACKET FOR CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOs)

Submit this Form with your Individual Permit Application (TCEQ - 000728)

Name of Site: Okee Dairy

TCEQ Permit Number, if assigned: WQ000 4108000

Date Prepared: June 2025

SECTION 1. POLLUTANT SOURCES MANAGEMENT

For each potential pollutant source listed in the table below, provide the management practices utilized or enter "Not Applicable". Management practices should address the collection, storage and final disposition of each potential pollutant source. You may attach your list.

Table 1: Potential Pollutant Sources and Best Management Practices

Potential Pollutant Source	Best Management Practices
Manure and Manure Stockpiles	See Attached BMPs
Wastewater	See Attached BMPs
Sludge	See Attached BMPs
Compost	See Attached BMPs
Feed and Bedding	See Attached BMPs
Silage stockpiles	See Attached BMPs
Dead animals	See Attached BMPs
Dust	See Attached BMPs
Lubricants	See Attached BMPs
Pesticides	See Attached BMPs
Bulk cleaning chemicals	N/A
Inorganic fertilizers	N/A
Fuel storage tanks	See Attached BMPs
Other, specify: <u>Parlor Chemicals & Burial Site</u>	See Attached BMPs

SECTION 2. RETENTION CONTROL STRUCTURE DESIGN

A. Design Summary

- 1) Design Standards, Characteristic, and Values Sources Used
 - ☐ Natural Resource Conservation Service
 - ☒ American Society of Agricultural and Biological Engineers
 - ☒ Other; specify: Midwest Plan Services

I. POLLUTANT SOURCES AND MANAGEMENT

B. For each potential pollutant source, provide the management practices utilized.

Note: A Best Management Practice, as defined in 30 TAC §321.32(7), is the schedule of activities, prohibitions of practices, maintenance procedures, and other management and conservation practices to prevent or reduce the pollution of water in the state. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge, land application, or drainage from raw material storage. The following practices should be updated in the on-site PPP as changes to facility operating procedures occur. Employee training should be provided upon development & implementation of any BMP.

Potential Pollutant Sources:

Potential Best Management Practices (BMPs)

Manure, Sludge, Stockpiles, Slurry, Bedding, Feed Waste & Compost	Temporary (< 30 days) & Permanent Storage (>30 days) Store in drainage area of the RCS - OR - If not located within drainage area, berm area to contain runoff. Annually sample manure/manure stockpiles/compost/slurry for nutrient concentrations. Manure, Sludge, Slurry and/or Compost -Land application on-site or to third-party fields or transferred to other persons. Regular pen maintenance (scrapping & drainage)
Dust - Vehicle Traffic	Control speeds around the facility. Reduce travel on unpaved facility roads, or manage dust by sprinkling road with water and/or a suppressant on an as needed basis. Utilize paving products and/or gravel to manage dust on facility roads.
Dust - Feed Handling/Processing	Utilize dust abatement measures for feed handling equipment, Utilize choke feeding when handling feed ingredients & Utilize feed ingredients, such as moisture or other additives, to manage dust.
Feedstuff/Silage Stockpiles	Contain leachate in an earthen berm or in the RCS Minimize feed spoilage & utilize plastic covers or roofed areas for storage when applicable.
Lubricants/Pesticides/Herbicides/Parlor Chemicals	Store under roof Handle and dispose according to label directions
Fuel Tanks	Provide secondary containment Prevent overfills/spills
Wastewater	Store in RCS Land application according to NUP/NMP Land application will not occur during periods of saturation or frozen conditions (except in the event of imminent overflow) Annually sample for nutrient concentrations Maintain liner and capacity certifications Land application on-site or to third-party fields Maintain adequate capacity as determined by the pond marker schematic
Dead Animals	Disposed by a third-party rendering service, composted on-site or burial. Collected within 24 hours of death and disposed within three days of death
Burial Pits	Carcasses buried at least 3 feet below the natural surface of the ground. Covered with 3 feet of native soil.

- 2) Total Number of Animals:
In Open Lots: 500 In Buildings: 1,500
- 3) Animal Housing Location, hours/day:
Open Lots: 21.5 Buildings: 2.5
- 4) Average Liveweight, pounds per head: 1,400
- 5) Volatile Solids Removed by Separator System: 40%
- 6) Volatile Solids Loading Rate, lbs/day/1000 ft³: 5.30
- 7) Spilled Drinking Water, gallons/day: Included in cleanup water
- 8) Water for Cleanup, gallons/day: 22,500 gal/day
- 9) Water for Manure Removal, gallons/day: Included in cleanup water
- 10) Recycled Wastewater, gallons/day: n/a

B. Wastewater Runoff

- 1) Design Rainfall Amount, inches: 12.2
- 2) Design Rainfall Event:
 - ☐ 25-year, 24 hour
 - ☐ Soil Plant Air and Water (SPA) Field and Pond Hydrology Model
 - ☒ 25-year, 10 day
 - ☐ Other; specify: Click here to enter text.

C. Retention Control Structure(s) (RCS) Volume Allocations

Table 2. RCS Volume Allocations (Acre-Feet)

RCS Name	Design Rainfall Event Runoff	Process Generated Wastewater	Minimum Treatment Volume	Sludge Accumulation	Water Balance	Required Capacity	Actual Capacity
1	0.00	0.00	6.90	1.15	0.00	8.05	9.62
2	14.82	2.07	0.00	0.16	4.60	21.64*	27.12
						*Rounded Figure	

Indicate which RCSs are in-series: RCS #1 & RCS #2

D. RCS Liner or Lack of Hydrologic Connection Certification

Table 3: RCS Hydrologic Connection

RCS Name	Construction Date	Type of Hydrologic Connection Certification
RCS #1	1992	Liner Cert., Jerry Holligan P.E., February 17, 1997
RCS #2	2008	Liner Cert., Norman Mullin P.E., October 13, 2008
Settling Pond #1	2001	Liner Cert., Norman Mullin P.E., April 24, 2006
Settling Pond #2	2004	Liner Cert., Norman Mullin P.E., June 19, 2017

E. Playa Lakes

Are any playa lakes used for RCSs? Yes ☐ No ☒

SECTION 3. MANURE, SLUDGE, AND WASTEWATER HANDLING

A. Manure:

- 1) Use or Disposal Method:
 - ☒ Land Application to LMUs
 - ☒ Transfer to other persons
 - ☒ Third Party Fields
 - ☐ Other; specify: [Click here to enter text.](#)
- 2) Land Application Location:
 - ☒ Onsite ☒ Offsite ☐ Not Applicable
- 3) Composting Location:
 - ☒ Onsite ☐ Offsite ☐ Not Applicable

B. Sludge:

- 1) Use or Disposal Method:
 - ☒ Land Application to LMUs
 - ☐ Transfer to other persons
 - ☒ Third Party Fields

☐ Other; specify: [Click here to enter text.](#)

2) Land Application Location:

☒ Onsite ☒ Offsite ☐ Not Applicable

C. Wastewater:

- 1) Use or Disposal Method:
- ☒ Land Application to LMUs
 - ☐ Total Evaporation
 - ☒ Third Party Fields
 - ☐ Other; specify: [Click here to enter text.](#)
- 2) Land Application Location:
- ☒ Onsite ☒ Offsite ☐ Not Applicable

D. Land Application Summary from the Nutrient Management Plan

For each Land Management Unit (LMU), provide the name, acre, crops/yield goals and application rates on Table 4 below. Add rows if needed or attach additional pages.

Table 4: Land Management Unit Summary from the Current NMP

LMU Name	Acre	Crop(s) and Yield Goal(s)	Application Rate (Ac-ft/Ac/Year OR Tons/Ac/Year)
1	51	Coastal GC 9-11T; SG GC 6-7T	238.1 tons/ac/yr
2	26	Coastal GC 9-11T; SG GC 6-7T	0.167 ac-ft/ac/yr
3	45	Coastal GC 9-11T; SG GC 6-7T	238.1 tons/ac/yr
4	155	Coastal GC 9-11T; SG GC 6-7T	238.1 tons/ac/yr
5	53	Coastal GC 9-11T; SG GC 6-7T	0.658 ac-ft/ac/yr
6	100	Silage-Corn 16-20T; SG GC 8-9T	0.458 ac-ft/ac/yr
7	33	Coastal GC 9-11T; SG GC 6-7T	113.3 tons/ac/yr

- 1) Wastewater production, ac-in/year: 600.12 ac-in/yr (Table 2.3, Col. 4)
- 2) Estimated Wastewater application, ac-in/year: 394.08 ac-in/yr (Table 2.3, Col. 10)
- 3) Manure production, tons/year: 6,479 tons/yr (Table 2.1)
- 4) Estimated manure application, tons/year: 1,016 ton/yr (NMP)
- 5) Estimated manure transferred to other persons, tons/year: 5,463 tons/yr (NMP)

E. Floodplain Information

- 1) Is any part of the production area within a 100-year floodplain? Yes ☐ No ☒

If YES, describe management practices to protect the sites. [Click here to enter text.](#)

- 2) Is land application or temporary storage of manure in a 100-year floodplain or near a water course? Yes ☒ No ☐

If YES, describe management practices. Vegetative buffer shall be maintained between all waters of the state and any waste/wastewater application.

F. Soil Limitations

Table 5: Soil Limiting Characteristics and Best Management Practices

Soil Types	Limiting Characteristics	Best Management Practices
BxD, OgB	Droughty Depth to Hard Bedrock Depth to Soft Bedrock	- Land Application not to exceed agronomic rates for nutrients and soil hydraulic rates (refer to NMP) - Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of that Land Management Unit. -No land application to inundated soils
PkB	Droughty Depth to Bedrock	- Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. - Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of that Land Management Unit. -No land application to inundated soils
KrB, SsB	Slow Water Movement	- Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. -No land application to inundated soils
ToC, WsC	Depth to Soft Bedrock	- Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. - Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of that Land Management Unit. -No land application to inundated soils
NuC	Large Surface Stones Slow Water Movement	- Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients.

Soil Types	Limiting Characteristics	Best Management Practices
		- Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of that Land Management Unit. -No land application to inundated soils

G. Well Protection

Table 6: Water Well Status and Protective Measures

Well ID Number	Well Type	Producing or Non-Producing	Open, Cased, or Capped	Protective Measures
1	Domestic	Producing	Cased	See Attached Approved Well Buffer Exception
2	Domestic	Producing	Cased	See Attached Approved Well Buffer Exception
3	Domestic	Producing	Cased	Maintain 150-ft Buffer
4	Domestic	Producing	Cased	Maintain 150-ft Buffer
5	Domestic	Non-Producing	Cased	See Attached Plugging Report
6	Domestic	Non-Producing	Cased	See Attached Plugging Report
7	Domestic	Non-Producing	Cased	See Attached Plugging Report
8	Domestic	Producing	Cased	Maintain 150-ft Buffer
9	Domestic	Producing	Cased	Maintain 150-ft Buffer
10	Domestic	Producing	Cased	Maintain 150-ft Buffer
11	Domestic	Producing	Cased	Maintain 150-ft Buffer

Well ID Number	Well Type	Producing or Non-Producing	Open, Cased, or Capped	Protective Measures
12	Domestic	Producing	Cased	Maintain 150-ft Buffer

SECTION 4. AIR AUTHORIZATION SUMMARY

A. Type of Air Authorization

- ☒ Air Standard Permit in 30 TAC § 321.43
- ☐ Permit By Rule in 30 TAC Chapter 106 Subchapter F
- ☐ Individual Air Quality Permit

If Air Standard Permit is selected, then complete Sections B and C below.

B. Indicate the AFO Status and Buffer Option.

- ☐ Operation started after August 19, 1998:
 - ☐ ½ mile buffer*
 - ☐ ¼ mile buffer* and an odor control plan
- ☒ Operation started on or before August 19, 1998:
 - ☒ ¼ mile buffer*
 - ☐ odor control plan

*A written letter of consent from an affected landowner may be used in lieu of meeting the buffer distances specified.

C. Odor Receptors

Identify the number of occupied residences or business structures, schools (including associated recreational areas), places of worship, or public parks located within the following distances from permanent odor sources as defined in 30 TAC §321.32(43):

0 - ¼ mile: 4 (4 Applicant Owned)

¼ - ½ mile: 0

½ - 1 mile: 8 (1 Applicant Owned)

SECTION 5. ATTACHMENTS

A. Maps

- 1) Site Map
- 2) Land Management Unit Map
- 3) Vicinity Map
- 4) Original United States Geological Survey 7.5 Minute Quadrangle Map
- 5) 100 Year Floodplain Map (if applicable)
- 6) Runoff Control Map
- 7) Natural Resource Conservation Service (NRCS) Soil Survey Map

B. Professional Certifications

- 1) Recharge Feature Certification Statement and Supporting Documents
- 2) RCS Design Calculations (Water Nutr, Animal Waste Management (AWM), or equivalent)
- 3) RCS As-Built Capacity Certifications (if constructed)
- 4) RCS Hydrologic Connection Certifications (if constructed)

C. Land Application

- 1) Nutrient Management Plan
- 2) Nutrient Utilization Plan. If the NUP is already approved, include the approval letter.
- 3) Copy of Annual Soil Sampling Analyses (used for the NMP that was submitted with the application)

- 4) Copy of Annual Manure and Wastewater Analyses (used for the NMP that was submitted with the application)

D. Air Standard Permit Documentation (if required)

- 1) Area Land Use Map,
- 2) Odor Control Plan, if applicable
- 3) Written Consent Letters, if applicable

E. Groundwater Monitoring (if required)

- 1) Groundwater Monitoring Plan
- 2) Groundwater Monitoring Analyses

TABLE OF CONTENTS

TABLE OF CONTENTS	i
LIST OF FIGURES	ii
LIST OF TABLES	ii
1.0 FACILITY MAPS	1
2.0 CALCULATIONS & SPECIFICATIONS	6
3.0 FACILITY INFORMATION	13
4.0 WASTE UTILIZATION & NUTRIENT MANAGEMENT PLAN	14
5.0 RECHARGE FEATURE CERTIFICATION	16
6.0 SURFACE WATER & TMDL ASSESSMENT	31
7.0 AIR STANDARD PERMIT REQUIREMENTS	34

LIST OF FIGURES

Figure 1.1: Vicinity Map	2
Figure 1.2: USGS Quadrangle Map	3
Figure 1.3: Site Map	4
Figure 1.4: Runoff Control Map	5
Figure 2.1: Manure & Wastewater Flow Chart	7
Figure 5.1: Geologic Atlas Map	20
Figure 5.2: NRCS Soils Map	25
Figure 5.3: Recharge Feature Map	28
Figure 6.1: Aerial Photograph	33
Figure 7.1: Area Land Use Map	35

LIST OF TABLES

Table 2.1: As-Excreted Manure Characteristics	8
Table 2.2: Required Storage Volumes – RCS #1 & RCS #2	11
Table 2.3: Water Balance Model – RCS #1 & RCS #2	12
Table 5.1: Estimated Soil Properties	22
Table 5.2: Major Soil Types	23
Table 5.3: Potential Soil Limitations for Land Application	23
Table 5.4: Well Information	27

1.0 FACILITY MAPS

1.1 Vicinity Map

Figure 1.1, Vicinity Map, is a general highway map generated in AutoCAD using Tiger Primary and Secondary roads data from geospatial Data Gateway at <http://datagateway.nrcs.usda.gov/> (retrieved 2014). The location of the facility is depicted on the map.

1.2 USGS Quadrangle Map

Figure 1.2, entitled 7.5-Minute USGS Map is a seamless, high-quality copy of the 7.5-minute USGS quadrangle map (Hico, TX, quadrangle) that shows the boundaries of land owned, operated, or controlled by Okee Dairy and used as part of the concentrated animal feeding operation; and all springs, lakes, or ponds located on-site and within 1 mile of the property boundary.

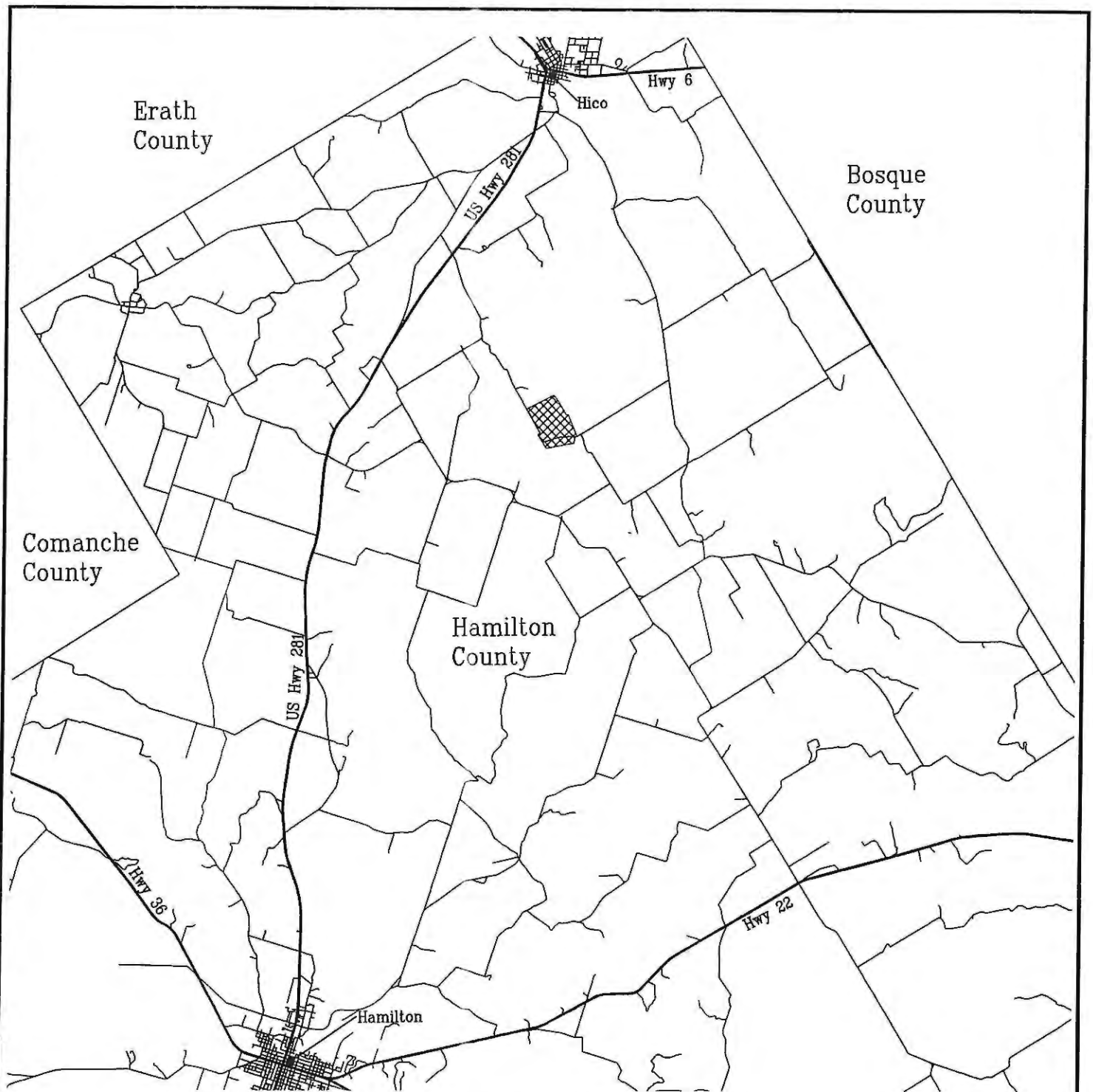
1.3 Site Map

Figure 1.3, Site Map, is a scaled drawing of the entire property to be permitted showing the locations of the following information:

- Pens/Open Lots
- Barns
- Retention Control Structures
- Land Management Units
- Buffer zones
- Wells
- Freshwater Ponds
- Berms/Diversions
- Milking Parlor
- Manure/Compost Storage Areas
- Burial Site

1.4 Runoff Control Map

Figure 1.4 is a scaled drawing of the production area showing the pens, barns, wells, RCSs, permanent manure storage and compost areas, hay/silage storage, drainage area boundaries and flow directions.



LEGEND:

- Denotes City/County Roads
- Denotes Major Roads
- ▤ Okee Dairy

Map Updated 7/22/2020



7000' 0 7000' 14000'



SCALED AS SHOWN

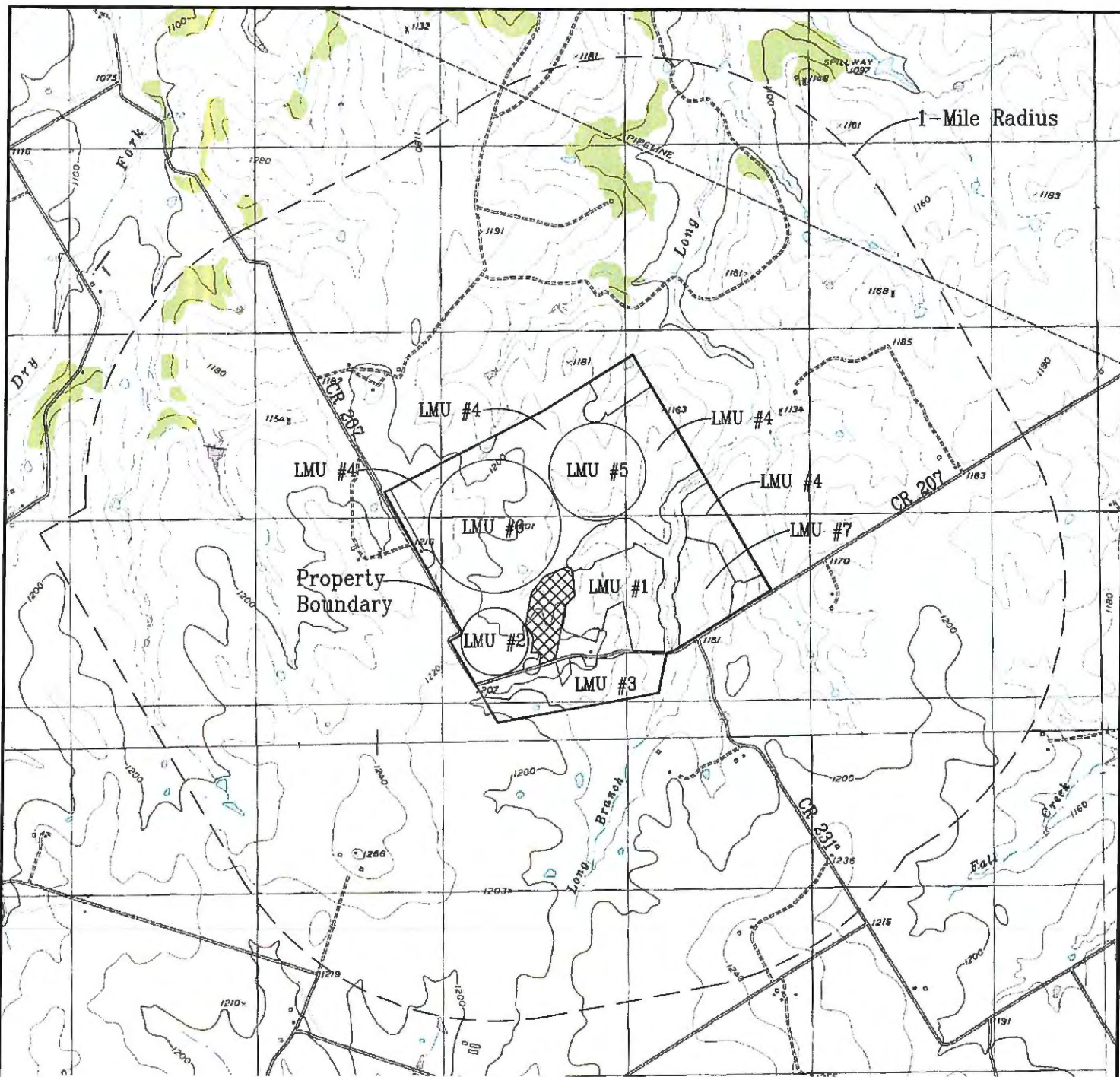
Source: USDA-NRCS. Geospatial Data Gateway. Available at:
<http://datagateway.nrcs.usda.gov/>. Tiger 2010
 Primary and Secondary Roads - Accessed May, 2014.

Okee Dairy
 Hico, Texas
 Hamilton County

Vicinity Map
 Figure 1.1
 Page 2



Enviro-Ag Engineering, Inc.
 ENGINEERING CONSULTANTS
 3404 Airway Blvd.
 AMARILLO, TEXAS 79118
 TEL (806) 353-6123 FAX (806) 353-4132



LEGEND:

 Denotes Production Area

Map Generated 7/2/2025



SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at:
<http://datagateway.nrcs.usda.gov/>. Digital Raster
 Graphic County Mosaic by NRCS - Accessed July, 2017.

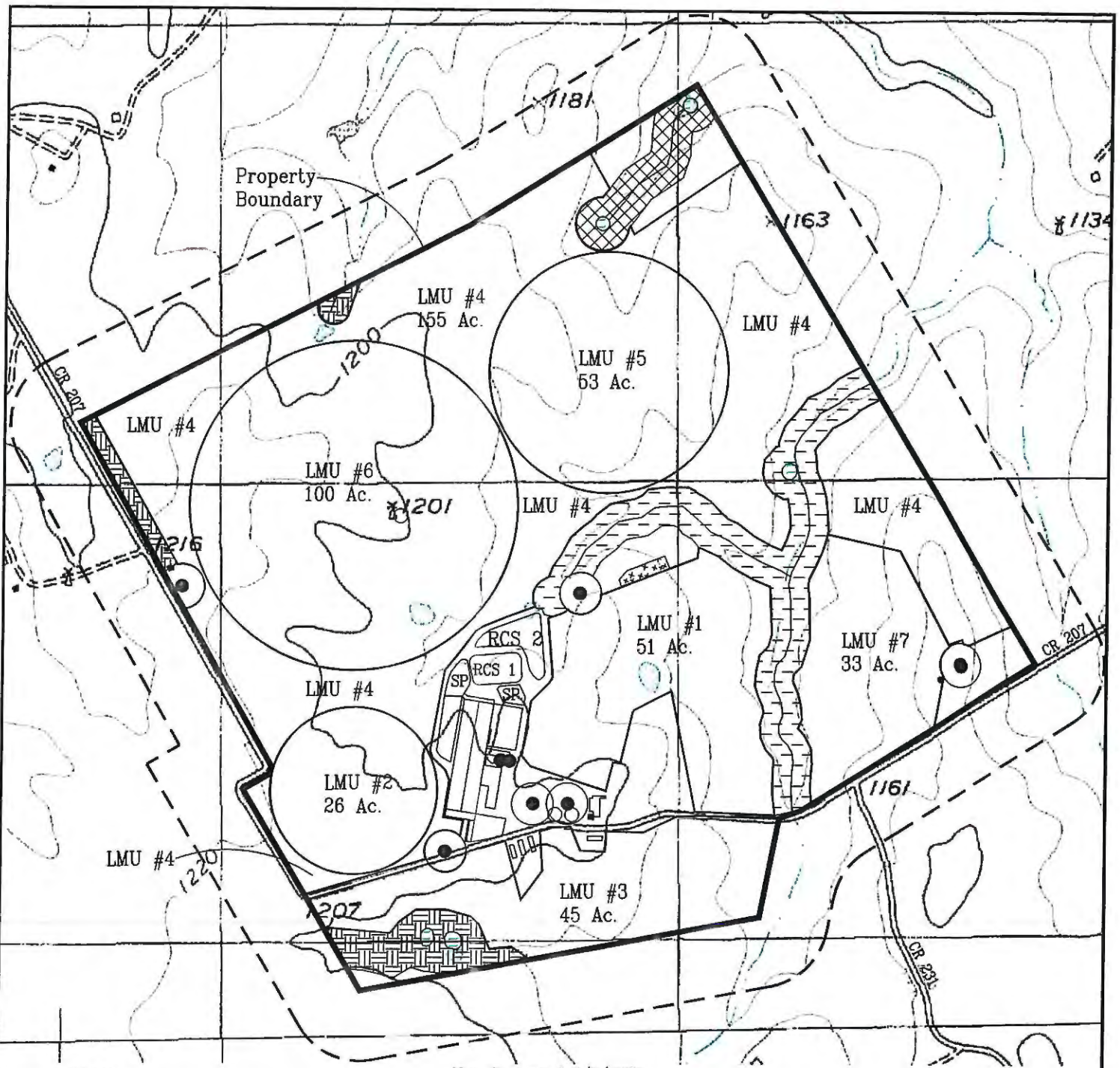
Note: Refer to Figures 1.3 & 1.4 for overall facility maps.

Okee Dairy
 Hico, Texas
 Hamilton County

USGS 7.5 Minute Quadrangle Map
 Figure 1.2
 Page 3



Enviro-Ag Engineering, Inc.
 ENGINEERING CONSULTANTS
 3404 Airway Blvd.
 AMARILLO, TEXAS 79118
 TEL (806) 353-6123 FAX (806) 353-4132



LEGEND:

- Denotes Plugged Water Well
- Denotes Well 150-ft Buffer
- Denotes Well
- ▨ Denotes 128ft Buffer
- ▩ Denotes 136ft Buffer
- ▧ Denotes 142ft Buffer
- * Denotes Burial Site
- Denotes Fresh Water Pond

Map Generated 7/2/2025



SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at:
<http://datagateway.nrcs.usda.gov/>. Digital Raster
 Graphic County Mosaic by NRCS - Accessed July, 2017.

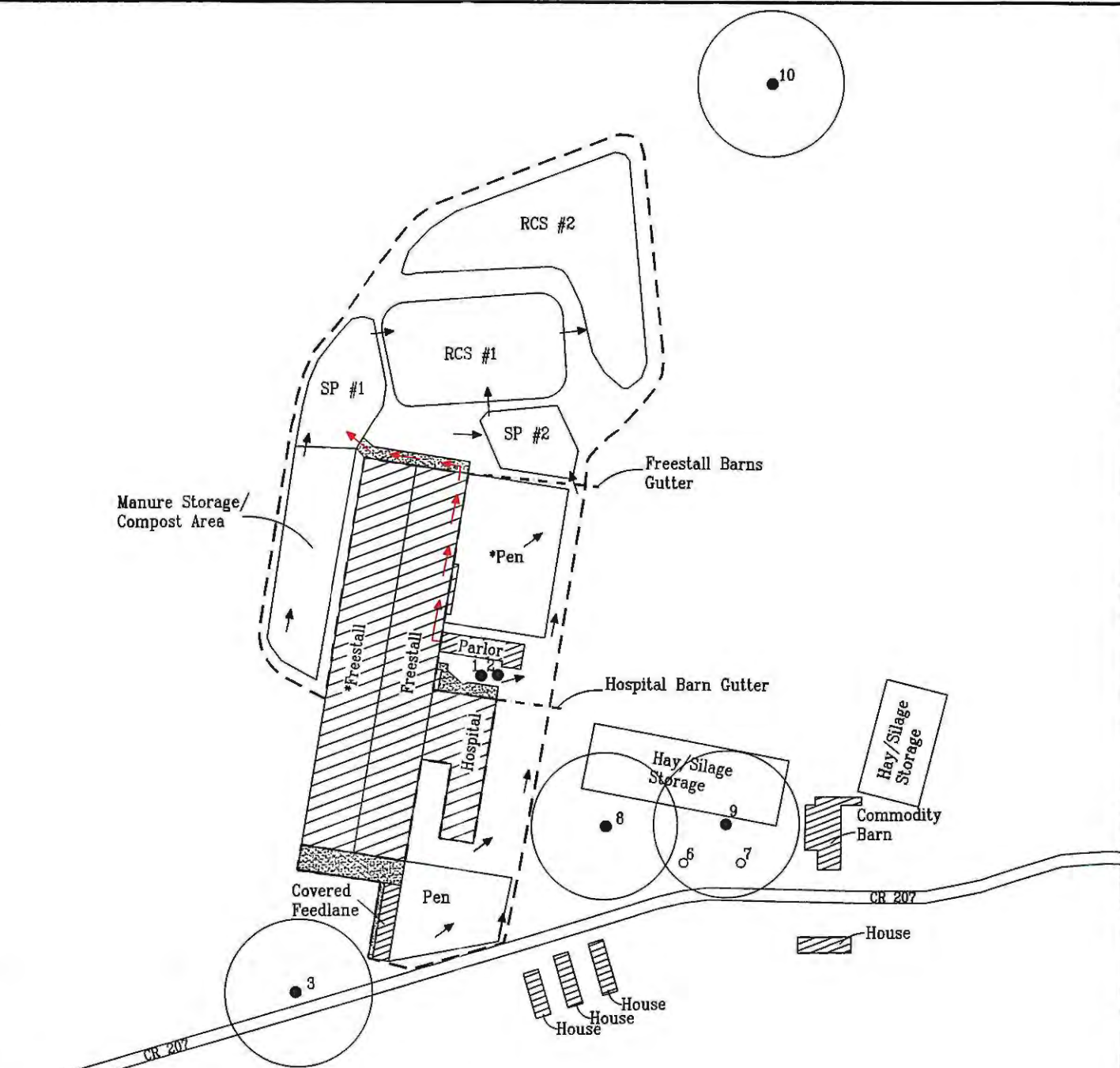
Note: Refer to Figure 1.4 for a detailed production area map.

Okee Dairy
 Hico, Texas
 Hamilton County

Site Map
 Figure 1.3
 Page 4



Enviro-Ag Engineering, Inc.
 ENGINEERING CONSULTANTS
 3404 Airway Blvd.
 AMARILLO, TEXAS 79118
 TEL (806) 353-6123 FAX (806) 353-4132



LEGEND:

- Denotes Water Well
- Denotes Plugged Well
- (with circle) Denotes Well with 150' Buffer
- - - Denotes Gutter Drain
- - - Denotes Drainage Area
- ▨ Denotes Barn/Roofed Area
- ▨ (with dots) Denotes Concreted Area
- * Denotes Proposed Structure

Map Generated 7/2/2025



SCALED AS SHOWN

Runoff Control:

Drainage is depicted by arrows shown on maps. The drainage will be directed to the RCS via ditches, berms or underground pipe.

Note: Refer to Figure 1.3 for overall facility map.

Okee Dairy
Hico, Texas
Hamilton County

Runoff Control Map
Figure 1.4
Page 5



Enviro-Ag Engineering, Inc.
ENGINEERING CONSULTANTS
3404 Airway Blvd.
AMARILLO, TEXAS 79118
TEL (806) 353-6123 FAX (806) 353-4132

2.0 CALCULATIONS & SPECIFICATIONS

2.1 Facility Overview

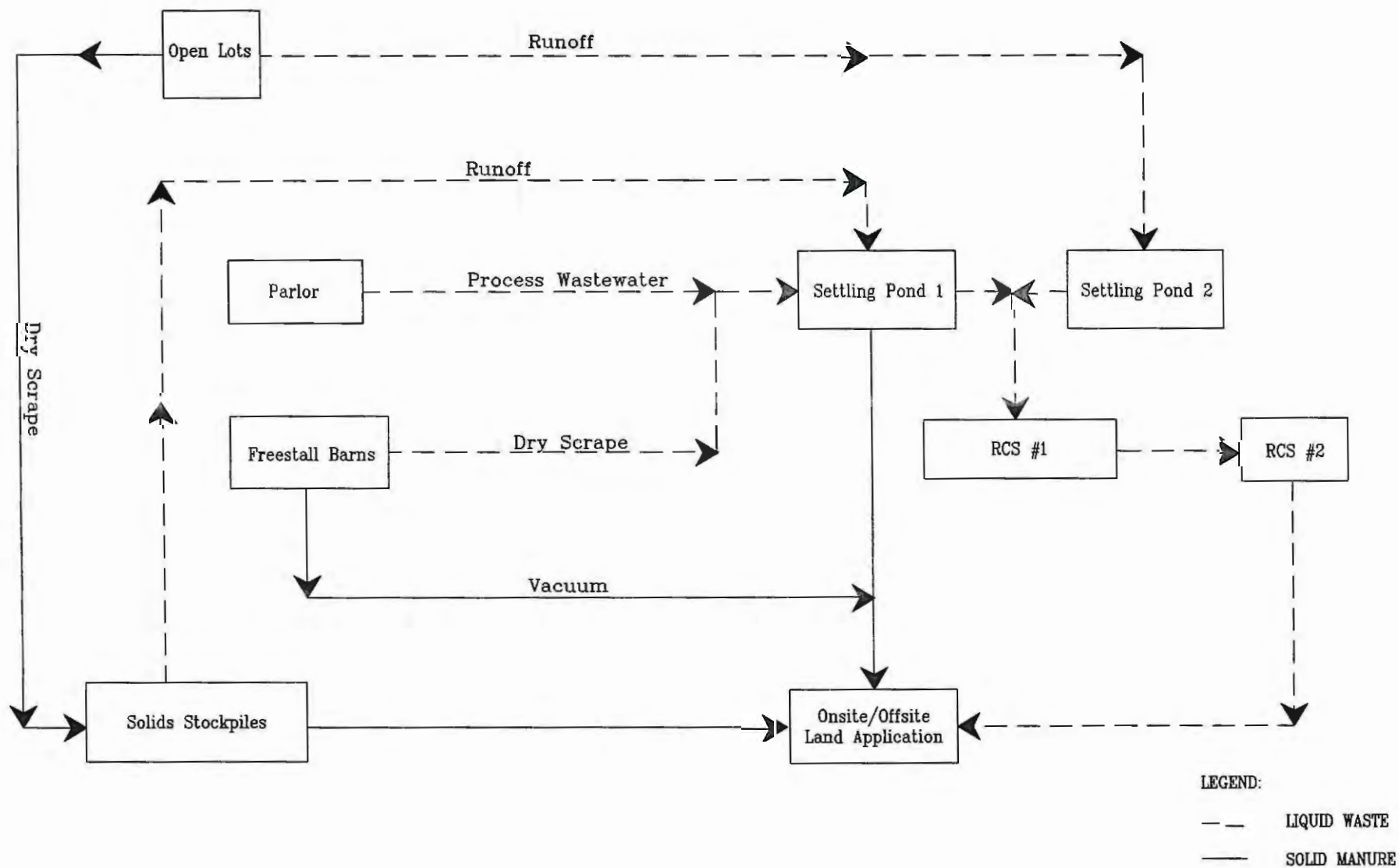
The existing facility consists of pens, freestall barns, a milking parlor, two settling ponds, one slurry pit and two retention control structures to confine 2,000 head, of which 1,500 head are milking.

This major amendment application is for reconfiguring the LMUs, addition of land, addition of new LMUs, reconfigure the drainage area, addition of a freestall barn, remove the slurry pit, expansion of the hospital barn, addition of a pen located to the East of the freestall barn and addition of wells #10, #11 and #12. The existing manure and/or wastewater storage structures have been certified as meeting TCEQ requirements for soil liner. Figure 2.1, Manure & Wastewater Flow Chart, shows the waste handling procedures and storage practices at the facility.

2.2 Manure Production

Table 2.1, As-Excreted Manure Characteristics Existing Dairy Facility, is included as a summary of the annual manure and nutrient production for the facility. The totals in Table 2.1 represent as-excreted manure and nutrient values for the maximum head count shown in the application.

Note: This data is intended for planning and design purposes and is not to be used for whole-farm nutrient mass balance calculations.



**ESTIMATED MANURE PRODUCTION
for a DAIRY FACILITY**

Table 2.1

ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO: Okee Dairy
LOCATION: Hamilton County
DATE: June-25

FACILITY TOTAL	MANURE PRODUCTION CRITERIA (a)			
	Milkers in Parlor	Milkers in Barns	Others*	Total
1. Maximum Number of Animals Confined (head):	1,500	1,500	500	2,000
2. Confinement period, hrs/hd/day	2.5	21.5	24	24
3. Percent of time in Confinement	10%	90%	100%	100%
4. Total Manure Production, lbs/day	23,438	201,563	41,500	266,500
5. Total Solids Production, lbs/day	3,125	26,875	5,500	35,500
6. Manure Production, tons/year	570	4,905	1,004	6,479
7. Volatile Solids Production, lbs/day	2,656	22,844	4,600	30,100
8. Total Nitrogen Production, lbs/day	155	1,330	250	1,735
9. Total Phosphorus, P2O5 lbs/day (b)	61	523	76	660
10. Total Potassium, K2O lbs/day (b)	43	371	198	612

NOTES:

* - Includes dry cows, growing heifers and young stock.

(a) - Manure and nutrient production values are taken from American Society of Agricultural and Biological Engineers Data: (ASABE D384.2 MAR05_R2010) Manure Production and Characteristics, Table 1.b - Section 3. Production values given in terms of lb/day-animal (wet-basis).

(b) - The ASAE Manure Production and Characteristics Tables give P and K in the elemental forms. Convert to P2O5 by multiplying by 2.29 and to K2O by multiplying by 1.2.

2.3 Process-Generated Wastewater Volume

The primary source of process-generated wastewater is wash water from the milking parlor operations, which is directed to settling pond #1 and then into RCS #1 and RCS #2. The freestall barns are vacuumed and dry scrapped manure removal. All open lot pens are dry scraped for manure removal. The volume of process wastewater (including wet manure from the milking parlor) generated daily is estimated to be 15 gallons per head (based on site specific data for Okee Dairy). The design storage volume in RCS #2 for process-generated wastewater is 30 days and is calculated in Table 2.2.

2.4 25-Year, 10-Day Rainfall Storage Volume

In accordance with 30 TAC §321.42(c)(1), RCS #2 is designed to maintain a margin of safety to contain the runoff and direct precipitation from the 25-year, 10-day storm event for this location, which is 12.2 inches of rainfall. Drainage area runoff volumes are calculated using the SCS method with curve numbers (CN) selected based on soil type and land use. The pen area runoff and compost/manure area were calculated using a CN of 90, the pond area was calculated using a CN of 100, and the adjacent areas were calculated a CN of 90. Roofed/concrete areas were calculated using a CN of 100. Run-on from areas outside the control facility is directed away from the RCSs. Table 2.2 shows the calculated storage volume required for the rainfall runoff from a 25-year, 10-day storm.

2.5 Sludge Accumulation Volume

Sludge accumulation from the milking parlor wash water was calculated using a rate of 0.0729 cubic feet of sludge per pound total solids (from USDA-NRCS Agricultural Waste Management Handbook) and a sludge storage period of 1 year. Parlor waste/wastewater is directed to settling ponds, with an estimated collection/removal efficiency of 40% (Midwest Plan Services) to reduce the amount of solids entering the RCSs, thereby reducing the demand for sludge storage. The required sludge accumulation volume calculations are shown in Table 2.2

2.6 Water Balance Model

Table 2.3, Water Balance Model, estimates the inflows and withdrawals from RCS #2 including runoff, direct rainfall, process-generated wastewater, evaporation, and irrigation withdrawal based on crop demand in accordance with 30 TAC §321.38(e)(7)(C). Actual pond withdrawal amounts will vary with changing weather conditions. An additional volume is included in the RCS to provide flexibility in managing RCS levels.

2.7 RCS Management Plan

A RCS Management Plan was developed by a licensed Texas professional engineer and has been implemented to incorporate the margin of safety, as specified in 30 TAC

§321.42(g). The plan includes the elements specified in §321.42(g)(1)-(6), and a copy is maintained in the onsite PPP.

2.8 Minimum Treatment Volume Requirement

A minimum treatment volume for odor control is required to obtain air standard authorization from the TCEQ. The minimum treatment volume is determined by estimating the volatile solids production rate less the removal efficiency of the settling basins and using a loading rate specified by ASABE Standards (ASAE EP 403.4 FEB2011) of 5.30 lbs of volatile solids per 1,000 cubic feet of storage. Table 2.2 shows the minimum treatment volume calculation.

**REQUIRED STORAGE VOLUMES FOR TREATMENT/
RUNOFF RETENTION CONTROL STRUCTURES**

Table 2.2
ENVIRO-AG ENGINEERING, INC.

NAME OF CAFO: Okee Dairy
LOCATION: Hamilton County
DATE: June-25

RCS #1 - TREATMENT POND REQUIREMENT

TREATMENT VOLUME

Volatile Solids Produced:	(lb/day)	2,656
Settling Basin Efficiency (%) (a):		40%
Adjusted Volatile Solids Production:	(lb/day)	1,594
Design Loading Rate (lbVS/1000cuft-day) (b):		5.30

Treatment Volume:	(ac-ft)	6.90
-------------------	---------	------

SLUDGE VOLUME

Dry Manure Produced:	(lb/day)	3,125
Settling Basin Efficiency (%) (a):		40%
Adjusted Dry Manure Production:	(lb/day)	1,875
Sludge Accumulation Rate (c):	(cuft/lb)	0.0729
Sludge Accumulation Period:	(years)	1

Sludge Volume:	(ac-ft)	1.15
----------------	---------	------

TOTAL TREATMENT VOLUME

Treatment Volume:	(ac-ft)	6.90
1-Year Sludge Volume:	(ac-ft)	1.15

Total Required RCS #1 Volume:	(ac-ft)	8.05
--------------------------------------	---------	-------------

NOTES:

- (a) Midwest Plan Service, 1983, Revised 1987 (Waste Management, pg. 702.11)
(b) Loading Rate taken from Figure 2, ASABE Standards (ASABE EP403.4 FEB2011)
(c) Sludge Accumulation Rate taken from Table 1, ASABE Standards (ASABE EP403.4 FEB2011)
(d) Value includes wet manure production from the milking parlor
(e) Using SCS method:

Where:

$$S = (1000/CN) - 10$$

$$Q = ((1 - 0.2S)^2) / (1 + 0.8S)$$

S = Potential maximum retention after runoff begins (in)
Q = Runoff (in)
I = 25-year, 10-day rainfall (in)
CN = Curve Number from SCS 210-VI-TR-55,
2nd Edition, June 1986

(f) USDA Agricultural Field Waste Handbook, Kansas, Part 651.1082, Suggested procedures for sediment volume estimation (1 year storage, pen/adjacent area and 1.5%)

NOTE: Calculations were performed in Microsoft Excel using floating point arithmetic in order to maintain the accuracy of the data. Any inconsistencies in rounding of the displayed values are not to be construed as errors in the calculation. For more information, please refer to <http://support.microsoft.com/>

RCS #2 - RUNOFF POND REQUIREMENT

PROCESS GENERATED WASTE/WASTEWATER

Parlor Wash Water (d):	(gal/head/day)	15
No. of Head in Parlor:		1,500
Volume of Process Water:	(gal/day)	22,500

Design Storage Period:	(days)	30
------------------------	--------	----

Process Water Volume:	(ac-ft)	2.07
-----------------------	---------	------

RAINFALL VOLUME

Drainage Area Characteristics:	(acres)	CN
Pen Area:	2.30	90
Adjacent/Manure Storage Areas:	4.85	90
Paved/Roof Areas:	0.80	100
Settling Ponds:	1.35	100
RCS #1 Surface Area:	1.70	100
RCS #2 Surface Area:	4.20	100
Total Drainage Area:	15.30	

25-year, 10-Day rainfall:	(inches)	12.2
---------------------------	----------	------

Runoff Volume Determination (e):	(inches)	(ac-ft)
Pen Area:	11.0	2.10
Adjacent/Manure Storage Areas:	11.0	4.43
Paved/Roof Areas:	12.2	0.81
Settling Ponds:	12.2	1.37
RCS #1 Surface Area:	12.2	1.73
RCS #2 Surface Area:	12.2	4.37

Rainfall Volume:	(ac-ft)	14.82
------------------	---------	-------

TOTAL RCS VOLUME REQUIRED

Runoff Sludge Volume (f):	(ac-ft)	0.16
Process Water Volume:	(ac-ft)	2.07
Rainfall Volume:	(ac-ft)	14.82
Additional from Water Balance:	(ac-ft)	4.60

Total Required RCS #2 Volume:	(ac-ft)	21.64
--------------------------------------	---------	--------------



Firm No. F-2507

WATER BALANCE MODEL
IRRIGATION AND EVAPORATION for RCS #2
Table 2.3
ENVIRO-AG ENGINEERING, INC.

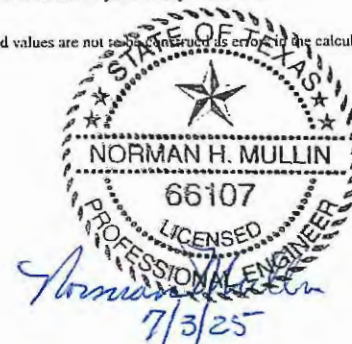
NAME:	Okee Dairy	HYDROLOGIC CHARACTERISTICS		IRRIGATION CELL VOLUME SUMMARY DATA	
LOCATION:	Hamilton County	Pen Areas (acres):	2.30	25-Year, 10-Day Rainfall Volume (ac-ft):	14.82
DATE:	June-25	Adjacent/Lake Storage Areas (acres):	4.85	Process Generated Wastewater Volume (ac-ft):	2.07
		Paved/Roof Areas (acres):	0.80	Sludge Accumulation Volume (ac-ft):	0.16
		Total RCS/SB Surface Areas (acres):	7.35	Additional Volume (ac-ft):	4.60
		Total Irrigated Area (acres)(12):	100	Total Required Capacity (ac-ft):	21.64
		Cropping Scheme:	Corn 100 Winter Wheat		
		Effective Evaporation Surface Area (acres):	5.66		

MONTH	RCS INFLOW CALCULATIONS					HYDRAULIC CROP DEMAND CALCULATIONS					RCS STORAGE SUMMARY			
	(1) (inches)	(2) (inches)	(2) (inches)	(3) (ac-ft)	(4) (ac-ft)	(5) (inches)	(6) (inches)	(6) (inches)	(7) (ac-ft)	(7) (ac-ft)	(8) (inches)	(9) (ac-ft)	(10) (ac-ft)	(11) (ac-ft)
JAN	1.57	0.24	0.24	2.14	3.35	1.57	0.00	2.74	0.00	9.75	2.23	0.68	8.22	0.16
FEB	1.89	0.39	0.39	1.93	3.45	1.89	0.00	3.11	0.00	10.17	2.56	0.78	2.67	0.16
MAR	2.12	0.52	0.52	2.14	3.89	2.12	0.00	4.97	0.00	23.75	4.08	1.24	2.65	0.16
APR	2.68	0.86	0.86	2.07	4.40	2.68	2.62	5.74	0.00	25.51	4.97	1.51	2.89	0.16
MAY	4.15	1.94	1.94	2.14	6.11	3.97	5.40	5.33	11.95	11.36	4.97	1.51	4.60	0.16
JUN	3.08	1.13	1.13	2.07	4.84	3.06	7.78	3.22	39.36	1.36	6.67	2.03	2.81	0.16
JUL	1.87	0.38	0.38	2.14	3.64	1.87	9.05	0.00	59.83	0.00	7.72	2.35	1.29	0.16
AUG	2.13	0.52	0.52	2.14	3.90	2.13	4.86	0.00	22.75	0.00	7.42	2.26	1.64	0.16
SEP	2.95	1.04	1.04	2.07	4.70	2.94	0.00	0.00	0.00	0.00	5.61	1.71	0.00	3.14
OCT	2.96	1.05	1.05	2.14	4.78	2.95	0.00	2.15	0.00	0.00	4.60	1.40	0.00	6.32
NOV	1.88	0.39	0.39	2.07	3.58	1.88	0.00	1.70	0.00	0.00	3.17	0.97	0.00	9.13
DEC	1.60	0.25	0.25	2.14	3.38	1.60	0.00	2.33	0.00	6.08	2.37	0.72	6.08	5.70
TOTALS	28.88	8.71	8.71	35.20	50.01	28.64	29.71	31.29	133.89	87.98	56.37	17.17	32.84	

NOTES:

- (1) AVERAGE PRECIPITATION - Average precipitation taken from the Texas Water Development Board, Erath County, Quad #609, retrieved June 16, 2025.
- (2) RUNOFF PENS AND ADJACENT AREA - Runoff from pens, adjacent areas calculated using SCS Curve Number Method adjusted from 1 to 30-day Curve Number (Pen CN-77, Adj CN-77) (Ref. NRCS Animal Waste Management Software Help File- Program Documentation for Runoff)
- (3) INFLOW - Inflow is calculated from process generated wastewater, Table 2.2
- (4) TOTAL INFLOW - Total inflow is calculated as that volume of rainfall that falls on the RCS and process water that enters the RCS.
- (5) RAINFALL ON IRRIGATED AREA - Effective monthly rainfall on the irrigated area calculated using SCS Curve Number Method adjusted from 1 to 30-day Curve Number (Irr CN-44) (Ref. NRCS Animal Waste Management Software Help File- Program Documentation for Runoff)
- (6) CONSUMPTIVE USE values from Borrelli, et al., 1998 Mean Crop Consumptive Use and Free-Water Evaporation for Texas, Dept. of Civil Engineering, Texas Tech University, Lubbock, Texas (Table 16)
- (7) NET CROP DEMAND - Net Crop Demand = ((Consumptive Use(6) - Effective Rainfall(5))/12) x Irrigated Area.
- (8) MONTHLY LAKE SURFACE EVAPORATION - Average monthly lake surface evaporation taken from the Texas Water Development Board, Erath County, Quad #609, retrieved June 16, 2025.
- (9) NET POND EVAPORATION - Net Evaporation from the water surface is taken as (Monthly Lake Surface Evap/12) x (RCS Surface Area)
- (10) ACTUAL WITHDRAWAL - Actual Withdrawal from the irrigation cell not to exceed Net Crop Demand. (No consideration given for nutrient demand of crop)
- (11) STORAGE AT END OF MONTH - Storage volume in the irrigation cell at the end of the month. The storage calculated in this column should not encroach in the volume reserved for the 25-year, 10-day rainfall event
- (12) Irrigated acres include LMU #6.

NOTE: Calculations were performed in Microsoft Excel using floating point arithmetic in order to maintain the accuracy of the data. Any inconsistencies in rounding of the displayed values are not to be construed as errors in the calculation. For more information, please refer to <http://support.microsoft.com/kb/42980>



3.0 FACILITY INFORMATION

3.1 Required Certifications

RCS #1, RCS #2, Settling Pond #1 and Settling Pond #2 have been certified by a licensed Texas professional engineer as meeting the liner requirements of the TCEQ. Existing liner and capacity certifications are attached.

3.2 100-Year Flood Plain Evaluation

There are no FEMA floodplain maps available for Hamilton County. Based on an on-site visit none of the production area is located within the 100-year flood plain.



**Okee Dairy
Hamilton County, Texas
RCS #1 Capacity Certification**

The survey capacity performed on October 14, 2008 by Enviro-Ag Engineering, Inc. using a Trimble GSP surveying system on retention control structure (RCS) #1 with 2 vertical feet of dry freeboard was calculated to be:

9.62 acre-feet (1.51 surface acres @ HWL)

Prepared by:



Norman Mullin, P.E.
Enviro-Ag Engineering, Inc.

(Supporting Documentation Attached)

RES #1

A.C. Lowther
Cert. Professional Soil Scientist
3310 Santa Monica
Abilene, Texas 79605

February 17, 1997

Texas Natural Resource Conservation Commission
Applications and Enforcement Section
Agriculture and Rural Assistance Division
P.O. Box 13067
Austin, Texas 78711-3087

Re: Bauke Mulder Dairy

A.C. Lowther has completed sampling and testing of the soil liner for the Waste Storage Pond on the Bauke Mulder Dairy, Hamilton, County, Texas. The test results including sample thickness, Atterberg limits, permeability and percent passing the number 200 sieve are tabulated on the attached report. Our findings indicate the soils meet the criteria established by the TNRCC.

Sincerely,

A. C. Lowther

A.C. Lowther, CPSS

Submitted By: Bauke Mulder

Signed By:

Date:



Jerry E. Holligan
2309 Hancock Drive
Suite 1 A
Texas 78756

EE DAIRY
Attachment IV.C.4
LINER CERTIFICATION

Mulder - Page 1

A.C. Lowther
Cert. Professional Soil Scientist
3310 Santa Monica
Abilene, Texas 79605

Name: Mulder Dairy

Pond No. Pond # 1 Sampled 2-12-97 Sampled By: A.C. Lowther

Test Location	No. 1	No.2	No.3	No.4	Minimum Req.
----------------------	-------	------	------	------	--------------

Soil Description

Color (Munsell)	Yellowish Brown	Yellowish Brown	Yellowish Brown	Yellowish Brown	
Texture (ASTM D-422)	Clay loam	Clay	Clay loam	Clay loam	
Unified	CL	CL	CL	CL	

Sample Depth	18	18	18	18	18
---------------------	----	----	----	----	----

Atterberg Limits

(ASTM D-423)

Liquid Limit %	36.3	41.2	41.4	34.3	30
-----------------------	------	------	------	------	----

Plastic Limit %	17.3	26.1	20.6	18.9	
------------------------	------	------	------	------	--

Plasticity Index %	18.9	15.1	20.8	15.4	15
---------------------------	------	------	------	------	----

Passing No. 200 Sieve %	78	85	79	83	30
--------------------------------	----	----	----	----	----

Permeability	2.6 X 10 - 8				1 X 10 - 7
---------------------	--------------	--	--	--	------------

In-Place Density (Existing Pond)

(ASTM D-1556)

Sample No.	Field Moisture %	Optimum Moisture %	Field Density (#/Cu.Ft.)	Maximum Density (#/Cu.Ft.)	Density (% Maximum)
-------------------	-------------------------	---------------------------	---------------------------------	-----------------------------------	----------------------------

A.C. Lowther
Cert. Professional Soil Scientist
3310 Santa Monica
Abilene, Texas 79605

February 17, 1997

Name: Bauke Mulder Dairy

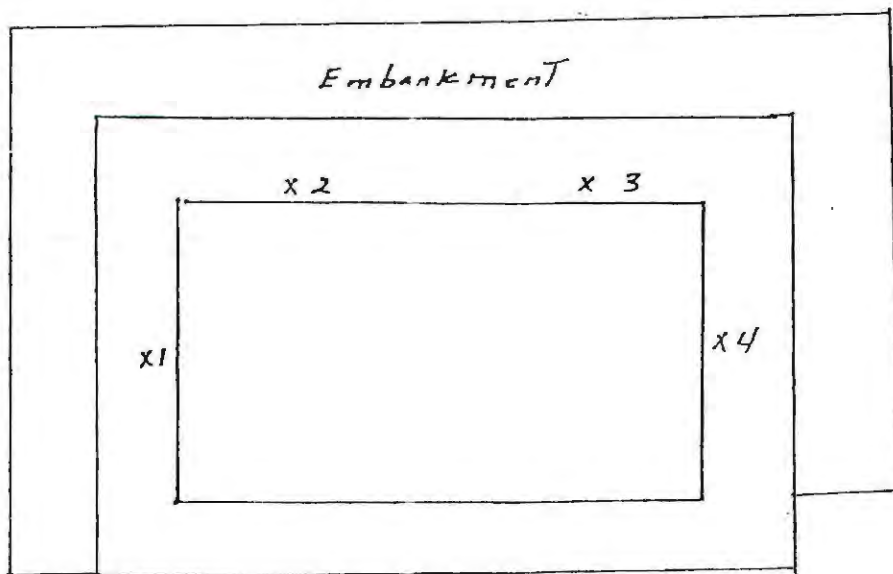
SOIL SAMPLE LOCATIONS

Depth of Samples (BGL): 8 Feet

Sampled By: A.C. Lowther



Not To Scale



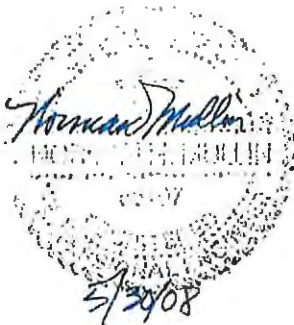


**Okee Dairy
Hamilton County, Texas
RCS #2 Capacity Certification**

The survey capacity performed on May 27, 2008 by Enviro-Ag Engineering, Inc. for retention control structure (RCS) #2 with 2 vertical feet of dry freeboard is:

RCS #2 27.12 ac-ft with 3.17 surface acres @ HWL

Respectfully Submitted,



Norman Mullin, P.E.
Enviro-Ag Engineering, Inc.

(Supporting Documentation Attached)



**Okce Dairy
Hamilton County, Texas
New RCS #2 Liner Certification**

Four three-inch Shelby tube core samples were collected from RCS #2 to document that the liner meets the requirements of the TCEQ requirements for soil liner. The liner thickness was documented to be at least 18 inches.

The hydraulic conductivity of the soil liner is documented as follows:

- | | |
|-------------------------|-------------------------------|
| • RCS #2 Bottom 1 (784) | 7.8 x 10 ⁻⁹ cm/sec |
| • RCS #2 Bottom 2 (785) | 3.7 x 10 ⁻⁸ cm/sec |
| • RCS #2 Side 1 (786) | 4.4 x 10 ⁻⁹ cm/sec |
| • RCS #2 Side 2 (787) | 5.4 x 10 ⁻⁹ cm/sec |

Based on the above documentation the liner in New RCS #2 is determined to be in accordance with TCEQ requirements for soil liners. The test results meet the requirements of the TCEQ for hydraulic conductivity considered protective of ground and surface water resources.

Respectfully Submitted,



Norman Mullin Revised 10/13/08

Norman Mullin, P.E.
Enviro-Ag Engineering, Inc.

(Supporting Documentation Attached)

Enviro-Ag Engineering, Inc.

3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123
LABORATORY SERVICES



HYDRAULIC CONDUCTIVITY

REPORT

ASTM D-5084, Method C

Client / Project Name:

Okee Dairy

Project No:

08-05-20

Lab Sample Number:

784

Sample ID:

1

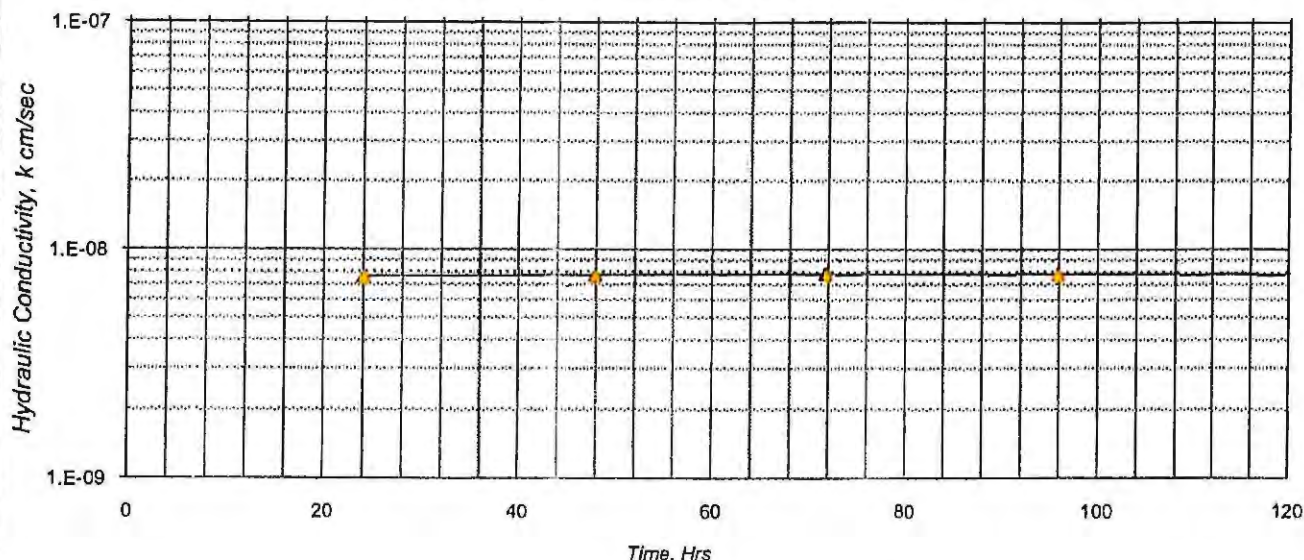
Sample Location:

RCS #2 - Bottom 1

Report Date:

July 2, 2008

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	1	
DESCRIPTION:	RCS #2 - Bottom 1	
	INITIAL	FINAL
HEIGHT, in.	2.8	2.8
DIAMETER, in.	2.8	2.8
WATER CONTENT, %	9.7	18.6
DRY DENSITY, pcf	113	112
SATURATION, %	54	99
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Brown/Yellow	
SAMPLE CONSISTENCY	Clay	

COMMENTS:

Tap water used as permeant.

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS: 5 psi
GRADIENT RANGE: 4 - 4
IN / OUT RATIO: 1.00

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY
		cm / sec
1	24.1	7.6E-09
2	48.0	7.7E-09
3	71.8	7.8E-09
4	95.9	7.8E-09
5	120.2	7.8E-09

AVERAGE LAST 4: 7.8E-09

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Enviro-Ag Engineering, Inc.

By accepting the data and results represented on this page, client agrees to limit the liability of Enviro-Ag Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Enviro-Ag from and against all liability in excess of the aforementioned limit.

Z: Soils Lab\Perms\2008\08-05-20\784

Print Date:

10/13/08

Reviewed By:

Micah Mullin

LSN:

784

DCN: EAE-QC-GRAPH (rev. 11/10/04)

Enviro-Ag Engineering, Inc.

3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123
LABORATORY SERVICES



HYDRAULIC CONDUCTIVITY

REPORT

ASTM D-5084, Method C

Client / Project Name:

Okee Dairy

Project No:

08-05-20

Lab Sample Number:

785

Sample ID:

2

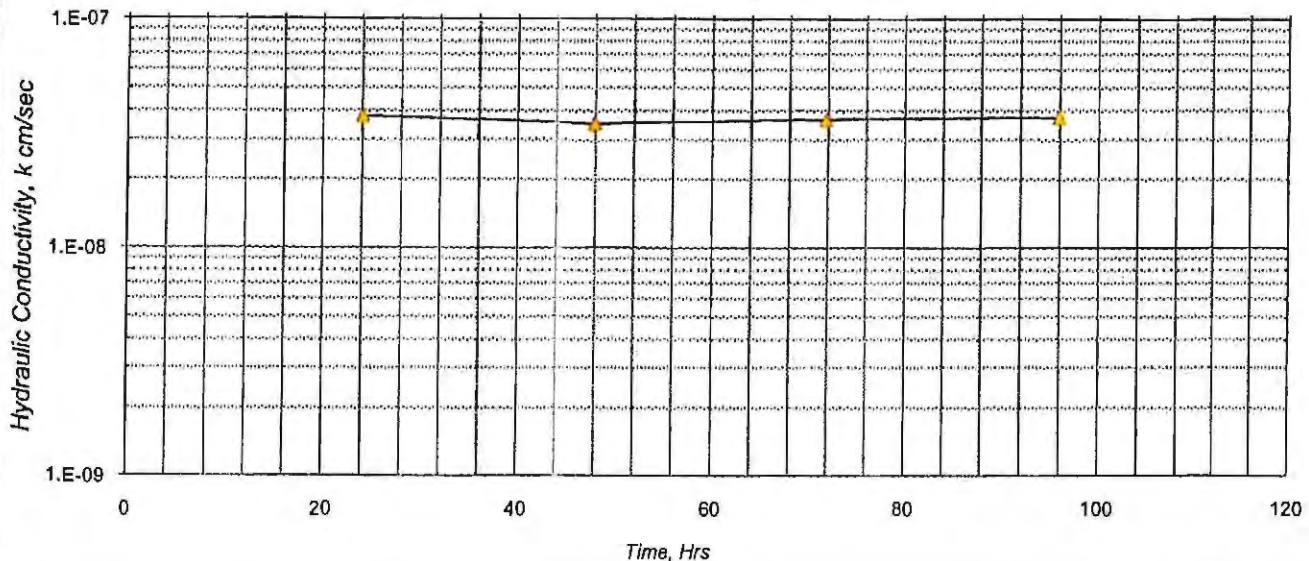
Sample Location:

RCS #2 - Bottom 2

Report Date:

July 2, 2008

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	2	
DESCRIPTION:	RCS #2 - Bottom 2	
	<u>INITIAL</u>	<u>FINAL</u>
HEIGHT, in.	3.2	3.2
DIAMETER, in.	2.8	2.9
WATER CONTENT, %	14.9	17.3
DRY DENSITY, pcf	110	106
SATURATION, %	75	79
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Yellow	
SAMPLE CONSISTENCY	Clay	

COMMENTS:

Tap water used as permeant.

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS: 5 psi
GRADIENT RANGE: 3 - 3
IN / OUT RATIO: 1.06

TRIAL nos.	TIME hrs.	HYDRAULIC CONDUCTIVITY
		cm / sec
1	24.1	3.8E-08
2	48.0	3.5E-08
3	71.8	3.7E-08
4	95.9	3.8E-08

AVERAGE LAST 4: 3.7E-08

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Enviro-Ag Engineering, Inc.

By accepting the data and results represented on this page, client agrees to limit the liability of Enviro-Ag Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Enviro-Ag from and against all liability in excess of the aforementioned limit.

Z: Soils Lab\Perms 12008\08-05-20\785

Print Date:

10/13/08

Reviewed By:

Micah Mullin

LSN:

785

DCN: EAE-QC-GRAPH (rev. 11/10/04)

Enviro-Ag Engineering, Inc.

3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123
LABORATORY SERVICES



HYDRAULIC CONDUCTIVITY

REPORT

ASTM D-5084, Method C

Client / Project Name:

Okee Dalry

Project No:

08-05-20

Lab Sample Number:

786

Sample ID:

3

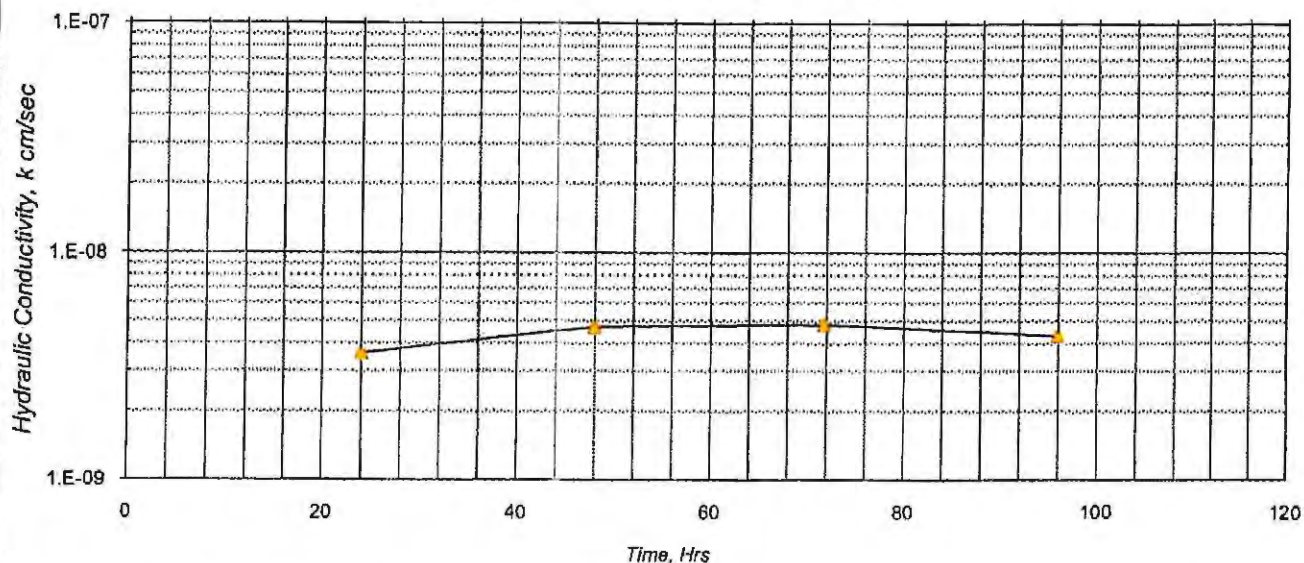
Sample Location:

RCS #2 - Side 1

Report Date:

July 2, 2008

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	3	
DESCRIPTION:	RCS #2 - Side 1	
	<u>INITIAL</u>	<u>FINAL</u>
HEIGHT, in.	1.8	1.8
DIAMETER, in.	2.8	2.7
WATER CONTENT, %	11.7	13.2
DRY DENSITY, pcf	110	119
SATURATION, %	59	86
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Yellow	
SAMPLE CONSISTENCY	Clay	

TEST DATA

ASTM D-5084, Method C		
EFFECTIVE STRESS:	5 psi	
GRADIENT RANGE:	5 - 6	
IN / OUT RATIO:	1.10	
HYDRAULIC CONDUCTIVITY		
<u>TRIAL nos.</u>	<u>TIME hrs.</u>	<u>cm / sec</u>
1	24.1	3.6E-09
2	48.0	4.7E-09
3	71.8	4.8E-09
4	95.9	4.3E-09
AVERAGE LAST 4 :		4.4E-09

COMMENTS:

Tap water used as permeant.

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Enviro-Ag Engineering, Inc.

By accepting the data and results represented on this page, client agrees to limit the liability of Enviro-Ag Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Enviro-Ag from and against all liability in excess of the aforementioned limit.

Z: Soils Lab\Perms\2008\08-05-20\786

Print Date:

10/13/08

Reviewed By:

Micah Mullin

LSN:

786

DCN: EAE-QC-GRAPH (rev. 11/10/04)

Enviro-Ag Engineering, Inc.

3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123

LABORATORY SERVICES



HYDRAULIC CONDUCTIVITY

REPORT

ASTM D-5084, Method C

Client / Project Name:

Okee Dairy

Project No:

08-05-20

Lab Sample Number:

787

Sample ID:

4

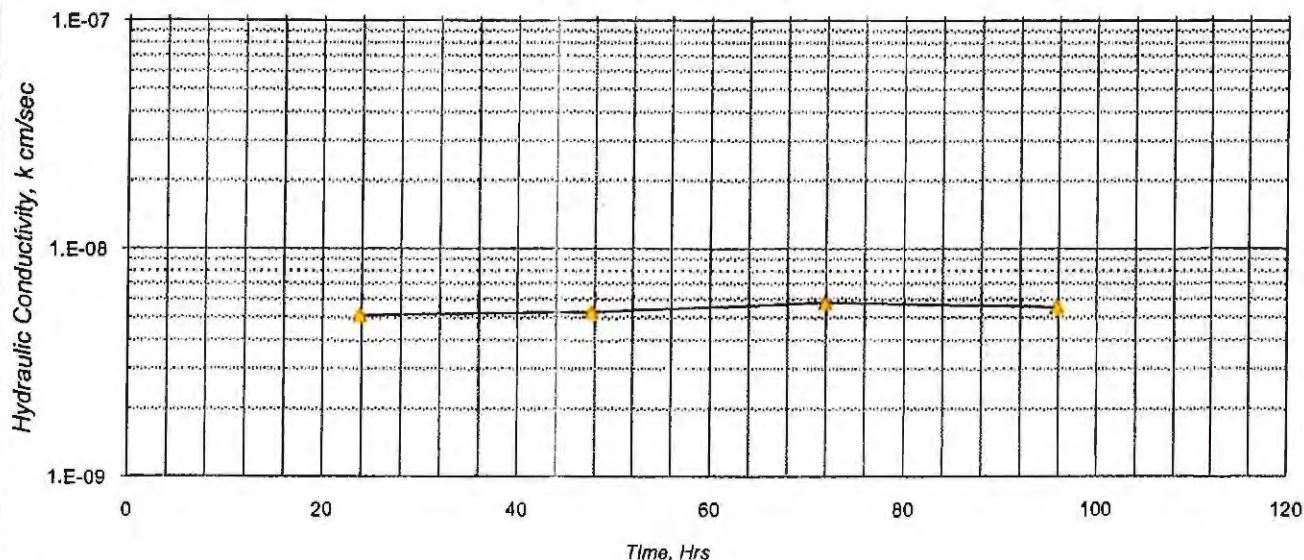
Sample Location:

RCS #2 - Side 2

Report Date:

July 2, 2008

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	4	
DESCRIPTION:	RCS #2 - Side 2	
	<u>INITIAL</u>	<u>FINAL</u>
HEIGHT, in.	1.7	1.7
DIAMETER, in.	2.9	2.9
WATER CONTENT, %	10.1	23.9
DRY DENSITY, pcf	108	103
SATURATION, %	49	102
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Yellow	
SAMPLE CONSISTENCY	Clay	

COMMENTS:

Tap water used as permeant.

TEST DATA

<u>ASTM D-5084, Method C</u>		
EFFECTIVE STRESS:	5 psi	
GRADIENT RANGE:	5 - 6	
IN / OUT RATIO:	1.06	
	<u>HYDRAULIC CONDUCTIVITY</u>	
<u>TRIAL nos.</u>	<u>TIME hrs.</u>	<u>cm / sec</u>
1	23.9	5.1E-09
2	47.7	5.3E-09
3	71.9	5.8E-09
4	95.8	5.5E-09
AVERAGE LAST 4:		5.4E-09

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Enviro-Ag Engineering Inc.

By accepting the data and results represented on this page, client agrees to limit the liability of Enviro-Ag Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Enviro-Ag from and against all liability in excess of the aforementioned limit.

Z: Soils Lab\Perms\2008\08-05-20\787

Print Date:

10/13/08

Reviewed By:

Micah Mullin

LSN:

787

DCN: EAE-QC-GRAPH (rev. 11/10/04)

TRIAXIAL PERMEABILITY CHAIN of CUSTODY

STRUCTURE

PERM
REPORT
I.D.

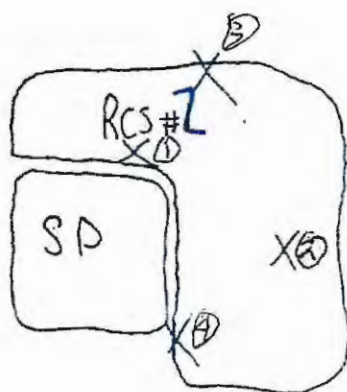
LAB
LOG

RCS #	2007061	1	784
-------	---------	---	-----

BOTTOMZ 2 785

SIDE 1	3	786
--------	---	-----

SIDEZ	4	787
-------	---	-----



Facility Name:

Project Engineer:

Sampled by:

Date Sampled:

Date to Lab:

Received:



Enviro-Ag Engineering, Inc.
ENGINEERING CONSULTANTS
3404 Airway Boulevard
AMARILLO, TEXAS 79118
TEL (806) 353-6123 FAX (806) 353-4132



LINER DISTURBANCE RE-CERTIFICATION

Slurry/Settling Pond #1

Okee Dairy

Hamilton County, Texas

In January 2006, the clay liner for the settling basin located at Okee Dairy was sampled for hydraulic conductivity determination after cleaning activities. The sample was collected to verify a minimum liner thickness of 12 inches and then submitted to Dyess-Peterson Testing Laboratory, Inc. in Amarillo, Texas for permeability determination. Results of the permeability tests are as follows:

- Slurry/Settling Slurry Pond #1 - $5.61 \times 10E-08$ cm/sec

Based on a liquid depth of 12 ft, the above permeability test results meet the TCEQ allowable seepage rates for runoff control structures (1.5 ft thickness of $1.0 \times 10E-07$ cm/sec materials).

Respectfully submitted,

A circular professional engineer seal for Norman H. Mullin, State of Texas. The seal contains the text "NORMAN H. MULLIN", "66107", and "REGISTERED PROFESSIONAL ENGINEER". A blue ink signature is written across the seal, and the date "4/24/06" is handwritten below it.

4/24/06

Norman H. Mullin, P.E.

(Revised on 4/24/06 to reflect date sample was collected)

(Supporting Documentation Attached)

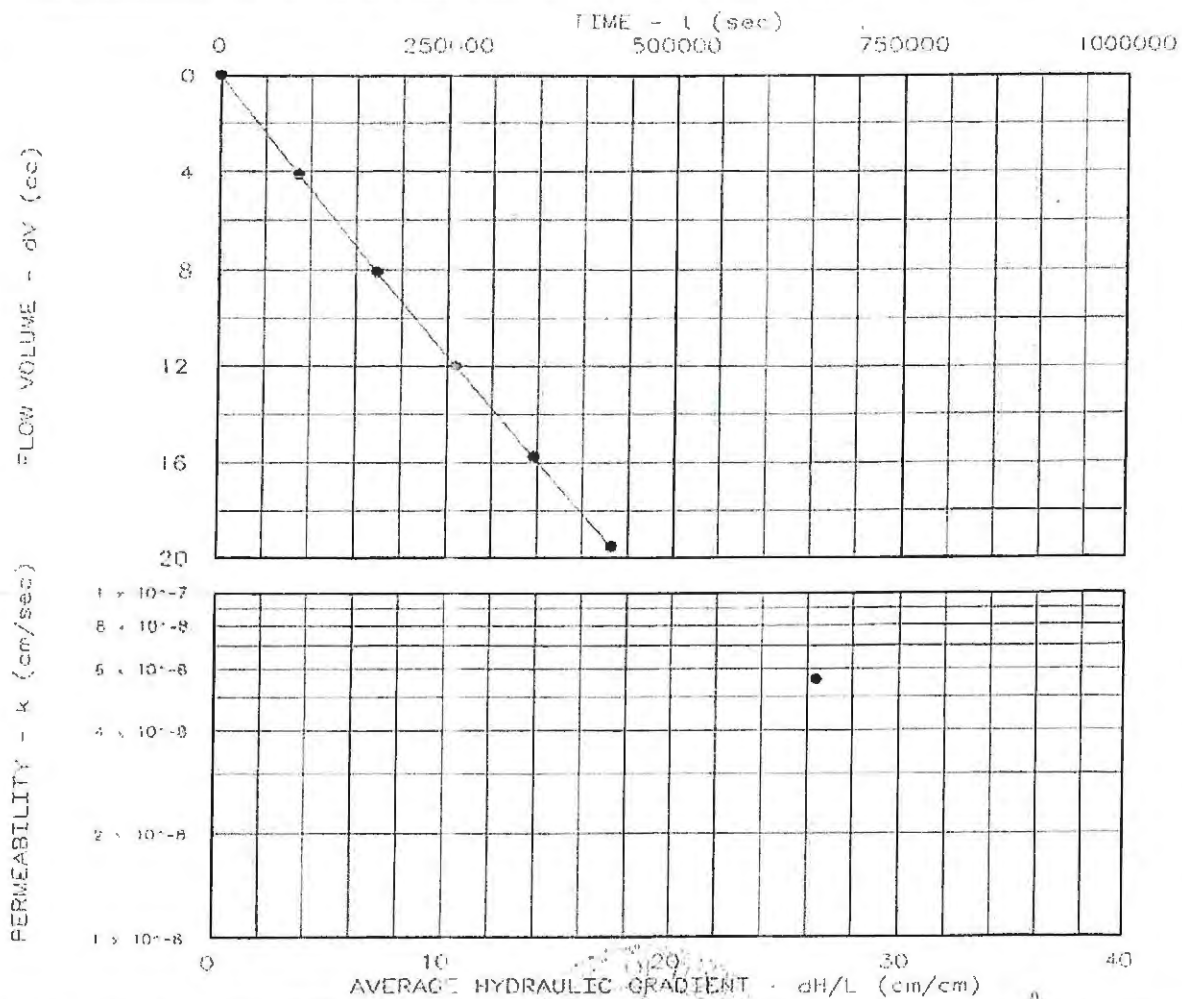
PERMEABILITY TEST REPORT

TEST DATA:

Specimen Height (cm): 12.70
 Specimen Diameter (cm): 6.23
 Dry Unit Weight (pcf): 101.3
 Moisture Before Test (%): 13.6
 Moisture After Test (%): 24.4
 Run Number: 1 • 2 ▲
 Cell Pressure (psi): 50.0
 Test Pressure (psi): 40.9
 Back Pressure (psi): 45.1
 Diff. Head (psi): 4.8
 Flow Rate (cc/sec): 4.51×10^{-5}
 Perm. (cm/sec): 5.61×10^{-8}

SAMPLE DATA

Sample Identification: Sample Labeled
 Slurry Pond #1
 Visual Description: Dark Brown Sandy Lean
 Clay with Caliche Nodules
 Remarks: Hico, Texas
 Maximum Dry Density (pcf):
 Optimum Moisture Content (%):
 Percent Compaction:
 Permeameter type: Flexible Wall
 Sample type: In-Place



Project: Enviro-Ag Engineering, Inc.
 Location: Okee Dairy Slurry Pond #1
 Date: 4-03-2006

Project No.: DP-185
 File No.: PT-5
 Lab No.: DP-4839
 Tested by:

PERMEABILITY TEST REPORT

DYESS-PETERSON TESTING LABORATORY, INC.

Checked by:
 Test: CH - Constant head



CORPORATE OFFICE
3404 AIRWAY BLVD
AMARILLO, TEXAS 79118
800.753.6525

CENTRAL TEXAS OFFICE
9855 FM 847
DUBLIN, TEXAS 76446
800.753.6525

NEW MEXICO OFFICE
203 EAST MAIN STREET
ARTESIA, NEW MEXICO 88210
800.753.6525

www.enviroag.com

Okee Dairy
Hamilton County, Texas

Soil Liner Certification for Settling Pond #2

Two Shelby tube core samples of the soil liner in Settling Pond #2 at Okee Dairy were collected and analyzed for permeability to document that the soil liner meets the requirements of TCEQ. Results of the permeability analysis are shown below:

7.7×10^{-8} cm/sec (Northeast Wall)
 8.0×10^{-8} cm/sec (Southwest Wall)

Based on the above documentation, the liner in Settling Pond #2 is determined to be in accordance with TCEQ requirements for soil liners. The test locations were backfilled with bentonite chips. The test results meet the requirements of the TCEQ for hydraulic conductivity considered protective of ground and surface water sources.

Respectfully Submitted,



Norman H. Mullin 6/19/17

Norman Mullin, P.E.
Enviro-Ag Engineering, Inc. F#2507

Attachments: Enviro-Ag Engineering, Inc. Reports

CALCULATION OF SPECIFIC DISCHARGE

SITE: Okee Dairy
 LOCATION: Hamilton County, TX
 STRUCTURE: Settling Pond #2

ENGINEER: NHM
 DATE: June '17

This worksheet calculates the specific discharge through a soil liner based on the measured thickness of the clay liner and the results of the permeability testing. The maximum allowable specific discharge of the liner is 1.1×10^{-6} cm/sec or 0.0374 in/day.

Laboratory Sample I.D.	Hydraulic Conductivity Results of Core Samples							
	4276	4277						
1. Water Depth, feet	12	12						
2. Liner Thickness, inches	18.0	18.0						
3. Hydraulic Conductivity, cm/sec	7.70E-08	8.00E-08						
4. Calculated specific discharge, v'								
Seepage Rate, inches/day	0.0236	0.0245						
Maximum Seepage Rate, inches/day	0.0374	0.0374						

NOTES:

- (1) Water depth of the pond in feet.
- (2) Soil liner thickness in inches.
- (3) Hydraulic conductivity of the core sample(s) as determined by flexible wall permeameter in cm/sec (Ref: ASTM D 5084).

The following equation is used:

$$v' = k (H + d) / d$$

where: v' = Specific Discharge of area representative of core sample, inches/day
 d = Measure Liner Thickness at core sample location, feet
 k = Hydraulic Conductivity of liner based on core sample testing, inches/day
 H = Maximum Water Depth, feet

- (4) Maximum Allowable Seepage Rate of 1.1×10^{-6} cm/sec (0.0374 in/day).



Norman Mullin 6/19/17

Norman Mullin, P.E. # 66107
 Enviro-Ag Engineering, Inc.
 TBPE Firm # 2507

[illegible]

ENVIRO-AG
EAF
ENGINEERING, INC.

9855 FM 847

Dublin, TX 76446

(254) 965-3500

Fax: (254) 965-8000

VIA UPS

Enviro-Ag Engineering, Inc.

3404 Airway Blvd., Amarillo, TX 79118 (806) 353-6123

LABORATORY SERVICES



HYDRAULIC CONDUCTIVITY

REPORT

ASTM D-5084, Method C

Client / Project Name:

Okee Dairy

Project No:

17-05-22

Lab Sample Number:

4276

Sample ID:

1

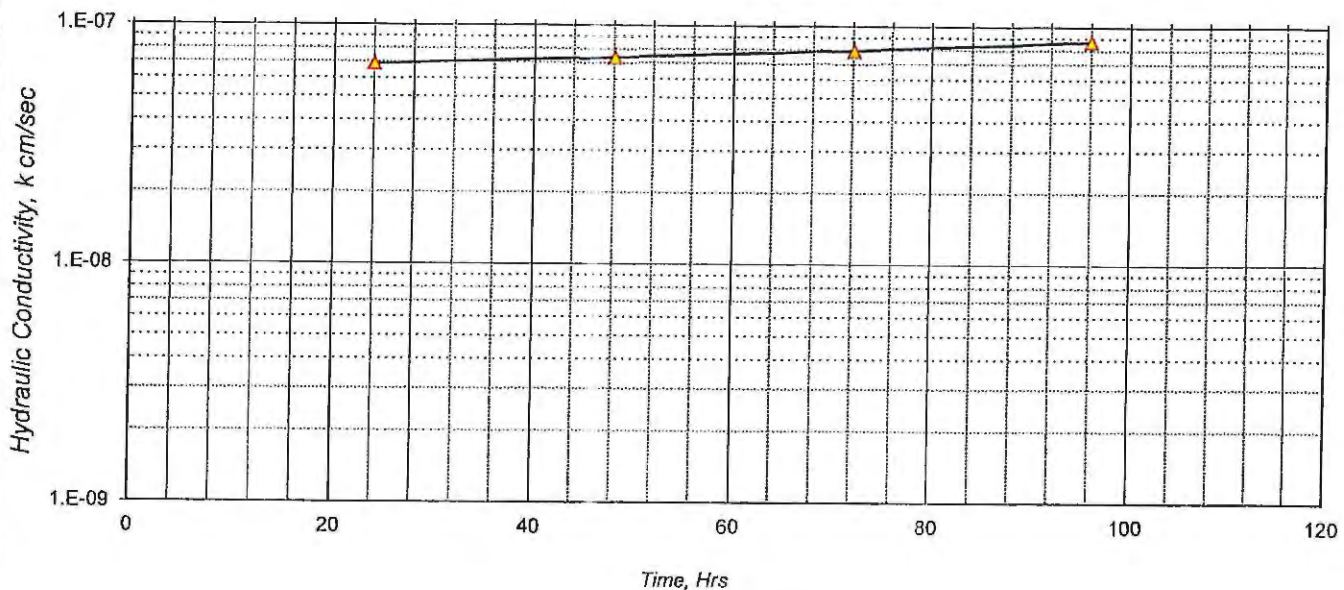
Sample Location:

Settling Pond NE

Report Date:

June 15, 2017

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	1	
DESCRIPTION:	Settling Pond NE	
	<u>INITIAL</u>	<u>FINAL</u>
HEIGHT, in.	3.1	3.1
DIAMETER, in.	2.8	2.9
WATER CONTENT, %	20.6	23.9
DRY DENSITY, pcf	105	102
SATURATION, %	91	99
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Light Brown	
SAMPLE CONSISTENCY	Clay	

TEST DATA

<u>ASTM D-5084, Method C</u>		
EFFECTIVE STRESS:	5 psi	
GRADIENT RANGE:	3 - 3	
IN / OUT RATIO:	1.00	
	<u>HYDRAULIC</u>	
<u>TRIAL</u>	<u>TIME</u>	<u>CONDUCTIVITY</u>
<u>nos.</u>	<u>hrs.</u>	<u>cm / sec</u>
1	24.0	6.9E-08
2	48.1	7.4E-08
3	72.1	8.0E-08
4	96.0	8.7E-08
AVERAGE LAST 4 :		7.7E-08

COMMENTS:

Tap water used as permeant.

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Enviro-Ag Engineering Inc.

By accepting the data and results represented on this page, client agrees to limit the liability of Enviro-Ag Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Enviro-Ag from and against all liability in excess of the aforementioned limit.

Z: Soils Lab/Perms \1917\17-05-22\4276

Print Date:

06/16/17

Reviewed By:

Micah Mullin

LSN:

4276

DCN: EAE-QC-GRAPH (rev. 11/10/04)



Client / Project Name:

Okee Dairy

Project No:

17-05-22

Lab Sample Number:

4277

Sample ID:

2

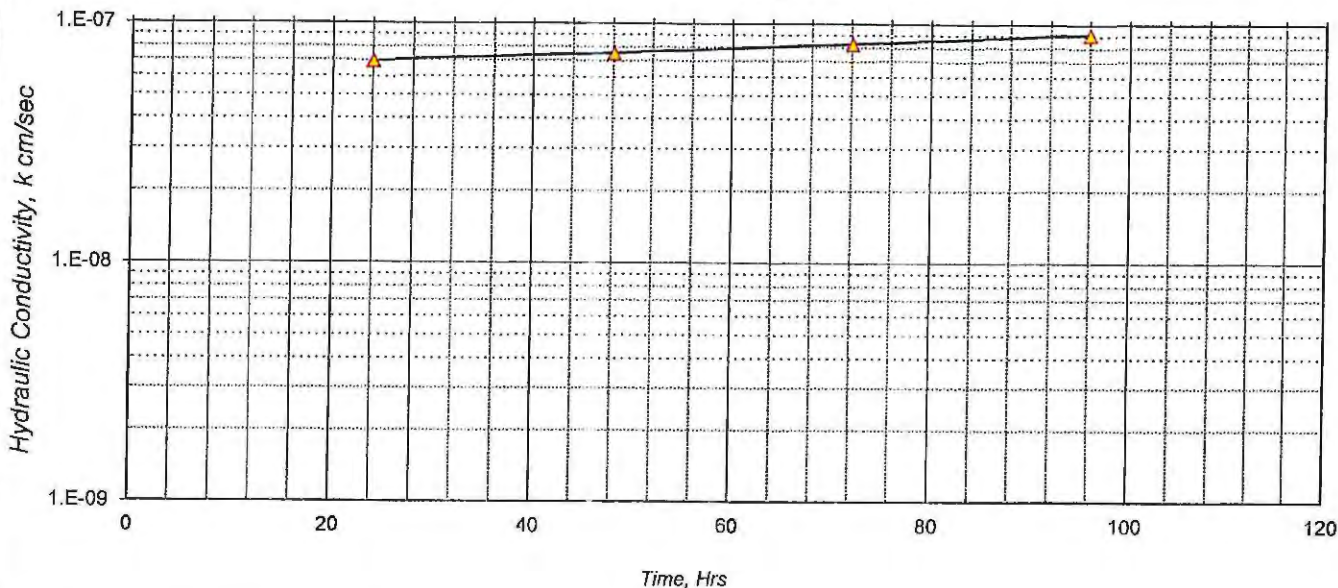
Sample Location:

Settling Pond SW

Report Date:

June 15, 2017

Hydraulic Conductivity vs Time



SPECIMEN DATA

SAMPLE ID:	2	
DESCRIPTION:	Settling Pond SW	
	INITIAL	FINAL
HEIGHT, in.	2.8	2.8
DIAMETER, in.	2.8	2.8
WATER CONTENT, %	24.6	28.6
DRY DENSITY, pcf	97	95
SATURATION, %	91	99
(Specific Gravity assumed as 2.7)		
SAMPLE COLOR	Light Brown	
SAMPLE CONSISTENCY	Clay	

COMMENTS:

Tap water used as permeant.

TEST DATA

ASTM D-5084, Method C

EFFECTIVE STRESS: 5 psi
 GRADIENT RANGE: 3 - 4
 IN / OUT RATIO: 1.00

TRIAL	TIME	HYDRAULIC
		CONDUCTIVITY
<u>nos.</u>	<u>hrs.</u>	<u>cm / sec</u>
1	24.0	7.0E-08
2	48.1	7.6E-08
3	72.1	8.3E-08
4	96.0	9.2E-08

AVERAGE LAST 4 : 8.0E-08

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Enviro-Ag Engineering Inc.

By accepting the data and results represented on this page, client agrees to limit the liability of Enviro-Ag Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Enviro-Ag from and against all liability in excess of the aforementioned limit.

Z: Soils Lab\Perms\1917\17-05-22\4277

Print Date:

06/16/17

Reviewed By:

LSN:

DCN: EAE-QC-GRAPH (rev. 11/10/04)

Micah Mullin

4277

4.0 WASTE UTILIZATION & NUTRIENT MANAGEMENT PLAN

4.1 Nutrient Utilization

Agronomic application of dairy wastewater enhances soil productivity and provides the crop and forage growth with needed nutrients for optimum growth and vigor. Land application of wastewater will take place according to a Nutrient Utilization/Nutrient Management Plan (NUP/NMP) in accordance with NRCS Codes 590 and 633. The NUP/NMP for crop year 2025 is attached.

Per 30 TAC §321.42(j), existing dairy facilities located in a major sole-source impairment zone may request the TCEQ to allow the operator to provide manure, litter and wastewater to owners of third-party fields (areas not owned, operated, controlled, rented, or leased by the permittee) that have been identified in the PPP. Okee Dairy requests access to third-party fields to be operated in accordance with 30 TAC §321.42(j)(1)-(4). Third-party written contracts between the permittee and the third-party recipient will be maintained in the PPP. These contracts will confirm that the third party will allow manure, wastewater and slurry from the facility to be beneficially applied at agronomic rates based on the soil test phosphorus in accordance with applicable requirements of 30 TAC §321.36 and §321.40.

A Texas State Soil and Water Conservation Board (TSSWCB) certified Comprehensive Nutrient Management Plan (CNMP) has been developed.

4.2 Waste Handling Procedures

The dairy shall operate under the provisions of 30 TAC §321.42, which describes certain waste management and disposal requirements for individual water quality permits for dairy concentrated animal feeding operations (CAFOs) when an operation is located in a major sole-source impairment zone. Waste disposal options include:

- Beneficial use outside the watershed
- Disposed in permitted landfills outside the watershed
- Delivered to a composting facility approved by the Executive Director
- Other beneficial use approved by the Executive Director
- Applied on-site in accordance with a certified NRCS Code 590/633 NMP or NUP, as dictated by annual soil test results
- Provided to third parties as discussed above in Section 4.1

2025
Executive Summary
Okee Dairy
WQ0004108000

LMU Summary:

LMU's 1, 2, 3, 4, 5, and 7 are established in Coastal Bermudagrass overseeded with small grains for continuous nutrient uptake. LMU 6 is cropped in Corn Silage and small grains.

Nutrient Summary:

The following is a summary of planned and maximum allowed application rates.

LMU #	Max N Lb/ac Application Rates	Max P205 Lb/ac Application Rates	Planned N Lb/ac Application Rates	Planned P Lb/ac Application Rates
1	400	218	400	218
2	47	104	5	10
3	400	218	400	218
4	400	218	400	218
5	186	410	19	41
6	129	285	13	28
7	190	104	190	104

LMU 7 has not been sampled by the TCEQ at the time of this plan's creation. Keeping with worst case scenario, LMU 7 soil analysis has been set to 200ppm for this plan. LMU 7 will need to be sampled prior to land application. LMU 6 was not sampled by TCEQ for the current crop year. This plan will utilize the 2023 soil analysis for that field.

Although this plan illustrates the certain LMUs being utilized for wastewater application, it is not the intent of this document to limit application of wastewater and manure to specified LMUs. It may be necessary to apply to others LMUs in addition to the recommended LMUs. Thus, the maximum allowable nutrient application rates shown above are not to be exceeded during the crop year.

Any remaining manure is to be hauled off by a contract hauler for beneficial use. Offsite manure transfer activities will be in accordance with NRCS and TCEQ requirements for sampling, recordkeeping, and land application.

Supplemental nutrients will be necessary to achieve the desired yields. Commercial N application shall be split such that individual application events do not exceed 100 lbs/ac N.

Waste Utilization and Nutrient Management Plan

Okee Dairy

TCEQ Permit Number:

WQ0004108000

Owner

Oene Keuning

4745 CR 207

Hico, TX 76457

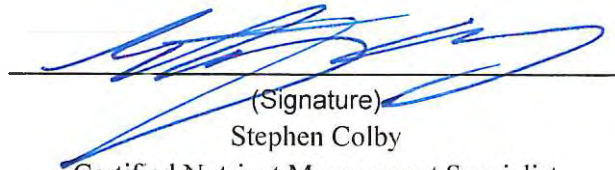
254-796-4991

Type of Organic Nutrient Management Plan:

Other AFO-CAFO Waste Plan

located in Hamilton County

Prepared By:



(Signature)
Stephen Colby

Certified Nutrient Management Specialist

Certificate Number = TX2025004

Expiration Date = December 31, 2025

Enviro-Ag Engineering

9855 FM 847

Dublin, TX 76446

(254) 233-9948

This plan is based on:

590 Organic Nutrient Management Plan V 5.0

6/23/25 8:49 AM

Waste Utilization and Nutrient Management Plan

EXECUTIVE SUMMARY:

Permit #:

WQ0004108000

This Nutrient Management Plan has fields that meet NMP and/or NUP requirements.

See Attached Executive Summary

LOCATION AND PURPOSE OF THE PLAN

This animal operation is located in **Hamilton** County (see attached topo map and plan map for location.) The purpose of this plan is to outline the details of the land application of the effluent and solids produced by this operation. When the plan is fully implemented, it should minimize the effects of the land application of animal wastes on the soil, water, air, plant, and animal resources in and around the application area. This plan, when applied, will meet the requirements of the Natural Resources Conservation Service Waste Utilization Standard and Nutrient Management Standard.

The plan is for the year of **2025** and will remain in effect until revision based on new soil or manure analysis or crop change (yield or crop) result in a new P-Index rating or plan classification (NMP-NUP). The waste has been stored in a **Dairy Lagoon**. Approximately **2000** head will be confined with the average weight of **1400** pounds. The animals will be confined **24** hours per day for **365** days per year.

Waste Utilization and Nutrient Management Plan

TABLES 1, 2 and 2a

Permit #:

WQ0004108000

Values in Table 1 may be based on actual analysis or "book" values during the initial planning to determine land application rates for the initial plan. When "book" values are used, they will be from NRCS, Texas Cooperative Extension or averages from other TX testing lab sources. Site specific data will be used as soon as feasible after production begins. Manure and/or effluent will be tested at least annually or in the year of application if it is stored for more than one year. If the actual values are more than 10% higher or lower than the estimated values, this plan will need to be revised accordingly.

Application of waste products may be made up to the Maximum Rate given in Table 2 or 2a as applicable. Table 2 applies to those that are subject to Nutrient Management Plan (NMP) requirements while Table 2a applies when subject to Nutrient Utilization Plan (NUP) requirements. Current requirements for both the NMP and NUP are given in the headers of the tables. Table 2a has a criteria involving the distance to a named stream when the Soil Test P Level is above 200 ppm in arid areas as well as special requirements when the site is in a TMDL watershed designated by TCEQ. For various P Index Ratings, the maximum rates in Table 2 are based on crop requirements, whereas the maximum rates in Table 2a are based on crop removal rates. County avg. rainfall information can be found in the TX Agronomy Technical Note 15, Phosphorus Assessment Tool for Texas, located in the eFOTG at the address given in the section entitled "Collecting Soil Samples for Analyses".

CROP REMOVAL RATES:

Crop Removal Rates of nitrogen (N), phosphorus (P), and potassium (K) in pounds per acre are given in Table 3 for the crop and yield planned for each field. This Table is included for information only, and should be used during the planning process to compare planned or maximum application rates to crop removal. Crop removal rates may be based on actual analysis of harvested material or default values in the database. P build-up will occur at higher rates when crop removal rates are exceeded..

SOLIDS APPLICATION:

The maximum solids application rates are given in Table 4 along with the current soil test P level, maximum P_2O_5 application rate, maximum tons per acre of solids and the total tons of solids per field that can be applied to each field. The maximum tons of solids that can be utilized on the fields planned is indicated in the box near the lower left corner of Table 4. When the total application acres of the fields are adequate to allow all of the solids to be applied, "Adequate" will be indicated below the tonnage in this box. If "Not Adequate" is indicated, then the lower box will indicate the tons of solids that must be utilized off-site unless more fields/acres are added. This plan is valid only if the application of waste to the crops listed does not exceed the per acre rates by more than 10%. If the yield of a crop does not meet the expected goal, the application rate should be adjusted the following year.

The estimated amounts of N, P_2O_5 , and K_2O contained in the solids are provided in Table 5 for the maximum application rate. Supplemental N and K_2O will be applied to achieve the yield goals in Table 4 when recommended by the soil test and the maximum rate of the solids does not meet the crop needs. When the maximum application rate is applied and Table 5 indicates additional commercial nutrients, they must be applied to fields as indicated. **NOTE:** If additional nitrogen is recommended, the producer should consider collecting soil samples from the 6 - 36 inch layer to see if there is any additional deep nitrogen available. Additional deep nitrogen within the root zone of the crop can be substituted for supplemental commercial nitrogen, and should be included in the soil test N ppm entry.

Waste Utilization and Nutrient Management Plan

SOLIDS APPLICATION: (cont)

Permit #:

WQ0004108000

In situations where more land is available than is needed to utilize the maximum application rate on each field, the application rates in Table 6 have been reduced to the level that does not exceed the amount of solids produced. Table 7 indicates the amount of nutrients provided and, if needed, the supplemental nutrients which **must** be applied when the application is based on these rates. The amounts of supplemental nutrients in Table 7 are based on the actual amount of waste available rather than the **maximum** rate that "**could**" be applied.

The second line from the bottom of Table 6 on the right has a box that will be "YES" or "NO". When the reduced rates use all solids to be produced in a year, this box will be "Yes". If the percentages are too low, it will be "No". If "No", either more acreage is needed on which to apply the solids or the solids will need to be transported off-site. The amount is located on the bottom line on the extreme right of the page.

Actual application will be based on the quantities produced, as well as, current manure analyses. **Application at the MAXIMUM rates shown in Table 4 will result in a more rapid build-up of phosphorus than if applied at lower rates. A different percentage may be used as long as the rate does not exceed the maximum shown in Table 4 for the field and the proper amount of supplemental nutrients are applied.** Applying a lower rate to the fields with higher soil test P levels will slow down the P buildup and extend their land application life. Phosphorus will also build up more rapidly on pastureland than on hayland or cropland, since very few nutrients are actually removed by grazing animals.

The solids may be applied to the same acreage every year according to Table 2 or 2a. The annual rates in both Table 4 and 6 may be doubled not to exceed the 2X the annual nitrogen requirement or nitrogen removal rate, as applicable. When the full biennial rate has been used, no additional phosphorus fertilizer or animal wastes may be applied in the alternate year. A column in both tables indicates whether the rates given are Annual Rates (A) or Biennial Rates (B). Rates given are based on Table 2 or 2a as applicable. Annual application rate for fields in a TMDL area with a Soil Test P level equal to or greater than 500 ppm or any field in a TMDL area with P Index Rating of Very High is 0.5 annual crop removal rate.

EFFLUENT APPLICATION:

The maximum effluent application rates are given in Table 8 for each field. This table provides the current soil test P level, maximum P_2O_5 application rate, effluent either in gallons per acre or acre inches per acre and the amount of effluent that can be applied per field. The maximum amount of effluent that can be utilized on the fields planned is indicated in a box near the lower left corner of Table 8. When the total application acres are adequate to allow all of the effluent to be applied, "Adequate" will be indicated below this box. If "Not Adequate" is indicated, then the lower box will indicate the amount of effluent that must be utilized off-site unless more field acres are added.

The estimated amounts of N, P, and K contained in the effluent are provided in Table 9 for the maximum application rate indicated in Table 8. Supplemental N and K_2O will be applied to achieve the yield goals when recommended by the soil test and the maximum rates of the effluent do not meet the crop requirements. **NOTE:** If additional nitrogen is recommended, the producer should consider collecting soil samples from the 6 - 36 inch layer to see if there is any additional deep nitrogen available. Additional deep nitrogen within the root zone of the crop can be substituted for supplemental commercial nitrogen.

Waste Utilization and Nutrient Management Plan

EFFLUENT APPLICATION: (cont)

Permit #:

WQ0004108000

In situations where more land is available than is needed to utilize the maximum application rate on each field, the application rates in Table 10 have been reduced to the level that does not exceed the amount of effluent produced. Table 11 indicates the amount of nutrients provided and, if needed, the supplemental nutrients which **must** be applied when application is made based on the rates in Table 10. These amounts of supplemental nutrients in Table 11 are based on the planned amount of effluent available rather than the **maximum** rate that "could" be applied.

The bottom line on the right of Table 10 has a box that will be "YES" or "NO". When the reduced rates uses all effluent to be produced in a year, this box will be "Yes". If the percentages are too low, it will be "No". If "No" is indicated, either more acreage is needed on which to apply the effluent or the effluent will need to be transported off-site.

Actual application will be based on the quantities produced, as well as, current manure analyses. **Application at the MAXIMUM rates shown in Table 8 will result in a more rapid build-up of phosphorus than if applied at lower rates. A different percentage may be used as long as the rate does not exceed the maximum shown in Table 8 for the field and the proper amount of supplemental nutrients are applied. Applying a lower rate to fields with higher soil test P levels will slow down the P buildup and extend their land application life. Phosphorus will also build up more rapidly on pastureland than on hayland or cropland, since very few nutrients are actually removed by grazing animals.**

The effluent may be applied to the same acreage every year according to Table 2 or 2a. The annual rates in both Table 8 and 10 may be doubled not to exceed the 2X the annual nitrogen requirement or nitrogen removal rate, as applicable, when the full biennial rate has been used, no additional phosphorus fertilizer or animal wastes may be applied in the alternate year. A column in both tables indicates whether the rates given are Annual Rates (A) or Biennial Rates (B). Rates given are based on Table 2 or 2a as applicable. Annual application rate for fields in a TMDL area with a Soil Test P level equal to or greater than 500 ppm or any field in a TMDL area with P Index Rating of Very High is 0.5 annual crop removal rate.

Maximum Hourly Application Rate - The maximum hourly application rate is determined by the texture of the soil layer with the lowest permeability within the upper 24 inches of the of the predominant soil in each field. The hourly application rate must be low enough to avoid runoff and/or ponding. For effluent with 0.5% solids or less, **DO NOT** exceed the rates shown in Table 1 of the attached Job Sheet titled, "*Waste Utilization, Determining Effluent Application Rates*". If the effluent contains more than 0.5% solids, those values must be reduced by the appropriate amount shown in Table 2 of the attached "*Waste Utilization, Determining Effluent Application Rates*" Job Sheet.

Maximum One-Time Application Rate - The maximum amount of effluent that can be applied to a given field at any one-time is the amount that will bring the top 24 inches of the soil to 100% field capacity. This amount is determined by subtracting the amount of water stored in the soil (estimated by feel and appearance method) from the available water holding capacity (AWC) of the soil. The available water holding capacity of the top 24 inches of the predominant soil of each field receiving effluent and the texture of the most restrictive layer in the upper 24 inches are given in Table 12.

Waste Utilization and Nutrient Management Plan

EFFLUENT APPLICATION: (cont)

Permit #:

WQ0004108000

To determine any one-time application amount, the current percent of field capacity (FC) of the upper 24 inches of the predominant soil in the field should be estimated using the guidance in Table 3 of the attached Job Sheet, *"Waste Utilization, Determining Effluent Application Rates, rev 4/06"*. Additional information on estimating soil moisture can be found in the NRCS Program Aid 1619, *"Estimating Soil Moisture by Feel and Appearance"*, or from the University of Nebraska Extension publication No. G84-690-A by the same name. Both of these publications have pictures of various soils at different percentages of field capacity to be used as a guide to estimating soil moisture. Once the current percent of FC is estimated, it is subtracted from the AWC amount in Table 12 for the given field and the difference is the maximum application for those soil conditions on that day. Remember, the maximum hourly application and the maximum one time application rates are only estimates to be used as a guide.

Solids/Effluent Land Application: - Land application of solids and/or effluent should be made at appropriate times to meet crop needs, but can be made at any time as long as the total annual (or biennial) rate, maximum hourly rate, and the maximum one time application rates are not exceeded. Effluent should be surface applied uniformly. No runoff or ponding should occur during application thus frequent observations should be made. Neither effluent or solids will be applied to slopes >8% with a runoff curve >80, or steeper than 16% slope with a runoff curve of 70 or greater, unless the application is part of an erosion control plan. Waste will not be spread at night, during rainfall events, or on frozen or saturated soils if a potential risk for runoff exists. Waste will not be applied to frequently flooded soils during months when the soils typically flood. If frequently flooded soil occur on any potential application field see attached, "Water Features Table", for months when flooding is expected. Solids should be applied with a manure spreader as uniformly as feasible. Surface applications with trucks should only be made when soil conditions are favorable in order to minimize soil compaction.

Managing Runoff -

A minimum 100 ft. setback or vegetated buffer (Filter Strip, Field Border, Riparian Forested Buffer, etc.) will be established and maintained between the application area and all surface water bodies, sink holes, and watercourses as designated on Soil Survey sheets or USGS topographic maps. A minimum application distance from private and public will be 150 ft. and 500 ft. respectively. A minimum application distance from water wells used exclusively for agricultural irrigation will be 100 ft. Table 9 provides a summary of the setbacks and out areas of each field.

Managing Leaching -

When soils with sandy, loamy sand, or gravelly surface textures have a Nitrogen Leaching Index score of >2 appropriate measures will be used to minimize the potential of leaching. These measures will include, split applications of waste, and may include double cropping, or cover crops, and irrigation water management (on fields that receive supplemental or full irrigation).

MORTALITY MANAGEMENT:

All mortality will be disposed of properly within 3 days according to the Texas Commission on Environmental Quality (TCEQ) rules. The preferred method for disposal of routine mortality is by a rendering plant. Before planning this method, contact the facility or its representative to be informed of special handling procedures, equipment needs, scheduling requirements, etc. Maintain a list of contact phone numbers so information will be readily available following a catastrophic die-off. Verify that local companies which have previously picked up and/or rendered dead animals are still doing so. A number of rendering companies across the state have stopped dead animal pick up service, and others have raised their fees significantly. Periodically review the availability and cost of rendering so that the plan can be modified if necessary. This can be an excellent option if mortality can be loaded and transported while still fresh or the mortality can be refrigerated until loaded and transported.

Waste Utilization and Nutrient Management Plan

MORTALITY MANAGEMENT: (cont)

Permit #:

WQ0004108000

Disposal in a landfill may be an option in some locations. Before planning this option, the closest commercial, regional, county, or municipal landfill should be contacted to determine if the landfill has a permit which would allow acceptance of dead animals (swine, sheep, cattle, etc.). Also ask if there are any restrictions on type and volume of animal mortality that will be accepted at the facility. Landfill fees and transport, offloading, and handling procedures should be discussed with landfill managers and documented for reference when needed. The landfill is not a viable option if the producer does not own or have access to a vehicle capable of transporting mortality quickly in an emergency situation. After a catastrophic die-off is not a good time to find out that a driver and truck to transport mortality will not be available for several weeks (**MAKE ARRANGEMENTS NOW, NOT AFTER THE ANIMALS ARE DEAD**).

On-farm disposal of catastrophic mortality may be considered if site conditions permit. On-farm methods include burial, composting, and incineration. Incinerators and composters are excellent options for routine mortality but usually do not have the capacity to handle mortality volumes associated with catastrophic events. Composting and incineration should not be relied on for catastrophic mortality handling without a documented evaluation of worst anticipated mortality condition (number, type, and weight of animals), and the anticipated capacity of the system (i.e., lb./hr. incineration rate, hrs/day of operation). NRCS Mortality Facility Standard 316 will be used for all mortality management.

See the attached soil interpretation, ENG - Animal Mortality Disposal (Catastrophic) Trench, to make a preliminary assessment of the limitations of the soils on this farm for burial of catastrophic mortality. The attached TX NRCS Technical Guidance, Catastrophic Animal Mortality Management (Burial Method) should be used as a guide to overcome minor limitations and as design criteria for the construction of burial pits for catastrophic mortality. Mortality burial sites shall be located outside the 100 -year floodplain. Mortality burial will not be less than 200 feet from a well, spring, or water course. A FIELD INVESTIGATION BY A QUALIFIED PROFESSIONAL SHOULD BE MADE BEFORE AN AREA IS USED FOR A BURIAL SITE FOR CATASTROPHIC MORTALITY EVENTS. **The TCEQ Industrial and Hazardous Waste Permits Section, MC-130, must be contacted before burial of catastrophic mortality.**

TCEQ
Industrial and Hazardous Waste Permits Section, MC-130
PO Box 13087
Austin, TX 78711-3087
Phone: 512-239-2334 Fax: 512-239-6383

Air Quality:

The following steps should be taken when spreading effluent or solids to reduce problems associated with odor.

1. Avoid spreading effluent or solids when wind will blow odors toward populated areas.
2. Avoid spreading effluent or solids immediately before weekends or holidays, if people are likely to be engaged in nearby outdoor activities.
3. Avoid spreading effluent or solids near heavily traveled highways.
4. Make applications in the morning when the air is warming, rather than in the late afternoon.
5. All materials will be handled in a manner to minimize the generation of particulate matter, odors, and greenhouse gas emissions.

Waste Utilization and Nutrient Management Plan

EFFLUENT AND SOLIDS STORAGE & TESTING:

Permit #:

WQ0004108000

Effluent and solids will be stored in facilities designed, constructed, and maintained according to USDA NRCS Standards and specifications.

Effluent and solids sampling is needed to get a better idea of the nutrients actually being applied. Effluent and/or solids samples will be collected at least annually, or in the year of its use if waste is typically stored for more than 1 year. The samples will be submitted immediately to a lab for testing. If sent to Texas A&M soil lab or SFASU Soil Testing Lab for analysis, use the "plant and forage analysis" form and note the type of operation. Request that the manure be analyzed for percent dry matter, solids, total nitrogen, total phosphorus, and total potassium. Further information on collecting effluent and manure samples for analysis can be found in the TCE publication No. L-5175, *"Managing Crop Nutrients Through Soil, Manure and Effluent Testing"*. **TCEQ sampling rules and testing requirements will be followed on permitted sites.**

COLLECTING SOIL SAMPLES FOR ANALYSIS:

Collect a composite sample for each field (or area of similar soils and management not more than 40 acres in size) comprised of 10 - 15 randomly selected cores. Each core should represent 0 - 6 inches below the surface except for when injection has been done over 6" in depth, then the core should represent the 3-9" layer. Thoroughly mix each set of core samples, and select about a pint of the mixture as the sample for analysis. Label each sample for the field that it represents. Request that the samples be analyzed for nitrate nitrogen, plant-available phosphorus, potassium, sodium, magnesium, calcium, sulfur, boron, conductivity, and pH. Also note on the samples that they are from an effluent or solids application area. **TCEQ sampling rules and testing requirements will be followed on permitted sites.** A weighted average of 0-2 and 2-6 inch layers will be used for calculations on permitted sites.

Further information on collecting soil samples can be found on the TCE Form D-494, p 2, TCE Publication No. L-1793, and TCEQ RG-408. Additional NRCS guidance and requirements can be found in the Nutrient Management (590) standard located in the Texas electronic Field Office Technical Guide (eFOTG) at:

http://efotg.nrcs.usda.gov/efotg_locator.aspx?map=TX

Click the county desired.

Click Section IV in the left column under eFOTG

Type: 590 in the Search Menu above eFOTG and click: **GO**

Click on the desired item under Nutrient Management in the left column

SOIL ANALYSIS:

A soil analysis will be completed for all areas to be used for all effluent or solids application areas. The soil test analysis method will be **Mehlich III with inductively coupled plasma (ICP)**. The area will be tested and analyzed at least annually to monitor P build up.

Waste Utilization and Nutrient Management Plan

OPERATION AND MAINTENANCE:

Permit #:

WQ0004108000

Application equipment should be maintained in good working order and it should be calibrated annually so that the desired rate and amount of effluent and solids will be applied.

Information on calibrating manure spreaders can be found in the TCE publication No. L-5175, *"Managing Crop Nutrients Through Soil, Manure and Effluent Testing"*. Information on calibrating big gun sprinklers can be found in the Arkansas Extension publication, *"Calibrating Stationary Big Gun Sprinklers for Manure Application"*. For information on calibrating tank spreaders, traveling guns, and additional information on other manure spreading equipment, see Nebraska Extension publication No. G95-1267-A, *"Manure Applicator Calibration"*. Observe and follow manufacturer's recommended maintenance schedules for all equipment and facilities involved in the waste management system. For information on lagoon functions, refer to TCE publication E9, *"Proper Lagoon Management"*.

Any changes in this system should be discussed with the local Soil and Water Conservation District, USDA Natural Resources Conservation Service, or other qualified professional prior to their implementation.

Plan Prepared by: Stephen Colby

Date: 6/23/2025

Plan Approved by: 

Date: 6/23/25

Producer Signature: Discussed with Producer

Date: 6/23/25

The producer's signature indicates that this plan has been discussed with him/her.

If this plan is not signed by the producer, indicate how the plan was provided to the producer.

Waste Utilization and Nutrient Management Plan

Table 1 - Estimated Effluent and Solids Quantities Produced

Permit #: WQ0004108000

Avg. Number of Animals 2,000	Type of Waste Dairy Lagoon Other Solids																																				
Contact the local Soil and Water Conservation District or USDA Natural Resources Conservation Service office if the total number of animals change by more than 10% so your plan can be revised. Estimated Acre Inches of Effluent to be Available Annually* 394 Estimated Tons Solids to be Land Applied Annually (on or off site)* 404,937.5 *From engineering design.																																					
Estimated Nutrient Availability Effluent	Estimated Nutrient Availability Solids																																				
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">pounds/yr</th> <th style="text-align: center;">Pounds / 1000 gal</th> <th style="text-align: center;">Pounds / Acre Inch</th> <th></th> </tr> </thead> <tbody> <tr> <td>N</td> <td style="text-align: center;">929</td> <td style="text-align: center;">0.09</td> <td style="text-align: center;">2.4</td> <td style="text-align: center;">**</td> </tr> <tr> <td>P2O5</td> <td style="text-align: center;">2,045</td> <td style="text-align: center;">0.19</td> <td style="text-align: center;">5.2</td> <td></td> </tr> <tr> <td>K2O</td> <td style="text-align: center;">3,215</td> <td style="text-align: center;">0.30</td> <td style="text-align: center;">8.2</td> <td></td> </tr> </tbody> </table>		pounds/yr	Pounds / 1000 gal	Pounds / Acre Inch		N	929	0.09	2.4	**	P2O5	2,045	0.19	5.2		K2O	3,215	0.30	8.2		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">pounds / yr</th> <th style="text-align: center;">pounds / ton</th> <th></th> </tr> </thead> <tbody> <tr> <td>N</td> <td style="text-align: center;">680,243</td> <td style="text-align: center;">1.7</td> <td style="text-align: center;">**</td> </tr> <tr> <td>P2O5</td> <td style="text-align: center;">370,923</td> <td style="text-align: center;">0.9</td> <td></td> </tr> <tr> <td>K2O</td> <td style="text-align: center;">1,000,928</td> <td style="text-align: center;">2.5</td> <td></td> </tr> </tbody> </table>		pounds / yr	pounds / ton		N	680,243	1.7	**	P2O5	370,923	0.9		K2O	1,000,928	2.5	
	pounds/yr	Pounds / 1000 gal	Pounds / Acre Inch																																		
N	929	0.09	2.4	**																																	
P2O5	2,045	0.19	5.2																																		
K2O	3,215	0.30	8.2																																		
	pounds / yr	pounds / ton																																			
N	680,243	1.7	**																																		
P2O5	370,923	0.9																																			
K2O	1,000,928	2.5																																			
** Effluent Values Based on Analysis dated: October 29, 2024	** Solids Values Based on Analysis dated: June 5, 2024																																				

Default values were used on all fields for plant removal of nutrients and yield levels.

Waste Utilization and Nutrient Management Plan

TABLE 2. A Nutrient Management Plan (NMP) is required where Soil Test P Level ^{1/} is:

- less than 200 ppm statewide or
- or < 350 ppm in arid areas ^{2/} with a named stream > one mile.

P – Index Rating	Maximum TMDL Annual P Application Rate ^{5/}	Maximum Annual P Application	Maximum Biennial Application Rate
Very Low, Low	Annual Nitrogen (N) Requirement	Annual Nitrogen (N) Requirement	2.0 Times Annual N Requirement
Medium	2.0 Times Annual Crop P Requirement ^{3/}	2.0 Times Annual Crop P Requirement ^{3/}	2.0 Times Annual N Requirement
High ⁵	1.5 Times Annual Crop P Requirement ^{3/}	1.5 Times Annual Crop P Requirement ^{3/}	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Requirement
Very High ⁵	1.0 Times Annual Crop P Requirement ^{3/}	1.0 Times Annual Crop P Requirement ^{3/}	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Requirement

TABLE 2a. A Nutrient Utilization Plan (NUP) is required by TCEQ where Soil Test P Level ^{1/} is:

- equal to or greater than 200 ppm in non-arid areas ^{2/} or
- equal to or greater than 350 ppm in arid areas ^{2/} with a named stream greater than one mile or
- equal to or greater than 200 ppm in arid areas ^{2/} with a named stream less than one mile.

P – Index Rating	Maximum TMDL Annual P Application Rate ^{5/}	Maximum Annual P Application	Maximum Biennial Application Rate
Very Low, Low	1.0 Times Annual Crop P Removal ^{4/}	Annual N Crop Removal	2.0 Times Annual N Removal
Medium	1.0 Times Annual Crop P Removal ^{4/}	1.5 Times Annual Crop P Removal ^{4/}	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Crop Removal
High ⁵	1.0 Times Annual Crop P Removal ^{4/}	1.0 Times Annual Crop P Removal ^{4/}	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Crop Removal
Very High ⁵	0.5 Times Annual Crop P Removal ^{4/}	0.5 Times Annual Crop P Removal ^{4/}	Double the Maximum Annual P Application Not to Exceed 2 times the Annual N Crop Removal

Footnotes Applicable to both Tables

- 1/ Soil test P will be Mehlich III by inductively coupled plasma (ICP).
- 2/ Non-arid areas, counties receiving $\geq$ 25 inches annual rainfall, will use the 200 ppm P level while arid areas, counties receiving < 25 inches of annual rainfall, will use the 350 ppm P level. See map in TX Agronomy Technical Note 15, Phosphorus Assessment Tool for Texas, for county designations.
- 3/ Not to exceed the annual nitrogen requirement rate.
- 4/ Not to exceed the annual nitrogen removal rate.
- 5/ When soil test phosphorus levels are $\geq$ 500 ppm, with a P-Index rating of “High” or “Very High”, there will be no additional application of phosphorus to a CMU or field.

PI Index by Field

Printed on: 6/23/25 8:47 AM

This plan is based on: Nutrient Management Plan V 5.0

Permit #: WQ0004108000

Client Name: Okee Dairy

Date: 6/23/2025

Planner: Stephen Colby

Location: Hamilton

Rainfall: >25.0 inches

LMU or Fields	Crop	Slope	Runoff Curve	Soil Test P Level	Inorganic P ₂ O ₅ Appl Rate	Organic P ₂ O ₅ Appl Rate	Inorganic Method & Timing	Organic Method & Timing	Proximity of Appl to Named Stream	Runoff Class	Soil Erosion	Total Index Points	P Runoff Potential	Soil Test Date:
1	Coastal GC (30%DM) 9-11T; SG GC 6-7T	3.5%	78	8	0	6	0	4	10	2	0	30	High	10/16/24
2	Coastal GC (30%DM) 9-11T; SG GC 6-7T	2.0%	78	8	0	6	0	0.5	0	2	0	16.5	Medium	10/16/24
3	Coastal GC (30%DM) 9-11T; SG GC 6-7T	2.0%	71	8	0	6	0	4	5	2	0	25	High	10/16/24
4	Coastal GC (30%DM) 9-11T; SG GC 6-7T	1.5%	78	8	0	6	0	4	5	2	0	25	High	10/16/24
5	Coastal GC (30%DM) 9-11T; SG GC 6-7T	3.1%	78	8	0	6	0	0.5	5	2	0	21.5	Medium	10/16/24
6	Silage - Corn16-20T,SG GreenChop-8-9T	3.5%	89	8	0	6	0	0.5	5	2	1.5	23	High	10/16/23
7	Coastal GC (30%DM) 9-11T; SG GC 6-7T	4.1%	78	8	0	6	0	4	5	2	1.5	26.5	High	TBD

Printed on 6/23/2025 8:48 AM

Waste Utilization and Nutrient Management Plan

Table 3 - Crop Removal Rates (For Information Only)

Permit #: WQ0004108000

LMU or Field No.	Acres	Crop and P Index Level	TCEQ Plan Type	Actual Crop Analysis or Default	Total Est. N Removal lbs/Ac/Yr	Total Est. P ₂ O ₅ Removal lbs/Ac/Yr	Total Est. K ₂ O Removal lbs/Ac/Yr
1	51.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	NMP	Default	330	104	190
2	26.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NUP	Default	330	104	190
3	45.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	NMP	Default	330	104	190
4	155.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	NMP	Default	330	104	190
5	53.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	NMP	Default	330	104	190
6	100.0	Silage - Corn16-20T;SG GreenChop-8-9T H	NMP	Default	387	148	226
7	33.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	NUP	Default	330	104	190

NOTE: When crops are used for grazing, only a portion of the nutrients used by the crop are removed from the field in the live weight gain of the livestock, the remainder is returned to the land in manure and urine. The book "Southern Forages" estimates the N, P, & K removed in 100 pounds live weight gain as follows: **2.5 lbs N, 0.68 lbs P, 0.15 lbs K**

Waste Utilization and Nutrient Management Plan

Table 4 - Maximum Solids Application per Field

Permit #:

WQ0004108000

Est. Solids Produced Annually (wet tons)	LMU or Field No.	Acres	Crop Management and PI runoff potential	Current Soil Test P Level (ppm)	Max Annual P2O5 lbs/acre	Annual/Biennial	Maximum Solids Allowable Tons/Acre	Maximum Allowable Application Per field (Tons)
404,938	1	51.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	86	218	A	238.1	12144
	2							
	3	45.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	76	218	A	238.1	10715
	4	155.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	85	218	A	238.1	36908
	5							
	6							
	7	33.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T H	200	104	A	113.3	3739
Total Solids Application Acres								
284								
Application Allowable on-site (tons)								
63505.4								
Not Adequate								
Solids to be used off-site (tons)								
341,432.1								

Waste Utilization and Nutrient Management Plan

Table 5 - Nutrients Applied/Needs at Maximum Solids Rates

Permit #:

WQ0004108000

Nutrients Applied When Application is at Maximum Rates				Supplemental Nutrients Needed When Application is at Maximum Rates			
LMU / Field #	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	Lime T/Ac
1	400	218	589	0	0	0	0
2							
3	400	218	589	0	0	0	0
4	400	218	589	0	0	0	0
5							
6							
7	190	104	280	0	0	0	0

Waste Utilization and Nutrient Management Plan

Table 6 - Planned Solids Application Rates

Permit #: WQ0004108000

[illegible]

Waste Utilization and Nutrient Management Plan

Permit #: WQ0004108000

LMU / Field #	Nutrients Applied at Planned Rates			Supplemental Nutrients Needed at Planned Rates			
	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	Lime T/Ac
1	400	218	589	0	0	0	0
2							
3	400	218	589	0	0	0	0
4	400	218	589	0	0	0	0
5							
6							
7	190	104	280	0	0	0	0

WQ0004108000

End of Table 8

Waste Utilization and Nutrient Management Plan

Table 9 - Nutrients Applied/Needed at Maximum Effluent Rates

Permit #:

WQ0004108000

LMU / Field #	Nutrients Applied When Application is at Maximum Rates			Supplemental Nutrients Needed When Application is at Maximum Rates			
	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	Lime T/Ac
1							
2	47	104	163	335	0	0	0
3							
4							
5	186	410	645	205	0	0	0
6	129	285	448	365	0	0	0
7							

Waste Utilization and Nutrient Management Plan

Table 10 - Planned Effluent Application Rates

Permit #:

WQ0004108000

Table 10 - Planned Effluent Application Rates									
LMU or Field No.	Acres	Double crop	Crop Management and PI runoff potential	Current Soil Test P ppm	Annual / Biennial	Maximum Effluent (ac in/ac)	% of Maximum to apply	Planned Effluent (ac in/ac)	Planned Effluent / field (Ac. In)
1	26.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	269	A	20	10.0	2.0	52
2									
3									
4	53.0		Coastal GC (30%DM) 9-11T; SG GC 6-7T M	72	A	79	10.0	7.9	419
5									
6	100.0		Silage - Corn16-20T;SG GreenChop-8-9T H	149	A	54.9	10.0	5.5	549
7									

Waste Utilization and Nutrient Management Plan

Table 11 - Nutrients Applied/Needed at the Planned Effluent Rates

Permit #:

WQ0004108000

Red cells? Proceed to adjustment page and fix.

Red cells? Proceed to adjustment page and fix.							
Nutrients Applied at Planned Rates				Supplemental Nutrients Needed at Planned Rates			
LMU / Field #	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	N Lb/ac	P ₂ O ₅ Lb/ac	K ₂ O Lb/ac	Lime T/Ac
1							
2	5	10	16	375	0	0	0
3							
4							
5	19	41	64	375	35	0	0
6	13	28	45	480	0	0	0
7							

Waste Utilization and Nutrient Management Plan

Table 12 - Available Water Capacity to 24 inches(or less) of predominant soil in fields receiving effluent and Texture of the most restrictive soil layer in the upper 24 inches Permit #: WQ0004108000

LMU / Field #	AWC (inches)	Restrictive Texture	LMU / Field #	AWC (inches)	Restrictive Texture
1					
2	1.72	Brackett Maloterre			
3					
4					
5	1.72	Brackett Maloterre			
6	1.72	Brackett Maloterre			
7					

Waste Utilization and Nutrient Management Plan

Table 13 - Non Application Areas by Field

Permit #:

WQ0004108000

FS = 393-Filter Strip; FB = 386-Field Border; RFB = 391-Riparian Forest Buffer; OLEA = Other Land Excluded Area

LMU / Field #	FS Acres	FB Acres	RFB Acres	OLEA Acres	Total Excluded
1	0.0	0.0			
2	0.0	0.0			
3	0.0	0.0			
4	0.0	0.0			
5	0.0	0.0			
6	0.0	0.0			
7	0.0	0.0			

See Application Map for location of buffers

Total 590-633 application acres: 463.0

LMU / Field #	FS Acres	FB Acres	RFB Acres	OLEA Acres	Total Excluded
Totals	0.0	0.0	0.0	0.0	0.0

Totals	0.0	0.0	0.0	0.0	0.0
---------------	-----	-----	-----	-----	-----

Total 590-633 Field Acres: 463.0

Waste Utilization and Nutrient Management Data Entries

General Data

Date : 6/23/2025
Farmer Name : Okee Dairy
County in which the Land is located : Hamilton
Type of Waste Plan : Other AFO-CAFO Waste Plan
Is this plan in a TMDL watershed for nutrients?
Yes or No : Yes
Is any field PERMITTED by TCEQ?
Yes or No : Yes
Permit # : WQ0004108000

All other entries on General Page appear on the Cover Page

Animal Information

Plan Year : 2025
Are you receiving waste from another producer? No
Number of animals : 2000
Approximate Weight : 1400
Days per year in confinement : 365
Hours per day confined : 24
ACRE FEET of effluent to be irrigated* : 32.84
Estimated annual gallons of effluent to be irrigated/applied annually : 10700848.32
For effluent, do you want application rates shown in gallons or acre inches? : acre inches
Estimated Tons Solids to be Land Applied Annually (on or off site)* : 6479
Is this the first Year of the AFO-CAFO Operation? : No

Analysis Information

Effluent Information

Date of Analysis: 10/29/2024
Manure Source: Dairy Lagoon
Nitrogen % From Analysis: 0.0013
Phosphorus % From Analysis: 0.001
Potassium % From Analysis: 0.003
Moisture % From Analysis: 99.9

Manure / Solids Information

Date of Analysis: 6/5/2024
Manure Source: Other Solids Explain Other: Slurry
Nitrogen % From Analysis: 6.562
Phosphorus % From Analysis: 1.25
Potassium % From Analysis: 6.437
Moisture % From Analysis: 98.4
What will be Applied to Fields on this Farm? Both Effluent and Solids
Is this Farm part of an AFO-CAFO? No

This plan is based on: rganic Nutrient Management Plan
Printed on: 6/23/25 8:49 AM

Field and Buffer Entries

Permit #: WQ0004108000

Printed on: 6/23/25 8:49 AM

Plan is based on: 590 Organic Nutrient Management Plan

FS = 393-Filter Strip, FB = 386-Field Border, RFB = 391-Riparian Forest Buffer, OLEA = Other Land Exclusion Areas or non-application areas (i.e. headquarters, freq. flooded areas, wooded areas, water bodies, etc)

NOTE: Field Border (FB) is expressed in ACRES on this spreadsheet, but as LINEAR FEET on the CPO.

[illegible]

Soil Test, Crop Information and Plant Analysis Data Entries

Printed on: 6/23/25 8:49 AM

Plan is based on: 590 Organic Nutrient Management Plan V 5.0

Permit #:

WQ0004108000

[illegible]

Solids Application Rate Entries

Solids - Set the Planned Application Rates

Permit #: WQ

404938 "Wet tons" of solids produced Annually			Will the planned rates use all of the Tons to be used off-site at plann				
LMU or Field No.	Acres	Crop Management and PI runoff potential	Current Soil Test P ppm	Crop P ₂ O ₅ Req.	Annual or Biennial Application Cycle	Maximum Solids Allowable Tons/Ac	Enter % of Maximum Planned to Apply
1	51.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T II	86	205	Annual	238.1	100.0
2							
3	45.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T II	76	205	Annual	238.1	100.0
4	155.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T II	85	205	Annual	238.1	100.0
5							
6							
7	33.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T II	200	205	Annual	113.3	100.0

Effluent Application Rate Entries

Effluent - Set the Planned Application Rates

Permit #:

WQ0004108000

10700848		Gallons of Effluent to be used annually			Will the planned rates use all of the effluent?				Yes
394		Acre inches of Effluent to be used annually							
LMU or Field No.	Acres	Crop Management and PI runoff potential	Current Soil Test P (ppm)	Crop P2O5 Req.	Annual or Biennial Application Cycle	Max Effluent Allowable (ac in/ac)	Enter % of Maximum Planned to Apply	Planned Effluent (ac in/ac)	Planned Effluent per field (acre inches)
1	26.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	269	205	Annual	20.0	10.0	2	52
2									
3									
4	53.0	Coastal GC (30%DM) 9-11T; SG GC 6-7T M	72	205	Annual	79.0	10.0	7.9	419
5									
6									
7	100.0	Silage - Corn16-20T;SG GreenChop-8-9T H	149	190	Annual	54.9	10.0	5.49	549
Total Effluent This Page									1020

Available Water Capacity Entries

Printed on: 6/23/25 8:49 AM

Plan is based on: 590 Organic Nutrient Management Pla

Permit #:

WQ0004108000

[illegible]

SOIL MONITORING REPORT FOR CAFO INDIVIDUAL PERMITS IN THE SOLE SOURCE IMPAIRMENT ZONES

A. Sample collection

1) Samples were collected for the land management unit (LMU) identified below.

☒ Yes, complete this form and Tables 1 and 2 below. **Attach a copy of the laboratory analyses to this soil monitoring report form.**

☐ No, provide the facility information for the LMU below with the exception of the tables.

2) Reporting Year: 2024

Sample Collection Date: 10/16/2024

B. Facility Information

1) Permit Number: WQ0004108000

2) Site Name: Okee Dairy

3) Name of LMU (LMU Name should correspond to field designation located on the Map included in the PPP): 1

4) Name of Owner/Operator: Oene Keuning

5) Mailing Address for Owner/Operator: 4745 CR 207, Hico, TX 76457

Table 1. Soil Analysis Report Where Manure, Sludge and Wastewater are not Incorporated

Soil Sample Parameter	0-2 inches soil depth	2-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm			
Phosphorus (extractable), ppm			
Potassium (extractable), ppm			
Sodium (extractable), ppm			
Magnesium (extractable), ppm			
Calcium (extractable), ppm			
Electrical Conductivity/Soluble Salts, dS/m			
pH, SU			

Table 2. Soil Analysis Report Where Manure, Sludge and Wastewater are Incorporated

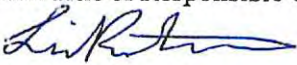
Soil Sample Parameter	0-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm	11.864	3.257
Phosphorus (extractable), ppm	85.8	13.1
Potassium (extractable), ppm	308	257
Sodium (extractable), ppm	35.6	72.7
Magnesium (extractable), ppm	449	286
Calcium (extractable), ppm	19219	15965
Electrical Conductivity/Soluble Salts, dS/m	0.167	0.2
pH, SU	7.36	7.61

Note: ppm = parts per million, considered to be equivalent to milligrams per liter (mg/l); dS/m = decisiemens per meter, equivalent to millimhos per centimeter (mmhols/cm); SU = standard units.

C. 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 information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name and Title of Responsible Official or Authorized Agent: Oene Keuning, Owner

Signature: 

Date: 2-21-25

Telephone Number: 254/796-4491

D. How to Submit

The soil monitoring report with attached soil analyses should be included in the Annual Report that is required to be submitted by March 31 of each year. For State Only CAFOs, submit this soil monitoring report form to the TCEQ, Enforcement Division (MC-224), P.O. Box 13087, Austin, Texas 78711-3087 and provide a copy to the TCEQ Regional Office.

If you have any additional questions about this form or soil sample collection and soil analyses requirements, contact:

By e-mail: CAFO@tceq.texas.gov or call (512) -239-4671

SOIL MONITORING REPORT FOR CAFO INDIVIDUAL PERMITS IN THE SOLE SOURCE IMPAIRMENT ZONES

A. Sample collection

1) Samples were collected for the land management unit (LMU) identified below.

☒ Yes, complete this form and Tables 1 and 2 below. **Attach a copy of the laboratory analyses to this soil monitoring report form.**

☐ No, provide the facility information for the LMU below with the exception of the tables.

2) Reporting Year: 2024

Sample Collection Date: 10/16/2024

B. Facility Information

1) Permit Number: WQ0004108000

2) Site Name: Okee Dairy

3) Name of LMU (LMU Name should correspond to field designation located on the Map included in the PPP): 2

4) Name of Owner/Operator: Oene Keuning

5) Mailing Address for Owner/Operator: 4745 CR 207, Hico, TX 76457

Table 1. Soil Analysis Report Where Manure, Sludge and Wastewater are not Incorporated

Soil Sample Parameter	0-2 inches soil depth	2-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm	9.178	9.031	5.497
Phosphorus (extractable), ppm	269	149	24.1
Potassium (extractable), ppm	432	530	317
Sodium (extractable), ppm	36.8	60.3	87.9
Magnesium (extractable), ppm	529	527	368
Calcium (extractable), ppm	7191	9596	17737
Electrical Conductivity/Soluble Salts, dS/m	0.268	0.306	0.505
pH, SU	7.19	7.41	7.64

Table 2. Soil Analysis Report Where Manure, Sludge and Wastewater are Incorporated

Soil Sample Parameter	0-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm		
Phosphorus (extractable), ppm		
Potassium (extractable), ppm		
Sodium (extractable), ppm		
Magnesium (extractable), ppm		
Calcium (extractable), ppm		
Electrical Conductivity/Soluble Salts, dS/m		
pH, SU		

Note: ppm = parts per million, considered to be equivalent to milligrams per liter (mg/l); dS/m = decisiemens per meter, equivalent to millimhos per centimeter (mmhols/cm); SU = standard units.

C. 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 information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name and Title of Responsible Official or Authorized Agent: Oene Keuning, Owner

Signature:  for 

Date: 2-21-25

Telephone Number: 254/796-4491

D. How to Submit

The soil monitoring report with attached soil analyses should be included in the Annual Report that is required to be submitted by March 31 of each year. For State Only CAFOs, submit this soil monitoring report form to the TCEQ, Enforcement Division (MC-224), P.O. Box 13087, Austin, Texas 78711-3087 and provide a copy to the TCEQ Regional Office.

If you have any additional questions about this form or soil sample collection and soil analyses requirements, contact:

By e-mail: CAFO@tceq.texas.gov or call (512) -239-4671

SOIL MONITORING REPORT FOR CAFO INDIVIDUAL PERMITS IN THE SOLE SOURCE IMPAIRMENT ZONES

A. Sample collection

1) Samples were collected for the land management unit (LMU) identified below.

☒ Yes, complete this form and Tables 1 and 2 below. **Attach a copy of the laboratory analyses to this soil monitoring report form.**

☐ No, provide the facility information for the LMU below with the exception of the tables.

2) Reporting Year: 2024

Sample Collection Date: 10/16/2024

B. Facility Information

1) Permit Number: WQ0004108000

2) Site Name: Okee Dairy

3) Name of LMU (LMU Name should correspond to field designation located on the Map included in the PPP): 3

4) Name of Owner/Operator: Oene Keuning

5) Mailing Address for Owner/Operator: 4745 CR 207, Hico, TX 76457

Table 1. Soil Analysis Report Where Manure, Sludge and Wastewater are not Incorporated

Soil Sample Parameter	0-2 inches soil depth	2-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm			
Phosphorus (extractable), ppm			
Potassium (extractable), ppm			
Sodium (extractable), ppm			
Magnesium (extractable), ppm			
Calcium (extractable), ppm			
Electrical Conductivity/Soluble Salts, dS/m			
pH, SU			

Table 2. Soil Analysis Report Where Manure, Sludge and Wastewater are Incorporated

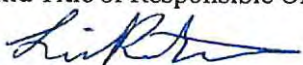
Soil Sample Parameter	0-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm	8.794	2.457
Phosphorus (extractable), ppm	76.1	13.8
Potassium (extractable), ppm	165	193
Sodium (extractable), ppm	56.0	88.3
Magnesium (extractable), ppm	396	240
Calcium (extractable), ppm	16721	16309
Electrical Conductivity/Soluble Salts, dS/m	0.264	0.437
pH, SU	7.43	7.62

Note: ppm = parts per million, considered to be equivalent to milligrams per liter (mg/l); dS/m = decisiemens per meter, equivalent to millimhos per centimeter (mmhols/cm); SU = standard units.

C. 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 information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name and Title of Responsible Official or Authorized Agent: Oene Keuning, Owner

Signature:  for 

Date: 2-21-25

Telephone Number: 254/796-4491

D. How to Submit

The soil monitoring report with attached soil analyses should be included in the Annual Report that is required to be submitted by March 31 of each year. For State Only CAFOs, submit this soil monitoring report form to the TCEQ, Enforcement Division (MC-224), P.O. Box 13087, Austin, Texas 78711-3087 and provide a copy to the TCEQ Regional Office.

If you have any additional questions about this form or soil sample collection and soil analyses requirements, contact:

By e-mail: CAFO@tceq.texas.gov or call (512) -239-4671

SOIL MONITORING REPORT FOR CAFO INDIVIDUAL PERMITS IN THE SOLE SOURCE IMPAIRMENT ZONES

A. Sample collection

1) Samples were collected for the land management unit (LMU) identified below.

☒ Yes, complete this form and Tables 1 and 2 below. **Attach a copy of the laboratory analyses to this soil monitoring report form.**

☐ No, provide the facility information for the LMU below with the exception of the tables.

2) Reporting Year: 2024

Sample Collection Date: 10/16/2024

B. Facility Information

1) Permit Number: WQ0004108000

2) Site Name: Okee Dairy

3) Name of LMU (LMU Name should correspond to field designation located on the Map included in the PPP): 4

4) Name of Owner/Operator: Oene Keuning

5) Mailing Address for Owner/Operator: 4745 CR 207, Hico, TX 76457

Table 1. Soil Analysis Report Where Manure, Sludge and Wastewater are not Incorporated

Soil Sample Parameter	0-2 inches soil depth	2-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm	6.318	5.358	2.525
Phosphorus (extractable), ppm	85.4	25.4	3.47
Potassium (extractable), ppm	216	214	200
Sodium (extractable), ppm	27.8	49.6	82.2
Magnesium (extractable), ppm	359	306	206
Calcium (extractable), ppm	10090	12715	20864
Electrical Conductivity/Soluble Salts, dS/m	0.296	0.381	0.416
pH, SU	7.27	7.5	7.67

Table 2. Soil Analysis Report Where Manure, Sludge and Wastewater are Incorporated

Soil Sample Parameter	0-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm		
Phosphorus (extractable), ppm		
Potassium (extractable), ppm		
Sodium (extractable), ppm		
Magnesium (extractable), ppm		
Calcium (extractable), ppm		
Electrical Conductivity/Soluble Salts, dS/m		
pH, SU		

Note: ppm = parts per million, considered to be equivalent to milligrams per liter (mg/l); dS/m = decisiemens per meter, equivalent to millimhos per centimeter (mmhols/cm); SU = standard units.

C. 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 information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name and Title of Responsible Official or Authorized Agent: Oene Keuning, Owner

Signature:  for 

Date: 2-21-25

Telephone Number: 254/796-4491

D. How to Submit

The soil monitoring report with attached soil analyses should be included in the Annual Report that is required to be submitted by March 31 of each year. For State Only CAFOs, submit this soil monitoring report form to the TCEQ, Enforcement Division (MC-224), P.O. Box 13087, Austin, Texas 78711-3087 and provide a copy to the TCEQ Regional Office.

If you have any additional questions about this form or soil sample collection and soil analyses requirements, contact:

By e-mail: CAFO@tceq.texas.gov or call (512) -239-4671

SOIL MONITORING REPORT FOR CAFO INDIVIDUAL PERMITS IN THE SOLE SOURCE IMPAIRMENT ZONES

A. Sample collection

1) Samples were collected for the land management unit (LMU) identified below.

☒ Yes, complete this form and Tables 1 and 2 below. **Attach a copy of the laboratory analyses to this soil monitoring report form.**

☐ No, provide the facility information for the LMU below with the exception of the tables.

2) Reporting Year: 2024

Sample Collection Date: 10/16/2024

B. Facility Information

1) Permit Number: WQ0004108000

2) Site Name: Okee Dairy

3) Name of LMU (LMU Name should correspond to field designation located on the Map included in the PPP): 5

4) Name of Owner/Operator: Oene Kuining

5) Mailing Address for Owner/Operator: 4745 CR 207, Hico, TX 76457

Table 1. Soil Analysis Report Where Manure, Sludge and Wastewater are not Incorporated

Soil Sample Parameter	0-2 inches soil depth	2-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm	3.762	0.934	2.043
Phosphorus (extractable), ppm	71.5	23.0	5.34
Potassium (extractable), ppm	264	236	204
Sodium (extractable), ppm	48.3	74.5	90.7
Magnesium (extractable), ppm	373	302	186
Calcium (extractable), ppm	13668	14018	18418
Electrical Conductivity/Soluble Salts, dS/m	0.088	0.184	0.192
pH, SU	7.27	7.72	7.73

Table 2. Soil Analysis Report Where Manure, Sludge and Wastewater are Incorporated

Soil Sample Parameter	0-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm		
Phosphorus (extractable), ppm		
Potassium (extractable), ppm		
Sodium (extractable), ppm		
Magnesium (extractable), ppm		
Calcium (extractable), ppm		
Electrical Conductivity/Soluble Salts, dS/m		
pH, SU		

Note: ppm = parts per million, considered to be equivalent to milligrams per liter (mg/l); dS/m = decisiemens per meter, equivalent to millimhols per centimeter (mmhols/cm); SU = standard units.

C. 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 information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name and Title of Responsible Official or Authorized Agent: Oene Keuning, Owner

Signature:  for 

Date: 2-21-25

Telephone Number: 254/796-4491

D. How to Submit

The soil monitoring report with attached soil analyses should be included in the Annual Report that is required to be submitted by March 31 of each year. For State Only CAFOs, submit this soil monitoring report form to the TCEQ, Enforcement Division (MC-224), P.O. Box 13087, Austin, Texas 78711-3087 and provide a copy to the TCEQ Regional Office.

If you have any additional questions about this form or soil sample collection and soil analyses requirements, contact:

By e-mail: CAFO@tceq.texas.gov or call (512) -239-4671



Chain of Custody Record

55768

Location: Okee Dairy

Permit #: 4108

(Do not fill in this shaded area if the facility information must be confidential)

Region: Organization #: PCA Code: Program: Sampler telephone number: (254) 552-1900

E-Mail ID: Sampler: (signature) Sampler: (please print clearly)

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	CL2	pH	Cond.	Analyses Requested	REMARKS
14249	-01	10/16/24	1305							See RFA	LMU 1 (0-6)
14250	-02	10/16/24	1305								LMU 1 (6-24)
14251	-03	10/16/24	1230								LMU 2 (0-2)
14252	-04	10/16/24	1230								LMU 2 (2-6)
14253	-05	10/16/24	1230								LMU 2 (6-24)
14254	-06	10/16/24	1250								LMU 3 (0-6)
14255	-07	10/16/24	1250								LMU 3 (6-24)
14256	-08	10/16/24	1210								LMU 4 (0-2)
14257	-09	10/16/24	1210								LMU 4 (2-6)
14258	-10	10/16/24	1210								LMU 4 (6-24)

Relinquished by: Delores Wilson Date: 10/18/24 Time: 9:22 Received by: [Signature] 11-19-24

Relinquished by: Date: Time: Received by:

Relinquished by: Date: Time: Received by:

Relinquished by: Date: Time: Received by:

Shipper name: Fed Ex Shipper Number: 7700 3341 5181

For Laboratory Use:

Received on ice: Y N deg. C

Preservatives: Y N

COC Seal: Y N

Seals Intact: Y N

Report for Samples analyzed Under Contract Number: 582-10-99518

Report ID: 055768a-45667

Print Date: 10-Jan-25

Texas A&M AgriLife Extension Service Soil, Water and Forage Testing Laboratory
108 Soil Testing Laboratory, 2478 TAMU
College Station, TX 77843-2478
979-862-4955

Client Name: Okee Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055768

Laboratory ID:	TCEQ/client Sample ID:	Sample Depth (inches)	Sample Coll. Date:	Collector Name:	TCEQ Region #	Date Received	Sample Type:	Sample opened Date	Sample Ground Date	Process Tech.
14249	55768-01	0-6	10/16/2024	not recorded	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP
14250	55768-02	6-24	10/16/2024	not recorded	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP
14251	55768-03	0-2	10/16/2024	not recorded	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP
14252	55768-04	2-6	10/16/2024	not recorded	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP
14253	55768-05	6-24	10/16/2024	not recorded	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP
14254	55768-06	0-6	10/16/2024	not recorded	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP
14255	55768-07	6-24	10/16/2024	not recorded	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP
14256	55768-08	0-2	10/16/2024	not recorded	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP
14257	55768-09	2-6	10/16/2024	not recorded	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP
14258	55768-10	6-24	10/16/2024	not recorded	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP

Methods and Sample Preparation:

Receiving of samples

Processing - SWFTL0097R0.SOP

Upon opening of sample chests, all samples are identified and organized as listed on COC to insure completeness and condition of shipment. Individually each sample is spread across a non-reactive tray where foreign materials is physically removed and discarded. The sample(s) are then placed inside a 65C drying oven and allow to remain until dry. Individual samples were then removed from drying oven and pulverized with an Agvise soil pulverizer fitted with a shaking 2mm screen. Every attempt was again made to remove any remaining plant tissue in the pulverized sample(s). Soil was then transferred to the laboratory sample cups and while additional sample was stored.

Analytical Methods:

Soil pH 2:1 DI water:soil

SOIL pH AND CONDUCTIVITY - SWFTL0015R1.SOP

Schofield, R.K. and A.W. Taylor. 1955. The measurement of soil pH. Soil Sci. Soc. Am. Proc. 19:164-167.

Soil Conductivity 2:1 DI Water:Soil

SOIL pH AND CONDUCTIVITY - SWFTL0015R1.SOP

Rhoades, J.D. 1982. Soluble salts. p. 167-178. In: A.L. Page, et al. (ed.). Methods of Soil Analysis: Part 2. Agronomy Monogr. 9. 2nd ed. ASA and SSSA, Madison, WI.

Soil Nitrate-N KCl Extractable with Cd-Reduction Analyses

NO3-N EXTRACTION - SWFTL0014R5.SOP/NO3-N ANALYSIS - SWFTL0089R1.SOP

Keeney, D.R. and D.W. Nelson. 1982. Nitrogen - inorganic forms. p. 643-687. In: A.L. Page, et al. (ed.). Methods of Soil Analysis: Part 2. Agronomy Monogr. 9. 2nd ed. ASA and SSSA, Madison, WI.

Soil P, K, Ca, Mg, S and Na -- Mehlich III by ICP

M3 EXTRACTION - SWFTL0079R1.SOP/M3 ANALYSIS - SWFTL0081R2.SOP

Mehlich-3 soil test extractant: a modification of Mehlich-2 extractant. Commun. Soil Sci. Plant Anal. 15(12):1409-1416

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14249	55768-01	85.8	ppm	308	ppm	19219	ppm	449	ppm	168	ppm	35.6	ppm
14250	55768-02	13.1	ppm	257	ppm	15965	ppm	286	ppm	130	ppm	72.7	ppm
14251	55768-03	239	ppm	432	ppm	7191	ppm	529	ppm	71.8	ppm	36.8	ppm
14252	55768-04	149	ppm	530	ppm	9596	ppm	527	ppm	90.5	ppm	60.3	ppm
14253	55768-05	24.1	ppm	317	ppm	17737	ppm	368	ppm	167	ppm	87.9	ppm
14254	55768-06	76.1	ppm	165	ppm	16721	ppm	396	ppm	149	ppm	56.0	ppm
14255	55768-07	13.8	ppm	193	ppm	16309	ppm	240	ppm	137	ppm	88.3	ppm
14256	55768-08	85.4	ppm	216	ppm	10090	ppm	359	ppm	90.7	ppm	27.8	ppm
14257	55768-09	25.4	ppm	214	ppm	12715	ppm	306	ppm	108	ppm	49.6	ppm
14258	55768-10	3.47	ppm	200	ppm	20864	ppm	206	ppm	173	ppm	82.2	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.2367	ppm	0.1308	ppm	0.0436	ppm	0.0250	ppm	0.0010	ppm	0.0269	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14249	55768-01	1/8/2025	FMR	1/9/2025	JLP
14250	55768-02	1/8/2025	FMR	1/9/2025	JLP
14251	55768-03	1/8/2025	FMR	1/9/2025	JLP
14252	55768-04	1/8/2025	FMR	1/9/2025	JLP
14253	55768-05	1/8/2025	FMR	1/9/2025	JLP
14254	55768-06	1/8/2025	FMR	1/9/2025	JLP
14255	55768-07	1/8/2025	FMR	1/9/2025	JLP
14256	55768-08	1/8/2025	FMR	1/9/2025	JLP
14257	55768-09	1/8/2025	FMR	1/9/2025	JLP
14258	55768-10	1/8/2025	FMR	1/9/2025	JLP

Report ID: 055768a-45667

Print Date: 10-Jan-25

Standard Sample Report

TCEQ COC# 055768

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14249	55768-01	7.36	NA	0.167	dS/M	11.864	ppm
14250	55768-02	7.61	NA	0.2	dS/M	3.257	ppm
14251	55768-03	7.19	NA	0.268	dS/M	9.178	ppm
14252	55768-04	7.41	NA	0.306	dS/M	9.031	ppm
14253	55768-05	7.64	NA	0.505	dS/M	5.497	ppm
14254	55768-06	7.43	NA	0.264	dS/M	8.794	ppm
14255	55768-07	7.63	NA	0.437	dS/M	2.457	ppm
14256	55768-08	7.27	NA	0.296	dS/M	6.318	ppm
14257	55768-09	7.5	NA	0.381	dS/M	5.358	ppm
14258	55768-10	7.67	NA	0.416	dS/M	2.525	ppm

Laboratory ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
Detection Limit	0.01	na	0.001	dS/M	0.01	ppm
Reporting Limit	0.1	na	0.001	dS/M	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitrate-N Extract		Nitrate-N Analysis	
		Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14249	55768-01	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
14250	55768-02	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
14251	55768-03	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
14252	55768-04	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
14253	55768-05	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
14254	55768-06	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
14255	55768-07	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
14256	55768-08	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
14257	55768-09	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
14258	55768-10	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14259	IC10223	50.8	ppm	325	ppm	2594	ppm	365	ppm	41.2	ppm	50.0	ppm
14260	IC1024	49.6	ppm	319	ppm	2378	ppm	358	ppm	40.1	ppm	50.2	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	45.9	ppm	305.0	ppm	2320.0	ppm	335.0	ppm	27.0	ppm	30.0	ppm
	IC Upper	53.4	ppm	365.0	ppm	2645.0	ppm	409.0	ppm	49.0	ppm	55.0	ppm
	blk221	<0.237	ppm	<0.131	ppm	<0.0436	ppm	<0.0250	ppm	<0.0100	ppm	<0.513	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.2367	ppm	0.1308	ppm	0.0436	ppm	0.0250	ppm	0.0010	ppm	0.0269	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC10223	1/8/2025	FMR	1/9/2025	JLP
IC1024	1/8/2025	FMR	1/9/2025	JLP
blk221	1/8/2025	FMR	1/9/2025	JLP

Quality Control Report

TCEQ COC# 055768

Laboratory ID:		pH	pH units	Conductivity conc.	Conductivity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14259	IC10223	5.9	na	0.254	dS/M	3.961	ppm	
14260	IC1024	5.9	na	0.257	dS/M	4.569	ppm	
	Mean IC	5.88	na	0.2555	dS/M	4.265	ppm	
14260spike	Spiked sample	-	-	-	-	3.9	ppm	88.1
	IC lower	5.760	na	0.241	dS/M	3.5	ppm	
	IC Upper	5.990	na	0.299	dS/M	5.5	ppm	
	blk221	-	na	0	dS/M	0.614	ppm	

Laboratory ID:	pH	pH units	Conductivity conc.	Conductivity units	Nitrate-N conc.	Nitrate-N units
Detection Limit	0.01	na	0.001	dS/M	0.01	ppm
Reporting Limit	0.1	na	0.001	dS/M	1	ppm

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitrate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC10223	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
IC1024	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
blk221	12/13/2024	DEC	12/16/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW



Chain of Custody Record

55769

Location: Okee Dairy
(Do not fill in this shaded area if the facility information must be confidential)

Permit #: 4108

Region: Organization #: PCA Code: Program: Sampler telephone number: (254) 552-1900

E-Mail ID: Sampler: (signature) Vanessa Haden Sampler: (please print clearly)

Lab ID Number	Sample ID	Date	Time	# of Bottles	Grab/ Comp.	Matrix L,S,M,O,T	CL2	pH	Cond.	Analyses Requested	REMARKS
14261	-01	10/14/24	1145							See RFA	LMU 5 (0-2)
14262	-02	10/14/24	1145								LMU 5 (2-6)
14263	-03	10/16/24	1145								LMU 5 (6-24)
	-04										LMU 6 (0-2)
	-05										LMU 6 (2-6)
	-06										LMU 6 (6-24)
	-07										
	-08										
	-09										
	-10										

Relinquished by: <u>Delores Nunez</u>	Date: <u>10/18/24</u>	Time: <u>9:21</u>	Received by: <u>JM</u>	Received by: <u>11-FI-24</u>	For Laboratory Use:
Relinquished by:	Date:	Time:	Received by:		Received on ice: Y <u>N</u> deg. C
Relinquished by:	Date:	Time:	Received by:		Preservatives: Y <u>N</u>
Relinquished by:	Date:	Time:	Received by:		COC Seal: Y <u>N</u>
Shipper name: <u>Fed Ex</u>	Shipper Number: <u>7700 3341 5181</u>				Seals Intact: Y <u>N</u>

Report for Samples analyzed Under Contract Number: 582-10-99518

Report ID: 055769a-45667

Print Date: 10-Jan-25

Texas A&M AgriLife Extension Service Soil, Water and Forage Testing Laboratory
108 Soil Testing Laboratory, 2478 TAMU
College Station, TX 77843-2478
979-862-4955

Client Name: Okee Dairy
Client address: not provided

Standard Sample Report TCEQ COC# 055769

Laboratory ID:	TCEQ/client Sample ID:	Sample Depth (inches)	Sample Coll. Date:	Collector Name:	TCEQ Region #	Date Received	Sample Type:	Sample opened Date	Sample Ground Date	Process Tech.
14261	55769-01	0-2	10/16/2024	Vanessa Gardner	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP
14262	55769-02	2-6	10/16/2024	Vanessa Gardner	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP
14263	55769-03	6-24	10/16/2024	Vanessa Gardner	4	11/19/2024	soil	11/25/2024	12/4/2024	TLP

Methods and Sample Preparation:

Receiving of samples

Processing - SWFTL0097R0.SOP

Upon opening of sample chests, all samples are identified and organized as listed on COC to insure completeness and condition of shipment. Individually each sample is spread across a non-reactive tray where foreign materials is physically removed and discarded. The sample(s) are then placed inside a 65C drying oven and allow to remain until dry. Individual samples were then removed from drying oven and pulverized with an Agvise soil pulverizer fitted with a shaking 2mm screen. Every attempt was again made to remove any remaining plant tissue in the pulverized sample(s). Soil was then transferred to the laboratory sample cups and while additional sample was stored.

Analytical Methods:

Soil pH 2:1 DI water:soil

SOIL pH AND CONDUCTIVITY - SWFTL0015R1.SOP

Schofield, R.K. and A.W. Taylor. 1955. The measurement of soil pH. Soil Sci. Soc. Am. Proc. 19:164-167.

Soil Conductivity 2:1 DI Water:Soil

SOIL pH AND CONDUCTIVITY - SWFTL0015R1.SOP

Rhoades, J.D. 1982. Soluble salts. p. 167-178. In: A.L. Page, et al. (ed.). Methods of Soil Analysis: Part 2. Agronomy Monogr. 9. 2nd ed. ASA and SSSA, Madison, WI.

Soil Nitrate-N KCl Extractable with Cd-Reduction Analyses

NO3-N EXTRACTION - SWFTL0014R5.SOP/NO3-N ANALYSIS - SWFTL0089R1.SOP

Keeney, D.R. and D.W. Nelson. 1982. Nitrogen - inorganic forms. p. 643-687. In: A.L. Page, et al. (ed.). Methods of Soil Analysis: Part 2. Agronomy Monogr. 9. 2nd ed. ASA and SSSA, Madison, WI.

Soil P, K, Ca, Mg, S and Na -- Mehlich III by ICP

M3 EXTRACTION - SWFTL0079R1.SOP/M3 ANALYSIS - SWFTL0081R2.SOP

Mehlich-3 soil test extractant: a modification of Mehlich-2 extractant. Commun. Soil Sci. Plant Anal. 15(12):1409-1416

Report ID: 055769a-45667

Print Date: 10-Jan-25

Standard Sample Report

TCEQ COC# 055769

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg units	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14261	55769-01	71.5	ppm	264	ppm	13668	ppm	373	ppm	121	ppm	48.3	ppm
14262	55769-02	23.0	ppm	236	ppm	14018	ppm	302	ppm	120	ppm	74.5	ppm
14263	55769-03	5.34	ppm	204	ppm	18418	ppm	186	ppm	155	ppm	90.7	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.2367	ppm	0.1308	ppm	0.0436	ppm	0.0250	ppm	0.0010	ppm	0.0269	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
14261	55769-01	1/8/2025	FMR	1/9/2025	JLP
14262	55769-02	1/8/2025	FMR	1/9/2025	JLP
14263	55769-03	1/8/2025	FMR	1/9/2025	JLP

Report ID: 055769a-45667
Standard Sample Report

Print Date: 10-Jan-25
TCEQ COC# 055769

Laboratory ID:	TCEQ/client Sample ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
14261	55769-01	7.27	NA	0.088	dS/M	3.762	ppm
14262	55769-02	7.72	NA	0.184	dS/M	0.934	ppm
14263	55769-03	7.73	NA	0.192	dS/M	2.043	ppm

Laboratory ID:	pH	pH units	Conductivity	Conductivity units	Nitrate-N	Nitrate-N units
Detection Limit	0.01	na	0.001	dS/M	0.01	ppm
Reporting Limit	0.1	na	0.001	dS/M	1	ppm

Laboratory ID:	TCEQ/client Sample ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitrate-N Extract		Nitrate-N Analysis	
		Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
14261	55769-01	12/18/2024	DEC	12/18/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
14262	55769-02	12/18/2024	DEC	12/18/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW
14263	55769-03	12/18/2024	DEC	12/18/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW

Laboratory ID:		Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
14279	IC1025	48.2	ppm	323	ppm	2503	ppm	360	ppm	40.8	ppm	48.7	ppm
14280	IC1026	46.5	ppm	309	ppm	2328	ppm	345	ppm	39.1	ppm	47.9	ppm
	Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
	IC Lower	45.9	ppm	305.0	ppm	2320.0	ppm	335.0	ppm	27.0	ppm	30.0	ppm
	IC Upper	53.4	ppm	365.0	ppm	2645.0	ppm	409.0	ppm	49.0	ppm	55.0	ppm
	blk221	<0.237	ppm	<0.131	ppm	<0.0436	ppm	<0.0250	ppm	<0.0100	ppm	<0.513	ppm

Laboratory ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
Detection Limit	0.2367	ppm	0.1308	ppm	0.0436	ppm	0.0250	ppm	0.0010	ppm	0.0269	ppm
Reporting Limit	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

Laboratory ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
IC1025	1/8/2025	FMR	1/9/2025	JLP
IC1026	1/8/2025	FMR	1/9/2025	JLP
blk221	1/8/2025	FMR	1/9/2025	JLP

Quality Control Report

TCEQ COC# 055769

Laboratory ID:		pH	pH units	Conductivity conc.	Conductivity units	Nitrate-N conc.	Nitrate-N units	Nitrate-N % recovery
14279	IC1025	5.9	na	0.254	dS/M	4.34	ppm	
14280	IC1026	5.9	na	0.255	dS/M	4.446	ppm	
	Mean IC	5.855	na	0.2545	dS/M	4.393	ppm	
14280spike	Spiked sample	-	-	-	-	3.9	ppm	88.1
	IC lower	5.760	na	0.241	dS/M	3.5	ppm	
	IC Upper	5.990	na	0.299	dS/M	5.5	ppm	
	blk221	-	na	0	dS/M	0.614	ppm	

Laboratory ID:	pH	pH units	Conductivity conc.	Conductivity units	Nitrate-N conc.	Nitrate-N units
Detection Limit	0.01	na	0.001	dS/M	0.01	ppm
Reporting Limit	0.1	na	0.001	dS/M	1	ppm

Laboratory ID:	pH/Conductivity prep		pH Analysis		Conductivity		Nitrate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
IC1025	12/18/2024	DEC	12/18/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW/
IC1026	12/18/2024	DEC	12/18/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW/
blk221	12/18/2024	DEC	12/18/2024	DEC	12/16/2024	DEC	12/16/2024	FMR	12/17/2024	JW

SOIL MONITORING REPORT FOR CAFO INDIVIDUAL PERMITS IN THE SOLE SOURCE IMPAIRMENT ZONES

A. Sample collection

1) Samples were collected for the land management unit (LMU) identified below.

☒ Yes, complete this form and Tables 1 and 2 below. **Attach a copy of the laboratory analyses to this soil monitoring report form.**

☐ No, provide the facility information for the LMU below with the exception of the tables.

2) Reporting Year: 2023

Sample Collection Date: 11/16/2023

B. Facility Information

1) Permit Number: WQ000410800

2) Site Name: Okee Dairy

3) Name of LMU (LMU Name should correspond to field designation located on the Map included in the PPP): 6

4) Name of Owner/Operator: Oene Keuning

5) Mailing Address for Owner/Operator: 4745 CR 207, Hico, TX 76457

Table 1. Soil Analysis Report Where Manure, Sludge and Wastewater are not Incorporated

Soil Sample Parameter	0-2 inches soil depth	2-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm			
Phosphorus (extractable), ppm			
Potassium (extractable), ppm			
Sodium (extractable), ppm			
Magnesium (extractable), ppm			
Calcium (extractable), ppm			
Electrical Conductivity/Soluble Salts, dS/m			
pH, SU			

Table 2. Soil Analysis Report Where Manure, Sludge and Wastewater are Incorporated

Soil Sample Parameter	0-6 inches soil depth	6-24 inches soil depth
Nitrate-Nitrogen (NO ₃ -N), ppm	2.615	35.569
Phosphorus (extractable), ppm	149	1
Potassium (extractable), ppm	605	200
Sodium (extractable), ppm	137	174
Magnesium (extractable), ppm	567	265
Calcium (extractable), ppm	12128	28180
Electrical Conductivity/Soluble Salts, dS/m	0.272	0.071
pH, SU	7.73	7.76

Note: ppm = parts per million, considered to be equivalent to milligrams per liter (mg/l); dS/m = decisiemens per meter, equivalent to millimhos per centimeter (mmhols/cm); SU = standard units.

C. 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 information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name and Title of Responsible Official or Authorized Agent: Oene Keuning , Owner

Signature: *Maeleigh Beijer for*

Date: *02 / 14 / 2024*

Telephone Number: 254/796-4991

D. How to Submit

The soil monitoring report with attached soil analyses should be included in the Annual Report that is required to be submitted by March 31 of each year. For State Only CAFOs, submit this soil monitoring report form to the TCEQ, Enforcement Division (MC-224), P.O. Box 13087, Austin, Texas 78711-3087 and provide a copy to the TCEQ Regional Office.

If you have any additional questions about this form or soil sample collection and soil analyses requirements, contact:

By e-mail: CAFO@tceq.texas.gov or call (512) -239-4671

Samples analyzed Under Contract Number: 582-10-99518

Report ID: 055766a-45315
Print Date: 24-Jan-24

Agrilife Extension Service Soil, Water and Forage Testing Laboratory
Testing Laboratory, 2478 TAMU
Station, TX 77843-2478
55

Species:

Okeee Dairy
not provided

Sample Report TCEQ COC# 055766

TCEQ/client Sample ID:	Sample Depth (inches)	Sample Coll. Date:	Collector Name:	TCEQ Region #	Date Received	Sample Type:	Sample opened Date	Sample Ground Date	Proced Tec
55766-01	0-6	11/16/2023	Chris Whitefield	4	12/6/2023	soil	12/7/2023	12/15/2023	TL
55766-02	6-24	11/16/2023	Chris Whitefield	4	12/6/2023	soil	12/7/2023	12/15/2023	TL

Sample Preparation:

Processing - SWFTL0097R0.SOP

Upon opening of sample chests, all samples are identified and organized as listed on COC to insure completeness and condition of shipment. Individually each sample is spread across a non-removable tray where foreign materials is physically removed and discarded. The sample(s) are then placed inside a 65C drying oven and allow to remain until dry. Individual samples were then removed, dried in a drying oven and pulverized with an AgVise soil pulverizer fitted with a shaking 2mm screen. Every attempt was made to remove any remaining plant tissue in the pulverized sample(s). Then transferred to the laboratory sample cups and while additional sample was stored.

Methods:

Soil pH 2:1 DI Water:soil SOIL pH AND CONDUCTIVITY - SWFTL0015R1.SOP

Schofield, R.K. and A.W. Taylor. 1955. The measurement of soil pH. Soil Sci. Soc. Am. Proc. 19:164-167.

Soil Conductivity 2:1 DI Water:Soil SOIL pH AND CONDUCTIVITY - SWFTL0015R1.SOP

Rhoades, J.D. 1982. Soluble salts. p. 167-178. In: A.L. Page, et al. (ed.), Methods of Soil Analysis: Part 2. Agronomy Monogr. 9, 2nd ed. ASA and SSSA, Madison, WI.

Soil Nitrate-N KCl Extractable with Cd-Reduction Analyses. NO3-N EXTRACTION - SWFTL0014R5.SOP/NO3-N ANALYSIS - SWFTL0089R1.SOP

Keeney, D.R. and D.W. Nelson. 1982. Nitrogen - inorganic forms. p. 643-687. In: A.L. Page, et al. (ed.), Methods of Soil Analysis: Part 2. Agronomy Monogr. 9, 2nd ed. ASA and SSSA, Madison, WI.

Soil P, K, Ca, Mg, S and Na - Mehlich III by ICP M3 EXTRACTION - SWFTL0079R1.SOP/M3 ANALYSIS - SWFTL0081R2.SOP

Mehlich-3 soil test extractant: a modification of Mehlich-2 extractant Commun. Soil Sci. Plant Anal. 15(12):1409-1416

ID:	TCEQ/client	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III
Sample ID:	P conc.	P units	K conc.	K units	Ca conc.	Ca units	Mg conc.	Mg units	S conc.	S units	Na conc.	Na units
55766-01	149	ppm	605	ppm	12128	ppm	567	ppm	92.1	ppm	137	ppm
55766-02	1	ppm	200	ppm	28180	ppm	265	ppm	163	ppm	174	ppm

ID:	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III
P conc.	P units	K conc.	K units	Ca conc.	Ca units	Mg conc.	Mg units	S conc.	S units	Na conc.	Na units
0.0177	ppm	0.1405	ppm	0.2130	ppm	0.0733	ppm	0.2616	ppm	0.0312	ppm
1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

ID:	TCEQ/client	Mehlich III	Mehlich III	Mehlich III	Mehlich III	Mehlich III
Sample ID:	Extract Date	Extract Tech	Anal Date	Anal Tech		
55766-01	1/9/2024	FMR	1/10/2024	JLP		
55766-02	1/9/2024	FMR	1/10/2024	JLP		

Chain of Custody Record

55766

Organization #: **Okee Dawg** (Do not fill in this shaded area if the facility information must be confidential) Permit #: **4108**

PCA Code: Program: Sampler telephone number: **(254) 552-1400**

ID: **CHN Whitefield** Sampler: (signature) **CHN Whitefield** Sampler: (please print clearly) **CHN Whitefield**

Sample ID	Date	Time	# of Bottles	Grab/Comp.	Matrix L.S.M.O.T	CL2	pH	Cond.	Analyses Requested	REMARKS
10815 10815-02	11/16/03	10:30							SERIFA	CMU 6 10.
-03										
-04										
-05										
-06										
-07										
-08										
-09										
-10										

Shipped by: **CHN Whitefield** Date: **10/19/03** Time: **8:15** Received by: **CHN Whitefield** Date: **12-6-23**

Shipped by: Date: Time: Received by:

Shipped by: Date: Time: Received by:

Shipped by: Date: Time: Received by:

Shipper Number: **7143 5183 9793**

Seals Intact: Y N

COC Seal: Y N

Preservatives: Y N

Received on ice: Y N

For Laboratory Use:

D:	pH	pH	Conductivity	Conductivity	Nitrate-N	Nitrate-N	Nitrate-N
		units	conc.	units	conc.	units	% recovery
IC985	5.8	na	0.251	ds/M	5.404	ppm	
IC986	5.9	na	0.251	ds/M	5.071	ppm	
Mean IC	5.835	na	0.251	ds/M	5.2375	ppm	
Spiked sample	-	-	-	-	4.6	ppm	83.5
IC lower	5.760	na	0.238	ds/M	4.9	ppm	
IC Upper	5.990	na	0.301	ds/M	6.9	ppm	
blt212	-	na	0	ds/M	-3.293	ppm	

D:	pH	pH	Conductivity	Conductivity	Nitrate-N	Nitrate-N
		units	conc.	units	conc.	units
nit	0.01	na	0.001	ds/M	0.01	ppm
nit	0.1	na	0.001	ds/M	1	ppm

D:	pH/Conductivity prep		pH Analysis		Conductivity		Nitrate-N Extract		Nitrate-N Analysis	
	Date	Tech	Date	Tech	Date	Tech	Date	Tech	Date	Tech
	1/5/2024	DEC	1/5/2024	DEC	1/5/2024	DEC	1/10/2024	FMR	1/12/2024	JW
	1/5/2024	DEC	1/5/2024	DEC	1/5/2024	DEC	1/10/2024	FMR	1/12/2024	JW
	1/5/2024	DEC	1/5/2024	DEC	1/5/2024	DEC	1/10/2024	FMR	1/12/2024	JW

	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
IC985	49.4	ppm	309	ppm	2265	ppm	359	ppm	35.9	ppm	52.2	ppm
IC986	49.8	ppm	315	ppm	2284	ppm	366	ppm	36.1	ppm	49.3	ppm
Mean IC	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm	0	ppm
IC Lower	45.3	ppm	300.0	ppm	1931.0	ppm	304.0	ppm	28.3	ppm	33.0	ppm
IC Upper	55.0	ppm	375.0	ppm	2440.0	ppm	388.0	ppm	47.3	ppm	57.0	ppm
blk212	<0.007702	ppm	<0.0840	ppm	<0.106	ppm	<0.0336	ppm	<0.001069	ppm	0.18	ppm

ID:	Mehlich III P conc.	Mehlich III P units	Mehlich III K conc.	Mehlich III K units	Mehlich III Ca conc.	Mehlich III Ca units	Mehlich III Mg conc.	Mehlich III Mg conc.	Mehlich III S conc.	Mehlich III S units	Mehlich III Na conc.	Mehlich III Na units
mt	0.0177	ppm	0.1405	ppm	0.2130	ppm	0.0733	ppm	0.2616	ppm	0.0312	ppm
mt	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm	1	ppm

ID:	Mehlich III Extract Date	Mehlich III Extract Tech	Mehlich III Anal.Date	Mehlich III Anal. Tech
	1/9/2024	FMR	1/10/2024	JLP
	1/9/2024	FMR	1/10/2024	JLP
	1/9/2024	FMR	1/10/2024	JLP

TCEQ/client	pH	pH	Conductivity	Conductivity	Nitrate-N	Amate-N
Sample ID:		units		units		units
55766-01	7.73	NA	0.272	ds/M	2.615	ppm
55766-02	7.76	NA	0.071	ds/M	35.569	ppm

D:	pH	pH	Conductivity	Conductivity	Nitrate-N	Nitrate-N
		units		units		units
mit	0.01	na	0.001	ds/M	0.01	ppm
mit	0.1	na	0.001	ds/M	1	ppm

D:	TCEQ/client	pH/Conductivity prep	pH Analysis		Conductivity		Nitrate-N Extract		Nitrate-N Analysis	
	Sample ID:	Date	Tech	Date	Tech	Date	Tech	Date	Tech	
	55766-01	1/5/2024	DEC	1/5/2024	DEC	1/10/2024	FMR	1/12/2024	JW	
	55766-02	1/5/2024	DEC	1/5/2024	DEC	1/10/2024	FMR	1/12/2024	JW	



6921 S. Bell • Amarillo, TX 79109
www.servitech.com

Phone: 806.677.0093

800.557.7509

Fax: 806.677.0329

Lab No.: 3492 **LABORATORY ANALYSIS REPORT** Report Date: 06/26/2024 09:15 pm

Send To:
6224

ENVIRO-AG ENGINEERING INC
3404 AIRWAY BLVD
AMARILLO, TX 79118

Amy Meier
Data Review Coordinator

Results For:
Sample ID:

OKEE DAIRY
SLURRY

Received: 06/11/2024
Sampled: 06/05/2024
Invoice No: 425751
P.O. #: RICHARD GEORGE

Total content Estimated available
first year*

Analysis Analysis lbs per lbs per lbs per lbs per
(dry basis) (as rec'd) Acre-In 1000 gal Acre-In 1000 gal

NUTRIENTS

Nitrogen

Total Nitrogen	%	6.562	0.105	14877	9.4	175.7	7.0
Organic Nitrogen	%	3.562	0.057	8076.2	5.1	66.9	2.7
Ammonium Nitrogen	%	3.00	0.048	6801.0	4.3	108.8	4.3
Nitrate+Nitrite Nitrogen	%	<0.0010	<0.0010	0	<0.1	<0.1	<0.1

Major and Secondary Nutrients

Phosphorus	%	1.25	0.020				
Phosphorus as P2O5	%	2.875	0.046	6517.6	4.1	93.9	3.7
Potassium	%	6.437	0.103				
Potassium as K2O	%	7.75	0.124	17569	11.2	281.1	11.2

OTHER PROPERTIES

Moisture	%		98.4				
Total Solids	%		1.6	226700	144		
Organic Matter	%	62.5	1.0	141688	90		
Ash	%		0.6		54		
C:N Ratio	ratio		5.5				
Density	lbs/gal	512.5	8.2				

* Assumes 52% of organic nitrogen available during first crop year after application. Assumes 100% of ammonium and nitrate nitrogen available, but should be adjusted for potential field losses at application site.

The reported analytical results apply only to the sample as it was supplied.
The report may not be reproduced, except in full, without permission of ServiTech.

Page 1 of 1

Your opinion is valuable to us. Please let us know what you think about our services! Send an email to feedback@servitech.com.

Enviro-Ag Engineering, Inc.
3404 Airway Blvd., Amarillo, TX 79118
Tel. 806-353-6123 Fax 806-353-4132

MANURE CHAIN OF CUSTODY RECORD

Producer/Facility: Okee Dairy

County: Hamilton

Date Sampled: 6/5/2024

Date Shipped: 6/10/2024

Project Manager: Richard George

[illegible]

Relinquished By: Ref. Internal COC Relinquished By: Lisa Postmus Relinquished By:

Company: EAE

Company: EAE

Company: ServiTech Lab

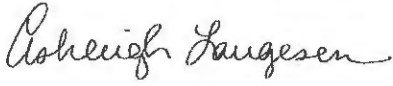
Date/Time: 6/11 6.7/6.7

Received By:



6921 S. Bell • Amarillo, TX 79109
www.servitech.com

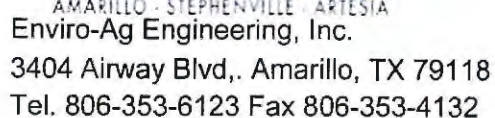
Phone: 806.677.0093
800.557.7509
Fax: 806.677.0329

Lab No: 841		LABORATORY ANALYSIS REPORT		Report Date: 11/13/2024 04:04 pm																																																																																											
Send To: 6224		ENVIRO-AG ENGINEERING INC 3404 AIRWAY BLVD AMARILLO, TX 79118		 Ashleigh Laugesen Signer																																																																																											
Client Name: Sample ID: Location		OKEE DAIRY RCS #2 HAMILTON COUNTY		Received: 11/08/2024 Sampled: 10/29/2024 Invoice No: 426892																																																																																											
<table border="1"><thead><tr><th colspan="3">Analysis results</th><th>lbs/acre-in</th><th>meq/L</th></tr></thead><tbody><tr><td colspan="5">NUTRIENTS</td></tr><tr><td colspan="5">Nitrogen</td></tr><tr><td>Total Nitrogen</td><td>13</td><td>ppm</td><td>3</td><td>0.9</td></tr><tr><td>Organic Nitrogen</td><td>9</td><td>ppm</td><td>2</td><td>0.6</td></tr><tr><td>Ammonium Nitrogen</td><td>4.3</td><td>ppm</td><td>1</td><td>0.3</td></tr><tr><td>Nitrate+Nitrite Nitrogen</td><td><0.20</td><td>ppm</td><td>0</td><td>0</td></tr><tr><td colspan="5">Major and Secondary Nutrients</td></tr><tr><td>Phosphorus</td><td><10</td><td>ppm</td><td></td><td></td></tr><tr><td>Phosphorus as P2O5</td><td><20</td><td>ppm</td><td>0</td><td></td></tr><tr><td>Potassium</td><td>30</td><td>ppm</td><td></td><td>0.8</td></tr><tr><td>Potassium as K2O</td><td>40</td><td>ppm</td><td>9</td><td></td></tr><tr><td colspan="5">OTHER PROPERTIES</td></tr><tr><td>Moisture</td><td>99.9</td><td>%</td><td></td><td></td></tr><tr><td>Total Solids</td><td><0.10</td><td>%</td><td>0</td><td></td></tr><tr><td>Organic Matter</td><td><0.10</td><td>%</td><td>0</td><td></td></tr><tr><td>Ash</td><td><0.10</td><td>%</td><td></td><td></td></tr><tr><td>C:N Ratio</td><td>44.5</td><td>ratio</td><td></td><td></td></tr></tbody></table>						Analysis results			lbs/acre-in	meq/L	NUTRIENTS					Nitrogen					Total Nitrogen	13	ppm	3	0.9	Organic Nitrogen	9	ppm	2	0.6	Ammonium Nitrogen	4.3	ppm	1	0.3	Nitrate+Nitrite Nitrogen	<0.20	ppm	0	0	Major and Secondary Nutrients					Phosphorus	<10	ppm			Phosphorus as P2O5	<20	ppm	0		Potassium	30	ppm		0.8	Potassium as K2O	40	ppm	9		OTHER PROPERTIES					Moisture	99.9	%			Total Solids	<0.10	%	0		Organic Matter	<0.10	%	0		Ash	<0.10	%			C:N Ratio	44.5	ratio		
Analysis results			lbs/acre-in	meq/L																																																																																											
NUTRIENTS																																																																																															
Nitrogen																																																																																															
Total Nitrogen	13	ppm	3	0.9																																																																																											
Organic Nitrogen	9	ppm	2	0.6																																																																																											
Ammonium Nitrogen	4.3	ppm	1	0.3																																																																																											
Nitrate+Nitrite Nitrogen	<0.20	ppm	0	0																																																																																											
Major and Secondary Nutrients																																																																																															
Phosphorus	<10	ppm																																																																																													
Phosphorus as P2O5	<20	ppm	0																																																																																												
Potassium	30	ppm		0.8																																																																																											
Potassium as K2O	40	ppm	9																																																																																												
OTHER PROPERTIES																																																																																															
Moisture	99.9	%																																																																																													
Total Solids	<0.10	%	0																																																																																												
Organic Matter	<0.10	%	0																																																																																												
Ash	<0.10	%																																																																																													
C:N Ratio	44.5	ratio																																																																																													

The reported analytical results apply only to the sample as it was supplied.
The report may not be reproduced, except in full, without permission of ServiTech.

Page 1 of 1

Your opinion is valuable to us. Please let us know what you think about our services! Send an email to feedback@servitech.com.



Producer/Facility: Okee Dairy

County: Hamilton

Date Sampled: 10/29/2024

Date Shipped: 11/4/2024

Project Manager: Richard George

Sample Type	Sample ID	Number of Containers	Test Package	Proper Preservation	Matrix
Wastewater	RCS #2	2	EAE TX CO KS LAGOON	Y	OT
		0841			

Relinquished By: Ref. Internal COC Relinquished By: Lisa Postmus Relinquished By:

Company: EAE

Company: EAE

Company: ServiTech Lab

Date/Time:

Received By: _____

5.0 RECHARGE FEATURE CERTIFICATION

CERTIFICATION

I certify that potential Recharge Features in the form of artificial penetrations and natural features exist on property utilized under this application as defined in 30 TAC §321.32(50). The protective measures in the form of best management practices identified in this report, when implemented, are designed to avoid adverse impacts to these features and associated groundwater formations.

All information presented on this page and in the following supporting documents is true and accurate to the best of my knowledge.



Norman Mullin 7/3/25

Norman Mullin, P.E.

Enviro-Ag Engineering, Inc.

Firm #F-2507

5.1 General

This recharge feature certification report was authorized by Mr. Oene Keuning representing Okee Dairy. The findings and recommendations contained herein were compiled by Ms. Jourdan Mullin and Mr. Norman Mullin, P.E., of Enviro-Ag Engineering, Inc., Amarillo, Texas.

5.2 Purpose of Report

Okee Dairy is applying for a major amendment of current TPDES #4108 under 30 TAC, Chapter 321, Subchapter B, Concentrated Animal Feeding Operations. The purpose of this report is to determine if the subject property has any natural or artificial features, either on or beneath the ground surface, which would provide a significant pathway for effluent or solids from the facility into the underlying aquifer. At a minimum, the records and/or maps of the following entities/agencies were reviewed to locate any artificial recharge features: A) Texas Railroad Commission, B) local water district, C) Texas Water Development Board, D) TCEQ, E) Natural Resource Conservation Service (NRCS), F) current land owners and G) onsite inspection. The TCEQ Regulatory Guidance RG-433 was followed to identify recharge features and recommend best management practices.

5.3 Property Under Evaluation

The property under evaluation consists of approximately 587 acres in Hamilton County, Texas.

5.4 Definition of Waste Production

The processes by which wastewater is produced at a dairy begins with the use of fresh water to clean manure from the milking parlor and equipment sanitization. Wastewater from the milking parlor is direct to settling pond #1 and then to RCS #1 and RCS #2 for storage and disposal through beneficial land application.

The second process of wastewater production involves the accumulation of manure solids in the open confinement lots. Rain falling on the open lots comes into contact with the manure layer and absorbs some of the excreted nutrients present in manure. The nutrient enriched runoff is considered wastewater, which flows by designed slopes from the open lots toward the settling ponds and into the RCSs.

Manure solids accumulated in the open confinement lots are collected at least annually and hauled off-site to farmland by a waste transporter. While in the open lots, manure becomes compacted and slowly permeable due to hoof action by the cattle. This compacted manure layer results in an increase of the overall runoff volume during rainfall events. Infiltration of nutrients downward through the manure layer into the underlying soils is considered minimal as a result of pen surface compaction (Sweeten, 1990).

5.5 Definition of Recharge Feature

TCEQ rules define a "Recharge Feature" as: "Those natural or artificial features either on or beneath the ground surface at the site under evaluation that provide or create a significant hydrologic connection between the ground surface and the underlying groundwater within an aquifer. Significant artificial features include, but are not limited to, wells and excavation or material pits. Significant natural hydrologic connections include, but are not limited to: faults, fractures, sinkholes or other macro pores that allow direct surface infiltration; a permeable or shallow soil material that overlies and aquifer; exposed geologic formations that are identified as an aquifer; or a water course bisecting an aquifer." (30 TAC §321.32(50))

The TCEQ Regulatory Guidance RG-433 further defines a "recharge feature" as: "A natural or artificial feature either on or beneath the ground surface that provides or creates a significant hydrologic connection (or pathway) between the ground surface and the underlying groundwater within an aquifer."

The guidance document also defines a "significant pathway" as: "A significant pathway between the land surface and the subsurface has the ability to transmit waste, wastewater, or precipitation mixed with waste to groundwater. The wastewater may impact the groundwater quality within an aquifer or migrate laterally to discharge as seeps that may impact surface water quality. Recharge features with significant pathways include geomorphologic, geologic, soil, and artificial features. Agricultural practices may also enhance existing recharge features."

EVALUATION OF NATURAL FEATURES

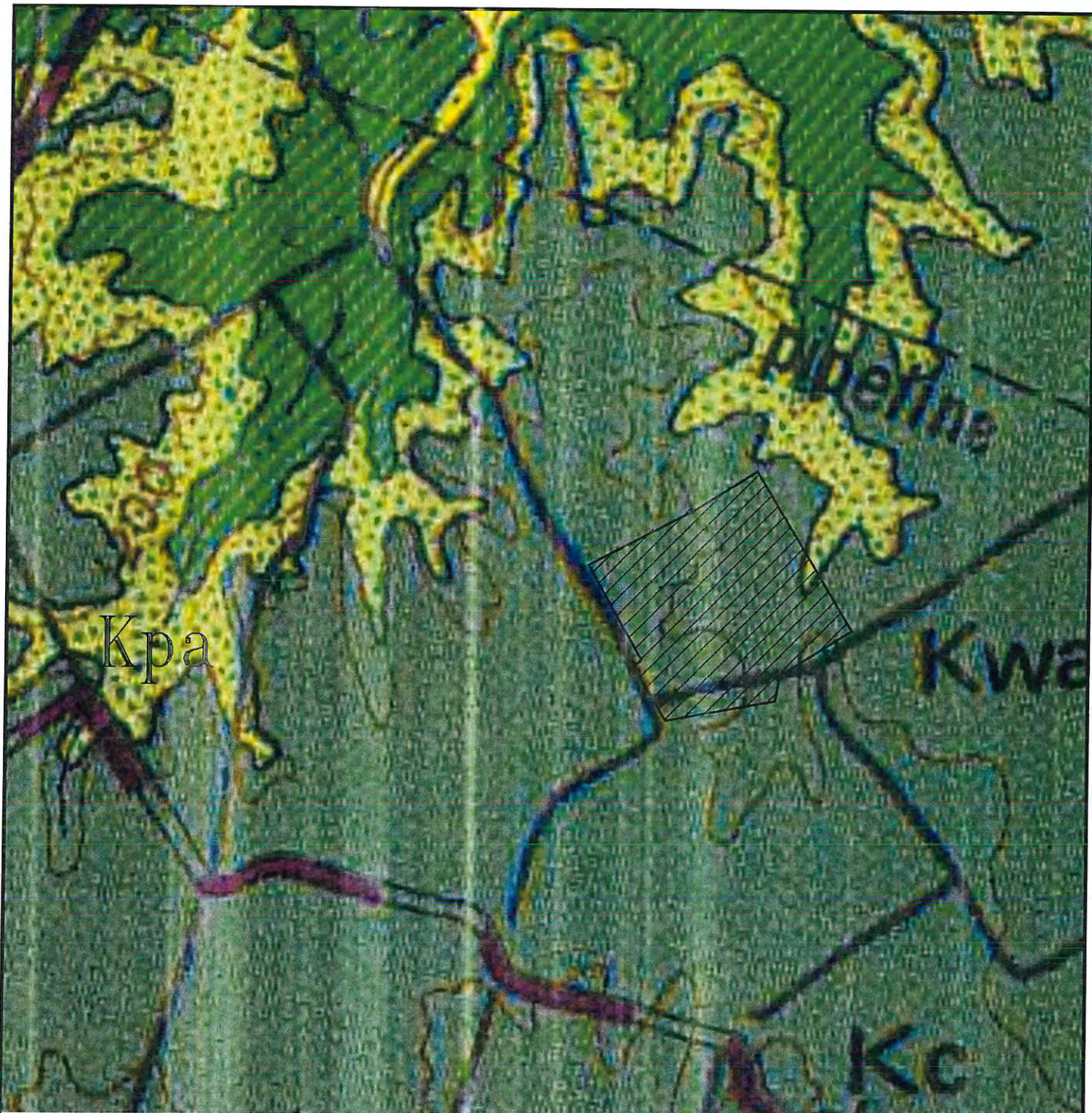
5.6 Geomorphologic/Geologic Features

The clay loam soils in this area of Hamilton County are immediately underlain by the Paluxy and Walnut Formations and by recently deposited Alluvium in the area of the North Bosque River, as shown in Figure 5.1, Geologic Atlas. Alluvium consists of floodplain deposits, including low terrace deposits near floodplain level and bedrock locally in stream channels; gravel, sand, silt, clay and organic matter up to 35 feet thick. The Paluxy Formation consists of sandstone interbedded with claystone and siltstone, up to 100 feet thick, thinning southward. The Glen Rose Formation of Cretaceous age consists of alternating limestone and claystone with some sandstone, up to 250 feet thick in the southeastern area of the formation. (Geologic Atlas, 1976).

The Walnut Formation comprises the beds of clay and nonchalky limestones at the base of the Fredericksburg division. They consist of alternations of calcareous laminated clays, weathering yellow on oxidation, semicrystalline limestone flags, and shell agglomerate, all of which grade upward without break into the more chalky beds of the Edwards limestone. In places they weather into rich black soils and make extensive agricultural belts (Hill, 1901).

Forming the upper unit of the Trinity Group, the Paluxy Formation consists of up to 400 feet of predominantly fine to coarse-grained sand interbedded with clay and shale. Underlying the Paluxy, the Glen Rose Formation forms a gulfward-thickening wedge of marine carbonates consisting primarily of limestone. Paluxy bedrock outcrops along the northeast portion of this site. Limiting application rates of wastewater and manure will protect this feature from adverse impacts.

The basal unit of the Trinity Group consists of the Twin Mountains and Travis Peak formations, which are laterally separated by a facies change. To the north, the Twin Mountains Formation consists mainly of medium-to coarse-grained sands, silty clays, and conglomerates (Ashworth, 1995).



Map Generated 6/16/2025

Legend:

 Denotes Okee Dairy

Kwa - Cretaceous Walnut Formation

Kpa - Cretaceous Paluxy Formation

Source: Geologic Atlas of Texas, Brownwood Sheet, 1978.



No Scale

Okee Dairy
Hico, Texas
Hamilton County

Geologic Atlas of Texas
Figure 5.1
Page 20

ENVIRO-AG
EAE
ENGINEERING, INC.

Enviro-Ag Engineering, Inc.
ENGINEERING CONSULTANTS
3404 Airway Blvd.
AMARILLO, TEXAS 79118
TEL (806) 353-6123 FAX (806) 353-4132

5.6.1 Outcrops/Stream Interception

An inspection of the CAFO property and review of the USGS topographic map of the area shows two tributaries of Long Branch Creek located in LMUs #1, #3, #4, #5 and #7 and freshwater ponds located in LMUs #3 and #4. No land application is proposed in these areas and required buffer zones will be maintained.

5.6.2 Excessive Slopes

No slopes of greater than 8 percent are present on the property.

5.6.3 Other Large-Scale Conduits

No faults, fractured sediments, caves, sinkholes, solution cavities, vugs or concentrated or extensive animal burrowing was observed during an on-site visit, nor is identified on the geologic atlas, soil surveys or USGS maps.

5.6.4 Surface Water

The "water in the state" designation is based on Enviro-Ag Engineering, Inc., site inspections, the permittee's knowledge of the property and the USDA-FSA aerial photograph (2025). The buffer zones and LMU boundaries in Figure 6.1 (Refer to Section 6) are submitted with this application for TCEQ approval.

5.6.5 Aquifer

The Trinity aquifer consist of early Cretaceous age formations of the Trinity Group where they occur in a band extending through the central part of the state in all or parts of 55 counties, from the Red River in North Texas to the Hill Country of South-Central Texas.

Formations comprising the Trinity Group are (from youngest to oldest) the Paluxy, Glen Rose, and Twin Mountains-Travis peak. Updip, where the Glen Rose thins or is missing, the Paluxy and Twin Mountains coalesce to form the Antlers Formation. The Antlers consists of up to 900 feet of sand and gravel, with clay beds in the middle section. Water from the Antlers is mainly used for irrigation in the outcrop area of North and Central Texas (Ashworth and Hopkins, 1995).

The aquifer is underlain and confined by low-permeability rocks that range in age from Precambrian to Jurassic. Where the aquifer does not crop out, it is confined above by the Walnut Formation in most of the area.

Recharge to the Trinity aquifer is generally as precipitation that falls on aquifer outcrop areas and as seepage from streams and ponds where the head gradient is downward. In the Hill Country, water might flow laterally into the Trinity aquifer from the adjacent Edwards-Trinity aquifer. The aquifer discharges by evapotranspiration, spring discharges, diffuse lateral or upward leakage into shallower aquifers, and withdrawals from wells (USGS, 2003). Land application at agronomic rates and maintain permanent cover crops will protect the feature from adverse impacts associated with this operation.

5.7 Soil Features

Soil mapping units included in this section for the production area and land application areas were taken from the electronic NRCS Soil Survey for Hamilton County. Soils descriptions are included in the supporting documentation and were obtained from the most current version of the NRCS electronic soil information database for Hamilton County available on the NRCS Web Soil Survey.

5.7.1 Production Area

Soils underlying the pen and pond areas are predominately of the Brackett-Maloterre (BxD) and Slidell (SsB) series. The RCSs have been certified as meeting TCEQ guidelines for soil liner (30 TAC §321.38(g)). Best management practices pertaining to surface drainage, surface compaction and manure management within the open lot confinement area will be followed. Steve Evans, Ph.D., soil physicist with the USDA Agricultural Research Service in Bushland, Texas, stated that his work with lysimeters and potential evapotranspiration indicated limited infiltration and even less deep percolation will occur on areas with sloped surfaces (1996). Work performed by the NRCS calculated the feedlot surface curve number (potential for runoff) as 90 on a scale of 100.

5.7.2 Land Application Areas

Soils underlying the land application areas are primarily of the Brackett-Maloterre (BxD), Pidcoke (PkB), Slidell (SsB) and Topsey (ToC) series. The application of wastewater and/or manure will be performed at agronomic rates according to an approved NUP/NMP. No pooling or ponding is anticipated due to application through sprinklers.

Figure 5.2 shows the soils underlying the property as delineated from the electronic NRCS Soil Survey map for Hamilton County. The electronic version of the soil survey is considered the most current soils information available. Table 5.1 is a summary of the estimated physical properties of the soils in the subject area, obtained from the NRCS Web Soil Survey.

Table 5.1: Estimated Soil Properties

Soil Series (Map ID)	Slope (%)	HSG	Depth (in)	USDA Soil Texture	Permeability / Infiltration Rate (in/hr)	Available Water Capacity (in/in of soil)
Brackett (BxD)	-----	C	0-4 4-14 14-60	Gravelly Clay Loam	0.6-2.0 0.6-2.0 0.06-2.0	0.11-0.16 0.08-0.16 -----
Maloterre	-----	D	0-5 5-80	Gravelly Clay Loam	0.6-2.0 0.06-0.6	0.11-0.13 -----
Pidcoke – PkB	1-3	D	0-11 11-18 18-80	Gravelly Clay Loam	0.6-2.0 0.6-2.0 0.06-0.6	0.11-0.15 0.11-0.15 -----
Slidell – SsB	1-3	D	0-19 19-32	Clay	.001-0.06 .001-0.06	0.10-0.18 0.10-0.18

Topsey – ToC	1-5	C	0-12 12-18 18-32	Clay Loam	0.6-2.0 0.6-2.0 0.20-2.0	0.12-0.20 0.10-0.20 0.10-0.20
Krum – KrB	1-5	C	0-8 8-36	Silty Clay	0.06-0.20 0.06-0.20	0.13-0.20 0.12-0.18
Nuff – NuC	2-6	C	0-5 5-13 13-23 23-33	Stony, Silty Clay Loam	0.6-2.0 0.20-0.6 0.06-0.20 0.06-0.20	0.08-0.11 0.07-0.11 0.11-0.16 0.11-0.16
Oglesby – OgB	1-3	D	0-17 17-35	Gravelly Silty Clay	0.06-0.20 0.06-2.0	0.10-0.15 -----
Wise – WsC	3-5	C	0-5 5-11 11-26	Clay Loam	0.6-2.0 0.6-2.0 0.6-2.0	0.15-0.20 0.15-0.24 0.15-0.24

The major soil series within each LMU are identified in Table 5.2. All soils at the site that have been identified by NRCS as being at high risk for various limitations are presented in Table 5.3. Associated best management practices will be implemented, as appropriate, based on physical and economic conditions.

Table 5.2: Major Soil Types

LMU ID	Major Soil Type
1, 2, 4, 5, 6	Brackett-Malotierre (BxD)
3, 7	Topsey (ToC)

Table 5.3: Potential Soil Limitations for Land Application

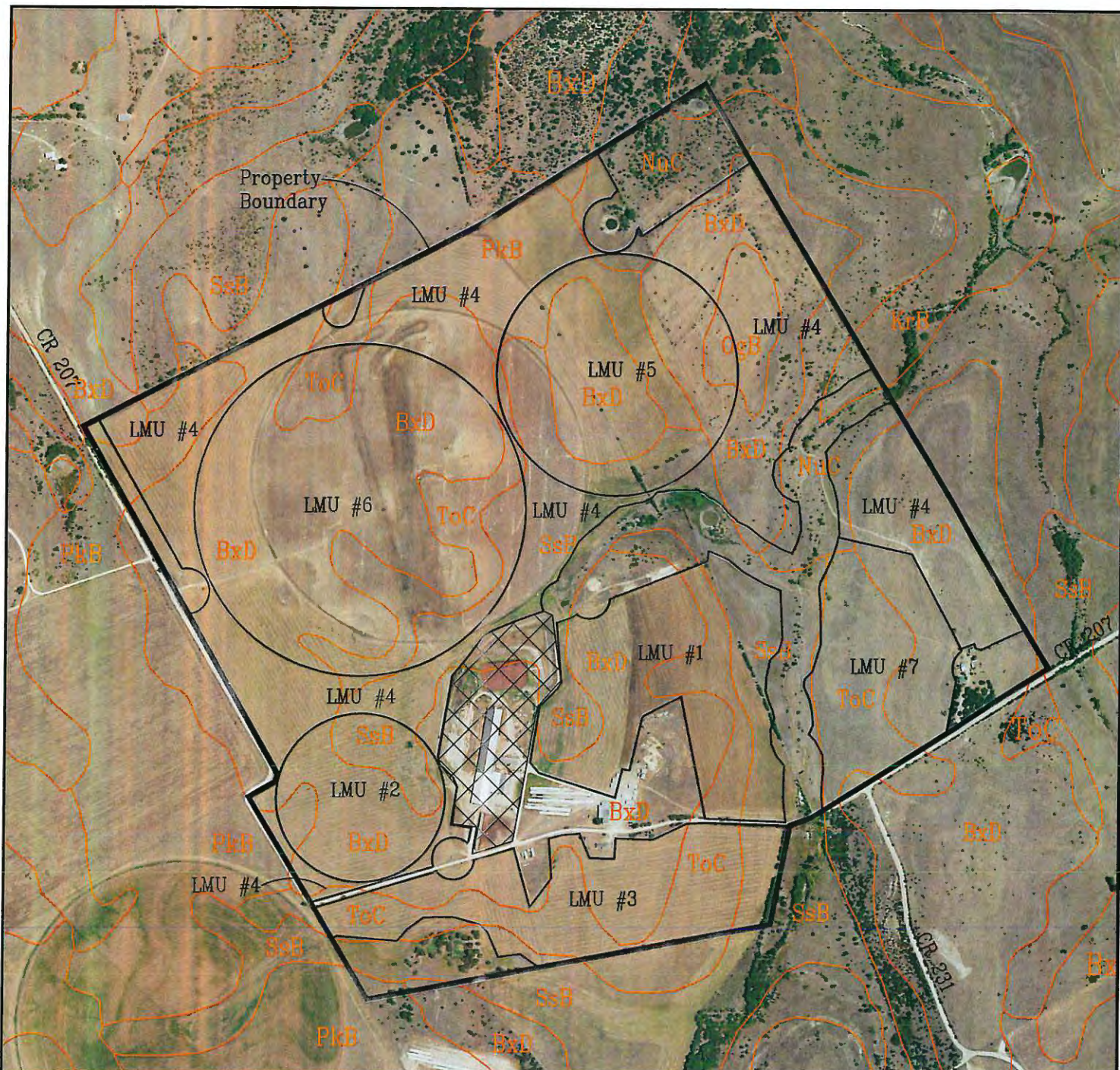
Soil Series	Potential Soil Limitations	Best Management Practices
BxD, OgB	Droughty Depth to Hard Bedrock Depth to Soft Bedrock	– Land Application not to exceed agronomic rates for nutrients and soil hydraulic rates (refer to NMP) – Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of that Land Management Unit. -No land application to inundated soils
PkB	Droughty Depth to Bedrock	– Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. – Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of that Land Management Unit. -No land application to inundated soils

Soil Series	Potential Soil Limitations	Best Management Practices
KrB, SsB	Slow Water Movement	- Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. -No land application to inundated soils
ToC, WsC	Depth to Soft Bedrock	- Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. - Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of that Land Management Unit. -No land application to inundated soils
NuC	Large Surface Stones Slow Water Movement	- Land Application will be based upon the AWC (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. - Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of that Land Management Unit. -No land application to inundated soils

5.7.3 Erosion

Figure 5.2 shows the onsite soils classified by NRCS as Highly Erodible Land (HEL), including Pidcoke (Pkb). LMUs will be protected with typical conservation farming practices within the standards of the NRCS. The following methods will be used to control/prevent erosion of exposed soils in the production area:

- Seeding/sprigging exposed areas with forage or cover crops,
- Constructing terraces or berms (shortening the length and steepness of slopes),
- Covering erosive areas with road surfacing materials,
- Implementing reduced tillage practices,
- Maintaining a cover of plants or crop residue.

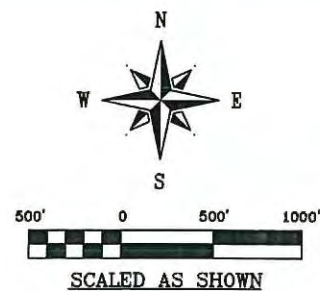


LEGEND:

 Denotes Production Area

For specifics on soils, refer to Table 5.1

Map Generated 7/2/2025



Source: USDA-NRCS Soil Survey, Soil Survey Geographic Database for (Hamilton County, TX). Available at: <http://websoilsurvey.nrcs.usda.gov>. Accessed July, 2017.

Okee Dairy
Hico, Texas
Hamilton County

NRCS Soils Map
Figure 5.2
Page 26

ENVIRO-AG
EAE
ENGINEERING, INC.

Enviro-Ag Engineering, Inc.
ENGINEERING CONSULTANTS
3404 Airway Blvd.
AMARILLO, TEXAS 79118
TEL (806) 353-6123 FAX (806) 353-4132

ARTIFICIAL FEATURES

5.8 Railroad Commission Records

A search of the RRC database files was performed and a search of the online RRC map viewer was conducted. No proposed locations or existing penetrations for oil and gas were identified on the subject property. Railroad Commission database information is included as an attachment to this document.

5.9 Ground Water Conservation District Records

There is no groundwater conservation district for Hamilton County; therefore, no data is available at this time. Should an abandoned penetration be encountered anywhere on the subject property at any time, the penetration will be marked, inspected and properly sealed to prevent a potential impact to the underlying aquifer. Appropriate well plugging reports shall be submitted as required to the Texas Department of Licensing and Regulation (TDLR) and will be maintained in the onsite PPP.

5.10 GeoSearch

GeoSearch was not utilized in this application.

5.11 Texas Water Development Board Water Data Interactive (WDI)

The TWDB WDI online database was reviewed for artificial penetrations. The database revealed water wells registered with the TWDB as being located on the subject property. The wells that could be correlated with onsite wells are shown on Table 5.4.

5.12 Natural Resource Conservation Service

The historical NRCS Soil Survey of Hamilton County (2006) was reviewed for locations of potential recharge features. No potential recharge features were identified.

5.13 Other Artificial Features

Numerous features, such as irrigation tail water pits and stock ponds, exist on the subject property and are shown to be buffered on Figure 5.3. These areas shall be buffered during land application events or backfilled prior to the first land application event. The facility has one burial site designated on Figure 5.3 for the disposal of dead animals. The location of the burial site on the property meets NRCS soil recommendations for large animal mortality burial.

5.14 Previous/Current Landowner

Mr. Oene Keuning was contacted regarding then presence of any potential recharge features on the property. Mr. Keuning is considered the most knowledgeable about the property. The previous landowner could not be located. Mr. Keuning confirmed the locations of all active water wells.

5.15 Onsite Inspection

The property has been inspected both on the ground and by historical mapping. All active water wells were documented on the property during the onsite inspection and are shown on Figure 5.3. The BMPs for all wells are listed in Table 5.4. Should any open well or test hole be encountered, it will be marked, reported to the Engineer, included on Figure 5.3 and properly plugged (30 TAC §321.34(f)(3)(B)). Well plugging reports shall be submitted as required to the Texas Department of Licensing and Registration (Well Drillers Board) and will be maintained in the onsite PPP.

All well data listed in Table 5.4 is based on information received from the water district, TCEQ and TWDB files, onsite inspection, and interviews of persons knowledgeable of the property. The map number corresponds to the location shown in Figure 5.3. The well identification number corresponds to the database number or drilling report number used by the water district, TCEQ or TWDB Commission.

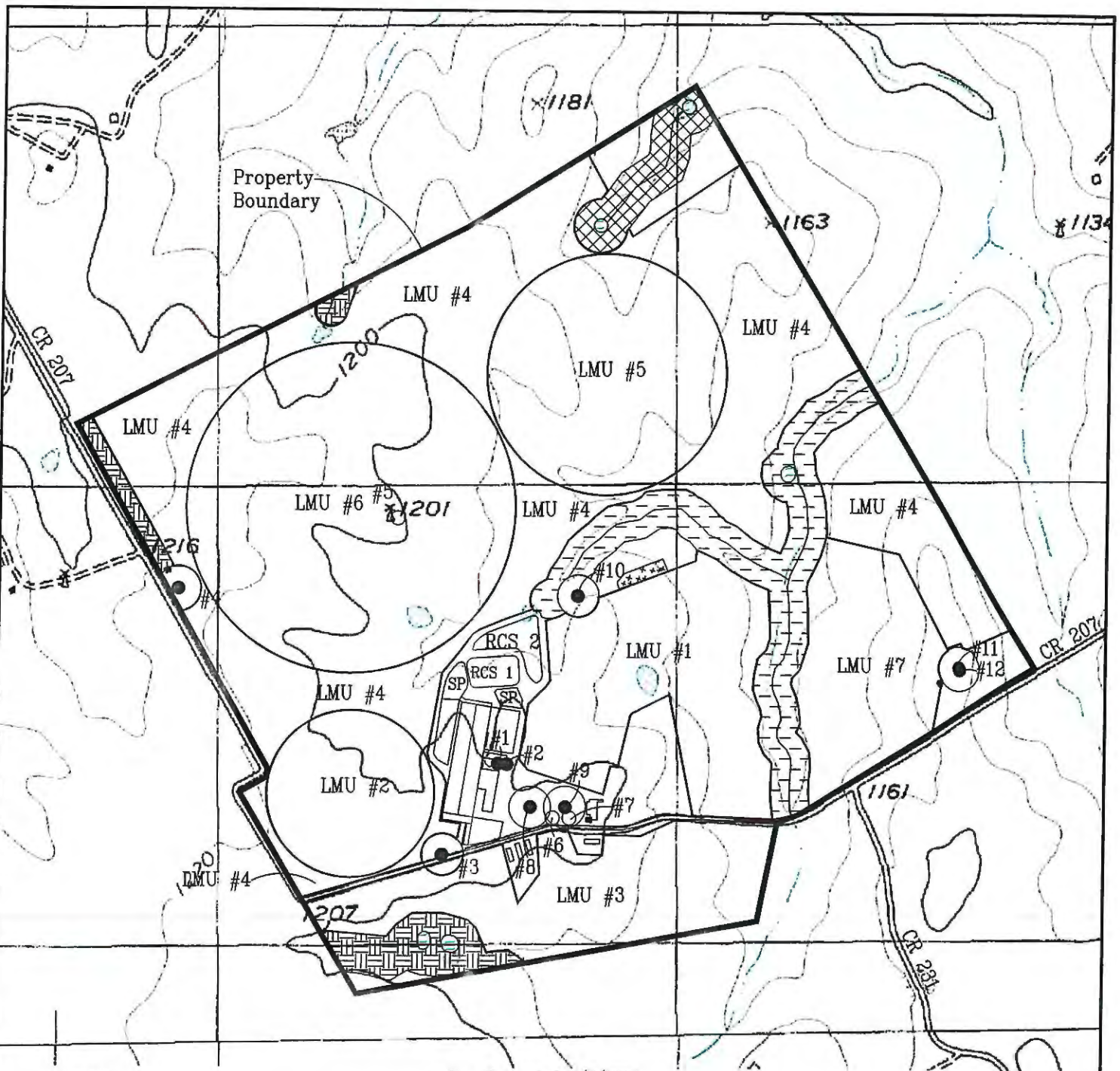
Table 5.4: Well Information

Map No.	Well ID	Best Management Practices
1	N/A	• See approved well variance.
2	N/A	• See approved well variance.
3	N/A	• Maintain 150-ft buffer
4	N/A	• Maintain 150-ft buffer
5	N/A	• See attached plugging report
6	N/A	• See attached plugging report
7	N/A	• See attached plugging report
8	478079	• Maintain 150-ft buffer
9	N/A	• Maintain 150-ft buffer
10	627628	• Maintain 150-ft buffer
11	N/A	• Maintain 150-ft buffer
12	N/A	• Maintain 150-ft buffer

Note: A copy of the well logs for onsite wells are attached.

No public water supply wells are located within 500 feet of the property boundary. All off-site wells within the required buffer distances required by this authorization are shown (on the Site Map) with their appropriate buffers. Wells outside the required buffer distances are shown for reference only.

All irrigation systems or water distribution systems into which any type of chemical or foreign substance, such as wastewater, is distributed into the water pumped from the well are required by 16 TAC §76 to install an in-line, automatic quick-closing check valve capable of preventing pollution of groundwater.



Map Generated 7/2/2025

LEGEND:

- Denotes Plugged Water Well
- Denotes Well 150-ft Buffer
- Denotes Well
- ▤ Denotes 128ft Buffer
- ▥ Denotes 136ft Buffer
- ▦ Denotes 142ft Buffer
- * * * Denotes Burial Site
- ~ ~ ~ Denotes Fresh Water Pond



SCALED AS SHOWN

Source: USDA-NRCS. Geospatial Data Gateway. Available at:
<http://datagateway.nrcs.usda.gov/>. Digital Raster
 Graphic County Mosaic by NRCS - Accessed July, 2017.

Note: Refer to Figure 1.4 for a detailed production area map.

Okee Dairy
 Hico, Texas
 Hamilton County

Recharge Feature Map
 Figure 5.3
 Page 29



Enviro-Ag Engineering, Inc.
 ENGINEERING CONSULTANTS
 3404 Airway Blvd.
 AMARILLO, TEXAS 79118
 TEL (806) 353-6123 FAX (806) 353-4132

REFERENCES

- Ashworth and Hopkins, November 1995. Aquifers of Texas. Report 345, Texas Water Development Board.
- Bureau of Economic Geology, The University of Texas at Austin, Geologic Atlas of Texas - Abilene Sheet, 1972.
- Evans, Steve. USDA-ARS Bushland, Texas - Telephone Interview, 1996.
- Keuning, Oene Current Landowner Interview, June 2025.
- Sweeten, J.M. 1990. Cattle Feedlot Waste Management Practices for Water and Air Pollution Control. B-1671, Texas Agricultural Extension Service, Texas A&M University System, 24 pp.
- Texas Railroad Commission Files Search, June 2025.
- Texas Railroad Commission, GIS Data Viewer, Accessed June 2025.
- TCEQ and Texas Water Development Board, Files Search, June 2025.
- Texas Water Development Board, Water Data Interactive (WDI). Retrieved June 2025, from <http://www3.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer>
- USDA NRCS, Soil Survey of Hamilton County, Texas, 2006.
- USDA NRCS, National Soil Database, SSURGO digital soil data for Hamilton County, Texas, Retrieved June 2025. http://www.ftw.nrcs.usda.gov/ssur_data.html
- USDA-NRCS Electronic Field Office Technical Guide, Soil Information Database – Hamilton County, Texas, Retrieved June 2025. <http://www.nrcs.usda.gov/technical/efotg>.
- USGS. Groundwater Atlas of the United States. Oklahoma and Texas. HA_730E. http://capp.water.usgs.gov/gwa/ch_e/E_text8.html, March 2003.

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factor Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic layer.

Report—RUSLE2 Related Attributes

Soil properties and interpretations for erosion runoff calculations. The surface mineral horizon properties are displayed or the first mineral horizon below an organic surface horizon. Organic horizons are not displayed.

RUSLE2 Related Attributes—Hamilton County, Texas								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
BxD—Brackett-Malotierre complex, 2 to 12 percent slopes								
Brackett	55	161	D	.24	2	32.0	40.0	28.0
Malotierre	30	200	D	.28	1	31.0	39.0	30.0
KrB—Krum silty clay, cool, 1 to 5 percent slopes								
Krum, cool	85	200	C	.28	5	7.0	48.0	45.0
NuC—Nuff very stony silty clay loam, 2 to 6 percent slopes								
Nuff	85	180	C	.28	5	17.0	49.0	34.0
OgB—Oglesby gravelly silty clay, 1 to 3 percent slopes								
Oglesby	100	200	D	.28	1	7.2	47.8	45.0
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes								
Pidcoke	85	200	D	.24	1	34.0	37.0	29.0
SsB—Slidell clay, 1 to 3 percent slopes								
Slidell	85	298	D	.17	5	22.0	28.0	50.0
ToC—Topsey clay loam, 1 to 5 percent slopes								
Topsey	85	200	C	.15	3	30.0	40.0	30.0

RUSLE2 Related Attributes--Hamilton County, Texas								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
WsC--Wise clay loam, 3 to 5 percent slopes, moderately eroded								
Wise, moderately eroded	85	151	C	.32	3	29.0	43.0	28.0

Data Source Information

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

Selected Soil Interpretations

This report allows the customer to produce a report showing the results of the soil interpretation(s) of his or her choice. It is useful when a standard report that displays the results of the selected interpretation(s) is not available.

When customers select this report, they are presented with a list of interpretations with results for the selected map units. The customer may select up to three interpretations to be presented in table format.

For a description of the particular interpretations and their criteria, use the "Selected Survey Area Interpretation Descriptions" report.

Report—Selected Soil Interpretations

Selected Soil Interpretations—Hamilton County, Texas							
Map symbol and soil name	Pct. of map unit	AWM - Irrigation Disposal of Wastewater		AWM - Land Application of Municipal Sewage Sludge		ENG - Sewage Lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BxD—Brackett-Maloterre complex, 2 to 12 percent slopes							
Brackett	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Droughty	1.00	Droughty	1.00	Slope	0.68
		Seepage, porous bedrock	0.50			Seepage	0.50
		Too steep for surface application	0.32				
Maloterre	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Droughty	1.00	Droughty	1.00	Slope	0.08
		Slow water movement	0.68	Slow water movement	0.68		
		Seepage, porous bedrock	0.50				
KrB—Krum silty clay, cool, 1 to 5 percent slopes							
Krum, cool	85	Very limited		Very limited		Somewhat limited	
		Slow water movement	1.00	Slow water movement	1.00	Slope	0.08
		Seepage, porous bedrock	0.30				

Selected Soil Interpretations--Hamilton County, Texas							
Map symbol and soil name	Pct. of map unit	AWM - Irrigation Disposal of Wastewater		AWM - Land Application of Municipal Sewage Sludge		ENG - Sewage Lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NuC---Nuff very stony silty clay loam, 2 to 6 percent slopes							
Nuff	85	Very limited		Very limited		Very limited	
		Large stones on the surface	1.00	Large stones on the surface	1.00	Large stones	1.00
		Slow water movement	1.00	Slow water movement	1.00	Slope	0.32
		Too steep for surface application	0.08				
OgB---Oglesby gravelly silty clay, 1 to 3 percent slopes							
Oglesby	100	Very limited		Very limited		Very limited	
		Droughty	1.00	Droughty	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Seepage	0.21
		Slow water movement	1.00	Slow water movement	1.00		
PkB---Pidcoke gravelly clay loam, 1 to 3 percent slopes							
Pidcoke	85	Very limited		Very limited		Very limited	
		Droughty	1.00	Droughty	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Seepage	0.50
		Slow water movement	0.68	Slow water movement	0.68		
		Seepage, porous bedrock	0.50				
SsB---Slidell clay, 1 to 3 percent slopes							
Slidell	85	Very limited		Very limited		Not limited	
		Slow water movement	1.00	Slow water movement	1.00		
ToC---Topsey clay loam, 1 to 5 percent slopes							
Topsey	85	Somewhat limited		Somewhat limited		Very limited	
		Droughty	0.40	Droughty	0.40	Depth to soft bedrock	1.00
		Slow water movement	0.37	Slow water movement	0.37	Seepage	0.50
		Depth to bedrock	0.29	Depth to bedrock	0.29	Slope	0.08
				Shallow to densic materials	0.29		

Selected Soil Interpretations--Hamilton County, Texas							
Map symbol and soil name	Pct. of map unit	AWM - Irrigation Disposal of Wastewater		AWM - Land Application of Municipal Sewage Sludge		ENG - Sewage Lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WsC--Wise clay loam, 3 to 5 percent slopes, moderately eroded							
Wise, moderately eroded	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.80	Depth to bedrock	0.80	Depth to soft bedrock	1.00
		Droughty	0.17	Shallow to densic materials	0.79	Seepage	0.50
		Too steep for surface application	0.08	Droughty	0.17	Slope	0.32

Data Source Information

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

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Report—Physical Soil Properties

Physical Soil Properties—Hamilton County, Texas														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
BxD—Brackett- Maloterre complex, 2 to 12 percent slopes														
Brackett	0-4	20-32- 45	20-40- 53	27-28- 35	1.25-1.40	4.00-14.00	0.11-0.16	2.1-5.4	1.0-3.0	.24	.24	2	4L	86
	4-14	20-35- 45	20-40- 53	20-25- 35	1.40-1.46	4.00-14.00	0.08-0.16	0.5-5.1	0.5-2.0	.32	.32			
	14-60	—	—	—	—	0.42-14.00	—	—	—					
Maloterre	0-5	22-31- 42	26-39- 50	28-30- 34	1.36-1.47	4.00-14.00	0.11-0.13	2.4-4.3	0.5-1.0	.15	.28	1	5	56
	5-80	—	—	—	—	0.42-4.00	—	—	—					
KrB—Krum silty clay, cool, 1 to 5 percent slopes														
Krum, cool	0-8	2- 7- 15	40-48- 58	40-45- 55	1.00-1.40	0.42-1.40	0.13-0.20	5.5-13.6	1.0-5.0	.28	.28	5	4	86
	8-36	2- 5- 33	25-45- 58	40-50- 60	1.15-1.45	0.42-1.40	0.12-0.18	4.8-12.5	1.0-4.0	.24	.24			
	36-48	2- 5- 33	25-45- 58	40-50- 60	1.15-1.50	0.42-1.40	0.12-0.18	4.5-10.8	0.1-2.0	.28	.28			
	48-80	2- 5- 33	25-48- 63	35-47- 60	1.30-1.55	0.42-4.00	0.07-0.18	3.1-10.2	0.1-1.0	.32	.32			

Physical Soil Properties—Hamilton County, Texas														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/in	Pct	Pct					
NuC—Nuff very stony silty clay loam, 2 to 6 percent slopes														
Nuff	0-5	10-17- 20	40-49- 59	27-34- 40	1.28-1.39	4.00-14.00	0.08-0.11	1.6-4.7	2.0-4.0	.10	.28	5	6	48
	5-13	10-19- 20	40-45- 59	27-36- 40	1.29-1.43	1.40-4.00	0.07-0.11	1.6-4.5	1.5-2.5	.10	.32			
	13-23	1- 6- 11	40-48- 59	40-46- 59	1.41-1.44	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	23-33	1- 6- 11	40-48- 59	40-46- 59	1.41-1.44	0.42-1.40	0.11-0.16	4.7-10.3	0.5-1.0	.32	.32			
	33-80	21-26- 31	10-29- 39	40-45- 60	1.31-1.45	0.42-1.40	0.12-0.18	5.3-10.2	0.3-0.8	.24	.24			
OgB—Oglesby gravelly silty clay, 1 to 3 percent slopes														
Oglesby	0-17	- 7-	-48-	40-45- 50	1.25-1.45	0.42-1.40	0.10-0.15	6.0-8.9	1.0-3.0	.15	.28	1	5	56
	17-35	—	—	—	—	0.42-14.00	—	—	—					
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes														
Pidcoke	0-11	22-34- 44	22-37- 50	28-29- 35	1.28-1.39	4.00-14.00	0.11-0.15	2.6-5.8	1.0-3.0	.17	.24	1	5	56
	11-18	5-34- 44	21-37- 60	28-29- 35	1.37-1.52	4.00-14.00	0.11-0.15	2.0-5.5	0.5-1.0	.24	.32			
	18-80	—	—	—	—	0.42-4.00	—	—	—					

Physical Soil Properties—Hamilton County, Texas														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
SsB—Slidell clay, 1 to 3 percent slopes														
Slidell	0-19	0-22- 35	20-28- 40	40-50- 60	1.10-1.45	0.01-0.42	0.10-0.18	7.0-16.0	1.0-4.0	.17	.17	5	4	86
	19-32	0-22- 35	20-28- 60	40-50- 60	1.10-1.45	0.01-0.42	0.10-0.18	6.6-17.0	1.0-3.0	.24	.24			
	32-49	0-22- 35	20-28- 60	40-50- 60	1.20-1.55	0.01-0.42	0.10-0.18	4.9-13.0	0.1-1.0	.24	.24			
	49-80	0-22- 35	20-28- 60	40-50- 60	1.20-1.55	0.01-0.42	0.10-0.18	4.9-10.8	0.1-1.0	.24	.24			
ToC—Topsey clay loam, 1 to 5 percent slopes														
Topsey	0-12	20-30- 45	24-40- 53	27-30- 35	1.32-1.50	4.00-14.00	0.12-0.20	1.1-4.5	2.0-5.0	.15	.15	3	4L	86
	12-18	10-30- 45	20-40- 65	20-30- 35	1.32-1.50	4.00-14.00	0.10-0.20	0.3-4.5	1.0-3.0	.28	.28			
	18-32	10-30- 45	20-40- 68	20-30- 40	1.50-1.65	1.40-14.00	0.10-0.20	0.3-5.4	1.0-2.0	.32	.32			
	32-80	5-15- 30	24-47- 65	30-38- 50	1.65-1.90	1.40-4.00	0.02-0.10	0.6-5.9	0.5-1.0	.32	.32			
WsC—Wise clay loam, 3 to 5 percent slopes, moderately eroded														
Wise, moderately eroded	0-5	20-29- 45	26-43- 53	27-28- 35	1.30-1.46	4.00-14.00	0.15-0.20	3.0-4.3	0.5-2.0	.32	.32	3	4L	86
	5-11	15-32- 50	15-40- 68	15-28- 35	1.41-1.46	4.00-14.00	0.15-0.24	1.3-3.8	0.5-1.0	.37	.37			
	11-26	15-32- 50	15-40- 68	15-28- 35	1.36-1.58	4.00-14.00	0.15-0.24	1.3-3.7	0.2-0.5	.43	.43			
	26-80	15-30- 80	5-50- 83	2-20- 35	1.66-1.75	1.40-14.00	0.01-0.14	0.0-4.3	0.1-0.5	.55	.55			

Data Source Information

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



Okee Dairy - 5/2025



**Texas Water
Development Board**

May 7, 2025



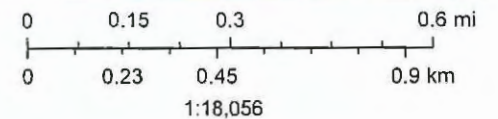
Plugging Reports



Well Reports



TWDB Groundwater



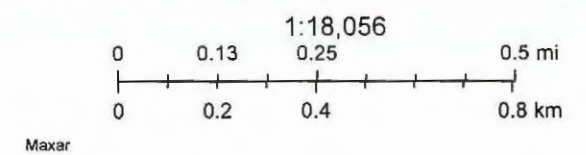
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

The data in Water Data Interactive represents the best available information provided by the TWDB and third-party cooperators of the TWDB. The TWDB provides information via this web site as a public service. Neither the State of Texas nor the TWDB assumes any legal liability or responsibility or makes any guarantees or warranties as to the accuracy, completeness or suitability of the information for any particular purpose. The TWDB systematically revises or removes data discovered to be incorrect. If you find inaccurate information or have questions, please contact

TEXAS WATER DEVELOPMENT BOARD



June 18, 2025



Public GIS Viewer Legend

Well Number	Water Supply from Oil / Gas
Well Locations	Observation
Permitted Location	Observation from Oil
Dry Hole	Observation from Gas
Oil	Observation from Oil / Gas
Gas	Storage
Oil / Gas	Service
Plugged Oil	Service from Oil
Plugged Gas	Service from Gas
Canceled / Abandoned Location	Service from Oil / Gas
Plugged Oil / Gas	Storage from Oil / Gas
Injection / Disposal	Injection / Disposal from Storage
Core Test	Injection / Disposal from Storage / Oil
Sulfur Test	Injection / Disposal from Storage / Gas
Storage from Oil	Injection / Disposal from Storage / Oil / Gas
Storage from Gas	Observation from Storage
Shut-In Oil	Observation from Storage / Oil
Shut-In Gas	Observation from Storage / Gas
Injection / Disposal from Oil	Observation from Storage / Oil / Gas
Injection / Disposal from Gas	Service from Storage
Injection / Disposal from Oil / Gas	Service from Storage / Oil
Geothermal	Service from Storage / Gas
Brine Mining	Service from Storage / Oil / Gas
Water Supply	Plugged Storage
Water Supply from Oil	Plugged Storage / Oil
Water Supply from Gas	

Page 1 of 3

Public GIS Viewer Legend

Plugged Storage / Gas	Storage / Brine Mining / Oil
Plugged Storage Oil / Gas	Storage / Brine Mining / Gas
Brine Mining	Storage / Brine Mining / Oil / Gas
Brine Mining / Oil	Injection / Disposal from Storage / Brine Mining
Brine Mining / Gas	Injection / Disposal from Storage / Brine Mining / Oil
Brine Mining / Oil / Gas	Injection / Disposal from Storage / Brine Mining / Gas
Injection / Disposal from Brine Mining	Injection / Disposal from Storage / Brine Mining / Oil / Gas
Injection / Disposal from Brine Mining / Oil	Observation from Storage / Brine Mining
Injection / Disposal from Brine Mining / Gas	Observation from Storage / Brine Mining / Gas
Injection / Disposal from Brine Mining / Oil / Gas	Observation from Storage / Brine Mining / Oil / Gas
Observation from Brine Mining	Plugged Storage / Brine Mining
Observation from Brine Mining / Oil	Plugged Storage / Brine Mining / Oil
Observation from Brine Mining / Gas	Plugged Storage / Brine Mining / Gas
Observation from Brine Mining / Oil / Gas	Plugged Storage / Brine Mining / Oil / Gas
Service from Brine Mining	Orphan Wells
Service from Brine Mining / Oil	Commercial Disposal
Service from Brine Mining / Gas	Injection/Disposal
Service from Brine Mining / Oil / Gas	HCTS Deeper than 15,000 ft.
Plugged Brine Mining	
Plugged Brine Mining / Oil	
Plugged Brine Mining / Gas	
Plugged Brine Mining / Oil / Gas	
Storage / Brine Mining	

Page 2 of 3

Public GIS Viewer Legend

High Cost Tight Sands	Alert Areas
EOR H13 Oil Wells	Water
Well Logs	City Limits
Horiz/Dir Surface Locations	Counties
Horizontal Well	Operator Cleanup Program Sites
Directional Well	Active
Horizontal/Directional Lines	Closed
LPGAS Sites	Voluntary Cleanup Program Sites
Q Pipelines	VCP, Accepted
Pipelines	VCP, Closed
Bay Tracts	Brownfield Response Program Sites
Offshore Areas	Brownfield, Accepted
Offshore Tracts	Brownfield, Closed
Water Lines	Commercial Waste Disposal Sites & Discharge Permits
Subdivisions	Commercial Waste Disposal
Railroads	Discharge Permits
Surveys	Oil and Gas Districts
Quads	AED Districts
	Pipeline Safety Regions

Page 3 of 3

runoff during the design rainfall event, the manure or sludge areas must be located within the drainage area of a RCS and accounted for in the design calculations of the RCS.

- (3) Manure or sludge stored for more than thirty (30) days must be stored within the drainage area of a RCS or stored in a manner (i.e. storage shed, bermed area, tarp covered area, etc.) that otherwise prevents contaminated storm water runoff from leaving the storage area. All storage sites and structures located outside the drainage area shall be designated on the site map.
 - (4) Temporary storage of manure or sludge shall not exceed thirty (30) days and is allowed only in a LMU or a RCS drainage area. Temporary storage of manure and sludge, near water courses or near recharge features is prohibited unless protected by berms or other structures to prevent inundation or damage that may occur.
 - (e) Composting. Composting on-site is prohibited on this CAFO unless this permit is amended to include composting requirements.
7. Site Specific Conservation Practice.
- (a) Well Protection Requirements
 - (1) The permittee shall not locate or operate a new RCS, holding pen, or LMU within the following buffer zones:
 - (i) public water supply wells 500 feet;
 - (ii) wells used exclusively for private water supply 150 feet; or
 - (iii) wells used exclusively for agriculture irrigation 100 feet.
 - (2) Irrigation of wastewater directly over a well head will require a structure protective of the wellhead that will prevent contact from irrigated wastewater.
 - (3) Construction of any new water wells must be done by a licensed water well driller.
 - (4) All abandoned and unuseable wells shall be plugged according to 16 TAC §76.104.
 - (5) The permittee may continue the operation and use of any existing holding pens and RCSs located within the required well buffer zones provided they are in accordance with the facility's approved recharge feature evaluation and certification. Buffer zone variance documentation must be kept on-site and made available to TCEQ personnel upon request. Well Buffer Exception requests for Wells #1 and #2 were submitted to and approved by the TCEQ Water Quality Assessment Team. Permittee shall implement the requirements of the Well Buffer Exceptions approval by TCEQ. Table 3 below shows the status of all wells on the facility and the best management practices (BMPs) used to protect them.

Table 3: Well Status and Best Management Practices

Well Number*	Status	BMPs
1	Producing	Steel sleeve, concrete surface slab
2	Producing	Steel sleeve, concrete surface slab
3	Producing	Maintain 150 ft buffer
4**	Producing	Maintain 150 ft buffer

Texas Department of License and Regulation
Water Well Driller/Pump Installer Program
P.O. Box 12157 Austin, Texas 78711 (512)463-7860 FAX (512)463-8618
Email address: water@texas.gov

This form must be completed and filed with the department within 30 days following the plugging of the well.

PLUGGING REPORT

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name Jewel Alt	Address 299 CR 4135	City Canton	State Tx	Zip 75103
--------------------------	-------------------------------	-----------------------	--------------------	---------------------

2) WELL LOCATION

County Hamilton	Physical Address County Road 207	City	State	Zip
---------------------------	--	------	-------	-----

3) Owner's Well No.

Lease	Lat	Grid #
-------	-----	--------

4) Type of Well

☒ Water ☐ Monitor ☐ Injection ☐ De-Watering

5) NT

Drill, Pump Installer, or Landowner performing the plugging operations must locate and identify the location of the well within a specific grid on a full scale gridded map available from Texas Natural Resource Information Service. The location of the well should be denoted within the grid by placing a corresponding dot in the square to the right. The legal description is optional.

B) HISTORICAL DATA ON WELL TO BE PLUGGED (if available)

6) Driller

Unknown

License No.

7) Drilled

Unknown

8) Diameter of hole

3

Inches

9) Total depth of well **45** feet

String Wt. **45**

207

C. CURRENT PLUGGING DATA

10) Date well plugged

07 / 25 / 05

12) Name of Driller/Pump Installer or Well Owner performing the plugging

J. Alt

License No.

13) CASING AND CEMENTING DATA RELATIVE TO THE PLUGGING OPERATIONS

CASING LEFT IN WELL

DIAMETER (Inches)	FROM (feet)	TO (feet)

CEMENT/BENTONITE PLUG(S) PLACED IN WELL

FROM (feet)	TO (feet)	SACKS
0-2 ft concrete		partial
2-43 bentonite		3

11) REMOVE ALL REMOVEABLE CASING

Please check box beside the method of plugging used

- ☐ Tremmie pipe cement from bottom to top.
- ☐ Tremmie pipe bentonite from bottom to 2 feet from From surface, cement top 2 feet.
- ☒ Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet.
- ☐ Large diameter well filled with clay material from top to bottom.

D. VALIDATION OF INFORMATION INCLUDED IN FORM

I certify that I plugged this well (or the well was plugged under my supervision) and that all of the statements herein are true and correct. I understand that failure to complete items 1 through 13 will result in the report(s) being returned for completion and resubmitted.

Company or individual's Name (type or print)

Jewel Alt

Address

299 CR 4135

City

Canton

State

Tx

Zip

75103

Signature

J. Alt
Licensed Driller/Pump Installer

7136125
Date

Signature

Apprentice

Date

Texas Department of License and Regulation
Water Well Driller/Pump Installer Program
P.O. Box 12157 Austin, Texas 78711 (512)463-7800 FAX (512)463-8618
Email address: water.well.drilling@state.tx.us

This form must be completed
and filed with the department
within 30 days following the
plugging of the well

PLUGGING REPORT

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name Jewel Alt	Address 299 CR 4135	City Canton	State Tx.	Zip 75103
--------------------------	-------------------------------	-----------------------	---------------------	---------------------

2) WELL LOCATION

County Hamilton	Physical Address County Road 207	City	State	Zip
---------------------------	--	------	-------	-----

3) Owner's Well No.

Long.

Lat.

Grid #

4) Type of Well

☒ Water

☐ Monitor

☐ Injection

☐ De-Watering

5)

NT

Drill, Pump Installer, or Landowner performing the plugging operations must locate and identify the location of the well within a specific grid on a full scale gridded map available from Texas Natural Resource Information Service. The location of the well should be denoted within the grid by placing a corresponding dot in the square to the right. The legal description is optional.

B) HISTORICAL DATA ON WELL TO BE PLUGGED (If available)

6) Driller

Unknown Driller

License No.

7) Drilled

Unknown

8) Diameter of hole

4 inches

Inches

9) String weight at 40 feet

307

C. CURRENT PLUGGING DATA

10) Date well plugged

07/25/05

12) Name of Driller/Pump Installer or Well Owner performing the plugging

J. Alt

License No.

13) CASING AND CEMENTING DATA RELATIVE TO THE PLUGGING OPERATIONS

CASING LEFT IN WELL

DIAMETER (inches)	FROM (feet)	TO (feet)

CEMENT/BENTONITE PLUG(S) PLACES IN WELL

FROM (feet)	TO (feet)	SACKS
0-2 feet concrete - partial		
2-40 feet bentonite		5

11) REMOVE ALL REMOVEABLE CASING

Please check box beside the method of plugging used



Tremmie pipe cement from bottom to top.



Tremmie pipe bentonite from bottom to 2 feet from From surface, cement top 2 feet.



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



Large diameter well filled with clay material from top to bottom.

D. VALIDATION OF INFORMATION INCLUDED IN FORM

I certify that I plugged this well (or the well was plugged under my supervision) and that all of the statements herein are true and correct. I understand that failure to complete items 1 through 13 will result in the report(s) being returned for completion and resubmitted.

Company or individual's Name (type or print)

Jewel Alt

Address

299 CR 4135

City **Canton**

State **Tx**

Zip **75103**

Signature

[Signature]
Licensed Driller/Pump Installer

Date

7/26/05

Signature

Appendix

Date

Texas Department of License and Regulation Water Well Driller/Pump Installer Program P.O. Box 12157 Austin, Texas 78711 (512)453-7880 FAX (512)453-8616 Email address: wdr@texas.gov					This form must be completed and filed with the department within 30 days following the plugging of the well.													
PLUGGING REPORT																		
A. WELL IDENTIFICATION AND LOCATION DATA																		
Name Jewel Alt		Address 299 CR 4135		City Canton	State Tx.	Zip 75103												
County Hamilton		Physical Address County Road 207		City	State	Zip												
3) Owner's Well No.		Loss		Lat		Grid #												
4) Type of Well ☒ Water ☐ Monitor ☐ Injection ☐ De-Watering						5) NT												
Drill, Pump Installer, or Landowner performing the plugging operations must locate and identify the location of the well within a specific grid on a full scale gridded map available from Texas Natural Resource Information Service. The location of the well should be denoted within the grid by placing a corresponding dot in the square to the right. The legal description is optional.						PR 207 *												
B. HISTORICAL DATA ON WELL TO BE PLUGGED (if available)																		
6) Driller Driller unknown-old windmill well				License No.														
7) Drilled unknown		8) Diameter of hole 4 inches		9) String weight at 35 ft. 100 lbs														
C. CURRENT PLUGGING DATA																		
10) Date well plugged 11 / 11 / 04				11) REMOVE ALL REMOVEABLE CASING Please check box beside the method of plugging used														
12) Name of Driller/Pump Installer or Well Owner performing the plugging J. Alt				☐ Tremmie pipe cement from bottom to top. ☐ Tremmie pipe bentonite from bottom to 2 feet from From surface, cement top 2 feet. ☒ Pour in 3/8 bentonite chips when standing water in well is less than 100 feet depth, cement top 2 feet. ☐ Large diameter well filled with clay material from top to bottom.														
License No.																		
13) CEMENT AND BENTONITE PLUGS RELATIVE TO THE PLUGGING OPERATIONS CARRY LEFT IN WELL																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DEPT (feet)</th> <th>FROM (feet)</th> <th>TO (feet)</th> </tr> </thead> <tbody> <tr><td> </td><td> </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> </tbody> </table>							DEPT (feet)	FROM (feet)	TO (feet)									
DEPT (feet)	FROM (feet)	TO (feet)																
CEMENT/BENTONITE PLUG(S) PLACED IN WELL																		
FROM (feet)		TO (feet)		SACKS														
35		top		5														
D. VALIDATION OF INFORMATION INCLUDED IN FORM																		
I certify that I plugged this well (or the well was plugged under my supervision) and that all of the statements herein are true and correct. I understand that failure to complete items 1 through 13 will result in the report(s) being returned for completion and resubmitted.																		
Company or individual's Name (type or print) Jewel Alt				State Tx Zip 75103														
Address 299 CR 4135		City Canton		State Tx Zip 75103														
Signature <i>[Signature]</i> Licensed Driller/Pump Installer		Signature Owner		Signature Driller/Pump Installer		Date												

STATE OF TEXAS WELL REPORT for Tracking #478079

Owner:	Oene Keuning	Owner Well #:	No Data
Address:	4548 CR 207 Hico, TX 76457	Grid #:	41-08-9
Well Location:	4548 CR 207 Hico, TX 76457	Latitude:	31° 52' 46.79" N
Well County:	Hamilton	Longitude:	098° 01' 52.2" W
		Elevation:	No Data

Type of Work: **New Well**Proposed Use: **Irrigation**Drilling Start Date: **4/12/2017**Drilling End Date: **4/12/2017**

Borehole:

Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
14	0	5
12.25	5	600

Drilling Method: **Air Rotary**Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
320	600	Gravel	12/20

Annular Seal Data:

Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
0	320	Cement 95 Bags/Sacks

Seal Method: **Tremie**Distance to Property Line (ft.): **150+**Sealed By: **Driller**Distance to Septic Field or other
concentrated contamination (ft.): **150+**Distance to Septic Tank (ft.): **No Data**Method of Verification: **Owner**Surface Completion: **Steel Cased**Surface Completion by **Driller**Water Level: **440 ft. below land surface on 2017-04-13**Packers: **No Data**Type of Pump: **Submersible**Pump Depth (ft.): **546**Well Tests: **Jetted**Yield: **100+ GPM with unknown ft. drawdown after 1 hours**

Water Quality:

Strata Depth (ft.)	Water Type
310 - 577	2nd trinity

Chemical Analysis Made: **No**

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

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

Company Information: **Associated Well Services, Inc.**

**PO Box 16
Stephenville, TX 76401**

Driller Name: **Russell Langford**

License Number: **56062**

Comments: **No Data**

Report Amended on 5/1/2018 by Request #24979

Report Amended on 6/5/2018 by Request #25224

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	1	Topsoil
1	10	Tan Clay Shale & Limestone
10	68	Grey Clay, Shale & Limestone
68	105	Grey Sandy Clay with Streaks of sand
105	310	Grey Clay, Shale & Limestone
310	455	Blue Sandy Clay & Sand
455	490	Red Clay
490	577	Sand, Blue Sandy Clay & Tiny Gravel
577	600	Yellow Clay & Shale

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
8.625	Blank	New Steel	0.25	0	417
8.625	Screen	New Rod Base Stainless Steel	.250 0.020	417	580
8.625	Blank	New Steel	0.25	580	600

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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

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

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

STATE OF TEXAS WELL REPORT for Tracking #627628

Owner:	Oene Keuning	Owner Well #:	No Data
Address:	4547 CR 207 Hico, TX 76457	Grid #:	41-08-9
Well Location:	4547 CR 207 Hico, TX 76457	Latitude:	31° 53' 01.57" N
Well County:	Hamilton	Longitude:	098° 01' 47.46" W
		Elevation:	No Data

Type of Work: **New Well**Proposed Use: **Domestic**Drilling Start Date: **12/12/2022** Drilling End Date: **12/14/2022**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	12.25	0	575

Drilling Method: **Air Rotary**Borehole Completion: **Filter Packed**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Filter Material</i>	<i>Size</i>
Filter Pack Intervals:	290	575	Sand	12/20

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks & material)</i>
Annular Seal Data:	0	290	Cement 95 Bags/Sacks

Seal Method: **Positive Displacement**Distance to Property Line (ft.): **50+**Sealed By: **Driller**Distance to Septic Field or other
concentrated contamination (ft.): **100+**Distance to Septic Tank (ft.): **50+**Method of Verification: **Customer**Surface Completion: **Steel Cased**

Surface Completion by Driller

Water Level: **392 ft. below land surface on 2022-12-14**Packers: **No Data**Type of Pump: **Submersible**Pump Depth (ft.): **546**Well Tests: **Jetted** Yield: **100+ GPM with Unk ft. drawdown after 1 hours**

Water Quality:

Strata Depth (ft.)	Water Type
360 - 553	Trinity

Chemical Analysis Made: **No**

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

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

Company Information: **Associated Well Services, Inc.**
PO Box 16
Stephenville, TX 76401

Driller Name: **Colton Aardal** License Number: **55034**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	2	Topsoil
2	15	Caliche
15	40	Limestone & Gray Shale
40	95	Sandy Blue Clay, Sand & Gray Shale
95	280	Limestone & Gray Shale
280	330	Sandy Blue Clay, Gray Shale & Sand
330	340	Red Clay & Blue Sandy Clay
340	360	Blue Sandy Clay
360	390	Blue Sandy Clay & Sand
390	430	Sand & Gravel & Sandstone
430	495	Red Clay & Blue Sandy Clay
495	553	Sand, Gravel, Sandstone & Limestone Streaks
553	575	Hard Yellow Shale & Limestone

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
8	Blank	New Steel	Sch 40	0	396
8	Screen	New Rod Base Stainless Steel	0.020	396	555
8	Blank	New Steel	Sch 40	555	575

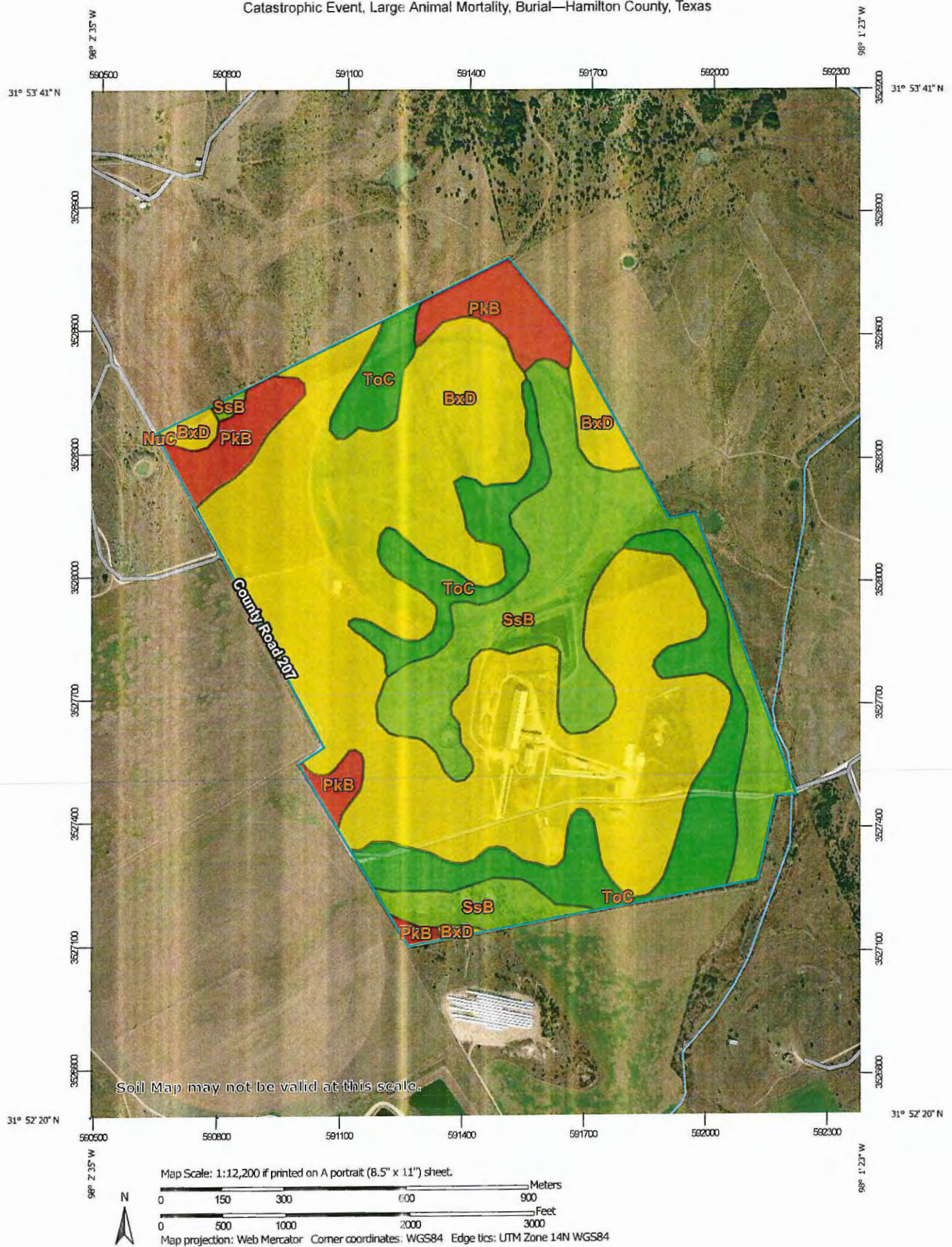
IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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**

Catastrophic Event, Large Animal Mortality, Burial—Hamilton County, Texas



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

8/10/2020
Page 1 of 6

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

-  Very severely limited
-  Severely limited
-  Somewhat limited
-  Slightly limited
-  Not limited
-  Not rated or not available

Soil Rating Lines

-  Very severely limited
-  Severely limited
-  Somewhat limited
-  Slightly limited
-  Not limited
-  Not rated or not available

Soil Rating Points

-  Very severely limited
-  Severely limited
-  Somewhat limited
-  Slightly limited
-  Not limited
-  Not rated or not available

Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

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

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: Hamilton County, Texas

Survey Area Data: Version 17, Jun 11, 2020

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

Date(s) aerial images were photographed: Feb 26, 2016—Dec 13, 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.

Catastrophic Event, Large Animal Mortality, Burial

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BxD	Brackett-Malotierre complex, 2 to 12 percent slopes	Somewhat limited	Brackett (60%)	Seepage, porous bedrock (0.50) Slope (0.16)	219.5	56.3%
NuC	Nuff silty clay loam, 2 to 6 percent slopes, very stony	Not limited	Nuff (100%)		0.0	0.0%
PkB	Pidcoke gravelly clay loam, 1 to 3 percent slopes	Very severely limited	Pidcoke (100%)	Depth to bedrock (1.00) Seepage, porous bedrock (0.50)	27.0	6.9%
SsB	Slidell clay, 1 to 3 percent slopes	Slightly limited	Slidell (85%)	Water gathering surface (0.20)	78.0	20.0%
ToC	Topsey clay loam, 1 to 5 percent slopes	Not limited	Topsey (85%)		65.2	16.7%
Totals for Area of Interest					389.8	100.0%

Rating	Acres in AOI	Percent of AOI
Somewhat limited	219.5	56.3%
Slightly limited	78.0	20.0%
Not limited	65.2	16.7%
Very severely limited	27.0	6.9%
Totals for Area of Interest	389.8	100.0%

Description

"Catastrophic Event, Large Animal Mortality, Burial", is a method of disposing of deceased animals as a result of a large scale natural disaster such as a hurricane. The animals are disposed of by placing the carcasses in successive layers in an excavated and sloped pit. The carcasses are spread, compacted, and covered daily with a thin layer of soil that is excavated from the pit. When the pit is full, a final cover of soil material at least 2 feet thick is placed over the burial pit.

Soils are rated based on their limitation for burial of large animals following a catastrophic event. Catastrophic events include, but are not limited to, hurricanes, wildfires, flooding, and tornados. Limitations for burial of large animals during a catastrophic event are based primarily on contamination of groundwater, trafficability of excavation equipment, site selection, and site reclamation.

While some general observations may be made, onsite evaluation is required before the final site is selected. Improper site selection, design, or installation may cause contamination of ground water, seepage, and contamination of stream systems from surface drainage or floodwater. Potential contamination may be reduced or eliminated by installing systems designed to overcome or reduce the effects of the limiting soil property. The rating is for soils in their present condition and does not consider present land use.

Ratings are based on properties and qualities to the depth normally observed during soil mapping (approximately 6 or 7 feet). However, because pits may be as deep as 15 feet or more, geologic investigations are needed to determine the potential for pollution of ground water as well as to determine the design needed. These investigations, which are generally arranged by the pit developer, include the examination of stratification, rock formations, and geologic conditions that might lead to the conducting of leachates to aquifers, wells, watercourses, and other water sources. The presence of hard, nonrippable bedrock, bedrock crevices, or highly permeable strata in or immediately underlying the proposed pit bottom is undesirable because of the difficulty in excavation and the potential contamination of underground water.

Properties that influence the risk of contamination of groundwater, ease of excavation, trafficability, and revegetation are major considerations. Soils that flood or have a water table within the depth of excavation present a potential contamination hazard and are difficult to excavate. Slope is an important consideration because it affects the work involved in road construction, the performance of the roads, and the control of surface water around the pit. It may also cause difficulty in constructing pits for which the pit bottom must be kept level and oriented to follow the contour.

The ease with which the pit is dug and with which a soil can be used as daily and final covers is based largely on texture and consistence of the soil. The texture and consistence of a soil determine the degree of workability of the soil both when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and difficult to place as a uniformly thick cover over

a layer of carcasses. The uppermost part of the final cover should be soil material that is favorable for the growth of plants. It should not contain excess sodium or salt and should not be too acid. In comparison with other horizons, the A horizon in most soils has the best workability and the highest content of organic matter. Thus, for a Large Animal Disposal, Burial operation it may be desirable to stockpile the surface layer for use in the final blanketing of the filled pit area.

Numerical ratings indicate the severity of the individual limitations. The ratings are shown in decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses.

Not limited (rating index equals 0) - The limitation for large animal disposal during a catastrophic event is insignificant. This soil is able to support standard excavation equipment, the soil has minimal contamination of groundwater, and soil reclamation using conventional processes is possible. Not limited soils have features that are very favorable for the specified use. Very good performance and very low maintenance can be expected of a properly designed and installed system.

Slightly limited (rating index greater than 0 but less than 0.30) - The limitation for large animal disposal during a catastrophic event is slightly limited. There are one or more soil properties that pose a slight limitation for contamination of groundwater, site reclamation, or excavation equipment. Slightly limited indicates the soil have features that are favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Good performance and low maintenance can be expected.

Somewhat limited (greater than 0.30 but less than 0.80) - The limitation for large animal disposal during a catastrophic event is somewhat limited. There are more than one soil properties that pose a limitation for contamination of groundwater, site reclamation, or excavation equipment. Any corrective measures taken to overcome these limitations are considered economical however, special care must be taken to overcome limitations. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.

Severely limited (greater than 0.80 but less than 0.99) - The limitation for large animal disposal during a catastrophic event is severely limited. There are many soil properties that pose a limitation for contamination of groundwater, site reclamation, or excavation equipment. Additionally, corrective measures will be needed to overcome these limitations. Corrective measures taken may be costly to overcome limitations that pose a severely limited rating. Severely limited indicates that the soil has features that are unfavorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation however, it is costly to do so. Poor performance and high maintenance can be expected.

Very severely limited (rating index equals 1.0) - The limitation for large animal disposal during a catastrophic event is severely limited. There are one or more soil properties that pose a very severe limitation for contamination of groundwater, site reclamation, or excavation equipment. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Very poor performance and very high maintenance can be expected.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Large Animal Disposal, Pit

"Large Animal Disposal, Pit," is a method of disposing of dead animals by placing the carcasses in an excavated pit. The number of livestock that can be buried is highly dependent on the space. Fourteen square feet of surface area should be allowed for an adult cow carcass. Five adult hogs or sheep can be considered equivalent to one bovine for this purpose. Multiple layers or stacking more than one animal deep should be avoided. When the pit is full, a final cover of soil material at least 3 feet thick is placed over the burial pit to prevent scavenging by other animals. The cap should be vegetated as soon as possible. Great care in site selection is needed because decomposing carcasses release material that can pollute ground water.

The interpretation is applicable to both heavily populated and sparsely populated areas. While some general observations may be made, onsite evaluation is required before the final site is selected. Improper site selection, design, or installation may cause contamination of ground water, seepage, and contamination of stream systems from surface drainage or floodwater. The risk of contamination can be reduced or eliminated by installing systems designed to eliminate or reduce the adverse effects of limiting soil properties. Ratings are for soils in their present condition. The present land use is not considered in the ratings.

Ratings are based on properties and qualities to the depth normally observed during soil mapping (approximately 6 feet). However, because pits may be as deep as 15 feet or more, geologic investigations are needed to determine the potential for pollution of ground water and to determine the design needed. These investigations, which are generally arranged by the pit developer, include the examination of stratification, rock formations, and geologic conditions that might lead to the conducting of leachates to aquifers, wells, watercourses, and other water sources. The presence of hard, nonrippable bedrock, bedrock crevices, or highly permeable strata in or immediately underlying the proposed pit bottom is undesirable because of the difficulty in excavation and the potential pollution of underground water.

Properties that influence the risk of pollution and ease of excavation are major considerations. Soils that are subject to flooding or that have a water table within the depth of excavation present a potential pollution hazard and are difficult to excavate. The leaching and seepage potential of the soil is considered. When this rate is high, transmission of fluids through the soil and underlying materials is unimpeded and leaching and seepage may become environmental, health, and performance concerns. Slope is an important consideration because it affects the work involved in road construction, the performance of the roads, and the control of surface water around the pit. It may also cause difficulty in constructing pits for which the pit bottom must be kept level and oriented to follow the contour.

The ease with which the pit is dug and with which a soil can be used as daily or final cover is based largely on texture and consistence of the soil. Large stones on the soil surface and in the soil fabric can cause excavation problems. The texture and consistence of a soil determine the degree of workability of the soil both when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and difficult to place as a uniformly thick cover over a layer of carcasses. The uppermost part of the final cover should be soil material that is favorable for the growth of plants. It should not contain excess sodium or salt and should not be too acid. In comparison with other horizons, the A horizon in most soils has the best workability and the highest content of organic matter. Thus, it may be desirable to stockpile the surface layer for use in the final blanketing of the filled pit area. Regulatory requirements for large animal disposal are provided in the Department of Homeland Security publications

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected if the system is properly designed and installed. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of the individual limitations. The ratings are shown in decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Report—Large Animal Disposal, Pit

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. The table shows only the five most limiting features for any given soil. The soil may have additional limitations.]

Large Animal Disposal, Pit—Hamilton County, Texas			
Map symbol and soil name	Pct. of map unit	Large Animal Disposal, Pit	
		Rating class and limiting features	Value
BxD—Brackett-Malotter complex, 2 to 12 percent slopes			
Brackett	60	Somewhat limited	
		Seepage, porous bedrock	0.50
		Slope	0.16
		Clay content	0.01
Malotter	30	Very limited	
		Depth to bedrock	1.00
		Seepage, porous bedrock	0.50
		Slope	0.16
NuC—Nuff silty clay loam, 2 to 6 percent slopes, very stony			
Nuff	100	Somewhat limited	
		Clay content	0.04
PkB—Pidcoke gravelly clay loam, 1 to 3 percent slopes			
Pidcoke	100	Very limited	
		Depth to bedrock	1.00
		Seepage, porous bedrock	0.50
		Clay content	0.01
SsB—Slidell clay, 1 to 3 percent slopes			
Slidell	85	Somewhat limited	
		Clay content	0.21
		Water gathering surface	0.20
ToC—Topsey clay loam, 1 to 5 percent slopes			
Topsey	85	Somewhat limited	
		Clay content	0.01

Data Source Information

Soil Survey Area: Hamilton County, Texas
Survey Area Data: Version 17, Jun 11, 2020

Supporting Documentation

USDA Soil Descriptions & Limitations

Texas Railroad Commission Map

Water District Well Location Map (if available)

Onsite Well Logs (if available)

Catastrophic Event, Large Animal Mortality Burial

6.0 SURFACE WATER & TMDL ASSESSMENT

6.1 Surface Water Assessment

Figure 6.1, Aerial Photograph, shows the existing land features, production area, Land Management Unit boundaries, and areas designated as "water in the state," as defined by 30 TAC §321.32(63). Buffer zones between waters in the state and LMUs will be maintained as required in 30 TAC §321.40(h) plus additional filter strips specified by NRCS Code 393, as required in 30 TAC §321.42(w)(2). Based on NRCS Code 393, Appendix 3, Table 1, and LMU slope and soil types, the buffer zones shown in the attached map will be maintained. According to NRCS, Codes 601 (applied to severely eroded areas) and 332 (applied to cropland) are not currently applicable to the LMUs at this facility. Should field conditions or cropping systems change, Codes 601 and 332 will be implemented as necessary.

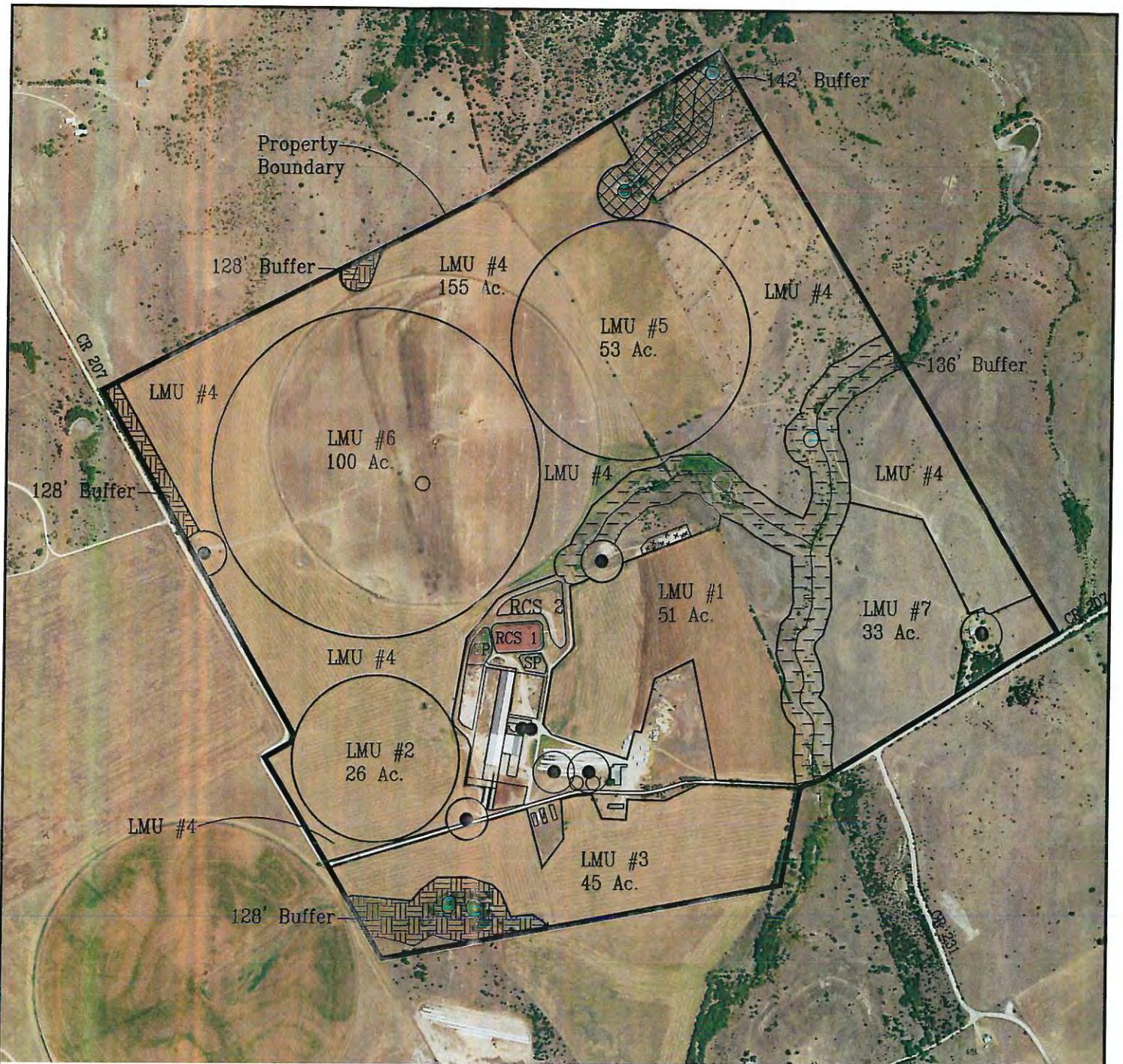
The "water in the state" designation is based on Enviro-Ag Engineering, Inc., site inspections, the permittee's knowledge of the property and the USDA-FSA aerial photograph (2025). The buffer zones and LMU boundaries in Figure 6.1 are submitted with this application for TCEQ approval.

6.2 TMDL Assessment

Okee Dairy is located in Segment 1226, North Bosque River, Brazos River Basin, which is a 303(d)-listed watershed. To demonstrate that Okee Dairy is designed and will be constructed and operated in a manner that is consistent with the Phosphorus Total Maximum Daily Load (TMDL) and Implementation Plan approved in 2001 and to address the other listed impairments for this segment, the following practices have been or will be implemented:

1. Implement a Nutrient Utilization Plan that limits P application to crop requirement and incorporates a P reduction component on fields over 200 ppm P.
2. Limit maximum P level in soils to 200 ppm.
3. Perform annual soil sampling in accordance with the provisions of 30 TAC §321.42(k)-(m) and with Texas Cooperative Extension guidelines for composite sampling.
4. Implement a certified Comprehensive Nutrient Management Plan that meets the NRCS requirements for a whole-farm Resource Management System.
5. Maintain contracts with owners of third-party fields in accordance with 30 TAC §321.42(j)(1)-(4) and with applicable requirements of 30 TAC §321.36 and §321.40.
6. Operate the facility in accordance with 30 TAC §321.42 with additional Best Management Practices as follows:
 - a. Scrape freestalls and cattle lanes to reduce or eliminate the need for flushing
 - b. Excluding extraneous drainage areas from the RCSs (roof areas, etc.)

- c. Reduce the potential for soil erosion and downgradient sediment deposition by maintaining permanent pastures and additional filter strips adjacent to waters in the state, as described above in Section 6.1

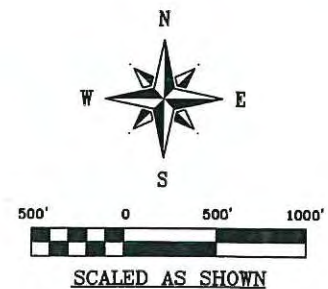


Map Generated 7/2/2025

LEGEND:

- Denotes Plugged Water Well
- Denotes Well 150-ft Buffer
- Denotes Well
- ▨ Denotes 128ft Buffer
- ▤ Denotes 136ft Buffer
- ▧ Denotes 142ft Buffer
- * * * Denotes Burial Site
- ▬ Denotes Fresh Water Pond

Source: USDA-NRCS. Geospatial Data Gateway. Available at: <http://datagateway.nrcs.usda.gov/>. National Ag. Imagery Program Mosaic - Accessed April, 2025.



Note: Refer to Figure 1.4 for a detailed production area map.

Okee Dairy
Hico, Texas
Hamilton County

Aerial Photograph
Figure 6.1
Page 33



Enviro-Ag Engineering, Inc.
ENGINEERING CONSULTANTS
3404 Airway Blvd.
AMARILLO, TEXAS 79118
TEL (806) 353-6123 FAX (806) 353-4132

7.0 AIR STANDARD PERMIT REQUIREMENTS

7.1 Permit Requirements

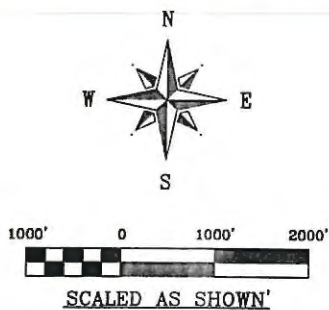
This facility was constructed prior to August 19, 1998. The facility meets the ¼-mile buffer option required in 30 TAC §321.43(j)(2) for facility expansion. The facility is designed, and will be operated, in accordance with the provisions and emissions limitations of the air standard permit in 30 TAC §321.43(j) regarding abatement of nuisance conditions, wastewater treatment, dust control and maintenance and housekeeping procedures. The facility uses an anaerobic treatment pond to minimize odors from process generated wastewater in accordance with §321.43(j)(3).

An Area Land Use Map (Figure 7.1) is attached depicting the locations of all occupied residences or business structures, schools (including associated recreational areas), churches, or public parks within 1 mile of the permanent odor sources of the facility. The map includes a north arrow, direction of prevailing wind, and scale. For the purposes of this application, the measurement of buffer distances is from the nearest edge of the permanent odor source to the occupied structure or designated recreational area identified on the Area Land Use Map (30 TAC §321.32(43)).

7.2 Odor control Plan

Per 30 TAC §321.43(j)(2)(F), the following Best Management Practices have been or will be implemented to control and reduce odors, dust and other air contaminants at Okee Dairy.

- Pen surfaces will be maintained to reduce ponding.
- The manure in the confinement pens will be removed on a regular basis (at least once annually) to prevent the manure from building up in the pens.
- Removal of manure and pond solids will be done in favorable wind conditions carrying odors away from nearby receptors. The TCEQ must be notified prior to RCS cleanout.
- Land application shall only occur from one hour after sunrise until one hour before sunset, unless written consent is obtained from current occupants of all residences within ¼-mile of the LMU boundary that receives waste or wastewater.
- Dust will be controlled on facility roads with the use of a portable water truck on an as-needed basis to minimize fugitive dust emissions.
- Dead animals will be collected within 24-hours and composted on-site or disposed by on-site burial.

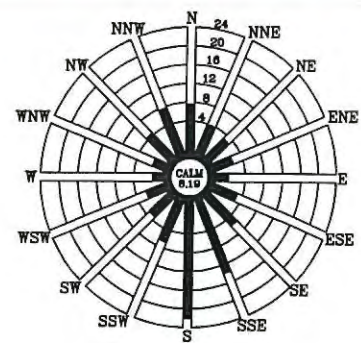


Legend:

- Denotes Occupied Structure
- ◻ Denotes Applicant Owned Structure

Site Visit - June 12, 2025
Map Generated - June 16, 2025

Source: USDA-NRCS. Geospatial Data Gateway.
Available at: <http://datagateway.nrcs.usda.gov/>.
National Ag. Imagery Program Mosaic-Accessed
Nov., 2017.



ANNUAL WIND ROSE
LOCATION: STEPHENVILLE, TEXAS
PERIOD OF RECORD: 1984 - 1992
SOURCE: TCEQ WINDROSE DATA

Note:
Hatched area represents permanent odor sources. These include, but are not limited to, pens, confinement buildings, lagoons, RCSs, manure stockpile areas, separators. Permanent odor sources do not include any feed handling facilities, land application equipment or fields.

Okee Dairy
Hico, Texas
Hamilton County

Area Land Use Map
Figure 7.1
Page 35

ENVIRO-AG
EAE
ENGINEERING, INC.

Enviro-Ag Engineering, Inc.
ENGINEERING CONSULTANTS
3404 Airway Blvd.
AMARILLO, TEXAS 79118
TEL (806) 353-6123 FAX (806) 353-4132

Abesha Michael

From: Jourdan Mullin <jmullin@enviroag.com>
Sent: Monday, July 14, 2025 1:43 PM
To: Abesha Michael
Cc: Corey Mullin
Subject: RE: Application to Amend Permit No. WQ0004108000 - Notice of Deficiency Letter

Follow Up Flag: Follow up
Flag Status: Flagged

Good Afternoon Abesha,

I have reviewed the attached NORI and everything looks correct as shown.

Respectfully,

Jourdan Mullin

Enviro-Ag Engineering, Inc.
9855 FM 847
Dublin, TX 76446

254/965-3500 – Work
806/679-5570 - Mobile

From: Corey Mullin <cmullin@enviroag.com>
Sent: Friday, July 11, 2025 7:22 PM
To: Jourdan Mullin <jmullin@enviroag.com>
Subject: Fw: Application to Amend Permit No. WQ0004108000 - Notice of Deficiency Letter

Sent via the Samsung Galaxy S25+, an AT&T 5G smartphone
Get [Outlook for Android](#)

From: Abesha Michael <Abesha.Michael@tceq.texas.gov>
Sent: Friday, July 11, 2025 6:39:26 PM
To: Corey Mullin <cmullin@enviroag.com>
Subject: Application to Amend Permit No. WQ0004108000 - Notice of Deficiency Letter

CAUTION: This email originated from outside of Enviro-Ag Engineering. Do not click links or open attachments unless you have verified the sender and know the content is safe.

Dear Mr. Mullin:

The attached Notice of Deficiency letter sent on July 11, 2025, requests additional information needed to declare the application administratively complete. Please send the complete response to my attention by July 25, 2025.

Thank you,



Abesha H. Michael
Applications Review & Processing Team
Water Quality Division Support Section
Water Quality Division, MC 148
PO Box 13087
Austin, Texas 78711
Phone: o: 512-239-4912
Email: abesha.michael@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

Disclaimer

The information contained in this communication from the sender is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohibited and may be unlawful.

This email has been scanned for viruses and malware, and may have been automatically archived by **Mimecast Ltd**, an innovator in Software as a Service (SaaS) for business. Providing a **safer** and **more useful** place for your human generated data. Specializing in; Security, archiving and compliance. To find out more [Click Here](#).



TPDES Permit No. WQ0004108000
This Permit supersedes and replaces
Permit No. WQ0004108000 issued on June 25, 2021
[For TCEQ use only EPA ID No. TX0128619]

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

TPDES PERMIT FOR CONCENTRATED ANIMAL FEEDING OPERATIONS

under provisions of
Section 402 of the Clean Water Act
Chapter 26 of the Texas Water Code and
Section 382.051 of the Texas Clean Air Act

I. Permittee:

A. Owner: Oene Keuning
B. Business Name: Okee Dairy
C. Owner Address: 4745 County Road 207
Hico, Texas 76457

II. Type of Permit: Major Amendment / Air & Water Quality

III. Nature of Business Producing Waste: Concentrated Animal Feeding Operation (CAFO): Dairy Cattle; SIC No. 0241

IV. General Description and Location of Waste Disposal System:

Maximum Capacity: 2,000 total head, of which 1,500 head are milking

Site Plan: See Attachment A

Retention Control Structures (RCSs) total required capacities without freeboard (Acre-Feet): RCS #1 – 8.05, RCS #2 – 21.64; RCS #1 and #2 act in-series

Land Management Units (LMUs) (Acres): LMU #1 - 51, LMU #2 - 26, LMU #3 - 45, LMU #4 – 155, LMU #5 – 53, LMU #6 – 100, LMU #7 - 33; See Attachment B for locations

Terms of the Nutrient Management Plan (NMP): See Attachments E and F

Location: The facility is located at 4745 County Road 207, Hico, Hamilton County, Texas 76457. Latitude: 31.881388° N and Longitude: 98.031944° W. See Attachment C

Drainage Basin: The facility is located in the drainage area of the North Bosque River in Segment No. 1226 of the Brazos River Basin

This permit contained herein shall expire at midnight, five years after the date of Commission approval.

ISSUED DATE:

For the Commission

V. Rule and Statute Applicability

- A. Definitions.** All definitions in Chapter 26 of the Texas Water Code, 30 Texas Administrative Code (TAC) Chapters 305 and 321, Subchapter B shall apply to this permit and are incorporated by reference.
- B. Amendments, renewals, transfers, corrections, revocation, and suspension of permit.** The requirements in 30 TAC Chapter 305, Subchapter D apply to this permit.

VI. Permit Applicability and Coverage

- A. Discharge Authorization.** No discharge is authorized by this permit except as allowed by the provisions in this permit and 40 Code of Federal Regulations Chapter 412, which is adopted by reference in 30 TAC Chapter 305.541.
- B. Application Applicability.** 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.
- C. Air Quality Authorization.** The permittee shall comply with the requirements listed in Section VII.D. of this permit and shall:
1. maintain a minimum treatment capacity of 6.90 acre-feet in RCS #1;
 2. identify the maximum sludge volume and the minimum treatment volume on the permanent pond marker in RCS #1;
 3. maintain a copy of the odor control plan in the Pollution Prevention Plan; and
 4. include a stage storage table for the treatment pond in the RCS Management Plan.

VII. Pollution Prevention Plan (PPP) Requirements**A. Technical Requirements**

1. PPP General Requirements.
 - (a) The permittee shall update and implement a PPP for this facility upon issuance of this permit. The PPP shall:
 - (1) be prepared in accordance with good engineering practices;
 - (2) include measures necessary to limit the discharge of pollutants to surface water in the state;
 - (3) describe and ensure the implementation of practices which are to be used to assure compliance with the limitations and conditions of this permit;
 - (4) include all information listed in Section VII.A.;
 - (5) identify specific individual(s) who is/are responsible for development, implementation, operation, maintenance, inspections, recordkeeping, and revision of the PPP. The activities and responsibilities of the pollution prevention personnel shall address all aspects of the facility's PPP;
 - (6) be signed by the permittee or other signatory authority in accordance with 30 TAC §305.44 (relating to Signatories to Applications); and
 - (7) be retained on-site.
 - (b) The permittee shall amend the PPP:
 - (1) before any change in the number or configuration of LMUs;
 - (2) before any increase in the maximum number of animals and/or the maximum number of milking cows;

- (3) before operation of any new control facilities;
 - (4) before any change that has a significant effect on the potential for the discharge of pollutants to water in the state;
 - (5) if the PPP is not effective in achieving the general objectives of controlling discharges of pollutants from the production area or LMUs; or
 - (6) within 90 days following written notification from the Executive Director that the plan does not meet one or more of the minimum requirements of this permit.
- (c) Maps. The permittee shall maintain the following maps as part of the PPP.
- (1) Site Map. The permittee shall update the site map as needed, by permit amendment, to reflect the layout of the facility. The map shall include, at a minimum, the following information: facility boundaries; pens; barns; berms; open lots; manure storage areas; areas used for composting; dead animal burial sites; RCSs or other control facilities; LMUs; water wells, abandoned and in use, which are on-site or within 500 feet of the facility boundary; and all springs, lakes, or ponds located on-site or within one mile of the facility boundary.
 - (2) Land Application Map. Natural Resource Conservation Service (NRCS) soil survey maps of all LMUs shall depict:
 - (i) the boundary of each LMU and acreage;
 - (ii) all buffer zones required by this permit; and
 - (iii) the unit name and symbol of all soils in the LMU(s).
- (d) Potential Pollutant Sources/Site Evaluation.
- (1) Potential Pollutant Sources. The PPP shall include a description of potential pollutant sources and indicate all measures that will be used to prevent contamination from the pollutant sources. Potential pollutant sources include any activity or material that may reasonably be expected to add pollutants to surface water in the state from the facility.
 - (2) Soil Erosion. The PPP shall identify areas that, due to topography, activities, or other factors, have a high potential for significant soil erosion. If these areas have the potential to contribute pollutants to surface water in the state, the PPP shall identify measures used to limit erosion and pollutant runoff.
 - (3) Control Facilities. The PPP shall include the location and a description of control facilities. The control facilities shall be appropriate for the identified sources of pollutants at the CAFO.
 - (4) Recharge Feature Certification. The recharge feature certification submitted in the permit application shall be implemented, updated by the permittee as often as necessary, and maintained in the PPP.
 - (5) 100-year Floodplain. All control facilities, including holding pens and RCSs, shall be located outside of the 100-year floodplain or protected from inundation and damage that may occur during the flood.
- (e) Spill Prevention and Recovery. The permittee shall take appropriate measures necessary to prevent spills and to clean up spills of any toxic pollutant. Where potential spills can occur, materials, handling procedures and storage shall be specified. The permittee shall identify the procedures for cleaning up spills and shall make available the necessary equipment to personnel to implement a clean up. The permittee shall store, use, and dispose of all pesticides in

accordance with label instructions. There shall be no disposal of pesticides, solvents or heavy metals, or of spills or residues from storage or application equipment or containers, into RCSs. Incidental amounts of such substances entering a RCS as a result of stormwater transport of properly applied chemicals is not a violation of this permit.

2. Discharge Restrictions and Monitoring Requirements.

- (a) Discharge Restrictions. Wastewater may be discharged to water in the state from a properly designed (25-year frequency 10-day duration (25 year/10 day)), constructed, operated and maintained RCS whenever chronic or catastrophic rainfall, or catastrophic conditions cause an overflow. There shall be no effluent limitations on discharges from RCSs which meet the above criteria.
- (b) Monitoring Requirements. The permittee shall sample all discharges from the RCS(s) and LMU(s). The effluent shall be analyzed by a National Environmental Laboratory Accreditation Conference (NELAC) accredited lab for the parameters shown in Table 1.

Table 1: Monitoring Requirements

Parameter	Sample Type	Sample Frequency
5 Day Biochemical Oxygen Demand (BOD ₅)	Grab	1/day ¹
<i>Escherichia coli</i>	Grab	1/day ¹
Total Dissolved Solids (TDS)	Grab	1/day ¹
Total Suspended Solids (TSS)	Grab	1/day ¹
Nitrate (N)	Grab	1/day ¹
Total Phosphorus	Grab	1/day ¹
Ammonia Nitrogen	Grab	1/day ¹
Pesticides ²	Grab	1/day ¹

¹Sample shall be taken within the first thirty (30) minutes following the initial discharge and then once per day while discharging.

²Any pesticide which the permittee has reason to believe could be present in the wastewater.

- (c) If the permittee is unable to collect samples due to climatic conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.), the permittee shall document why discharge samples could not be collected. Once dangerous conditions have passed, the permittee shall conduct the required sampling.
3. RCS Design and Construction.
 - (a) RCS Certifications
 - (1) The permittee shall ensure that the design and completed construction of the RCS(s) (See Special Provision X.A.) is certified by a licensed Texas Professional Engineer prior to use. The certification shall be signed and sealed in accordance with the Texas Board of Professional Engineers requirements.

- (2) Documentation of liner and capacity certifications must be completed for each RCS prior to use and kept on-site in the PPP. Table 2 below shows the current RCS liner and capacity certifications.

Table 2: Current Liner and Capacity Certifications

RCS Name	Liner Certification Date	Capacity Certification Date	Certified Capacity (Acre-Feet)
RCS #1	February 17, 1997	October 15, 2008	9.62
RCS #2	October 13, 2008	May 30, 2008	27.12
Settling Pond 1	April 24, 2006	Not Applicable	
Settling Pond 2	June 19, 2017		

The Slurry Pit in the current permit has been removed, and the location has been added to the proposed freestall barn.

- (b) Design and Construction Standards. The permittee shall ensure that each RCS is designed and constructed in accordance with the technical standards developed by the NRCS, American Society of Agricultural and Biological Engineers, American Society of Civil Engineers, or American Society of Testing Materials that are in effect at the time of construction. Where site-specific variations are warranted, a licensed Texas Professional Engineer must document these variations and their appropriateness to the design.
- (c) RCS Drainage Area.
- (1) The permittee shall describe in the PPP and implement measures that will be used to minimize entry of uncontaminated stormwater into the RCS(s).
 - (2) Stormwater must be diverted, as indicated in Attachment A - Site Map from contact with feedlots and holding pens, and manure and/or process wastewater storage systems. In cases where it is not feasible to divert stormwater from the production area, the retention structures shall include adequate storage capacity for the additional stormwater. Stormwater includes rain falling on the roofs of facilities, runoff from adjacent land, or other sources.
 - (3) The permittee shall maintain the drainage area to minimize ponding or puddling of water outside the RCS(s).
- (d) RCS Sizing.
- (1) The design plan must include documentation describing the sources of information, assumptions and calculations used in determining the appropriate volume capacity and structural features of each RCS, including embankment and liners.
 - (2) Design Rainfall Event. Each RCS authorized under this permit shall be designed and constructed to meet or exceed the margin of safety, equivalent to the volume of runoff and direct precipitation from the 25 year/10 day rainfall event. The design rainfall event for this CAFO is **12.2** inches.
 - (3) Any RCS capacity that is greater than the minimum capacity required by this permit may be allocated to additional sludge storage volume, which will increase the design sludge cleanout interval for the RCS. The new

sludge cleanout interval will be identified in the RCS management plan maintained in the PPP, the stage storage tables will accurately reflect the new volumes, and the pond markers will visually identify the new volume levels.

- (e) Irrigation Equipment Design. The permittee shall ensure that the irrigation system design is capable of removing wastewater from the RCS(s) on a regular schedule. Equipment capable of dewatering the RCS(s) shall be available and operational whenever needed to restore the operating capacity required by the RCS management plan.
- (f) Embankment Design and Construction. The RCS(s) have a depth of water impounded against the embankment at the spillway elevation of three feet or more, therefore the RCS(s) are considered to be designed with an embankment. The PPP shall include a description of the design specifications for the RCS embankments. The following design specifications are required for all new construction and/or the modified portions of existing RCSs.
 - (1) Soil Requirements. Soils used in the embankment shall be free of foreign material such as rocks larger than four (4) inches, trash, brush, and fallen trees.
 - (2) Embankment Lifts. The embankment shall be constructed in lifts or layers no more than eight (8) inches compacted to six (6) inches thick at a minimum compaction effort of 95 per cent (%) Standard Proctor Density (ASTM D698) at -1% to +3% of optimum moisture content.
 - (3) Stabilize Embankment Walls. All embankment walls shall be stabilized to prevent erosion or deterioration.
 - (4) Compaction Testing. Embankment construction must be accompanied by certified compaction tests including in place density and moisture in accordance with the American Society of Testing Materials (ASTM) D1556, D2167 or D2937 for density and D2216, D4643, D4944 or D4959 for moisture, or D6938 for moisture and density or equivalent testing standards. Compaction tests will provide support for the liner certification performed by a licensed Texas Professional Engineer as meeting a permeability no greater than 1×10^{-7} centimeters per second (cm/sec) over a thickness of 18 inches or its equivalency in other materials, and not to exceed a specific discharge through the liner of 1.1×10^{-6} cm/sec with a water level at spillway depth.
 - (5) Spillway or Equivalent Protection. The new or modified RCS(s), which are constructed with embankments, shall be constructed with a spillway or other outflow device properly sized according to NRCS design and specifications to protect the integrity of the embankment.
 - (6) Embankment Protection. The new or modified RCS(s) must have a minimum of two (2) vertical feet of materials equivalent to those used at the time of design and construction between the top of the embankment and the structure's spillway. RCS(s) without spillways must have a minimum of two (2) vertical feet between the top of the embankment and the required storage capacity.
- (g) RCS Liner Requirements. For all new construction and for all structural modifications of existing RCS(s), the RCS must have a liner consistent with one of the following:

- (1) In-situ Material. In-situ material is undisturbed, in-place, native soil material. In-situ materials must at least meet the minimum criteria for hydraulic conductivity and thickness and specific discharge as described in Section VII.A.3(g)(2) of this permit. Samples shall be collected and analyzed in accordance with Section VII.A.3(g)(3) of this permit. This documentation must be certified by a licensed Texas Professional Engineer or licensed Texas Professional Geoscientist.
- (2) Constructed or Installed Liner.
 - (i) Constructed or installed liners must be designed by a licensed Texas Professional Engineer. The liner must be constructed in accordance with the design and certified as such by a licensed Texas Professional Engineer. Compaction tests and post construction sampling and analyses, conducted in accordance with Sections VII.A.3(f)(4) and VII.A.3(g)(3) of this permit, will provide support for the liner certification.
 - (ii) Liners shall be designed and constructed to have hydraulic conductivities no greater than 1×10^{-7} centimeters per second (cm/sec), with a thickness of 18 inches or its equivalency in other materials, and not to exceed a specific discharge through the liner of 1.1×10^{-6} cm/sec with a water level at spillway depth.
 - (iii) Constructed or installed liners must be designed and constructed to meet the soil requirements, lift requirements, and compaction testing requirements as listed in Section VII.A.3(f)(1), (2) and (4) of this permit.
- (3) Liner Sampling and Analyses
 - (i) The licensed Texas Professional Engineer or licensed Texas Professional Geoscientist shall use best professional practices to ensure that corings or other liner samples will be appropriately plugged with material that also meets liner requirements of this subsection.
 - (ii) Samples shall be collected in accordance with ASTM D1587 or other method approved by the Executive Director. For each RCS, a minimum of two core samples collected from the bottom of the RCS and a minimum of at least one core sample from each sidewall shall be collected. Additional samples may be necessary based on the best professional judgment of the licensed Professional Engineer. Distribution of the samples shall be representative of liner characteristics, and proportional to the surface area of the sidewalls and floor. Documentation shall be provided identifying the sample locations with respect to the RCS liner.
 - (iii) Undisturbed samples shall be analyzed for hydraulic conductivity in accordance with ASTM D5084 or other method approved by the Executive Director.
- (4) Leak Detection System. If notified by the Executive Director that significant potential exists for the adverse impact of water in the state or drinking water from leakage of a RCS, the permittee shall install a leak detection system or monitoring well(s) in accordance with that notice.

Documentation of compliance with the notification must be kept with the PPP, as well as copies of all sampling data.

4. Special Considerations for Existing RCS(s). An existing RCS that has been properly maintained without any modifications and has no apparent structural problems or leakage is considered to be properly designed with respect to the embankment design and construction and liner requirements of this permit, provided that any required documentation was completed in accordance with the requirements at the time of construction. If no documentation exists, the RCS must be certified by a licensed Texas Professional Engineer as providing protection equivalent to the requirements of this permit.
5. Operation and Maintenance of RCSs.
 - (a) The permittee must operate and maintain a margin of safety in the RCS(s) to contain the volume of runoff and direct precipitation from the 25 year/10 day rainfall event.
 - (b) The permittee shall implement a RCS management plan incorporating the margin of safety developed by a licensed Texas Professional Engineer. The management plan shall become a component of the PPP, shall be developed for each RCS, and must describe or include:
 - (1) RCS management controls appropriate for the CAFO and the methods and procedures for implementing such controls;
 - (2) the methods and procedures for proper operation and maintenance of each RCS consistent with the system design;
 - (3) the appropriateness and priorities of any controls reflecting the identified sources of pollutants at the facility;
 - (4) a stage/storage table for each RCS with minimum depth increments of one-foot, including the storage volume provided at each depth;
 - (5) a second table or sketch that includes increments of water level ranges for volumes of total design storage, including the storage volume provided at each specified depth (or water level) and the type of storage designated by that depth; and
 - (6) the planned end of month storage volume anticipated for each RCS for each month of the year and the corresponding operating depth expected at the end of each month of the year, based on the design assumptions.
 - (c) The wastewater level in the RCS shall be maintained at or below the maximum operating level expected during that month, according to the design of the RCS. When rainfall volumes exceed average rainfall data used in design calculations planned end of month storage volumes may encroach into the design storm event storage provided that documentation is available to support that the design parameters have been exceeded and that the RCS is otherwise being managed according to the RCS management plan criteria. In circumstances where the RCS has a water level exceeding the expected end of the month depth, the permittee shall document in the PPP why the level of water in the structure is not at or below the expected depth. Also, if the water level in the RCS encroaches into the storage volume reserved for the design rainfall event, the permittee must document, in the PPP, the conditions that resulted in this occurrence. As soon as irrigation is feasible and not prohibited by Section VII.A.8(f) and (g), the permittee shall irrigate until the RCS water level is at or below the maximum operating level expected during that month.

- (d) **Imminent Overflow.** If a RCS is in danger of imminent overflow from chronic or catastrophic rainfall or catastrophic conditions, the permittee shall take reasonable steps to irrigate wastewater to the LMU(s) only to the extent necessary to prevent overflow from the RCS. If irrigation results in a discharge from a LMU, the permittee shall collect samples from the drainage pathway at the point of the discharge from the edge of the LMU where the discharge occurs, analyze the samples for the parameters listed in Section VII.A.2.(b), and provide the appropriate notifications as required by Section VIII.B of this permit and 30 TAC §321.44.
- (e) **Permanent Pond Marker.** The permittee shall install and maintain a permanent pond marker (measuring device) in the RCS(s), visible from the top of the levee to show the following:
 - (1) the volume for the design rainfall event;
 - (2) one-foot increments beginning from the predetermined minimum treatment volume of the RCS, or the bottom of the RCS for those without treatment volume, to the top of the embankment or spillway; and
 - (3) design volume levels for maximum sludge accumulation and operating volume (calculated process generated wastewater plus rainfall runoff minus evaporation) must be identifiable on the marker.
- (f) **Rain Gauge.** A rain gauge capable of measuring the design rainfall event shall be kept on-site and properly maintained.
- (g) **Sludge Removal.** The permittee shall monitor sludge accumulation and depth, based upon the design sludge storage volume in the RCS. (See Special Provision X.E for additional requirements related to sludge monitoring.) Sludge shall be removed from the RCS(s) in accordance with the design schedule for cleanout in the RCS Management Plan to prevent the accumulation of sludge from exceeding the designed sludge volume of the structure. Removal of sludge shall be conducted during favorable wind conditions that carry odors away from nearby receptors. Sludge may only be beneficially utilized by land application to a LMU if in accordance with a nutrient management plan or disposed of in accordance with Section VII.A.8(e) of this permit. A sludge sample must be collected and analyzed in accordance with Section VII.A.9(a) prior to each clean out.
- (h) **Liner Protection and Maintenance.** The permittee shall maintain the liner to inhibit infiltration of wastewater. Liners must be protected from animals by fences or other protective devices. No tree shall be allowed to grow such that the root zone would intrude or compromise the structure of the liner or embankment. Any mechanical or structural damage to the liner shall be evaluated by a licensed Texas Professional Engineer within thirty (30) days of the damage.
- (i) **Closure Requirements.** A closure plan must be developed when a RCS will no longer be used and/or when the CAFO ceases or plans to cease operation. The closure plan shall be submitted to the appropriate regional office and the CAFO Permits Team of the Water Quality Division in Austin (MC-150) within ninety (90) days of when operation of the CAFO or the RCS terminates. The closure plan for the RCS must, at a minimum, be developed using standards contained in the NRCS Practice Standard Code 360 (Closures of Waste Impoundments), as amended, and using the guidelines contained in the Texas AgriLife

Extension/ NRCS publication #B-6122 (Closure of Lagoons and Earthen Manure Storage Structures), as amended. The permittee shall maintain or renew its existing authorization and maintain compliance with the requirements of this permit until the facility has been closed.

6. General Operating Requirements.

- (a) Flush/Scrape Systems. Flush/scrape systems shall be flushed/scraped in accordance with design criteria in the application.
- (b) Pen Maintenance. The permittee shall maintain earthen pens to ensure good drainage, minimize ponding, and minimize the entrance of uncontaminated storm water to the RCSs.
- (c) Carcass Disposal. Carcasses shall be collected within twenty four (24) hours of death and properly disposed of within three days of death in accordance with Texas Water Code, Chapter 26; Texas Health and Safety Code, Chapter 361; and 30 TAC Chapter 335 (relating to Industrial Solid Waste and Municipal Hazardous Waste) unless otherwise provided for by the commission. Animals must not be disposed of in any liquid manure or process wastewater system. Disposal of diseased animals shall also be conducted in a manner that prevents a public health hazard in accordance with Texas Agriculture Code, §161.004, and 4 TAC §31.3, §58.31(b), and §59.12. The collection area for carcasses shall be addressed in the potential pollutant sources section of the PPP with the management practices to prevent contamination of surface or groundwater, control access, and minimize odor.
- (d) Manure and Sludge Storage
 - (1) Manure and sludge storage capacity requirements shall be based on manure and sludge production, land availability, and the NRCS Field Office Technical Guide (Part 651, Chapter 10) or equivalent standards. (See Special Provision X.I for the storage requirements applicable to slurry collected from freestall barns.)
 - (2) When manure is stockpiled, it shall be stored in a well-drained area, and the top and sides of stockpiles shall be adequately sloped to ensure proper drainage and prevent ponding of water. Runoff from manure or sludge storage piles must be retained on-site. If the manure or sludge areas are not roofed or covered with impermeable material, protected from external rainfall, or bermed to protect from runoff during the design rainfall event, the manure or sludge areas must be located within the drainage area of a RCS and accounted for in the design calculations of the RCS.
 - (3) Manure or sludge stored for more than thirty (30) days must be stored within the drainage area of a RCS or stored in a manner (i.e. storage shed, bermed area, tarp covered area, etc.) that otherwise prevents contaminated storm water runoff from leaving the storage area. All storage sites and structures located outside the drainage area shall be designated on the site map.
 - (4) Temporary storage of manure or sludge shall not exceed thirty (30) days and is allowed only in a LMU or a RCS drainage area. Temporary storage of manure and sludge in the 100-year floodplain, near water courses or near recharge features may be allowed if protected by berms or other structures to prevent inundation or damage that may occur.

- (e) Composting. Composting on-site shall be performed in accordance with 30 TAC Chapter 332 (relating to Composting). The permittee may compost waste generated on-site, including manure, sludge, bedding, feed and dead animals. The permittee may add agricultural products to provide an additional carbon source or bulking agent to aid in the composting process. If the compost areas are not roofed or covered with impermeable material, protected from external rainfall, or bermed to protect from runoff in the case of the design rainfall event, the compost areas must be located within the drainage of an RCS and must be shown on the site plan and accounted for in the design calculations of the RCS.
7. Site Specific Conservation Practice.
- (a) Well Protection Requirements
- (1) The permittee shall not locate or operate a new RCS, holding pen, or LMU within the following buffer zones:
 - (i) public water supply wells 500 feet;
 - (ii) wells used exclusively for private water supply 150 feet; or
 - (iii) wells used exclusively for agriculture irrigation 100 feet.
 - (2) Irrigation of wastewater directly over a well head will require a structure protective of the wellhead that will prevent contact from irrigated wastewater.
 - (3) Construction of any new water wells must be done by a licensed water well driller.
 - (4) All abandoned and unuseable wells shall be plugged according to 16 TAC §76.104.
 - (5) The permittee may continue the operation and use of any existing holding pens and RCSs located within the required well buffer zones provided they are in accordance with the facility's approved recharge feature evaluation and certification. Buffer zone variance documentation must be kept on-site and made available to TCEQ personnel upon request. A Well Buffer Exception request for Wells #1 and #2 was submitted to and approved by the TCEQ Water Quality Assessment Team. Permittee shall implement the requirements of the Well Buffer Exception approval by TCEQ. Table 3 below shows the status of all wells on the facility and the best management practices (BMPs) used to protect them.

Table 3: Well Status and Best Management Practices

Well Number*	Status	BMPs
1	Producing	Steel sleeve, concrete surface slab
2	Producing	Steel sleeve, concrete surface slab
3	Producing	Maintain 150 ft buffer
4	Producing	Maintain 150 ft buffer
5	Non-Producing	Plugged
6	Non-Producing	Plugged
7	Non-Producing	Plugged

Well Number*	Status	BMPs
8	Producing	Maintain 150 ft buffer
9	Producing	Maintain 150 ft buffer
10	Producing	Maintain 150 ft buffer
11	Producing	Maintain 150 ft buffer
12	Producing	Maintain 150 ft buffer

*Well Numbers correspond with Attachment D

- (b) Soil Limitations. The permittee shall implement the BMPs on Table 4 for the specified soil series.

Table 4: Soil Limitations and Best Management Practices

Soil Series and Map ID	Potential Limitations	BMPs*
Brackett Maloterre complex: BxD Oglesby: OgB	Droughty Depth to Hard Bedrock Depth to Soft Bedrock	Land application not to exceed agronomic rates for nutrients and hydraulic rates (refer to the nutrient management plan (NMP)). Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of the soils in the LMUs. No land application to inundated soils.
Pidcoke: PkB	Droughty Depth to Bedrock	Land application will be based upon the available water capacity (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of the soils in the LMUs. No land application to inundated soils.
Topsey: ToC, Wise: WsC	Depth to Soft Bedrock	
Nuff: NuC	Large Surface Stones Slow water movement	
Krum: KrB, Slidell: SsB	Slow water movement	Land application will be based upon the available water capacity (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. No land application to inundated soils.

*or an equivalent protective measure identified in an NRCS Practice Standard.

- (c) Pollutant Sources and Management. The permittee shall implement the BMPs on Table 5 for handling dead animals and pesticides.

Table 5: Pollutant Sources and Best Management Practices

Potential Pollutant Source	BMPs*
Dead Animals	Collect within 24 hours of death and remove within three days of death by a third-party rendering service, compost in accordance with Section VII.A.6(e) or bury onsite in accordance with Section X. P of this permit.
Pesticides/Parlor Chemicals	Store under roof Handle and dispose according to label directions

*or an alternative BMP as allowed by 30 TAC 321 Subchapter B or an equivalent protective measure identified in an NRCS Practice Standard.

8. Land Application.

- (a) Nutrient Management Plan (NMP) Required. The certified NMP submitted in the permit application shall be implemented upon issuance of this permit. The plan shall be updated as appropriate or at a minimum of annually according to NRCS Practice Standard Code 590. The permittee shall make available to the Executive Director, upon request, a copy of the site specific NMP and documentation of the implementation.
 - (1) For Terms of the NMP see Attachments E and F.
 - (2) The following changes to the terms of the NMP are substantial:
 - (i) Increase in animal headcount;
 - (ii) Increase in LMU acreage or a change in LMU location;
 - (iii) Change in crop and yield goal (not listed in Attachment F);
 - (3) Substantial and Non-Substantial Change to the terms of the NMP.
 - (i) Any changes (substantial or non- substantial) to the NMP, other than the Annual Recalculation of Application Rates outlined in Attachment E, must be submitted to the Executive Director for review, and may be subject to public comment;
 - (ii) If the Executive Director determines that the changes to the NMP are not substantial, the revised NMP will be made publicly available and included in the permit record; and
 - (iii) If the Executive Director determines that the changes to the NMP are substantial, the information provided by the permittee will be subject to a major amendment process as set in 30 TAC §§305.61-305.72.
- (b) Comprehensive Nutrient Management Plan (CNMP) required. The permittee must continue to operate under a CNMP certified by the Texas State Soil and Water Conservation Board.
- (c) Critical Phosphorus Level
 - (1) When results of the annual soil analysis show a phosphorus level in the soil of more than 200 ppm but not more than 500 ppm in Zone 1 depth (0-6 inch incorporated; 0-2 or 2-6 inch if not incorporated) for a particular LMU or if ordered by the commission to do so in order to protect the quality of water in the state, then the permittee shall:
 - (i) file with the Executive Director a new or amended nutrient utilization plan (NUP) with a phosphorus reduction component based on crop removal that is certified as acceptable by a person described in (3) below; or

- (ii) show that the level is supported by a NUP that is certified as acceptable by a person described in (3) below.
 - (2) The permittee shall cease land application of compost, manure, sludge, slurry and wastewater to the affected area until the NUP has been approved by the TCEQ. After a NUP is approved, the permittee shall land apply in accordance with the NUP until soil phosphorus is reduced below the critical phosphorus level of 200 ppm extractable phosphorus. Thereafter, the permittee shall implement the requirements of the nutrient management plan.
 - (3) NUP. A NUP is a NMP, based on NRCS Practice Standard Code 590, which utilizes a crop removal application rate. The NUP, based on crop removal, must be developed and certified by one of the following individuals or entities:
 - (i) an employee of the NRCS;
 - (ii) a nutrient management specialist certified by the NRCS;
 - (iii) the Texas State Soil and Water Conservation Board;
 - (iv) the Texas AgriLife Extension;
 - (v) an agronomist or soil scientist on full-time staff at an accredited university located in the State of Texas; or
 - (vi) a Certified Professional Agronomist certified by the American Society of Agronomy, a Certified Professional Soil Scientist certified by the Soil Science Society of America, or a licensed Texas Professional Geoscientist-soil scientist after approval by the Executive Director based on a determination by the Executive Director that another person or entity identified in this paragraph cannot develop the plan in a timely manner.
 - (4) When results of the annual soil analysis for extractable phosphorus indicate a level greater than 500 ppm in Zone 1 depth (0-6 inch incorporated; 0-2 or 2-6 inch if not incorporated), the permittee shall file with the Executive Director a new or amended NUP with a phosphorus reduction component, based on crop removal, that is certified as acceptable by a person described in (3) above. After the new or amended NUP is approved, the permittee shall land apply in accordance with the NUP until soil phosphorus is reduced below 500 ppm extractable phosphorus.
 - (5) If the permittee is required to have a NUP with a phosphorus reduction component based on crop removal, and if the results of tests performed on composite soil samples collected 12 months or more after the plan is filed do not show a reduction in phosphorus concentration in Zone 1 depth (0-6 inch incorporated; 0-2 or 2-6 inch if not incorporated), then the permittee is subject to enforcement action at the discretion of the Executive Director.
- (d) Buffer Requirements. The permittee shall meet the following buffer requirements for each LMU:
- (1) Water in the State. The permittee shall not apply compost, manure, sludge, slurry and wastewater within the buffer distances as noted on Attachment B and Special Provision X.D. Vegetative buffers shall be maintained in accordance with NRCS Field Office Technical Guidance.

The permittee shall maintain the filter strip (according to NRCS Code 393) between the vegetative buffer and the land application area. If the land application area is cropland, the permittee shall install and maintain contour buffer strips (according to NRCS Code 332) within the land application area in addition to the buffer distances required by this permit.

- (2) Water Wells. The permittee shall comply with the well protection requirements listed in Section VII.A.7.(a).
- (e) Exported wastewater, sludge, and/or manure. Wastewater, sludge, and/or manure removed from the operation shall be disposed of by:
 - (1) delivery to a composting facility authorized by the Executive Director;
 - (2) delivery to a permitted landfill located outside of the major sole source impairment zone;
 - (3) beneficial use by land application to land located outside of the major sole source impairment zone;
 - (4) put to another beneficial use approved by the Executive Director; or
 - (5) providing wastewater, sludge, and/or manure to operators of third-party fields, i.e. areas of land in the major sole source impairment zone not owned, operated, controlled, rented, or leased by the CAFO owner or operator, that have been identified in the PPP.
 - (i) There must be a written contract between the permittee and the recipient that includes, but is not limited to, the following provisions:
 - (A) All transferred wastewater, sludge, and/or manure shall be beneficially applied to third-party fields identified in the PPP in accordance with the applicable requirements in 30 TAC §321.36 and §321.40 at an agronomic rate based on soil test phosphorus. The requirements for development or implementation of a nutrient management plan or nutrient utilization plan, under 30 TAC §321.40, do not apply to third-party fields.
 - (B) Manure and sludge must be incorporated on cultivated fields within forty-eight (48) hours after land application.
 - (C) Land application rates shall not exceed the crop nitrogen requirement when the soil phosphorus concentration in Zone 1 depth (0-6 inch if incorporated; 0-2 or 2-6 inch if not incorporated) is less than or equal to 50 ppm phosphorus.
 - (D) Land application rates shall not exceed two times the phosphorus crop removal rate, and not to exceed the crop nitrogen requirement, when soil phosphorus concentration in Zone 1 depth (0-6 inch if incorporated; 0-2 or 2-6 inch if not incorporated) is greater than 50 ppm phosphorus and less than or equal to 150 ppm phosphorus.
 - (E) Land application rates shall not exceed one times the phosphorus crop removal rate, and not to exceed the crop nitrogen requirement, when soil phosphorus concentration in Zone 1 depth (0-6 inch if incorporated; 0-2 or 2-6 inch if not incorporated) is greater than 150 ppm phosphorus and less than 200 ppm phosphorus.

- (F) Before commencing manure, wastewater, compost, and/or sludge application to third-party fields, at least one representative soil sample from each third-party field must be collected by a certified nutrient management specialist and analyzed in accordance with 30 TAC §321.36. Third-party fields which have had wastewater, sludge, compost, and/or manure applied during the preceding year must be sampled annually by a certified nutrient management specialist and the samples analyzed in accordance with 30 TAC §321.36. For third-party fields that have not received wastewater, sludge, compost, and/or manure during the preceding year, initial sampling must be completed before re-starting land application to the third-party field.
- (G) A copy of the annual soil analyses shall be provided to the permittee within sixty (60) days of the date the samples were taken.
- (H) Temporary storage of wastewater, sludge, and/or manure is prohibited on third-party fields.
- (ii) The permittee is prohibited from delivering wastewater, sludge, and/or manure to an operator of a third-party field once the soil test phosphorus analysis shows a level equal to or greater than 200 ppm or after becoming aware that the third-party operator is not following appropriate provisions of 30 TAC §321.36, §321.40 and/or the contract.
- (iii) The permittee will be subject to enforcement action for violations of the land application requirements on any third-party field under contract.
- (iv) The permittee shall submit records to the appropriate regional office quarterly that contain the name, locations, and amounts of wastewater, sludge, and/or manure transferred to operators of third-party fields.
- (f) Irrigation Operating Requirements.
 - (1) Minimize Ponding. Irrigation practices shall be managed so as to minimize ponding or puddling of wastewater on the site, prevent tailwater discharges to water in the state, and prevent the occurrence of nuisance conditions.
 - (2) Discharge Prohibited
 - (i) The drainage of compost, manure, sludge, slurry and wastewater is prohibited from the LMU(s), unless authorized under Section VII.A.5(d).
 - (ii) Where compost, manure, sludge, slurry and wastewater is applied in accordance with the nutrient management plan and/or NUP, precipitation-related runoff from the LMU(s) under the control of the permittee is authorized.
 - (iii) If a discharge from the irrigation system is documented as a violation, the permittee may be required by the Executive Director to install an automatic emergency shut-down or alarm system to notify the permittee of system problems.

- (3) Backflow Prevention. If the permittee introduces wastewater or chemicals to water well heads for the purpose of irrigation, then backflow prevention devices shall be installed according to 16 TAC Chapter 76 (related to Water Well Drillers and Water Well Pump Installers).
- (g) Nighttime Application.
 - (1) Land application at night shall only be allowed if there is no occupied residence(s) within one quarter (0.25) of a mile from the outer boundary of the actual area receiving compost, manure, sludge, slurry and wastewater application. In areas with an occupied residence within one quarter (0.25) of a mile from the outer boundary of the actual area receiving compost, manure, sludge, slurry and wastewater application, application shall only be allowed from one (1) hour after sunrise until one (1) hour before sunset, unless the current occupant of such residences have, in writing, agreed to specified nighttime applications.
 - (2) Land application of compost, manure, sludge, slurry and wastewater is prohibited between 12 a.m. and 4 a.m. during normal operating conditions.
- 9. Sampling and Testing.
 - (a) Manure and Wastewater. The permittee shall collect and analyze at least one representative sample of wastewater and one representative sample of manure each year for total nitrogen, total phosphorus, and total potassium. The results of these analyses shall be used in determining application rates.
 - (b) Soils
 - (1) Initial Sampling. Before commencing compost, manure, sludge, slurry and wastewater application to the LMU(s), the permittee shall have at least one representative soil sample from each LMU, collected and analyzed according to the following procedures.
 - (2) Annual Sampling. The TCEQ or its designee shall have soil samples collected annually for each current and historical LMU.
 - (3) Sampling Procedures. Sampling procedures shall employ accepted techniques of soil science for obtaining representative samples and analytical results, and be consistent with approved methods described in the Executive Director's guidance entitled "Soil Sampling for Concentrated Animal Feeding Operations (CAFOs) (RG-408)."
 - (i) Soil samples must be collected by one of the following persons:
 - (A) the NRCS;
 - (B) a certified nutrient management specialist;
 - (C) the Texas State Soil and Water Conservation Board;
 - (D) the Texas AgriLife Extension; or
 - (E) an agronomist or soil scientist on full-time staff at an accredited university located in the State of Texas.
 - (ii) Samples shall be collected and analyzed within the same forty-five (45) day time frame each year, except when crop rotations or inclement weather require a change in the sampling time. The reason for a change in sampling timeframe shall be documented in the PPP.
 - (iii) Obtain one composite sample for each soil depth zone per uniform soil type (soils with the same characteristics and texture) within each LMU.

- (iv) Composite samples shall be comprised of 10 - 15 randomly sampled cores obtained from each of the following soil depth zones:
 - (A) Zone 1: 0-6 inches (where the manure, sludge, slurry, or compost is physically incorporated or injected directly into the soil) or 0-2 inches (where the manure, sludge or slurry is not incorporated into the soil). Wastewater is considered to be incorporated upon land application if it is less than two percent (2%) solids. Slurry from freestall barns is treated like manure for this sampling requirement. If a 0-2 inch sample is required, then an additional sample from the 2-6 inch soil depth zone shall be obtained in accordance with the provisions of this section; and
 - (B) Zone 2: 6-24 inches.
 - (4) Laboratory Analysis. Samples shall be analyzed by a soil testing laboratory. Physical and chemical parameters and analytical procedures for laboratory analysis of soil samples shall include the following:
 - (i) nitrate reported as nitrogen in ppm;
 - (ii) phosphorus (extractable, ppm) using Mehlich III with Inductively Coupled Plasma (ICP);
 - (iii) potassium (extractable, ppm);
 - (iv) sodium (extractable, ppm);
 - (v) magnesium (extractable, ppm);
 - (vi) calcium (extractable, ppm);
 - (vii) soluble salts (ppm) or electrical conductivity (dS/m) – determined from extract of 2:1 (v/v) water/soil mixture; and
 - (viii) soil water pH (soil:water, 1:2 ratio).
- 10. Preventative Maintenance Program.
 - (a) Facility Inspections
 - (1) General Requirements
 - (i) Inspections shall include visual inspections and equipment testing to determine conditions that could cause breakdowns or failures resulting in discharge of pollutants to water in the state or the creation of a nuisance condition.
 - (ii) The permittee shall draft a report, to be maintained in the PPP, to document the date of inspections, observations and actions taken in response to deficiencies identified during the inspection. The permittee shall correct all the deficiencies within thirty (30) days or shall document the factors preventing immediate correction.
 - (2) Daily Inspections. The permittee shall conduct daily inspections on all water lines, including drinking water and cooling water lines, which are located within the drainage area of a RCS.
 - (3) Weekly Inspections. The permittee shall conduct weekly inspections on:
 - (i) all control facilities, including RCSs, storm water diversion devices, runoff diversion structures, control devices for management of potential pollutant sources, and devices channeling contaminated storm water to RCSs; and
 - (ii) equipment used for land application of compost, manure, sludge, slurry and wastewater.

- (4) Monthly Inspections. The permittee shall conduct monthly inspections on:
 - (i) mortality management systems, including collection areas; and
 - (ii) disposal and storage of toxic pollutants, including pesticide containers.
- (5) Annual Site Inspection.
 - (i) The permittee shall annually conduct a complete site inspection of the production area and the LMU(s).
 - (ii) The inspection shall verify that:
 - (A) the description of potential pollutant sources is accurate;
 - (B) the site plan/map has been updated or otherwise modified to reflect current conditions; and
 - (C) the controls outlined in the PPP to reduce pollutants and avoid nuisance conditions are being implemented and are adequate.
- (b) Five Year Evaluation. Once every five years the permittee shall have a licensed Texas Professional Engineer review the existing engineering documentation, complete a site evaluation of the structural controls, review existing liner and RCS capacity documentation, and complete and certify a report of their findings. The report must be kept in the PPP.
- 11. Management Documentation. The permittee shall maintain the following records in the PPP:
 - (a) a copy of the administratively complete and technically complete individual water quality permit application and the written authorization issued by the commission or Executive Director;
 - (b) a copy of the approved recharge feature certification and appropriate updates;
 - (c) a copy of the comprehensive nutrient management plan, nutrient management plan, nutrient utilization plan and appropriate updates to these plans, if required;
 - (d) the RCS liner certification(s);
 - (e) any written agreement with a landowner which documents the allowance of nighttime application of compost, manure, sludge, slurry and wastewater;
 - (f) documentation of employee and operator training, including verification of the date, time of attendance, and completion of training;
 - (g) the RCS management plan;
 - (h) the capacity of each RCS as certified by a licensed Texas Professional Engineer; and
 - (i) a copy of all third-party field contracts.

B. General Requirements

- 1. The permittee shall not construct any component of the production area in any stream, river, lake, wetland, or playa (except as defined by and in accordance with the Texas Water Code §26.048).
- 2. Animals confined on the CAFO shall be restricted from coming into direct contact with surface water in the state through the use of fences or other controls.
- 3. The permittee shall prevent the discharge of pesticide contaminated waters into water in the state. All wastes from dipping vats, pest and parasite control units, and other facilities used for the application of potentially hazardous or toxic chemicals

- shall be handled and disposed of in a manner that prevents any significant pollutants from entering water in the state or creating a nuisance condition.
4. The permittee shall operate the CAFO in such a manner as to prevent nuisance conditions of air pollution as mandated by Texas Health and Safety Code, Chapters 341 and 382.
 5. The permittee shall take reasonable steps necessary to prevent adverse effects to human health or safety, or to the environment.
 6. The permittee shall maintain control of the RCS(s), required LMU(s), and control facilities identified on the site map submitted in the application. In the event the permittee loses control of any of these areas, the permittee shall notify the Executive Director within five (5) working days.
 7. If animals are maintained in pastures, the permittee shall maintain crops, vegetation, forage growth or post harvest residues in those pastures during the normal growing season, excluding the feed and/or water trough areas.

C. Training

1. Employee Training
 - (a) Employees at the CAFO facility who are responsible for work activities relating to compliance with provisions of this permit must be regularly trained or informed of any information pertinent to the proper operation and maintenance of the facility and land application of manure, sludge, and wastewater.
 - (b) Employee training shall address all levels of responsibility of the general components and goals of the PPP. Training shall include appropriate topics, such as land application of manure, sludge, and wastewater, proper operation and maintenance of the facility, good housekeeping, material management practices, recordkeeping requirements, and spill response and clean up.
 - (c) The permittee is responsible for determining the appropriate training frequency for different levels of personnel. The PPP shall identify periodic dates for such training.
2. Operator Training. The operator shall attend at least eight (8) hours of continuing education in animal waste management or its equivalent, developed by the Executive Director and the Texas AgriLife Extension, for each two year period.
3. Verification of the date and time(s) of attendance and completion of required training shall be documented in the PPP.

D. Air Standard Permit Requirements

1. Air emission limitations.
 - (a) Facilities shall be operated in such a manner as to prevent the creation of a nuisance as defined by Texas Health and Safety Code, 30 TAC §§341.011 and 321.32(32), and as prohibited by 30 TAC §101.4. Facilities shall be operated in such a manner as to prevent a condition of air pollution as defined by Texas Health and Safety Code and 30 TAC §382.003(3).
 - (b) The permittee shall take necessary action to identify any nuisance condition that occurs. The permittee shall take action to abate any nuisance condition as soon as practicable or as specified by the Executive Director.

2. Wastewater treatment. The permittee shall design and operate RCSs to minimize odors in accordance with accepted engineering practices. Each RCS shall be operated in accordance with the design and an operation and maintenance plan that minimizes odors. The primary lagoon in a multi-stage lagoon system shall be designed with a minimum treatment volume so that the lagoon maintains a constant level at all times unless prohibited by climatic conditions. A multi-stage lagoon system shall be designed to minimize the amount of contaminated storm water runoff entering the primary lagoon by routing the contaminated storm water runoff into a secondary RCS.
3. Dust Control. To minimize dust emissions, the CAFO shall be operated and maintained as follows:
 - (a) Fugitive emissions from all grain receiving pits, where a pit is used, shall be minimized through the use of “choke feeding” or through an equivalent method of control. If choke feeding is used, operation of conveyors associated with receiving shall not commence until the receiving pits are full.
 - (b) As necessary, emissions from all in-plant roads, truck loading and unloading areas, parking areas, and other traffic areas shall be controlled with one or more of the following methods to minimize nuisance conditions and maintain compliance with all applicable commission requirements:
 - (1) sprinkled with water;
 - (2) treated with effective dust suppressant(s); or
 - (3) paved with a cohesive hard surface and cleaned.
 - (c) All non-vehicular external conveyors or other external conveying systems associated with the feedmill shall be enclosed.
 - (d) On-site feed milling operations with processing equipment using a pneumatic conveying system (which may include, but are not limited to, pellet mill/pellet cooler systems, flaker systems, grinders, and roller-mills) shall vent the exhaust air through a properly-sized high efficiency cyclone collector or an equivalent control device before releasing the exhaust air to the atmosphere. This requirement does not include cyclones used as product separators.
 - (e) If the Executive Director determines that the implementation and employment of these practices is not effective in controlling dust, the permittee shall implement any necessary additional abatement measures to control and minimize this contaminant within the time period specified by the Executive Director.
4. Maintenance and Housekeeping. The permittee shall comply with the following to help prevent nuisance conditions.
 - (a) The premises shall be maintained to prevent the occurrence of nuisance conditions from odors and dust. Spillage of any raw products or waste products causing a nuisance condition shall be picked up and properly disposed of daily.
 - (b) Proper pen drainage shall be maintained at all times. Earthen pen areas shall be maintained by scraping uncompacted manure and shaping pen surfaces as necessary to minimize odors and ponding.

VIII. Recordkeeping, Reporting, and Notification Requirements**A. Recordkeeping**

The permittee shall keep records on-site for a minimum of five (5) years from the date the record was created and shall submit them within five (5) days of a written request by the Executive Director.

1. The permittee shall update records daily to include:
 - (a) all measurable rainfall events; and
 - (b) the wastewater levels in each RCS, as shown on the depth marker. In circumstances where a RCS has a water level exceeding the expected end of the month depth, the permittee shall document in the PPP why the level of water in the structure is not at or below the expected depth.
2. The permittee shall update records weekly to include:
 - (a) records of all wastewater, sludge, and/or manure removed from the CAFO that shows the dates, amount, and recipient. The permittee must make the most recent nutrient analysis available to any hauler; and
 - (b) inspections of control facilities and land application equipment.
3. The permittee shall update records monthly to include:
 - (a) records describing mortality management practices;
 - (b) storage and disposal of chemicals, including pesticide containers; and
 - (c) records of all compost, manure, sludge, slurry and wastewater applied on the LMU(s). Such records must include the following information:
 - (i) date of compost, manure, sludge, slurry and wastewater application to each LMU;
 - (ii) location of the specific LMU and the volume applied during each application event;
 - (iii) acreage on which compost, manure, sludge, slurry and wastewater is applied;
 - (iv) basis for and the total amount of nitrogen and phosphorus applied per acre to each LMU on a dry basis, including sources of nutrients other than compost, manure, sludge, slurry and wastewater; and
 - (v) weather conditions, such as temperature, precipitation, and cloud cover, during the land application and twenty-four (24) hours before and after the land application.
4. The permittee shall update records annually to include:
 - (a) annual nutrient analysis for at least one representative sample of wastewater and one representative sample of manure for total nitrogen, total phosphorus, and total potassium;
 - (b) any initial and annual soil analysis reports;
 - (c) the annual site inspection report;
 - (d) percent moisture content of the manure, sludge, slurry, and wastewater; and
 - (e) actual annual yield of each harvested crop for each LMU.
5. The Five Year Evaluation report must be updated every five (5) years.
6. The permittee shall keep the following records on-site:
 - (a) a list of any significant spills of potential pollutants at the CAFO that have a significant potential to reach water in the state;
 - (b) documentation of liner maintenance by an NRCS engineer, a licensed Texas Professional Engineer or a licensed Texas Professional Geoscientist;

- (c) RCS design calculations and as built capacity certification;
- (d) embankment certification;
- (e) liner certification;
- (f) a copy of current and amended site plans; and
- (g) copies of all notifications to the Executive Director, including any made to a regional office.

B. Reporting and Notifications

1. The permittee shall provide written notice to the appropriate TCEQ regional office as soon as the RCS cleaning is scheduled, but not less than ten (10) days before cleaning. The permittee shall also provide written verification of completion to the same regional office within five (5) days after the cleaning has been completed. This paragraph does not apply to the cleaning of solid separators or settling basins that are functioning as solid separators.
2. The permittee shall notify the appropriate TCEQ regional office in writing or by electronic mail with the date, time, and location at least ten (10) working days before collecting soil samples from current and historical LMUs; and third-party fields.
3. Discharge Notification. If for any reason there is a discharge of manure, sludge or wastewater into water in the state, the permittee shall notify the appropriate TCEQ regional office orally within one (1) hour of discovery; unless it is not reasonably possible to do so in which event the discharge shall be reported as soon as reasonably possible, but in no event later than twenty-four (24) hours from when the discharge occurred. The permittee shall also submit written notice, within fourteen (14) working days of the discharge to the Office of Compliance and Enforcement, Enforcement Division (MC 224). In addition, the permittee shall document the following information, keep the information on-site, and submit the information to the appropriate regional office within fourteen (14) working days of becoming aware of such discharge. The written notification must include:
 - (a) a description and cause of the discharge, including a description of the flow path to the receiving water body and an estimation of the volume discharged;
 - (b) the period of discharge, including exact dates and times, and, if not corrected, the anticipated time the discharge is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the discharge;
 - (c) if caused by a precipitation event(s), the date(s) of the event(s) and the rainfall amount(s) recorded from an on-site rain gauge; and
 - (d) discharge monitoring analyses required by this permit.
4. In the event of a discharge of manure, sludge, or wastewater from a RCS or a LMU during a chronic or catastrophic rainfall event or resulting from catastrophic conditions, the permittee shall orally notify the appropriate TCEQ regional office within one (1) hour of the discovery of the discharge. The permittee shall send written notification to the appropriate regional office within fourteen (14) working days.
5. Chronic Rainfall Discharge. In the event of a discharge of manure, sludge or wastewater from a RCS or a LMU due to chronic rainfall, the permittee shall submit a report to the appropriate TCEQ regional office showing the CAFO records that substantiates that the overflow was a result of cumulative rainfall that exceeded the design rainfall event without the opportunity for dewatering, and was beyond the control of the permittee. After review of the report, if required by the Executive

Director, the permittee shall have an engineering evaluation by a licensed Texas Professional Engineer developed and submitted to the Executive Director. This requirement is in addition to the discharge notification requirement in this permit.

6. Impacts to Human Health or Safety, or the Environment. The permittee shall provide the following noncompliance notifications:
 - (a) 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, by e-mail, or electronic facsimile transmission (Fax) to the TCEQ regional office within twenty four (24) hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the TCEQ regional office and the Enforcement Division (MC 224) within five (5) 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 anticipated 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) In the event the permittee discharges manure, sludge, or wastewater other than as authorized in the permit, the permittee shall give twenty four (24) hour oral, e-mail, or fax notice and five (5) day written notice to TCEQ as required by paragraph (a) above.
7. The permittee shall submit an annual report to the appropriate regional office and the Enforcement Division (MC 224) by March 31 of each year for the 12-month reporting period of January 1 to December 31 of the previous year. The report shall be submitted on forms prescribed by the Executive Director to include, but not limited to:
 - (a) number and type of animals, whether in open confinement or housed under roof;
 - (b) estimated total manure, sludge, and wastewater generated during the reporting period;
 - (c) total compost, manure, sludge, slurry and wastewater land applied during the last twelve (12) months on-site at the CAFO facility;
 - (d) total wastewater, sludge, and/or manure transferred to other persons during the reporting period;
 - (e) total number of acres for land application under the control of the permittee and all third-party acreage;
 - (f) summary of discharges of manure, sludge, or wastewater from the production area that occurred during the reporting period including dates, times, and approximate volume;
 - (g) a statement indicating that the NMP/NUP, under which the CAFO is operating, was developed and approved by a certified nutrient management specialist;
 - (h) a copy of the initial soil analysis for each new LMU, regardless of whether manure, wastewater, or sludge has been applied;
 - (i) soil monitoring reports of all soil samples collected in accordance with the requirements of this permit;
 - (j) groundwater monitoring reports (if applicable);
 - (k) the actual crop(s) planted and yield(s) for each LMU;

- (l) the actual nitrogen and phosphorus content of manure, sludge or process wastewater that was land applied;
 - (m) the results of data used in calculations and the results of calculations conducted in accordance with Attachment E;
 - (n) the results of any soil testing for nitrogen and phosphorus conducted during the previous 12 months;
 - (o) the amount of any supplemental fertilizer applied during the previous 12 months; and
 - (p) any other information requested by the Executive Director.
8. The permittee shall furnish to the appropriate regional office, and the Enforcement Division (MC 224), soil testing analysis for third-party fields of all soil samples within sixty (60) days of the date the samples were taken in accordance with the requirements of this permit.

IX. Standard Permit Conditions

- A. The permittee has a duty to comply with all permit conditions. Failure to comply with any permit conditions is a violation of the permit and statutes under which it was issued and is ground 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.
- B. The permittee must apply for an amendment or renewal before the expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. Authorization to continue such activity terminates upon the effective denial of said permit.
- C. It is not a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the permit conditions.
- 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. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) installed or used by the permittee to achieve compliance with the permit conditions. Proper operation and maintenance also includes adequate laboratory and process controls, and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the permit conditions.
- F. The permittee shall furnish any information, at the request of the Executive Director, which is necessary to determine whether cause exists for revoking, suspending, or terminating authorization under this permit. The requested information must be provided within a reasonable time frame and in no case later than thirty (30) days from the date of the request.
- G. The permittee shall give notice to the Executive Director before 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.
- H. Authorization from the Commission is required before beginning any change in the permitted facility or activity that would result in noncompliance with other permit requirements.
- I. Inspection and entry shall be allowed under Texas Water Code, Chapters 26-28, Health and Safety Code, §§361.032-361.033 and §361.037, and 40 Code of Federal Regulations

(CFR) §122.41(I). The statement in Texas Water Code, §26.014 that the Commission entry of a facility 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 inspection.

J. Standard Monitoring Requirements

1. Samples required by this permit shall be collected and measurements shall be taken at times and in a manner so as to be representative of the monitored discharge or activity. Samples shall be delivered to the laboratory immediately upon collection, in accordance with any applicable analytical method and required maximum holding time. 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.
2. Records of monitoring activities must include:
 - (a) the date, time, and place of sample or measurement;
 - (b) the identity of any individual who collected the sample or made the measurement;
 - (c) the chain-of-custody procedures used to maintain sample integrity from sample collection to laboratory delivery;
 - (d) the date and time of laboratory analysis;
 - (e) the identity of the individual and laboratory who performed the analysis;
 - (f) the technique or method of analysis; and
 - (g) the results of the analysis or measurement and quality assurance/quality control records.
3. The permittee shall ensure that properly trained and authorized personnel monitor and sample the soil or wastewater related to any permitted activity.

K. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly shall be reported to the Executive Director as promptly as possible.

L. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §305.97 (relating to Action on Application for Transfer).

M. PPPs, reports, and other information requested or required by the Executive Director shall be signed in accordance with the requirements of 30 TAC §305.128 (relating to Signatories to Reports).

N. A permit may be amended, suspended and re-issued, or revoked for cause. The filing of a request by the permittee for a permit amendment, suspension and re-issuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

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

P. 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 fourteen (14) days following each schedule date.

Q. If the permittee becomes aware that he/she 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, the permittee shall promptly submit such facts or information.

- R. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code, §§26.136, 26.212, and 26.213, for violations including but not limited to the following:
1. negligently or knowingly violating Clean Water Act (CWA) §§301, 302, 306, 307, 308, 318, or 405 or any condition or limitation implementing any sections in a permit issued under CWA §402, or any requirement imposed in a pretreatment program approved under CWA §402(a)(3) or §402(b)(8);
 2. falsifying, tampering with, or knowingly rendering inaccurate any monitoring device or method required to be maintained under a permit; or
 3. knowingly making any false statement, representation, or certification in any record or other document submitted or required to be maintained under a permit, including monitoring reports or reports of compliance or noncompliance.
- S. The permittee shall comply with all applicable rules and regulations of the commission, including 30 TAC 321, Subchapter B.
- T. 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:
1. Violation of any terms or conditions of this permit;
 2. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
 3. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- U. Acceptance of the permit by the person to whom it is issued constitutes acknowledgement 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.
- V. 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.
- W. 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.
- X. Notice of Bankruptcy.
1. 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:
 - (a) the permittee;
 - (b) 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
 - (c) an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.
 2. This notification must indicate:
 - (a) the name of the permittee;
 - (b) the permit number(s);
 - (c) the bankruptcy court in which the petition for bankruptcy was filed; and

(d) the date of filing of the petition.

X. Special Provisions

- A. RCS Volumes. The permittee shall maintain the wastewater volumes in each RCS in accordance with Table 6.

Table 6: Volume Allocations for RCSs (Acre-Feet)

RCS Name	Design Rainfall Event Runoff	Process Generated Wastewater	Minimum Treatment Volume	Sludge Accumulation	Water Balance	Required Capacity Without Freeboard	Actual Capacity Without Freeboard
RCS #1	0.0	0.0	6.90	1.15	0.0	8.05	9.62
RCS #2	14.82	2.07	0.0	0.16	4.60	21.64	27.12

- B. Future Revisions to Bosque River Total Maximum Daily Load (TMDL). The permittee is hereby placed on notice that this permit may be amended by the TCEQ in order to make the terms and conditions of this permit consistent with any revisions to the Bosque River TMDL, associated Implementation Plan, and any revisions to federal regulations.
- C. The permittee shall submit the following record to the appropriate Regional Office and the Enforcement Division (MC 224) by March 31 of each year for the 12-month reporting period of January 1 to December 31 of the previous year.
1. date of compost, manure, sludge, slurry and wastewater application to each LMU;
 2. location of the specific LMU and the volume applied during each application event;
 3. acreage of each individual crop on which compost, manure, sludge, slurry and wastewater is applied;
 4. basis for and the total amount of nitrogen and phosphorus applied per acre to each LMU, including sources of nutrients other than compost, manure, sludge, slurry and wastewater on a dry basis;
 5. weather conditions, such as temperature, precipitation, and cloud cover, during the land application and twenty-four (24) hours before and after the land application;
 6. annual nutrient analysis for at least one (1) representative sample of manure, sludge (if applicable), slurry, and wastewater for total nitrogen, total phosphorus, and total potassium; and
 7. any measurements of sludge accumulations as required in each RCS.
- D. Table 7 describes the buffers that the permittee is required to install and maintain according to the NRCS practice standards in the referenced code. The map in Attachment B includes the location and distance requirements for all buffers.

Table 7: Buffer Distances

LMU Name	Vegetative Buffer Setback (feet)	Additional Buffer Setback NRCS Code 393 Filter Strip Flow Length (feet)
LMU #1	100	36
LMU #2	Not Applicable	
LMU #3	100	28
LMU #4	100	28 - 42

LMU Name	Vegetative Buffer Setback (feet)	Additional Buffer Setback NRCS Code 393 Filter Strip Flow Length (feet)
LMU #5	Not Applicable	
LMU #6	Not Applicable	
LMU #7	100	36

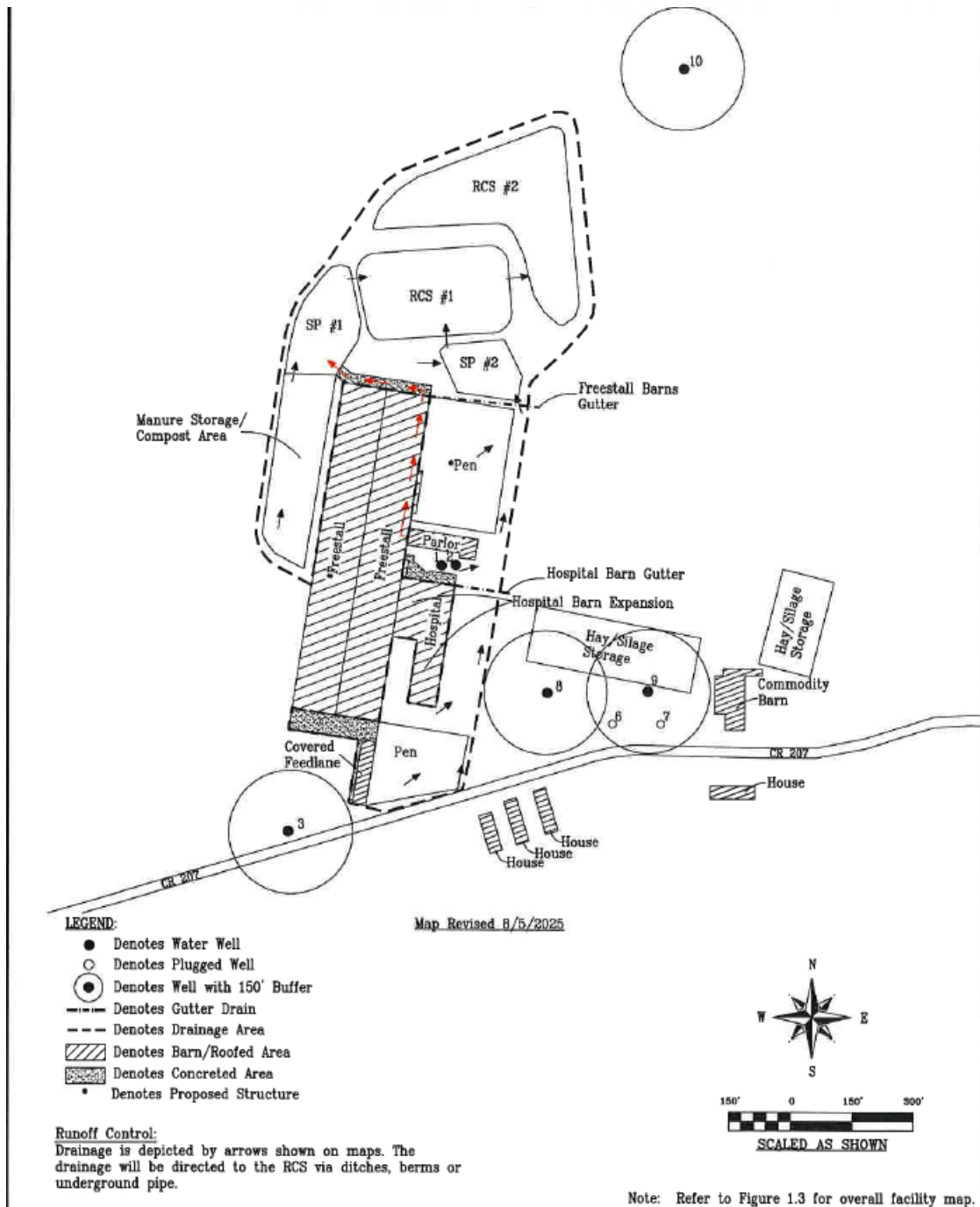
- E. The sludge volume in each RCS will be measured and recorded in the PPP as necessary, but at least annually.
- F. There will be no grazing of livestock on the LMUs for this CAFO unless the NMP reflects grazing and the grazing practices mentioned in the NRCS Conservation Practice Code 393, Filter Strip, are implemented to protect buffers.
- G. Settling Basin Solids.
 - 1. For the purpose of this permit, settling basin solids shall be defined as manure.
 - 2. If settling basin solids are land applied, an annual sample must be collected and analyzed in accordance with Section VII.A.9(a), in addition to other manure and wastewater.
- H. All runoff from silage, commodity, and hay storage outside the RCS drainage area will be contained. Appropriate provisions for that containment will be stated in the PPP upon issuance of the permit. This permit does not authorize any discharge from the silage, commodity, or hay storage areas located outside the drainage area of the RCSs.
- I. Slurry from freestall barn
 - 1. For the purpose of this permit, slurry from freestall barns shall be defined as manure.
 - 2. If slurry from freestall barns is land applied, an annual sample must be collected and analyzed in accordance with Section VII.A.9(a), in addition to other manure and wastewater.
 - 3. Slurry removed from freestall barns must be stored within the drainage area of an RCS, and the storage area must be large enough to prevent overflow into settling basins and/or RCSs. Any overflow of these storage basins shall be recorded in the PPP and notification shall be provided to the Regional Office within thirty (30) days. Based on review of the information this permit may be formally amended to require additional controls or other requirements.
- J. Should LMUs be converted from permanent grass to cropland, permittee must maintain contour buffer strips within the cropland LMUs in accordance with NRCS Code 332.
- K. Sludge must be analyzed for nutrient content prior to routing offsite for any land application. The analysis for each haul off shall be maintained in the PPP. (See Section VII.A.5(g) for additional requirements relating to sludge cleanout.)
- L. Manure and settled solids accumulations in the settling basin must be removed on a regular and consistent basis so as to assure attainment of the 40% designed removal efficiency.
- M. A LMU map showing historical LMUs shall be maintained in the PPP.
- N. Flushing of the freestall barns is prohibited. Manure removal may be accomplished by dry scrape or vacuum only.
- O. During the annual site inspection, the permittee will inspect Wells #1 and #2. Special attention should be given to ensure that the concrete slabs, well heads, and the best management practices listed in Table 3 are in place and functional. Integrity

compromises, such as the concrete slab cracking, sanitary seal deterioration, cracks in the well casing, or well house deterioration will be repaired within 30 days of the discovery. Permittee shall ensure no runoff or wastes encroach upon the wells. Fertilizers and pesticides will not be stored on or in any structure that houses the water wellhead. Maintenance records for the wells shall be maintained onsite.

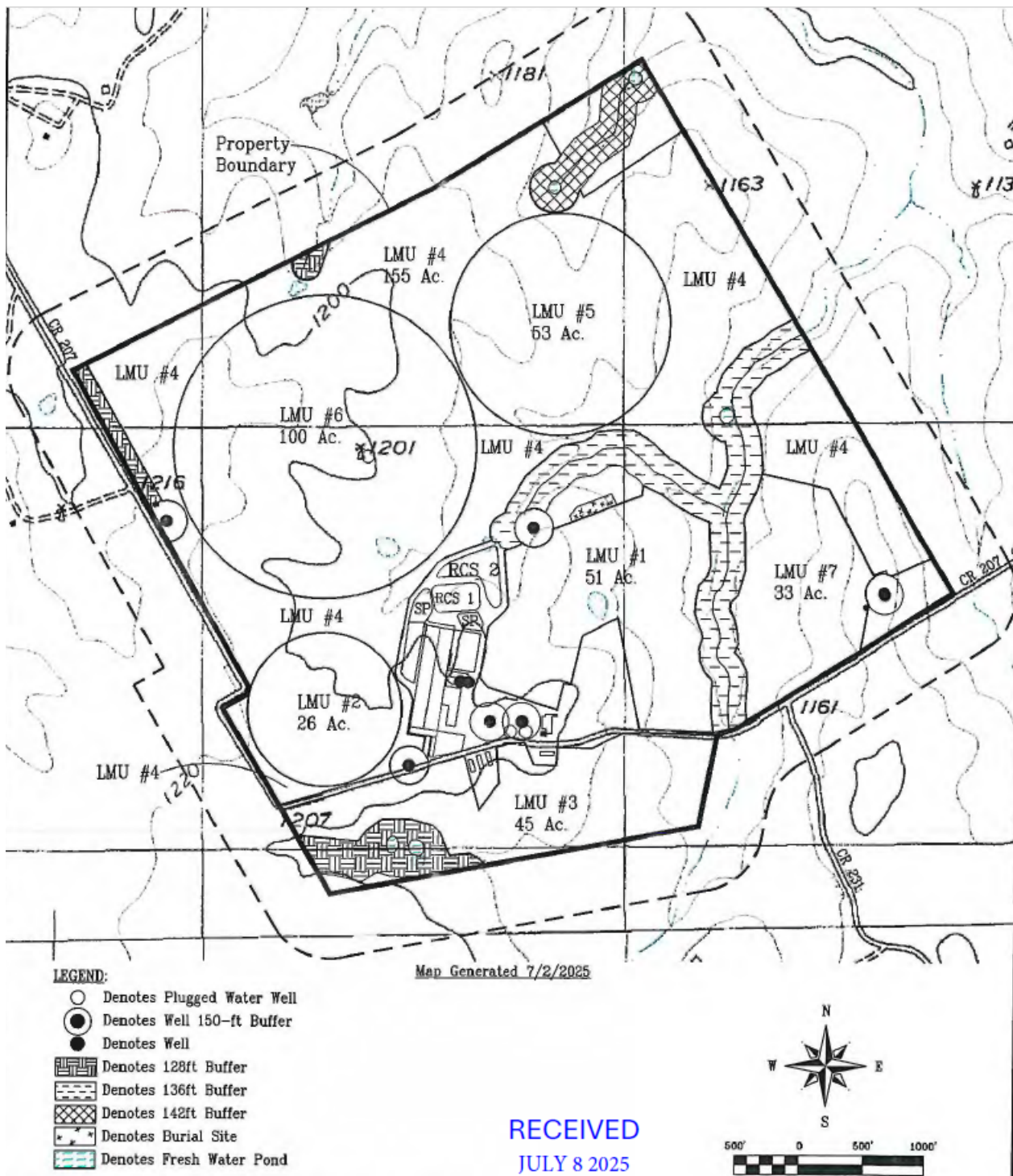
P. Onsite Burial.

1. The permittee shall collect non-diseased carcasses within 24 hours of death and properly dispose of them within three days of death, in accordance with Texas Water Code Section 26.0405; Texas Health and Safety Code Section 361.090; and 30 TAC 335.4–335.6, unless otherwise provided for by the TCEQ.
2. The permittee shall comply with the following requirements:
 - (a) The permittee shall properly design or install the pit or trench, and shall not cause contamination of ground water, seepage, or contamination of stream systems from surface drainage or floodwater.
 - (b) Animal burial sites that have highly permeable soils, fractured or cavernous bedrock, or a seasonal high water table are not suitable.
 - (c) Depth to ground water table shall be at least 5 feet below the bottom of the excavation. The site shall not be subject to flooding and surface water should be diverted from the excavation.
 - (d) The soil for the final cover of the pit or trench shall be of soil material that favors revegetation and shall not contain excess sodium or salts and shall not be too acid. It is recommended that topsoil from the excavation be set aside for the top layer of final cover.
 - (e) Burial sites should be located in an area not likely to be disturbed in the near future.
 - (f) The permittee shall maintain the following setbacks for burial:
 - (i) Minimum of 300 feet downgradient from any ground water supply source and nearest drinking water well.
 - (ii) Minimum of 300 feet from the nearest surface water including but not limited to creek, stream, pond, lake, or river, and not in a floodplain.
 - (iii) Minimum of 200 feet from adjacent property lines.
 - (iv) Depth of burial shall be at least 3 feet below the natural surface of the ground, with at least 3 feet of earthen material (soil) over the carcass.

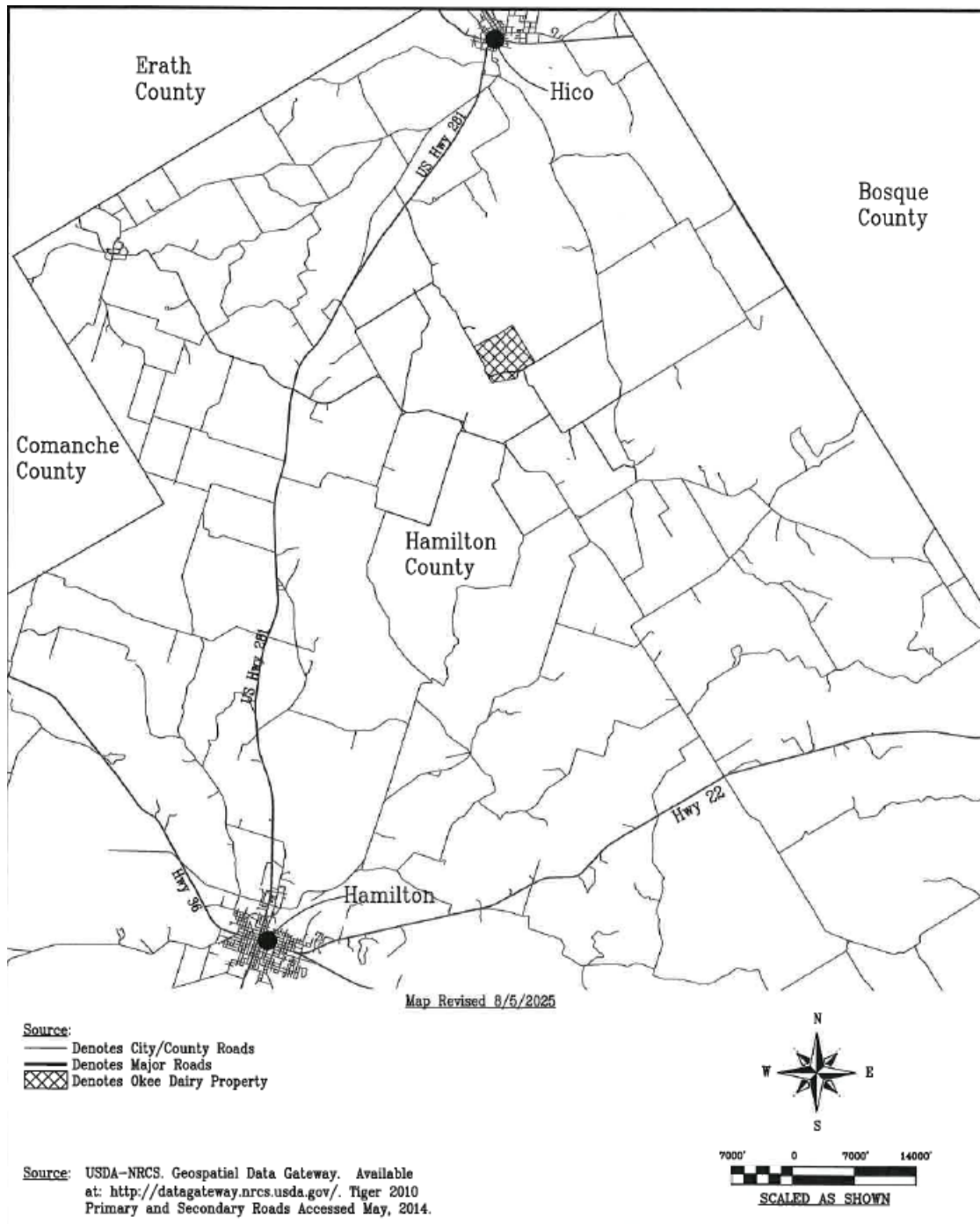
ATTACHMENT A
SITE MAP (RUNOFF CONTROL)



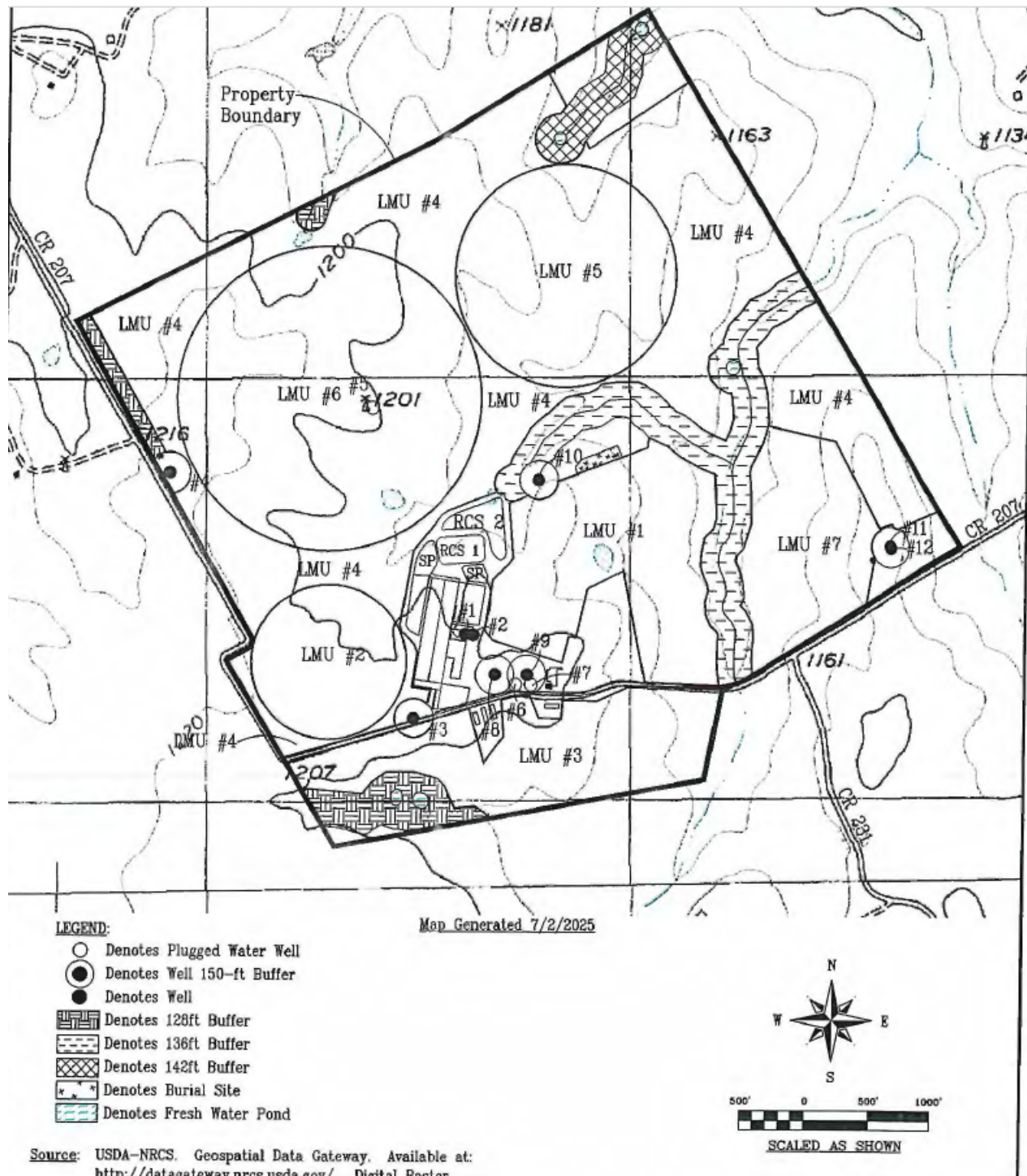
ATTACHMENT B
LAND MANAGEMENT UNITS



ATTACHMENT C
VICINITY MAP



ATTACHMENT D
WELL LOCATION AREAS



ATTACHMENT E

METHODOLOGY FOR CALCULATING MAXIMUM APPLICATION RATES AND ANNUAL RECALCULATION OF APPLICATION RATES

1. Identify the Soil Test Phosphorus (P) Level (Extremely Low, Very Low- Low, Medium, High, Very High) on the soil test analysis.

Soil Test P Rating	Soil Test P Levels (ppm*)
Extremely Low	Less than 5
Very Low - Low	5 to less than 20
Medium	20 to less than 50
High	50 to less than 100
Very High	Greater than or equal to 100

*ppm is equivalent to mg/kg of solids

2. Update Table 1 to Attachment E:
 - (a) Populate the Sub Total column with the point value that corresponds to the Site Characteristic for each.
 - (b) Calculate the Total Index Points
 - (c) Select the P Runoff Potential from the total sum of the Index Points of the Site Characteristics using the Phosphorus Index Classification Table.
3. Determine which of the tables (Table 2A or Table 2B) of Table 2 to Attachment E on the following page is appropriate to use. Each table describes the criteria for its use.
4. Determine which application rate column is appropriate using the following criteria:
 - (a) Use the Maximum TMDL Annual P Rate if this LMU is located in a segment with an approved TMDL.
 - (b) Use Maximum Annual P Application if this LMU is not located in a segment with an approved TMDL and you wish to apply annually.
 - (c) Use Maximum Biennial Application Rate if this LMU is not located in a segment with an approved TMDL and you wish to apply biennially.
5. Determine the Maximum Application Rate using the table identified in Step 3, the column identified in Step 4, and the P Runoff Potential identified in Step 2.(c).
6. Using one of the approved crops and yield goals identified on Attachment F for this LMU, determine the maximum application rate (in lbs/ac) for that crop and yield goal and the Maximum Application Rate identified in Step 5 from the S-Crop Table.
 - (a) Example 1: If the Maximum Application Rate in Step 5 is “1.5 Times Annual Crop P Requirement”, find the number identified on the S-Crop Table under the column “Crop P₂O₅ requirement” for your crop/yield goal, then multiply that number by 1.5 to determine your maximum application rate (in lbs/ac P₂O₅).
 - (b) Example 2: If the Maximum Application Rate in Step 5 is “0.5 Times Annual Crop P Removal”, find the number identified on the S-Crop Table under the column “Crop P₂O₅ Removal Rate” for your crop/yield goal, then multiply that number by 0.5 to determine your maximum application rate (in lbs/ac P₂O₅).

ATTACHMENT E

TABLE 1: PHOSPHORUS INDEX WORKSHEET FOR EAST TEXAS FROM NRCS PRACTICE STANDARD 590

Client Name:			Field(s):			Date:	
Planner:			Location:			Crop:	
Impaired Watershed (Y or N):			Runoff Curve No.:			% Slope:	
Site Characteristic (Weighting Factor)	[Weighting Factor Times the Column Factor]					Sub Total	
	0	1	2	4	8		
Soil Test P Rating (1.00)	N/A	Very Low – Low	Moderate	High	Very High		
	[0]	[1.0]	[2.0]	[4.0]	[8.0]		
Fertilizer Phosphorus (P ₂ O ₅) Application Rate (0.75)	None Applied	1-40 lbs/ac P ₂ O ₅	41-90 lbs/ac P ₂ O ₅	91-150 lbs/ac P ₂ O ₅	>150 lbs/ac P ₂ O ₅		
	[0]	[0.75]	[1.5]	[3.0]	[6.0]		
Organic Phosphorus (P ₂ O ₅) Application Rate (0.75)	None Applied	1-40 lbs/ac P ₂ O ₅	41-90 lbs/ac P ₂ O ₅	91-150 lbs/ac P ₂ O ₅	>150 lbs/ac P ₂ O ₅		
	[0]	[0.75]	[1.5]	[3.0]	[6.0]		
Phosphorus Fertilizer Application Method and Timing (0.50)	None Applied	Placed deeper than 2 in. or broadcast and incorporated within 48 hours	Surface applied 12/1-2/15	Surface applied 2/16-4/15 or 6/16-11/30	Surface Applied 4/16-6/15		
	[0]	[0.50]	[1.0]	[2.0]	[4.0]		
Organic Phosphorus source Application Method and Timing (0.50)	None Applied	Placed deeper than 2 in. or broadcast and incorporated within 48 hours	Surface applied 12/1-2/15	Surface applied 2/16-4/15 or 6/16-11/30	Surface Applied 4/16-6/15		
	[0]	[0.50]	[1.0]	[2.0]	[4.0]		
Proximity of nearest field edge to named stream or lake (1.25)	> 2000 feet	1000 – 1999 feet	500 – 999 feet	100 – 499 feet	< 100 feet		
	[0]	[1.25]	[2.5]	[5.0]	[10.0]		
Runoff Class (Runoff Class Table 3) (1.00)	Negligible	Low	Moderate	High	Very High		
	[0]	[1.0]	[2.0]	[4.0]	[8.0]		
Soil Erosion (all sources) (1.50)	Very Low <1 t/ac	Low 1-3 t/ac	Medium 3-5 t/ac	High 5-10 t/ac	Very High >10 t/ac		
	[0]	[1.5]	[3.0]	[6.0]	[12.0]		
Total Index Points:							

ATTACHMENT E

TABLE 2: APPLICATION RATES FROM NRCS PRACTICE STANDARD 590

Commercial fertilizers must be applied in accordance with SWFTL* recommendations. Application of all organic soil amendments must not exceed the values in Table 2A or 2B.

Table 2A. A Nutrient Management Plan (NMP)¹ is required where any organic soil amendments are applied where Soil Test P Level is less than 200 ppm statewide or, less than 350 ppm in arid areas² with distance to a named stream greater than one mile.

P – Index Rating	Maximum TMDL Annual P Application Rate	Maximum Annual P Application Rate	Maximum Biennial Application Rate
Very Low, Low	Annual Crop Nitrogen (N) Requirement	1.0 Times Annual Crop N Requirement	2.0 Times Annual Crop N Requirement
Medium	2.0 Times Annual Crop P Requirement ³	2.0 Times Annual Crop P Requirement ³	2.0 Times Annual Crop N Requirement
High	1.5 Times Annual Crop P Requirement ³	1.5 Times Annual Crop P Requirement	Double the Maximum Annual P Application Not to Exceed 2 Times the Annual Crop N Requirement
Very High	1.0 Times Annual Crop P Requirement ³	1.0 Times Annual Crop P Requirement ³	Double the Maximum Annual P Application Not to Exceed 2 Times the Annual Crop N Requirement

Table 2B. A Nutrient Utilization Plan (NUP)¹ is required where Soil Test P Level is: equal to or greater than 200 ppm in nonarid areas², or equal to or greater than 350 ppm in arid areas² with distance to a named stream greater than one mile and erosion control is adequate to keep erosion at the soil loss tolerance (T) or less, or equal to or greater than 200 ppm in arid areas² with distance to a named stream less than one mile.

P – Index Rating	Maximum TMDL Annual P Application Rate	Maximum Annual P Application Rate	Maximum Biennial Application Rate
Very Low, Low	1.0 Times Annual Crop P Removal ⁴	Annual Crop N Removal	2.0 Times Crop N Removal
Medium	1.0 Times Annual Crop P Removal ⁴	1.5 Times Annual Crop P Removal ⁴	Double the Maximum Annual P Application Not to Exceed 2 Times the Annual Crop N Removal
High	1.0 Times Annual Crop P Removal ⁴	1.0 Times Annual Crop P Removal ⁴	Double the Maximum Annual P Application Not to Exceed 2 Times the Annual Crop N Removal
Very High	0.5 Times Annual Crop P Removal ⁴	0.5 Times Annual Crop P Removal ⁴	Double the Maximum Annual P Application Not to Exceed 2 Times the Annual Crop N Removal

Footnotes Applicable to both Tables

¹NMP and NUP designations are consistent with 30 TAC §321.40.

²All counties must use the 200 ppm P level limit to determine whether to use Table 2A or Table 2B. However, in counties receiving less than 25 inches of annual rainfall, the 350 ppm P level limit applies if the field application area is greater than 1 mile from a named stream or lake. See map in current Texas Agronomy Technical Note 15, Phosphorus Assessment Tool for Texas for county rainfall designations.

³Not to exceed the annual nitrogen requirement rate.

⁴Not to exceed the annual nitrogen removal rate.

SWFTL* Texas A&M AgriLife Extension Soil, Water and Forage Testing Laboratory

ATTACHMENT F

SITE SPECIFIC INFORMATION FOR LAND MANAGEMENT UNITS FROM THE NUTRIENT MANAGEMENT PLAN

**Table 1: Alternative Crops and Yield Goals
Applicable to All Land Management Units: - 463 Acres**

Crop and Yield Goal	Nitrogen		P2O5	
	Requirement	Removal	Requirement	Removal
Alfalfa Hay 10 Tons	530	532	180	101
Alfalfa Hay 12 Tons	640	638	180	121
Alfalfa Hay 2 Tons	120	106	35	20
Alfalfa Hay 4 Tons	210	213	80	40
Alfalfa Hay 6 Tons	300	319	130	60
Alfalfa Hay 8 Tons	420	426	180	81
Bahia 2 Cut Hay 7000 #	140	89	70	21
Bahia 3 Cut Hay 8000 #	210	102	80	24
Bahia 4 Cut Hay 9000 #	280	114	115	27
Bahia Grazing + 1 Hay	110	83	70	19
Bahia Grazing 1 AU/1 ac	260	114	70	27
Bahia Grazing 1 AU/2 ac	220	108	45	25
Bahia Grazing 1 AU/3 ac	180	102	45	24
Bahia Grazing 1 AU/4 ac	140	95	45	22
Bahia Grazing 1 AU/5 ac	100	79	45	18
Bahia Grazing 1 AU/6 ac	60	65	45	15
Cantaloupes 15-20 tons	120	88	105	82
Coastal 2 Cut + Graze	260	198	125	62
Coastal 2 Cut Hay	200	169	125	39
Coastal 3 Cut + Graze	360	257	125	80
Coastal 3 Cut Hay	300	238	125	74
Coastal 4 Cut Hay	400	257	170	80
Coastal 5-6 Cut Hay	500	297	170	93
Coastal Grazing + 1 Hay	160	145	70	34
Coastal Grazing 1 AU/0.5 ac	300	218	70	68
Coastal Grazing 1 AU/1 ac	240	198	70	62
Coastal Grazing 1 AU/2 ac	200	169	70	39
Coastal Grazing 1 AU/3 ac	160	145	70	34
Coastal Grazing 1 AU/4 ac	120	120	70	28
Coastal Grazing 1 AU/5 ac	90	103	70	24
Coastal Grazing 1 AU/6 ac	60	86	70	20
Coastal GC (30%DM) 21-23 Ton	400	345	170	95
Coastal GC (30%DM) 18-20 Ton	350	300	170	82
Coastal GC (30%DM) 15-17 Ton	300	255	125	70
Coastal GC (30%DM) 9-11 Ton	200	170	125	47
Common 2 Cut Hay 6000 #	140	113	80	26
Common 3 Cut Hay 7400 #	210	141	80	46
Common 4 Cut Hay 8000 #	280	152	80	49
Common 5-6 Cut Hay 9000 #	350	171	80	56
Common Grazing + 1 Hay	110	100	70	23
Common Grazing + 2 Hay	180	132	80	30
Common Grazing + 3 Hay	250	148	80	48
Common Grazing 1 AU/1 ac	260	152	70	49
Common Grazing 1 AU/2 ac	220	143	45	46
Common Grazing 1 AU/3 ac	180	132	45	30
Common Grazing 1 AU/4 ac	140	113	45	26
Common Grazing 1 AU/5 ac	100	94	45	22
Common Grazing 1 AU/6 ac	60	79	45	18

ATTACHMENT F

SITE SPECIFIC INFORMATION FOR LAND MANAGEMENT UNITS FROM THE NUTRIENT MANAGEMENT PLAN

**Table 1: Alternative Crops and Yield Goals
Applicable to All Land Management Units: - 463 Acres**

Crop and Yield Goal	Nitrogen		P2O5	
	Requirement	Removal	Requirement	Removal
Corn 111 - 130 bu	144	117	105	47
Corn 131 - 150 bu	164	135	105	54
Corn 151 - 170 bu	180	153	130	61
Corn 171 - 190 bu	210	171	130	68
Corn 191 - 210 bu	250	189	130	75
Corn 211 - 230 bu	280	207	130	83
Corn 231 - 250 bu	300	225	130	90
Corn 250 - 275 bu	325	243	130	97
Corn 276 - 300 bu	350	261	130	104
Corn 301 - 350 bu	375	279	130	111
Corn 50 - 70 bu	70	63	80	25
Corn 71 - 90 bu	90	81	80	32
Corn 91 - 110 bu	120	99	105	39
Cotton 0.5 Bale	25	18	30	9
Cotton 1.0 Bale	50	36	55	18
Cotton 2.0 Bale	100	71	105	35
Cotton 3.0 Bale	150	107	105	53
Cotton 3.5 Bale	175	125	105	62
Cotton 4.0 Bale	200	142	105	71
Cotton 4.5 Bale	225	160	105	80
Cotton 5.0 Bale	250	178	105	89
Eastern gamagrass- 3000 #	80	57	40	21
Eastern gamagrass- 6000 #	120	114	60	41
Fescue, Tall Hay/Graze 7000#	150	140	80	42
Grain Sorg. 1000 #	20	17	30	8
Grain Sorg. 10000 #	200	167	130	82
Grain Sorg. 1500 #	30	25	30	12
Grain Sorg. 2000 #	40	33	30	16
Grain Sorg. 3000 #	60	50	55	25
Grain Sorg. 4000 #	80	67	55	33
Grain Sorg. 5000 #	100	84	80	41
Grain Sorg. 6000 #	120	100	80	49
Grain Sorg. 7000 #	140	117	130	58
Grain Sorg. 8000 #	160	134	130	66
Grain Sorg. 9000 #	180	150	130	74
Guar 3500 lbs	25	22	80	76
Johnsongrass Hay 6000 #	140	101	80	32
Klein 3 Cut Hay 7200 #	150	83	55	16
Klein 4 Cut Hay 7800 #	150	90	55	18
Klein Grazing + 1 Hay	80	69	55	14
Klein Grazing 1 AU/1.5 ac	150	90	80	18
Klein Grazing 1 AU/2.5 ac	80	69	55	14
Klein Grazing 1 AU/6 ac	40	58	55	11
Legume Overseeded	80	60	105	15
Legume w/ryegrass	160	94	160	38
Midland Bermuda 4000 #	120	75	80	17
Midland Bermuda 6000 #	150	113	105	26
Midland Bermuda 8000 #	200	150	105	35

ATTACHMENT F

SITE SPECIFIC INFORMATION FOR LAND MANAGEMENT UNITS FROM THE NUTRIENT MANAGEMENT PLAN

**Table 1: Alternative Crops and Yield Goals
Applicable to All Land Management Units: - 463 Acres**

Crop and Yield Goal	Nitrogen		P2O5	
	Requirement	Removal	Requirement	Removal
Native Grazing or Hay 4000#	80	44	70	34
Native Grazing or Hay 3000#	40	33	55	25
Native Grazing or Hay 1500#	20	17	27	13
Native Grazing or Hay 750#	10	8	13	6
Oat Light Grazing	120	107	55	40
Oat Moderate Grazing	160	110	80	41
Oats Hay 2-3 tons	120	100	55	37
Oats Heavy Grazing plus Hay	200	117	80	43
Old World Bluestem- 3000 #	40	33	55	25
Old World Bluestem- 6000 #	80	66	55	51
Peanut Hay Dryland 1 Ton	50	47	70	11
Peanut Hay Dryland 2 Tons	100	93	70	22
Peanut Hay Irrigated 3 Tons	150	140	95	33
Peanuts Irrigated 4500 #	180	162	95	18
Rice Early 7500 #	195	104	45	41
Rice Late 7500 #	180	104	45	41
Rice plus Ratoon Early 10000 #	295	139	60	55
Rice plus Ratoon Late 10000 #	280	139	60	55
Rye Forage 5000 #	140	84	55	31
Rye Forage 7000 #	240	117	80	43
Ryegrass Hay 6000	140	100	55	37
Ryegrass Heavy Grazing	200	117	80	43
Ryegrass Moderate Grazing	140	84	55	31
SG Green Chop(25% DM) 8 to 9 tons	260	203	90	73
SG Green Chop(25% DM) 6 to 7 tons	200	158	80	57
SG Green Chop(25% DM) 4 to 5 tons	135	113	60	41
SG Green Chop(25% DM) 2 to 3 tons	75	68	40	24
SG Silage(35% DM) 12 to 14 tons	160	128	90	67
SG Silage(35% DM) 10 to 11 tons	120	101	70	53
SG Silage(35% DM) 8 to 9 tons	95	83	40	43
SG Silage(35% DM) 5 to 7 tons	70	64	30	34
Silage - Corn(35% DM) 11 - 15 Ton	140	119	80	58
Silage - Corn(35% DM) 16 - 20 Ton	240	183	100	77
Silage - Corn(35% DM) 21 - 25 Ton	350	263	105	96
Silage - Corn(35% DM) 26 - 30 Ton	420	315	135	115
Silage - Corn(35% DM) 7 - 10 Ton	85	79	60	38
Silage - Sorg(35% DM) 11 - 15 Ton	200	179	75	55
Silage - Sorg(35% DM) 16 - 20 Ton	280	238	95	74
Silage - Sorg(35% DM) 21 - 25 Ton	360	298	115	92
Silage - Sorg(35% DM) 26 - 30 Ton	380	315	130	111
Silage - Sorg(35% DM) 31 - 40 Ton	450	364	155	135
Silage - Sorg(35% DM) 41 - 50 Ton	580	455	190	168
Silage - Sorg(35% DM) 51 - 60 Ton	700	550	220	202
Silage - Sorg(35% DM) 7 - 10 Ton	125	119	60	37
Small Grain Heavy Grazing	240	112	105	41
Small Grain Light Grazing	60	75	80	28
Small Grain Moderate Grazing	160	97	105	36
Sorg. - Sudan Hay/Graze 11000 #	240	219	105	83

ATTACHMENT F

SITE SPECIFIC INFORMATION FOR LAND MANAGEMENT UNITS FROM THE NUTRIENT MANAGEMENT PLAN

**Table 1: Alternative Crops and Yield Goals
Applicable to All Land Management Units: - 463 Acres**

Crop and Yield Goal	Nitrogen		P2O5	
	Requirement	Removal	Requirement	Removal
Sorg. - Sudan Hay/Graze 7500 #	160	149	55	57
Sorg Forage Hay/Graze 11000 #	240	219	105	83
Sorg Forage Hay/Graze 7500 #	160	151	55	57
Soybean 30 bu	110	119	60	24
Soybean 50 bu	180	180	80	40
Sunflower 2000#	100	71	56	30
Sunflower 3000#	175	107	65	45
Triticale Graze or Hay 7000 #	160	117	105	43
Triticale Graze or Hay 9000 #	240	150	105	56
Watermelons 12 tons	80	53	55	49
Weeping Lovegrass 3500 #	70	39	55	30
Wheat Forage 2000 #	60	33	80	12
Wheat Forage 4000 #	160	67	105	25
Wheat Forage 6000 #	240	100	105	37
Wheat Grain 20 - 30 bu + Grazing	60	58	55	40
Wheat Grain 20 - 30 bu	45	37	55	26
Wheat Grain 31 - 40 bu + Grazing	80	71	75	48
Wheat Grain 31 - 40 bu	60	50	75	34
Wheat Grain 41 - 50 bu + Grazing	100	83	75	57
Wheat Grain 41 - 50 bu	75	62	75	43
Wheat Grain 51 - 60 bu + Grazing	120	96	90	65
Wheat Grain 51 - 60 bu	90	75	90	51
Wheat Grain 61 - 70 bu + Grazing	140	108	90	74
Wheat Grain 61 - 70 bu	105	87	90	60
Wheat Grain 71 - 80 bu + Grazing	160	121	95	82
Wheat Grain 71 - 80 bu	120	100	95	68
Wheat Grain 81 - 90 bu + Grazing	180	133	95	91
Wheat Grain 81 - 90 bu	135	112	95	77
Wheat Grain 91 - 100 bu + Grazing	200	146	95	99
Wheat Grain 91 - 100 bu	150	125	95	85
Wheat Heavy Grazing	240	114	105	42
Wheat Light Grazing	60	75	80	28
Wheat Moderate Grazing	160	97	105	36
Millet GC (25% DM) 18 - 24 Ton	180	140	60	46
Millet Hay/Graze 11000 #	150	95	45	40
Silage - Millet(35% DM) 15 - 18 Ton	190	139	60	46
Popcorn Shelled 3000 - 4000 #	80	74	80	27
Popcorn Shelled 4000 - 5000 #	100	92	80	33
Popcorn Shelled 5000 - 6000 #	120	110	80	40
Vetch Hay 1 Ton	70	60	105	14
Vetch Hay 2 Tons	140	120	105	28
Vetch Green chop(25%DM) 4 Tons	70	56	105	7
Vetch Green chop(25%DM) 8 Tons	140	112	105	14
Winter Pea Hay 5000#	140	137	105	35
Winter Pea Green chop(25%DM)8-9 Tons	140	123	105	32
Cowpea Hay 2 Tons	140	120	105	26
Cowpea GreenChop 8Tons(25%DM) Tons	140	120	105	26

ATTACHMENT F

**SITE SPECIFIC INFORMATION FOR LAND MANAGEMENT UNITS (LMUs) FROM THE NUTRIENT
MANAGEMENT PLAN**

Table 2: Current Site-Specific Information from NMP

LMU Name	Acreage	Crop(s) and Yield Goal(s)	*Nitrogen Recommendation (lbs/ac)(*1)	*Phosphorus as P ₂ O ₅ Recommendation (lbs/ac)(*1)	Nitrogen Maximum Application Rates (lbs/ac)* (*1)	Phosphorus as P ₂ O ₅ Maximum Application Rates (lbs/ac)* (*1)
LMU #1	51	Coastal Green Chop: 9 – 11 tons / Small Grain Green Chop: 6 – 7 tons	400	218	400	218
LMU #2	26	Coastal Green Chop: 9 – 11 tons / Small Grain Green Chop: 6 – 7 tons	47	104	47	104
LMU #3	45	Coastal Green Chop: 9 – 11 tons / Small Grain Green Chop: 6 – 7 tons	400	218	400	218
LMU #4	155	Coastal Green Chop: 9 – 11 tons / Small Grain Green Chop: 6 – 7 tons	400	218	400	218
LMU #5	53	Coastal Green Chop: 9 – 11 tons / Small Grain Green Chop: 6 – 7 tons	186	410	186	410
LMU #6	100	Silage-Corn: 16 – 20 tons / Small Grain Green Chop: 8 – 9 tons	129	285	129	285
LMU #7	33	Coastal Green Chop: 9 – 11 tons / Small Grain Green Chop: 6 – 7 tons	0**	0**	0**	0**

NOTE – see page 43.

NOTE

*Nutrients Applied When Application is At Maximum Rates from NMP 590-633 Plan V 5.0 with the Print Date 06/23/2025. Any future revision to the NMP will be based on the current version of the 590-633 CNMP Component (NMP/NUP) Worksheet. Maximum rates are based on wastewater and manure analyses dated 10/29/2024 and 06/05/2024, and soil analysis reports dated 11/16/2023 and 10/16/2024 by the Soil, Water and Forage Testing Laboratory, AgriLife Extension, College Station, Texas. The Maximum Rates (lb/ac) for nitrogen (N) and phosphorus (P_2O_5) will be updated based on most recent annual analyses of soil and waste.

(*1) Nutrient recommendations and maximum amount of nutrients derived from all sources have been established for both nitrogen and phosphorus based on the NMP submitted with the application. The permittee is required to recalculate these values annually in accordance with the requirements of this permit. These annual recalculations do not constitute a substantial change and therefore do not require an amendment of this permit.

**No land application of manure or wastewater is proposed. The Executive Director has reviewed and approved the data elements for Phosphorus Index Rating for LMU #7. In the event that the Applicant decides to land apply manure or wastewater to the permitted fields, a NMP must be developed in accordance with Attachment E prior to land application.

Fact Sheet and Executive Director's Preliminary Decision

I. Description of Application

Applicant: Oene Keuning

Permit No.: WQ0004108000

Regulated Activity: Concentrated Animal Feeding Operation; Dairy Cattle

Permit Action: Major Amendment with Renewal

Authorization: Air & Water Quality Authorization

II. Executive Director's Recommendation

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. For New, Major Amend & Renewal: The proposed permit shall be issued for a 5-year term in accordance with 30 TAC Chapter 305.

III. Reason for Proposed Project

The applicant has applied to the Texas Commission on Environmental Quality (TCEQ) for a major amendment of Texas Pollutant Discharge Elimination System Permit No.

WQ0004108000 to authorize the permittee to modify an existing dairy cattle Concentrated Animal Feeding Operation (CAFO) by reconfiguring land management units (LMUs) and increasing the acreage of LMU #1 from 46 to 51 acres, LMU #4 from 72 to 155 acres and LMU #5 from 24 to 53 acres; and add new LMU #7 – 33 acres. The total land application area will increase from 313 to 463 acres. Other proposed changes include reconfiguration of the drainage area to add a new freestall barn; remove the slurry pit and use the location as part of the proposed freestall barn; expand the hospital barn; and add pens and Wells #10, #11 and #12.

There is no change to the maximum capacity of 2,000 head, of which 1,500 head are milking cows, or the list of alternative crops and yield goals.

IV. Facility Description and Location

Maximum Capacity: 2,000 total head, of which 1,500 head are milking

Land Management Units (LMUs) (Acres): LMU#1 - 51, LMU#2 - 26, LMU#3 - 45, LMU#4 – 155, LMU #5 – 53, LMU #6 – 100, LMU #7 - 33

Location: The facility is located at 4745 County Road 207, Hico in Hamilton County, Texas 76457. Latitude: 31.881388° N and Longitude: 98.031944° W.

Drainage Basin: The facility is located in the drainage area of the North Bosque River in Segment No. 1226 of the Brazos River Basin.

The facility consists of two Retention Control Structures (RCSs) and two Settling Ponds. The table below indicates the volume allocations for the RCS(s):

RCS #1 and #2 act in-series.

Table 1: Volume Allocations for RCSs (Acre-Feet)

RCS Name	Design Rainfall Event Runoff	Process Generated Wastewater	Minimum Treatment Volume	Sludge	Water Balance	Required Capacity	Actual Capacity (if existing)
RCS #1	0.0	0.0	6.90	1.15	0.0	8.05	9.62
RCS #2	14.82	2.07	0.0	0.16	4.6	21.64	27.12

- A. The volume allocations are determined using Natural Resource Conservation Service standards, American Society of Agricultural and Biological Engineers standards, and/or site-specific data submitted in the permit application.
- B. The Design Rainfall Event is the volume of runoff from the 25 year, 10 day storm event. The RCS is required to include adequate capacity to contain this amount of runoff as a margin of safety to protect against discharges during rainfall events that may exceed the average monthly values used to design the RCS, but do not constitute chronic or catastrophic rainfall. This volume allocation accommodates runoff from open lot surfaces, all areas between the open lots and the RCS, runoff from roofed areas that contribute to the RCS and direct rainfall on the surface of the RCS. Runoff curve numbers used to calculate the runoff volume from the open lot surfaces are reflective of the characteristics of open lot surfaces and range between 90 and 95. Runoff curve numbers used to compute the runoff from areas between the open lots and the RCS are reflective of the land use and condition of the areas between the open lots and RCS. A curve number of 100 is used for the RCS surface and all roofed areas.
- C. Process Generated Wastewater is the volume of wet manure and wastewater generated by the facility that is flushed or otherwise directed to the RCS. Wastewater includes all water used directly or indirectly by the facility that comes in contact with manure or other waste. The RCS must contain the process generated wastewater from a 21 day period or greater. RCS #1 is designed to contain 30 days of process generated wastewater for this permit.
- D. Treatment volume is required to minimize odors for facilities requesting air authorization under the Air Standard Permit in 30 TAC Section 321.43. Treatment volume is based on the amount of volatile solids produced and the volatile solids loading rate. Volatile solids are solid material in waste that can be decomposed through biological, physical, and chemical activity. The rate of solids decomposition is based on temperature; therefore it varies by geographic location. The volatile solids loading rate for this facility is **5.3** pounds per day of volatile solids per 1000 ft³ of treatment volume.
- E. Sludge accumulation volumes are required in the RCS that receives runoff from open lots, flushwater from freestall barns, and flushwater from the milking parlor. The sludge accumulation volume for flushwater entering the RCS is based on a rate of 0.0729 cubic feet of storage capacity per pound of total solids in the wet manure entering the RCS during the design sludge accumulation period. The sludge accumulation volume allocated for runoff from open lots is calculated using USDA Agricultural Field Waste Handbook, Kansas, Part 651.1083, which uses the following equation: (%SC) × (MAR) × (DA) × (SP), where %SC = percent solids content of runoff, MAR = mean annual runoff (in inches), DA = contributing drainage area (in acres), and SP = sediment storage period (in years). A

minimum of one year of sludge storage is required in the RCS. Design sludge volumes in this permit reflect a one (1) year sludge accumulation period.

- F. The RCS volume designated as Water Balance is the capacity needed in addition to the Process Generated Wastewater volume to provide adequate operating capacity so that the operating volume does not encroach into the design storm volume. The water balance is an analysis of the inflow into the RCS, all outflows from the RCS and the consumptive use requirements of the crops on the land areas being irrigated. The water balance is developed on a monthly basis. It estimates all inflows into the RCS including process generated wastewater and runoff from open lots, areas between open lots and the RCS, roofed areas and direct rainfall onto the RCS surface. Consumptive use potential for the areas to be irrigated is developed based on the potential evapotranspiration of the crops and the effective average monthly rainfall on the area to be irrigated. Runoff curve numbers used for the water balance are adjusted from one (1) day to 30 day curve numbers to more accurately reflect monthly values. Evaporation from the RCS surface is computed on a monthly basis. Monthly withdrawals from the RCS are developed based on the total inflow to the RCS minus evaporation from the RCS surface and limited by the monthly crop consumptive use potential.

V. Summary of Changes from Existing Authorization

- A. The following changes have been made to Page 1 of the permit:
1. added the reconfigured and new LMUs and acreage; and replaced the revised Attachment B that relates to LMU Map
 2. revised the RCSs required capacity
- B. The slurry pit was removed from Table 2 that relates to the current liner and capacity certifications because the location has been added to the proposed freestall barn.
- C. Section VII.A.1(d)(5) that relates to floodplain was added to the permit to address LMUs near water course. The requirement states:
- “100-year Floodplain. All control facilities, including holding pens and RCSs, shall be located outside of the 100-year floodplain or protected from inundation and damage that may occur during the flood.”
- D. The new Wells #10, #11, and #12 have been added to Table 3 of the permit that relates to Well status and BMPs; and the Attachment D to the permit that relates to the Well location.
- E. The soil series Oglesby (OgB), Krum (KrB), Wise (WsC) and Nuff (NuC) from the new LMUs have been added to Table 4 that relates to the Soil limitations and BMPs.
- F. Tables 6 in Section X.A of the permit that relates to the RCSs volume allocation has been updated with revised volumes for the RCSs.
- G. The new LMU has been added to Table 7 in Section X.D that relates to the buffer distances, and Table 2 to Attachment F that relates to the current site specific information from the NMP.

In addition, a note has been added to the footnote to Table 2 of Attachment F to clarify that LMU #7 has not been soil sampled, and this will be done prior to any land application.

- H. Attachment A that relates to the runoff control has been revised to show the proposed location of the new freestall barn, the expansion area of the hospital barn, and the pen area.
- I. Attachment C that relates to the Vicinity Map has been updated to include the new land.

VI. Proposed Permit Conditions and Monitoring Requirements

A. Effluent Limitations

Compost, manure, sludge, slurry and wastewater may only be discharged from a LMU or a properly designed, constructed, operated and maintained RCS into water in the state from this CAFO if any of the following conditions are met:

- discharge resulting from a catastrophic condition other than a rainfall event that the permittee cannot reasonably prevent or control;
- a discharge resulting from a catastrophic rainfall event from a RCS;
- a discharge resulting from a chronic rainfall event from a RCS; or
- a discharge resulting from a chronic rainfall event from a LMU that occurs because the permittee takes measures to de-water the RCS in accordance with the individual permit, relating to imminent overflow.

40 CFR §122.44 specifies that any requirements, in addition to or more stringent than promulgated effluent limitation guidelines, must be applied when they are necessary to achieve state water quality standards. Water quality based effluent limitations must be established when the TCEQ determines there is a reasonable potential to cause or to contribute to an in-stream excursion above the allowable ambient concentration of a state numeric criterion. For CAFO discharges the TCEQ must consider:

1. existing controls on point and non-point sources of pollution;
2. variability of the pollutant in the effluent; and
3. dilution of the effluent in the receiving water.

In proposing this permit, the TCEQ addresses considerations 2 and 3 since continuous discharges are prohibited and effluent discharges are authorized only during catastrophic conditions or a chronic or catastrophic rainfall event from a RCS properly designed, constructed, operated and maintained. The effluent pollutant levels are variable and effluent is usually not discharged. Additionally, during these climatic events, water bodies receiving a contribution of CAFO wastewater should be significantly diluted by other rainfall runoff.

Consideration 1 requires permit controls on CAFO discharges which will result in the numeric criteria of the water quality standards being met, thus ensuring that applicable uses of water in the state are attained. The principal pollutants of concern include organic matter causing biochemical oxygen demand, the discharge of ammonia-nitrogen, phosphorus and *Escherichia coli*. This permit requires discharges to be monitored for the pollutants of concern. Existing technology does not allow for practicable or economically achievable numeric effluent limitations at this time. The Environmental Protection Agency (EPA) has not promulgated effluent guidelines or numeric effluent limitations that would allow regular discharges of CAFO process wastewater or process-generated wastewater. The proposed permit addresses potential pollutant impacts through requirements including numerous narrative (non-numeric) controls on CAFO process

wastewater and non-point sources of pollutant discharges associated with CAFOs. Setting specific water quality-based effluent limitations in this permit is not feasible (see 40 CFR §122.44 (k)(3)).

The general and site-specific provisions which are expected to result in compliance with water quality criteria and protection of attainable water quality are discussed in the following sections of this fact sheet: RCS Design and Operational Requirements; Requirements for Beneficial Use of Manure, Sludge, and Wastewater; Additional Water Quality Requirements; and Monitoring and Reporting Requirements.

B. RCS Design and Operational Requirements

The draft permit includes the following requirements related to proper RCS design, construction, operation and maintenance:

1. The RCS(s) must be designed and constructed to meet or exceed the margin of safety, equivalent to the volume of runoff and direct precipitation from the 25 year/10 day rainfall event. The design rainfall event, at which time the CAFO is authorized to discharge, is **12.2** inches. The application includes design calculations and certification by a Professional Engineer, which determine the design criteria for the RCS(s).
2. A RCS management plan is required to be implemented. This plan must establish expected end of the month water storage volumes for each RCS. These maximum levels are based on the design assumptions used to determine the required size of the RCS. This plan assures the permittee will maintain wastewater volumes within the designed operating capacity of the structures, except during chronic or catastrophic rainfall events. The permittee must document and provide an explanation for all occasions where the water level exceeds the expected end of the month storage volumes. By maintaining the wastewater level at or below the expected monthly volume, the RCS will be less likely to encroach into the volume reserved for the design rainfall event and/or discharge during smaller rainfall events.
3. The pond marker must have one-foot increments. This requirement identifies the level of wastewater storage to assist the permittee in the implementation of the RCS management plan. It also acts as an enforcement tool for TCEQ to determine compliance with the RCS management plan.
4. The wastewater level in the RCS(s) must be recorded daily. This requirement will assist the permittee in the implementation of the RCS management plan and will provide a visual indication of compliance.
5. The amount of sludge in the RCS(s) must be maintained at or below the designed sludge volume. Proper sludge management will reduce overflows associated with insufficient wastewater storage capacity. This permit requires that sludge accumulations in the RCS(s) be measured at least annually.
6. The RCS(s) must be adequately lined and certified by a Texas Professional Engineer; alternatively, certification must document that in situ material meets the requirements of constructed and installed liners. Groundwater has the potential to resurface as surface water. Therefore, preventing impacts to groundwater also

provides protection to surface water. A liner certification, certified by a Professional Engineer, for the existing RCSs was submitted with the application.

Table 3: Existing RCSs Liner Certifications

RCS Name	Liner Certification Date
RCS #1	February 17, 1997
RCS #2	October 13, 2008
Settling Pond #1	April 24, 2006
Settling Pond #2	June 19, 2017

7. The RCS(s) must maintain two vertical feet of material equivalent to construction materials between the top of the embankment and the structure's spillway to protect from overtopping the structure. RCS(s) without spillways must have a minimum of two vertical feet between the top of the embankment and the required storage capacity.
8. The entry of uncontaminated stormwater runoff into RCS(s) must be minimized. The site includes diversion structures to direct contaminated runoff into the RCS(s) and to prevent uncontaminated stormwater runoff from entering the RCS(s).

C. Requirements for Beneficial Use of Manure, Sludge, and Wastewater

Nutrient pollutants of concern have narrative criteria and are discharged in CAFO wastewater. Nutrient pollutants have been addressed through imposition of BMPs. No water quality impacts are expected to occur from land application based upon properly prepared and implemented nutrient management practices. The proposed permit contains requirements related to the collection, handling, storage and beneficial use of manure, wastewater, and sludge. These requirements were established based on TCEQ rules, EPA guidance, NRCS Field Operations Technical Guidance and the Animal Waste Management Field Handbook, recommendations from the TCEQ's Water Quality Assessment Team, and best professional judgment.

The elements of a NMP as listed in 40 CFR §122.42(e)(1) have been incorporated into this permit. This permit requires a NMP developed by a certified nutrient management specialist, based on United States Department of Agriculture/Natural Resource Conservation Service (NRCS) Practice Standard 590 and each of the required elements to be implemented upon issuance of this permit. In relation to these items, the proposed permit meets federal requirements.

1. For LMUs with a soil phosphorus concentration of less than 200 ppm in Zone 1 depth (0-6 inches if incorporated, 0-2 or 2-6 inch if not incorporated), land application of commercial fertilizer, compost, manure, sludge, slurry and wastewater must be in accordance with a certified NMP. This plan is based on the NRCS Practice Standard Code 590. This plan involves a site-specific evaluation of the LMU to include soils, crops, nutrient need and includes the phosphorus index tool. The phosphorus index is a site-specific evaluation of the risk potential for phosphorus movement into watercourses. The risk potential is determined by site characteristics such as soil phosphorus level, proposed phosphorus application rate, application method and timing, proximity of the nearest field edge to a named stream or lake,

runoff class, and soil erosion potential. The application rates are adjusted according to the risk potential. The higher the risk potential, the lower the application rate; thus there is minimal potential to have excess nutrients available to leave the site and affect water quality.

2. For LMUs with a soil phosphorus concentration of 200-500 ppm in Zone 1 depth (0-6 inches if incorporated, 0-2 or 2-6 inch if not incorporated), land application of commercial fertilizer, compost, manure, sludge, slurry and wastewater must be in accordance with a nutrient utilization plan (NUP). The NUP is a revised NMP based on crop removal. A crop removal application rate is the amount of nutrients contained in and removed by the proposed crop. At the discretion of the certified nutrient management specialist, the NUP may also include a phosphorus reduction component. This NUP must be submitted to the TCEQ for review and approval.
3. For LMUs with a soil phosphorus concentration of greater than 500 ppm in Zone 1 depth (0-6 inches if incorporated, 0-2 or 2-6 inch if not incorporated), land application of commercial fertilizer, compost, manure, sludge, slurry and wastewater must be in accordance with a NUP based on crop removal which also includes a phosphorus reduction component. A phosphorus reduction component is a management practice, incorporated into the NUP, which is designed to further reduce the soil phosphorus concentration by means such as phosphorus mining, moldboard plowing, or other practices utilized by the permittee. This revised NUP must also be submitted to the TCEQ for review and approval. Permittees required to operate under a NUP with a phosphorus reduction component must show a reduction in the soil phosphorus concentration within twelve (12) months or may be subject to enforcement actions.
4. Table 3 below identifies the maximum application rate, as shown in the NMP submitted in the permit application. NMPs are routinely updated and the values shown below are subject to change.

Table 3: LMU Maximum Application Rates and Soil Phosphorus Levels

LMU Name	Soil Test P (ppm)	Max Annual P ₂ O ₅ (lbs/ac)
LMU #1	86	218
LMU #2	269	104
LMU #3	76	218
LMU #4	85	218
LMU #5	72	410
LMU #6	149	285
LMU #7	0*	0*

*LMU will be soil sampled, analyzed and a NMP developed in accordance with Attachment E of the permit prior to land application.

5. All generated manure, sludge or wastewater in excess of the amount allowed to be land applied by the NMP or NUP must be delivered to a composting facility authorized by the Executive Director, delivered to a permitted landfill, beneficially

Fact Sheet and Executive Director's Preliminary Decision
Oene Keuning, TPDES Permit No. WQ0004108000

used by land application on land located outside of the major sole source impairment zone, or provided to operators of third-party fields for beneficial use subject to specified land application requirements and testing. By requiring specific outlets for excess manure, sludge and wastewater, the permit limits unregulated use of manure, sludge and wastewater within the watershed.

6. The permittee must continue to operate under a Comprehensive NMP (CNMP) certified by the Texas State Soil and Water Conservation Board (TSSWCB). The CNMP must be developed by a qualified individual(s) in accordance with TSSWCB regulations. The CNMP is a whole farm plan that addresses nutrient management from the origin in the feed rations to final disposition. The CNMP considers all nutrient inputs, onsite use and treatment, outputs, and losses. Inputs include animal feed, purchased animals, and commercial fertilizer. Outputs include animals sold, harvested crops removed from the facility, and manure removed from the facility. Losses include volatilization, stormwater runoff, and leaching.
7. The permittee must implement additional conservation practices on LMUs adjacent to water in the state. These conservation practices include a 100-foot vegetative buffer, filter strips, vegetative barrier, and/or contour buffer strips. Site specific conditions and NRCS practice standards specify which conservation practices, in addition to the required 100-foot vegetative buffer, must be implemented. The conservation practices reduce erosion, suspended solids and nutrients in runoff from LMUs. This will improve the quality of stormwater runoff prior to entering water in the state.
8. In Table 4 below, the Additional Buffer Setback distance was determined by using the NRCS Conservation Practice Code 393, Filter Strip. The practice code uses a combination of hydrologic soil groups and field slope percentages to calculate an appropriate filter strip length.

Table 4: Buffer Distances for Each LMU

LMU Name	Vegetative Buffer Setback (feet)	Additional Buffer Setback NRCS Code 393 Filter Strip Flow Length (feet)
LMU #1	100	36
LMU #2	Not Applicable	
LMU #3	100	28
LMU #4	100	28 - 42
LMU #5	Not Applicable	
LMU #6	Not Applicable	
LMU #7	100	36

9. Land application is prohibited between the hours of 12 a.m. and 4 a.m. This provision reduces the potential of irrigation related discharges associated with equipment malfunctions.
10. Discharge of wastewater from irrigation is prohibited, except a discharge resulting from irrigation events associated with imminent overflow conditions. Precipitation-

related runoff from LMUs is allowed by the permit, when land application practices are consistent with a NMP or NUP.

11. Terms of the NMP and Changes to the Terms of the NMP

The permit addresses the terms of the NMP and changes to the terms of the NMP to clarify substantial and non-substantial changes.

- (a) Attachment E of the draft permit describes the methodology for calculating maximum application rates and annual recalculation of application rates and Attachment F of the draft permit shows the list of the proposed alternative crops, their yield goals, and the N and P requirements and removal rates for each crop and yield goal.
- (b) To the extent that the alternative crops were identified in the application, annual recalculations do not constitute a substantial change to the terms of the NMP, and therefore will not require a permit amendment. The maximum amounts of N and P from all sources of nutrients and the amounts of manure and process wastewater to be applied on alternative crops will be determined in accordance with the methodology described in Attachment E of the draft permit when such crops are being used.
- (c) Nutrient recommendations and maximum amount of nutrients derived from all sources have been established for both nitrogen (N) and phosphorus (P) based on the NMP that was submitted with the application. The permittee is required to recalculate these values annually based on the most recent analyses of wastewater, manure, and soil.
- (d) Section VII.A.8(a)(2) of the permit lists changes to the terms of the NMP that will require a major amendment to the permit. Changes that would result in a major amendment are:
 - Increase in animal headcount;
 - Increase in LMU acreage or a change in LMU location; or
 - Change in crop and yield goal (not listed in Attachment F of the proposed permit).
- (e) Any changes (substantial or non-substantial) to the NMP, other than the annual recalculation of application rates outlined in Attachment E, must be submitted to the ED for review. If the ED determines that the changes to the NMP are non-substantial, the revised NMP will be made publicly available and included in the permit record. If the ED determines that the changes to the NMP are substantial, the information provided by the permittee will be subject to the major amendment process.

12. Third-Party Fields.

The proposed permit authorizes the use of third-party fields, i.e. land not owned, operated, controlled, rented, or leased by the CAFO owner or operator that have been identified in the Pollution Prevention Plan (PPP). The permittee must have a contract with the operator of the third-party fields. The written contract must require all transferred manure, wastewater, and sludge to be beneficially applied to third-party fields in accordance with the applicable requirements in 30 Texas Administrative Code §321.36 and §321.40 at an agronomic rate based on soil test phosphorus in Zone 1 depth (0-6 inches if incorporated, 0-2 or 2-6 inch if not incorporated). A certified nutrient management specialist must annually collect soil samples from each third-party field used and have the samples analyzed in accordance with the requirements for permitted LMUs. The permittee is prohibited from delivering manure, wastewater, and sludge to an operator of a third-party field once the soil test phosphorus analysis shows a level equal to or greater than 200 ppm in Zone 1 depth (0-6 inches if incorporated, 0-2 or 2-6 inch if not incorporated) or after becoming aware that the third-party operator is not following the specified requirements and the contract. The permittee will be subject to enforcement action for violations of the land application requirements on any third-party field. The third-party fields must be identified in the PPP. The permittee must submit a quarterly report with the name, locations, and amounts of manure, wastewater, and sludge transferred to operators of third-party fields.

VII. Additional Water Quality Requirements

The approved recharge feature certification submitted in the permit application must be updated and maintained in the onsite PPP. The recharge feature certification identifies any natural or artificial features on the CAFO site, either on or beneath the ground surface, which could provide or create significant pathways for wastewater or manure to enter the underlying aquifer, and describes measures to prevent adverse impacts to groundwater. Groundwater has the potential to resurface as surface water. Therefore, preventing impacts to groundwater also provides protection to surface water.

Table 5 below shows potential soil limitations identified in the recharge feature evaluation and the proposed management practices to address those limitations.

Table 5: Soil Limitations

Soil Series and Map ID	Potential Limitations	BMPs
Brackett Maloterre complex: BxD Oglesby: OgB	Droughty Depth to Hard Bedrock Depth to Soft Bedrock	Land application not to exceed agronomic rates for nutrients and hydraulic rates (refer to the nutrient management plan (NMP)). Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of the soils in the LMUs. No land application to inundated soils.

Soil Series and Map ID	Potential Limitations	BMPs
Pidcoke: PkB	Droughty Depth to Bedrock	Land application will be based upon the available water capacity (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. Irrigation events will be managed to assist in maintaining soil moisture levels within the range of the available water holding capacity of the soils in the LMUs. No land application to inundated soils.
Topsey: ToC, Wise: WsC	Depth to Soft Bedrock	
Nuff: NuC	Large Surface Stones Slow water movement	
Krum: KrB, Slidell: SsB	Slow water movement	Land application will be based upon the available water capacity (refer to NMP) of the soil and will not exceed agronomic rates for nutrients. No land application to inundated soils.

Table 6 below lists all wells on the facility, their status, and what BMP will be implemented to protect groundwater. A Well Buffer Exception request for Wells #1 and #2 was submitted to and approved by the TCEQ Water Quality Assessment Team.

Table 6: Water Well Protection

Well Number	Status	BMPs
1	Producing	Steel sleeve, concrete surface slab
2	Producing	Steel sleeve, concrete surface slab
3	Producing	Maintain 150 ft buffer
4	Producing	Maintain 150 ft buffer
5	Non-Producing	Plugged
6	Non-Producing	Plugged
7	Non-Producing	Plugged
8	Producing	Maintain 150 ft buffer
9	Producing	Maintain 150 ft buffer
10	Producing	Maintain 150 ft buffer
11	Producing	Maintain 150 ft buffer
12	Producing	Maintain 150 ft buffer

VIII. Monitoring and Reporting Requirements

- A. The permittee is required to report all discharges to TCEQ. Discharges resulting from a chronic or catastrophic rainfall event or catastrophic conditions must be reported orally within one hour of the discovery of the discharge and in writing within fourteen (14) working days. For any discharges, grab samples must be collected and analyzed for Biochemical Oxygen Demand, *Escherichia coli*, Total Dissolved Solids, Total Suspended Solids, Nitrate, Total Phosphorus, Ammonia Nitrogen and pesticides (if suspected).
- B. The permittee must provide a report to the TCEQ to substantiate a chronic rainfall discharge. After review of the report, if required by the Executive Director, the permittee must have an engineering evaluation by a licensed Texas Professional Engineer developed and submitted to the Executive Director. The report and engineering evaluation may be used to verify that the facility was maintained and operated according to the permit conditions. Information reviewed may include rainfall records at the CAFO, RCS wastewater levels preceding the discharge, irrigation records, and the current sludge volume. This requirement allows for closer scrutiny by TCEQ for discharges resulting from chronic conditions and provides documentation for enforcement of unauthorized discharges.
- C. Soil samples must be taken annually from LMUs and analyzed for Nitrate, Phosphorus, Potassium, Sodium, Magnesium, Calcium, Soluble salts/electrical conductivity, and pH. The results are used in the NMP to determine land application rates. Annual soil samples must be collected by one of the following persons:
 - the NRCS; a certified nutrient management specialist;
 - the Texas State Soil and Water Conservation Board;
 - the Texas AgriLife Extension; or
 - an agronomist or soil scientist on full-time staff at an accredited university located in the State of Texas.

The TCEQ or its designee shall have soil samples collected annually for each current and historical LMUs and the TCEQ Regional Office must be notified ten (10) days prior to annual soil sample collection activities on third-party fields. The permittee is required to submit soil analyses for third-party fields to TCEQ.

- D. The permittee is required to annually collect and analyze at least one (1) representative sample of wastewater, sludge (if applicable), or manure for total nitrogen, total phosphorus, and total potassium. The results are used in the NMP to determine land application rates.
- E. Some of the land application records maintained by the permittee must be submitted to the TCEQ annually. These records include: date of compost, manure, sludge, slurry and wastewater application to each LMU; location of the specific LMU and the volume applied during each application event; acreage of each individual crop on which compost, manure, sludge, slurry and wastewater is applied; basis for and the total amount of nitrogen and phosphorus applied per acre to each LMU, including sources of nutrients and amount of nutrients on a dry weight basis other than compost, manure, sludge, slurry and wastewater and; weather conditions, such as temperature, precipitation, and cloud cover, during the land application and twenty-four (24) hours before and after the land application.

- F. Other recordkeeping requirements include: daily records of RCS wastewater levels and measurable rainfall; weekly records of manure, wastewater, and sludge removed from the facility, inspections of control facilities and land application equipment; and monthly records of compost, manure, sludge, slurry and wastewater land applied.

IX. 303(D) Listing and Total Maximum Daily Load (TMDL)

The facility for this permit action is located within the watershed of the North Bosque River in Segment No. 1226 of the Brazos River Basin. The designated uses and dissolved oxygen criterion as stated in Appendix A of the Texas Surface Water Quality Standards (30 TAC §307.10) for Segment No. 1226 are primary contact recreation, high aquatic life use, and 5.0 mg/L dissolved oxygen.

The North Bosque River (Segment 1226 and 1255) was included in the 1998 Texas CWA 303(d) List and deemed impaired under narrative water quality standards related to nutrients and aquatic plant growth.

Segment No. 1226 is included in the Agency's document Two Total Maximum Daily Loads for Phosphorus in the North Bosque River, adopted by the Commission on February 9, 2001 and approved by EPA on December 13, 2001. An Implementation Plan for Soluble Reactive Phosphorus in the North Bosque River Watershed (I-Plan) was approved by the Commission on December 13, 2002 and approved by the Texas State Soil and Water Conservation Board on January 16, 2003. According to the TMDL I-Plan, management measures for control of phosphorus loading will also have some corollary effect on reducing bacteria loading, since the nonpoint source nutrient and bacteria loads largely originate from the same sites and materials and are transported via the same processes and pathways.

The TMDL for the North Bosque River, Segments 1226 and 1255, identified the amount of phosphorus introduced into these segments, i.e. the load. Phosphorus load from two categories of sources was modeled to calculate the expected reductions in phosphorus load to meet instream water quality standards. Point sources included wastewater treatment plants; non-point sources included all other sources, such as CAFOs. The TMDL called for an average 50% reduction in the average concentration of soluble reactive phosphorus loadings from both point sources and non-point sources. The TMDL was developed assuming implementation of specific best management practices. This set of best management practices represents one way to achieve the water quality targets in stream and the overall reduction goal of the TMDL.

The TMDL was approved with the understanding that an adaptive management approach was an appropriate means to manage phosphorus load to the stream. The I-Plan emphasized this approach to achieve the phosphorus reductions targeted in the TMDL. Adaptive management envisions adjustment of management practices over time as necessary to reach this target. The TMDL anticipated that, to control loading to the stream, dairy CAFO permittees would implement those best management practices which best addressed site-specific conditions. Accordingly, the TMDL is not directly tied to the number of animal units permitted in the watershed; it is instead tied to the amount of nutrients that may be land applied consistent with management practices that ensure appropriate agricultural utilization of nutrients.

Fact Sheet and Executive Director's Preliminary Decision
Oene Keuning, TPDES Permit No. WQ0004108000

Primary management strategies for dairies, both voluntary and regulatory, were identified in the I-Plan which included: phosphorus-based application rates in LMUs, voluntarily measures to reduce the amount of phosphorus in dairy cow diets, voluntarily removing 50% of dairy-generated manure from the watershed, more stringent RCS design requirements to reduce the potential for overflows from RCSs, evaluation of chronic rainfall and incidences of RCS overflows, additional tailwater requirements, additional protective measures to prevent runoff caused by excessive irrigation, CNMPs, and educational requirements for dairy operators and employees.

The proposed permit includes the following requirements to address the recommendations in the I-Plan:

- RCS(s) designed and constructed for 25 year, 10 day rainfall event
- RCS management plan
- pond marker with one foot increments
- daily recordkeeping of wastewater levels
- chronic rainfall discharge notification, including records that substantiate that the overflow was a result of cumulative rainfall that exceeded the design rainfall event without the opportunity for dewatering
- NMP and NUP based on phosphorus risk index
- CNMP
- specific outlets for excess manure, sludge and wastewater
- additional record-keeping for exported manure, sludge and wastewater to track each permittee's contribution toward the 50% voluntary removal goal in the Bosque River Total Maximum Daily Load (TMDL)
- prohibition of discharges from LMUs, except as related to imminent overflow
- minimize ponding and puddling of wastewater and prevent tailwater discharges
- additional conservation practices between land application areas and water in the state
- prohibition of land application between 12 a.m. and 4 a.m.
- automatic shutdown or alarm system may be required if unauthorized discharge occurs from irrigation system
- employee and operator required training related to land application of manure, sludge, and wastewater, proper operation and maintenance of the facility, good housekeeping, material management practices, recordkeeping requirements, and spill response and clean up

The voluntary phosphorus diet reductions may be implemented through consultations between a nutritionist and the permittee. Any such dietary phosphorus reductions will result in reduced phosphorus concentrations in manure. These strategies are facets of CNMPs.

The RCS storage capacity requirements, nutrient management practices, increased TCEQ oversight of operational activities, and requirements of the I-Plan, which are incorporated into the draft permit, are designed to reduce the potential for this CAFO to contribute to further impairment from bacteria, oxygen-demanding constituents and nutrients such as total phosphorus. Furthermore, it is anticipated the implementation of the primary management strategies and permit provisions identified above will result in phosphorus load reduction in the watershed and achieve the reductions targeted in the TMDL. The draft permit provisions are consistent with the approved TMDL and I-Plan that establish measures for reductions in loading of phosphorus (and consequently other potential pollutants) to the North Bosque River Watershed. Therefore, the draft permit is consistent with the requirements of the antidegradation implementation procedures in 30 Texas Administrative Code Section 307.5 (c)(2)(G) of the Texas Surface Water Quality Standards.

X. Threatened or Endangered Species

The discharge from this permit action is not expected to have an effect on any federal endangered or threatened aquatic or aquatic dependent species or proposed species or their critical habitat. This determination is based on the United States Fish and Wildlife Service's (USFWS) Biological Opinion on the State of Texas authorization of the Texas Pollutant Discharge Elimination System (TPDES) dated September 14, 1998 and the October 21, 1998 update. To make this determination for TPDES permits, TCEQ and Environmental Protection Agency only considered aquatic or aquatic dependent species occurring in watersheds of critical concern or high priority as listed in Appendix A of the USFWS Biological Opinion. This determination is subject to reevaluation due to subsequent updates or amendments to the Biological Opinion. The permit does not require Environmental Protection Agency review with respect to the presence of endangered or threatened species.

XI. Procedures for Final Decision

When an application is declared administratively complete, the Chief Clerk sends a letter to the applicant instructing 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 Fact Sheet and Executive Director's Preliminary Decision, to the Office of the Chief Clerk. At that time, Notice of Application and Preliminary Decision will be mailed to the individuals identified on the Office of the Chief Clerk mailing list and published in the newspaper. 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. A public meeting is intended for the taking of public comment, and is not a contested case proceeding.

Fact Sheet and Executive Director's Preliminary Decision
Oene Keuning, TPDES Permit No. WQ0004108000

After the public comment deadline, the Executive Director prepares a response to all timely, relevant and material, or significant public comments significant on the application or the draft permit raised during the public comment period. The Office of the Chief Clerk then mails the Executive Director's Response to Comments and Final Decision to individuals who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that a person may request a contested case hearing or file a request for reconsideration of the Executive Director's decision within thirty (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 thirty (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's Commissioners for their consideration at a scheduled Commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

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

For additional information about this application, contact Joy Alabi at (512) 239-1318.

XII. Administrative Record

The following items were considered in developing the proposed draft permit:

- TCEQ Permit No. WQ0004108000 issued June 25, 2021.
- The application received on July 8, 2025 and subsequent revisions.
- Interoffice Memorandum for groundwater review from the Water Quality Assessment Team, Water Quality Assessment Section, Water Quality Division August 15, 2025.
- Interoffice Memorandum for NMP review from the Water Quality Assessment Team, Water Quality Assessment Section, Water Quality Division, dated August 29, 2025.
- Interoffice Memorandum from the Standards Implementation Team, Water Quality Assessment Section, Water Quality Division, dated August 11, 2025.
- Bosque River TMDL Implementation Plan.
- Federal Clean Water Act - Section 402; Section 382.051 of the Texas Clean Air Act; Texas Water Code §26.027; 30 TAC §39, §305, §321 Subchapter B; Commission Policies; and EPA Guidelines.
- Texas 2024 Clean Water Act Section 303(d) List, Texas Commission on Environmental Quality, June 26, 2024; approved by EPA on November 13, 2024.
- NRCS Animal Waste Management Field Handbook and Field Office Technical Guidance for Texas.
- NRCS, ASABE and ASTM Standards.

Fact Sheet and Executive Director's Preliminary Decision
Oene Keuning, TPDES Permit No. WQ0004108000

- John Borrelli, Clifford B. Fedler & James M. Gregory, February 1, 1998. Mean Crop Consumptive Use and Free-Water Evaporation for Texas.
- U.S. Department of Agriculture, Natural Resources Conservation Service, 25-Year, 10 – Day precipitation (inches), Arkansas, Louisiana, New Mexico, Oklahoma and Texas. USDA, Technical Paper No 49, Weather Bureau.
- American Society of Agricultural and Biological Engineers (ASABE) Standards:
 - ASABE D384.2 MAR05_R2010) Manure Production and Characteristics
 - ASABE EP403 4 FEB2011- Figure 2 (Loading Rate) and Table 1 (Sludge accumulation Rate)