



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
DOMESTIC WASTEWATER PERMIT APPLICATION

DOMESTIC TECHNICAL REPORT 1.0

The Following Is Required For All Applications
Renewal, New, And Amendment

Section 1. Permitted or Proposed Flows (Instructions Page 51)

A. Existing/Interim I Phase

Design Flow (MGD): 0.200

2-Hr Peak Flow (MGD): 0.800

Estimated construction start date: Summer 2023

Estimated waste disposal start date: Winter 2023

B. Interim II Phase

Design Flow (MGD): 0.400

2-Hr Peak Flow (MGD): 1.600

Estimated construction start date: Summer 2025

Estimated waste disposal start date: Winter 2025

C. Final Phase

Design Flow (MGD): 1.000

2-Hr Peak Flow (MGD): 4.000

Estimated construction start date: Summer 2027

Estimated waste disposal start date: Winter 2027

D. Current operating phase: N/A

Provide the startup date of the facility: N/A

Section 2. Treatment Process (Instructions Page 51)

A. Treatment process description

Provide a detailed description of the treatment process. **Include the type of**

treatment plant, mode of operation, and all treatment units. Start with the plant's head works and finish with the point of discharge. Include all sludge processing and drying units. **If more than one phase exists or is proposed in the permit, a description of *each phase* must be provided.** Process description:

The Guajolote WRRF is proposed to be developed in three phases; the first two will be 200,000-gal/day and the final phase 400,000-gal/day for a total plant capacity of 1,000,000-gal/day. Each phase is proposed to be a cyclically aerated, flow-through activated sludge process designed for biological nutrient removal with chemical phosphorous removal capability. The plant will be biochemically designed as an extended aeration plant. Each phase will include an anaerobic selector ahead of the aerobic/anoxic zones to provide filament control. Under optimal conditions, this arrangement will also provide a degree of biological P removal. Alternating aerobic/anoxic reactors following first stage aeration provide for denitrification. This is a compact, common-wall process design that will utilize air lifts for most of the pumping requirements.

Port or pipe diameter at the discharge point, in inches: 6"

B. Treatment Units

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

Table 1.0(1) – Treatment Units

Treatment Unit Type	Number of Units	Dimensions (L x W x D)
Bar Screen	1/2/3	1/4" Manual Bar Screen
Anoxic Selector	1/2/3	1) 8' x 20' x 14' SWD 2) 8' x 20' x 14' SWD 3) 12' x 40' x 14' SWD
Primary Aeration	2/4/6	1) (2) x 24' x 20' x 14' SWD 2) (2) x 24' x 20' x 14' SWD 3) (2) x 36' x 40' x 14' SWD
Secondary Aeration	2/4/6	1) (2) x 42' x 14' x 14' SWD 2) (2) x 42' x 14' x 14' SWD 3) (2) x 82' x 21' x 14' SWD
Clarification	2/4/6	1) (2) x 20' x 20' x 14' SWD

Treatment Unit Type	Number of Units	Dimensions (L x W x D)
		2) (2) x 20' x 20' x 14' SWD 3) (2) x 40' x 30' x 14' SWD
Aerobic Digester	2/4/6	1) (2) x 10' x 38' x 14' SWD 2) (2) x 10' x 38' x 14' SWD 3) (2) x 57' x 20' x 14' SWD
Chlorine Contact	1/2/3	1) 42' x 6' x 14' SWD 2) 42' x 6' x 14' SWD 3) 82' x 4' x 14' SWD

C. Process flow diagrams

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

Attachment: Process Flow Diagrams

Section 3. Site Drawing (Instructions Page 52)

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

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

Attachment: Site Drawings

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

Guajolote Ranch Development. The development will consist of approximately 2,900 residential home units at final buildout.

Section 4. Unbuilt Phases (Instructions Page 52)

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

Yes ☐ No ☒

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

Yes ☐ No ☐

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

Section 5. Closure Plans (Instructions Page 53)

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

Yes ☐ No ☒

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

Yes ☐ No ☐

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

Section 6. Permit Specific Requirements (Instructions Page 53)

For applicants with an existing permit, check the *Other Requirements* or

Special Provisions of the permit.

A. Summary transmittal

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

Yes ☐ No ☐

If yes, provide the date(s) of approval for each phase:

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

B. Buffer zones

Have the buffer zone requirements been met?

Yes ☐ No ☐

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

C. Other actions required by the current permit

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

Yes ☐ No ☐

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

D. Grit and grease treatment

1. Acceptance of grit and grease waste

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

Yes ☐ No ☐

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

2. Grit and grease processing

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

3. Grit disposal

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

Yes ☐ No ☐

If **No**, contact the TCEQ Municipal Solid Waste team at 512-239-0000. Note: A registration or permit is required for grit disposal. Grit shall not be combined with treatment plant sludge. See the instruction booklet for additional information on grit disposal requirements and restrictions.

Describe the method of grit disposal.

4. Grease and decanted liquid disposal

Note: A registration or permit is required for grease disposal. Grease shall not be combined with treatment plant sludge. For more information, contact the TCEQ Municipal Solid Waste team at 512-239-0000.

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

E. Stormwater management

1. Applicability

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

Yes ☐ No ☐

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

Yes ☐ No ☐

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

2. MSGP coverage

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

Yes ☐ No ☐

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

TXR05 or TXRNE

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

Yes ☐ No ☐

3. Conditional exclusion

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

Yes ☐ No ☐

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

4. Existing coverage in individual permit

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

Yes ☐ No ☐

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

5. Zero stormwater discharge

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

Yes ☐ No ☐

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

Note: If there is a potential to discharge any stormwater to surface water in

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

6. Request for coverage in individual permit

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

Yes ☐ No ☐

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

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

F. Discharges to the Lake Houston Watershed

Does the facility discharge in the Lake Houston watershed?

Yes ☐ No ☐

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

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

waste

1. Acceptance of sludge from other WWTPs

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

Yes ☐ No ☐

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

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

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

2. Acceptance of septic waste

Is the facility accepting or will it accept septic waste?

Yes ☐ No ☐

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

Yes ☐ No ☐

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

Yes ☐ No ☐

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

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

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

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

Yes ☐ No ☐

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

Section 7. Pollutant Analysis of Treated Effluent (Instructions Page 58)

Is the facility in operation?

Yes ☐ No ☒

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

If yes, provide effluent analysis data for the listed pollutants. **Wastewater treatment facilities** complete Table 1.0(2). **Water treatment facilities** discharging filter backwash water, complete Table 1.0(3).

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

Table 1.0(2) - Pollutant Analysis for Wastewater Treatment Facilities

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
CBOD ₅ , mg/l					

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

*TPDES permits only

†TLAP permits only

Table 1.0(3) - Pollutant Analysis for Water Treatment Facilities

Pollutant	Average Conc.	Max Conc.	No. of Samples	Sample Type	Sample Date/Time
Total Suspended Solids, mg/l					
Total Dissolved Solids, mg/l					

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

Section 8. Facility Operator (Instructions Page 60)

Facility Operator Name: Sillers, Chadwick J PG

Facility Operator's License Classification and Level: WW Treatment Operator A

Facility Operator's License Number: WW0045469

Section 9. Sewage Sludge Management and Disposal (Instructions Page 60)

A. Sludge disposal method

Identify the current or anticipated sludge disposal method or methods from the following list. Check all that apply.

- ☒ Permitted landfill
- ☐ Permitted or Registered land application site for beneficial use
- ☐ Land application for beneficial use authorized in the wastewater permit
- ☐ Permitted sludge processing facility
- ☐ Marketing and distribution as authorized in the wastewater permit
- ☐ Composting as authorized in the wastewater permit
- ☐ Permitted surface disposal site (sludge monofill)
- ☐ Surface disposal site (sludge monofill) authorized in the wastewater permit
- ☐ Transported to another permitted wastewater treatment plant or

permitted sludge processing facility. If you selected this method, a written statement or contractual agreement from the wastewater treatment plant or permitted sludge processing facility accepting the sludge must be included with this application.

☐ Other:

B. Sludge disposal site

Disposal site name: STEVEN M CLOUSE WATER RECYCLING CENTER

TCEQ permit or registration number: 21372

County where disposal site is located: Bexar

C. Sludge transportation method

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

Name of the hauler: TBD

Hauler registration number: TBD

Sludge is transported as a:

Liquid ☐ semi-liquid ☒ semi-solid ☒ solid ☐

Section 10. Permit Authorization for Sewage Sludge Disposal (Instructions Page 60)

A. Beneficial use authorization

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

Yes ☐ No ☐

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

Yes ☐ No ☐

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

Yes ☐ No ☐

B. Sludge processing authorization

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

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

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

Yes ☐ No ☐

Section 11. Sewage Sludge Lagoons (Instructions Page 61)

Does this facility include sewage sludge lagoons?

Yes ☐ No ☒

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

A. Location information

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

- Original General Highway (County) Map:

Attachment:

- USDA Natural Resources Conservation Service Soil Map:

Attachment:

- Federal Emergency Management Map:

Attachment:

- Site map:

Attachment:

Discuss in a description if any of the following exist within the lagoon area.

Check all that apply.

- ☐ Overlap a designated 100-year frequency flood plain
- ☐ Soils with flooding classification
- ☐ Overlap an unstable area
- ☐ Wetlands

- ☐ Located less than 60 meters from a fault
- ☐ None of the above

Attachment: [REDACTED]

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

[REDACTED]

B. Temporary storage information

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

Nitrate Nitrogen, mg/kg: [REDACTED]

Total Kjeldahl Nitrogen, mg/kg: [REDACTED]

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

Phosphorus, mg/kg: [REDACTED]

Potassium, mg/kg: [REDACTED]

pH, standard units: [REDACTED]

Ammonia Nitrogen mg/kg: [REDACTED]

Arsenic: [REDACTED]

Cadmium: [REDACTED]

Chromium: [REDACTED]

Copper: [REDACTED]

Lead: [REDACTED]

Mercury: [REDACTED]

Molybdenum: [REDACTED]

Nickel: [REDACTED]

Selenium: [REDACTED]

Zinc: [REDACTED]

Total PCBs: [REDACTED]

Provide the following information:

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

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

[REDACTED]

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

[REDACTED]

C. Liner information

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

Yes ☐ No ☐

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

[REDACTED]

D. Site development plan

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

[REDACTED]

Attach the following documents to the application.

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

Attachment: [REDACTED]

- Copy of the closure plan

Attachment: [REDACTED]

- Copy of deed recordation for the site

Attachment: [REDACTED]

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

Attachment: [REDACTED]

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

Attachment: [REDACTED]

- Procedures to prevent the occurrence of nuisance conditions

Attachment: [REDACTED]

E. Groundwater monitoring

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

Yes ☐ No ☐

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

Attachment: [REDACTED]

Section 12. Authorizations/Compliance/Enforcement (Instructions Page 63)

A. Additional authorizations

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

Yes ☐ No ☒

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

B. Permittee enforcement status

Is the permittee currently under enforcement for this facility?

Yes ☐ No ☒

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

Yes ☐ No ☒

If yes to either question, provide a brief summary of the enforcement, the

implementation schedule, and the current status:

Section 13. RCRA/CERCLA Wastes (Instructions Page 63)

A. RCRA hazardous wastes

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

Yes ☐ No ☒

B. Remediation activity wastewater

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

Yes ☐ No ☒

C. Details about wastes received

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

Attachment:

Section 14. Laboratory Accreditation (Instructions Page 64)

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

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

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

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

CERTIFICATION:

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

Printed Name: Lonnie Wright

Title: Owner

Signature: 

Date: 5/18/22

DOMESTIC TECHNICAL REPORT 1.1

The following is required for new and amendment applications

Section 1. Justification for Permit (Instructions Page 66)

A. Justification of permit need

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

Preliminary plans for the Guajolote Ranch development involve building a subdivision with approximately 2,900 living unit equivalents (LUE). Flows will be greater than 5,000 GPD and therefore a TCEQ discharge permit is required. There are no other WWTFs within a 3-mile radius of the proposed plant, and it is not economical to transport to any facilities beyond this distance. Development is within SAWS service area, however they declined to provide service (see Special Conditions Attachment below)

B. Regionalization of facilities

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

1. *Municipally incorporated areas*

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

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

Yes ☐ No ☒ Not Applicable ☐

If yes, within the city limits of:

If yes, attach correspondence from the city.

Attachment:

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

Attachment:

2. *Utility CCN areas*

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

Yes ☒

No ☐

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

Attachment: Special Conditions of the Utility Service Agreement

3. Nearby WWTPs or collection systems

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

Yes ☐

No ☒

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

Attachment: N/A

If yes, attach copies of your certified letters to these facilities **and** their response letters concerning connection with their system.

Attachment: N/A

Does a permitted domestic wastewater treatment facility or a collection system located within three (3) miles of the proposed facility currently have the capacity to accept or is willing to expand to accept the volume of wastewater proposed in this application?

Yes ☐

No ☐

If yes, attach an analysis of expenditures required to connect to a permitted wastewater treatment facility or collection system located within 3 miles versus the cost of the proposed facility or expansion.

Attachment: N/A

Section 2. Organic Loading (Instructions Page 67)

Is this facility in operation?

Yes ☐

No ☒

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

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

A. Current organic loading

Facility Design Flow (flow being requested in application): [REDACTED]
[REDACTED]

Average Influent Organic Strength or BOD₅ Concentration in mg/l: [REDACTED]
[REDACTED]

Average Influent Loading (lbs/day = total average flow X average BOD₅ conc. X 8.34): [REDACTED]

Provide the source of the average organic strength or BOD₅ concentration.

[REDACTED]

B. Proposed organic loading

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

Table 1.1(1) - Design Organic Loading

Source	Total Average Flow (MGD)	Influent BOD ₅ Concentration (mg/l)
Municipality		
Subdivision	1.000	300
Trailer park - transient		
Mobile home park		
School with cafeteria and showers		
School with cafeteria,		

Source	Total Average Flow (MGD)	Influent BOD ₅ Concentration (mg/l)
no showers		
Recreational park, overnight use		
Recreational park, day use		
Office building or factory		
Motel		
Restaurant		
Hospital		
Nursing home		
Other		
TOTAL FLOW from all sources	1.000	
AVERAGE BOD ₅ from all sources		300

Section 3. Proposed Effluent Quality and Disinfection (Instructions Page 68)

A. Existing/Interim I Phase Design Effluent Quality

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

Total Suspended Solids, mg/l: 5

Ammonia Nitrogen, mg/l: 2

Total Phosphorus, mg/l: 1

Dissolved Oxygen, mg/l: 4

Other:

B. Interim II Phase Design Effluent Quality

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

Total Suspended Solids, mg/l: 5

Ammonia Nitrogen, mg/l: 2

Total Phosphorus, mg/l: 1

Dissolved Oxygen, mg/l: 4

Other:

C. Final Phase Design Effluent Quality

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

Total Suspended Solids, mg/l: 5

Ammonia Nitrogen, mg/l: 2

Total Phosphorus, mg/l: 1

Dissolved Oxygen, mg/l: 4

Other:

D. Disinfection Method

Identify the proposed method of disinfection.

- ☒ Chlorine: 0.5 mg/l after 20 minutes detention time at peak flow
Dechlorination process:
- ☐ Ultraviolet Light: seconds contact time at peak flow
- ☐ Other:

Section 4. Design Calculations (Instructions Page 68)

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

Attachment: Design Calculations

Section 5. Facility Site (Instructions Page 68)

A. 100-year floodplain

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

Yes ☒

No ☐

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

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

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

Yes ☐

No ☐

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

Yes ☐

No ☐

If **yes**, provide the permit number:

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

B. Wind rose

Attach a wind rose. **Attachment:** San Antonio Wind Rose


Section 6. Permit Authorization for Sewage Sludge Disposal (Instructions Page 69)

A. Beneficial use authorization

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

Yes ☐ No ☒

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

Attachment: 

B. Sludge processing authorization

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

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

If any of the above sludge options are selected, attach a completed DOMESTIC WASTEWATER PERMIT APPLICATION: SEWAGE SLUDGE TECHNICAL REPORT (TCEQ Form No. 10056).

Attachment: 

Section 7. Sewage Sludge Solids Management Plan (Instructions Page 69)

Attach a solids management plan to the application.

Attachment: Sludge Management Plan

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

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

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

DOMESTIC TECHNICAL REPORT WORKSHEET 2.0

RECEIVING WATERS

The following is required for all TPDES permit applications

Section 1. Domestic Drinking Water Supply (Instructions Page 73)

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

Yes ☐ No ☒

If yes, provide the following:

Owner of the drinking water supply:

Distance and direction to the intake:

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

Attachment:

Section 2. Discharge into Tidally Affected Waters (Instructions Page 73)

Does the facility discharge into tidally affected waters?

Yes ☐ No ☒

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

A. Receiving water outfall

Width of the receiving water at the outfall, in feet:

B. Oyster waters

Are there oyster waters in the vicinity of the discharge?

Yes ☐ No ☐

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

<input type="text"/>

C. Sea grasses

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

Yes ☐ No ☐

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

--

Section 3. Classified Segments (Instructions Page 73)

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

Yes ☐ No ☒

If yes, this Worksheet is complete.

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

Section 4. Description of Immediate Receiving Waters (Instructions Page 75)

Name of the immediate receiving waters: Helotes Creek (1906A)

A. Receiving water type

Identify the appropriate description of the receiving waters.

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

Surface area, in acres:

Average depth of the entire water body, in feet:

Average depth of water body within a 500-foot radius of discharge point, in feet:

- ☐ Man-made Channel or Ditch

- ☐ Open Bay
- ☐ Tidal Stream, Bayou, or Marsh
- ☒ Other, specify: Ephemeral Creek

B. Flow characteristics

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

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

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

- ☐ USGS flow records
- ☐ Historical observation by adjacent landowners
- ☒ Personal observation
- ☐ Other, specify:

C. Downstream perennial confluences

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

N/A

D. Downstream characteristics

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

Yes ☐ No ☒

If yes, discuss how.

E. Normal dry weather characteristics

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

Ephemeral creek for most normal weather occurrences during the year.

Date and time of observation: 15 Dec 2021, 12:00PM

Was the water body influenced by stormwater runoff during observations?

Yes ☐

No ☒

**Section 5. General Characteristics of the Waterbody (Instructions
Page 74)**

A. Upstream influences

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

☐ Oil field activities

☐ Urban runoff

☐ Upstream discharges

☐ Agricultural runoff

☐ Septic tanks

☐ Other(s), specify

B. Waterbody uses

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

☐ Livestock watering

☐ Contact recreation

☐ Irrigation withdrawal

☐ Non-contact recreation

☐ Fishing

☐ Navigation

☐ Domestic water supply

☐ Industrial water supply

☐ Park activities

☐ Other(s), specify

C. Waterbody aesthetics

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

☐ Wilderness: outstanding natural beauty; usually wooded or unpastured area; water clarity exceptional

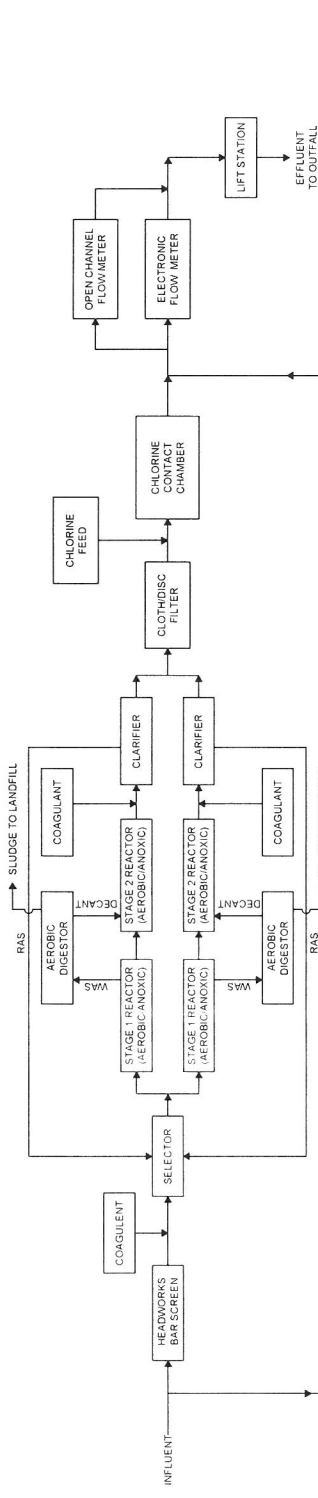
☒ Natural Area: trees and/or native vegetation; some development evident (from fields, pastures, dwellings); water clarity discolored

☐ Common Setting: not offensive; developed but uncluttered; water may be colored or turbid

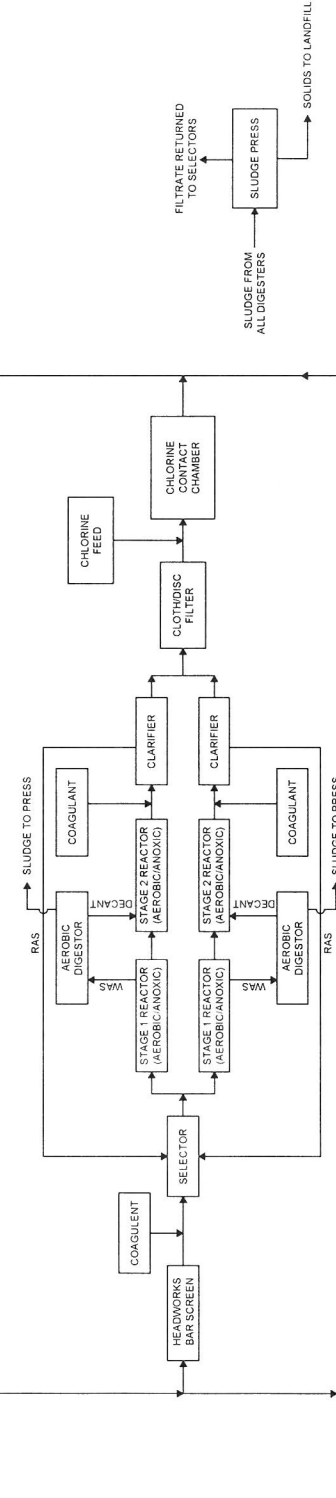
☐ Offensive: stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

Guajolote Ranch WRRF Permit Domestic Admin Report 1.0 - Section 2 Process Flow Diagram

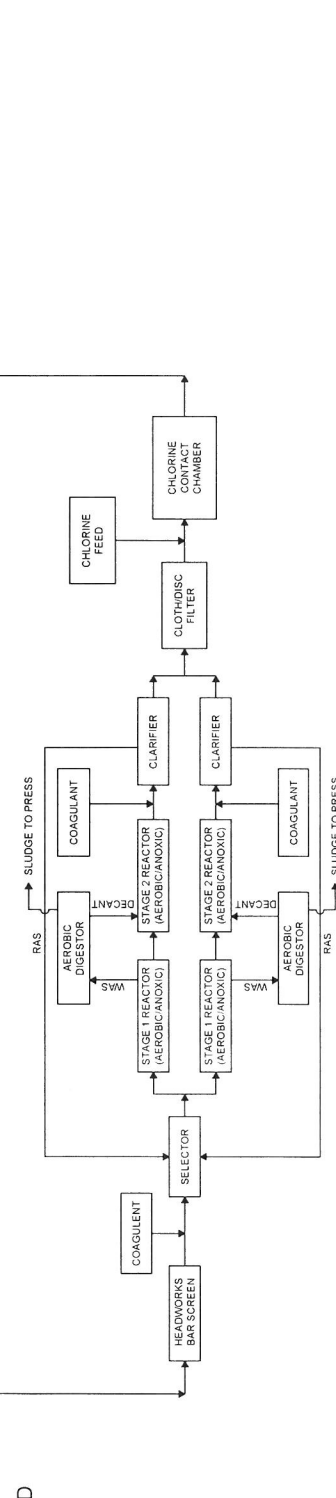
PHASE I FLOW = 200,000 GPD



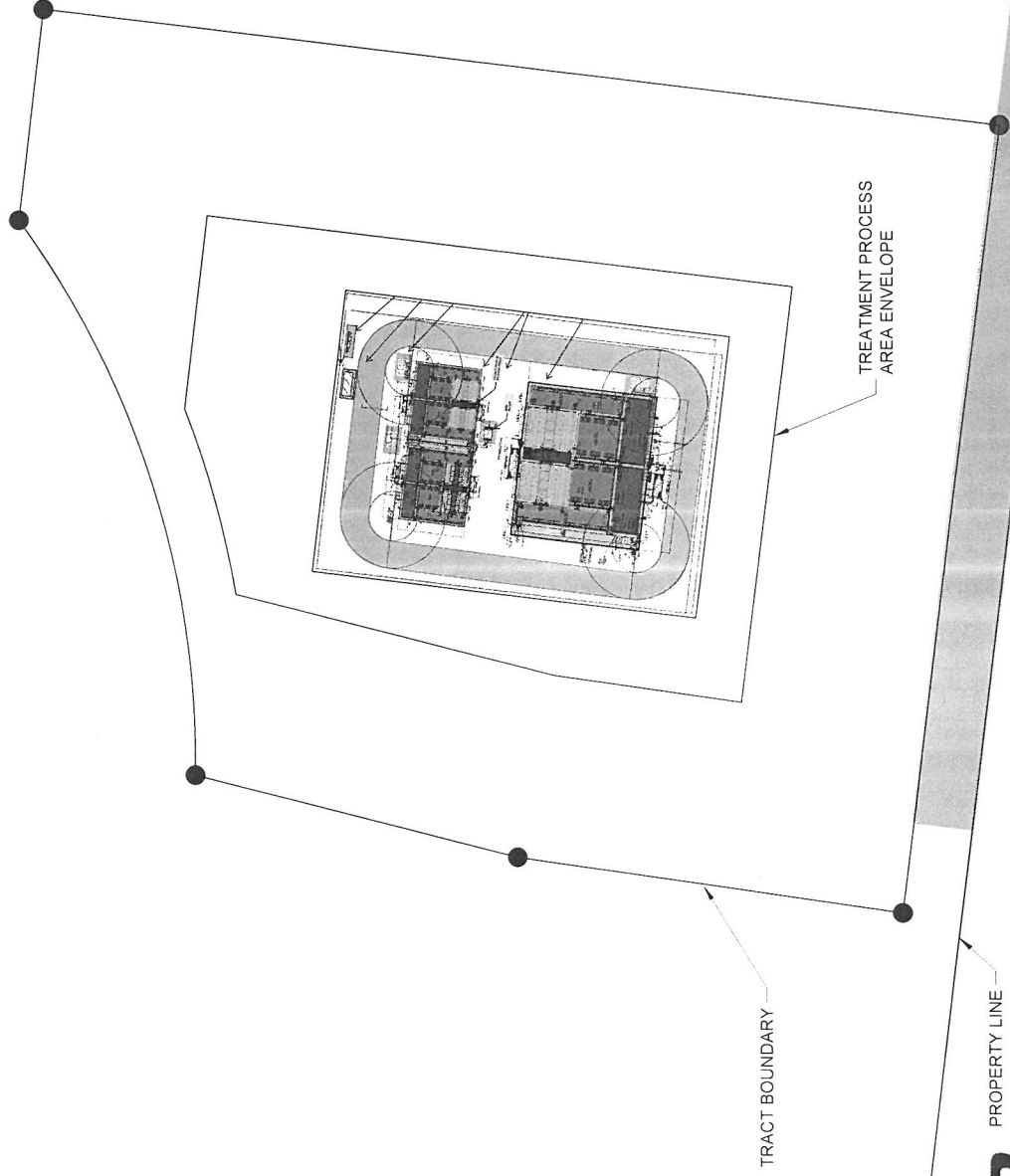
PHASE II FLOW = 400,000 GPD



PHASE III FLOW = 1,00,000 GPD

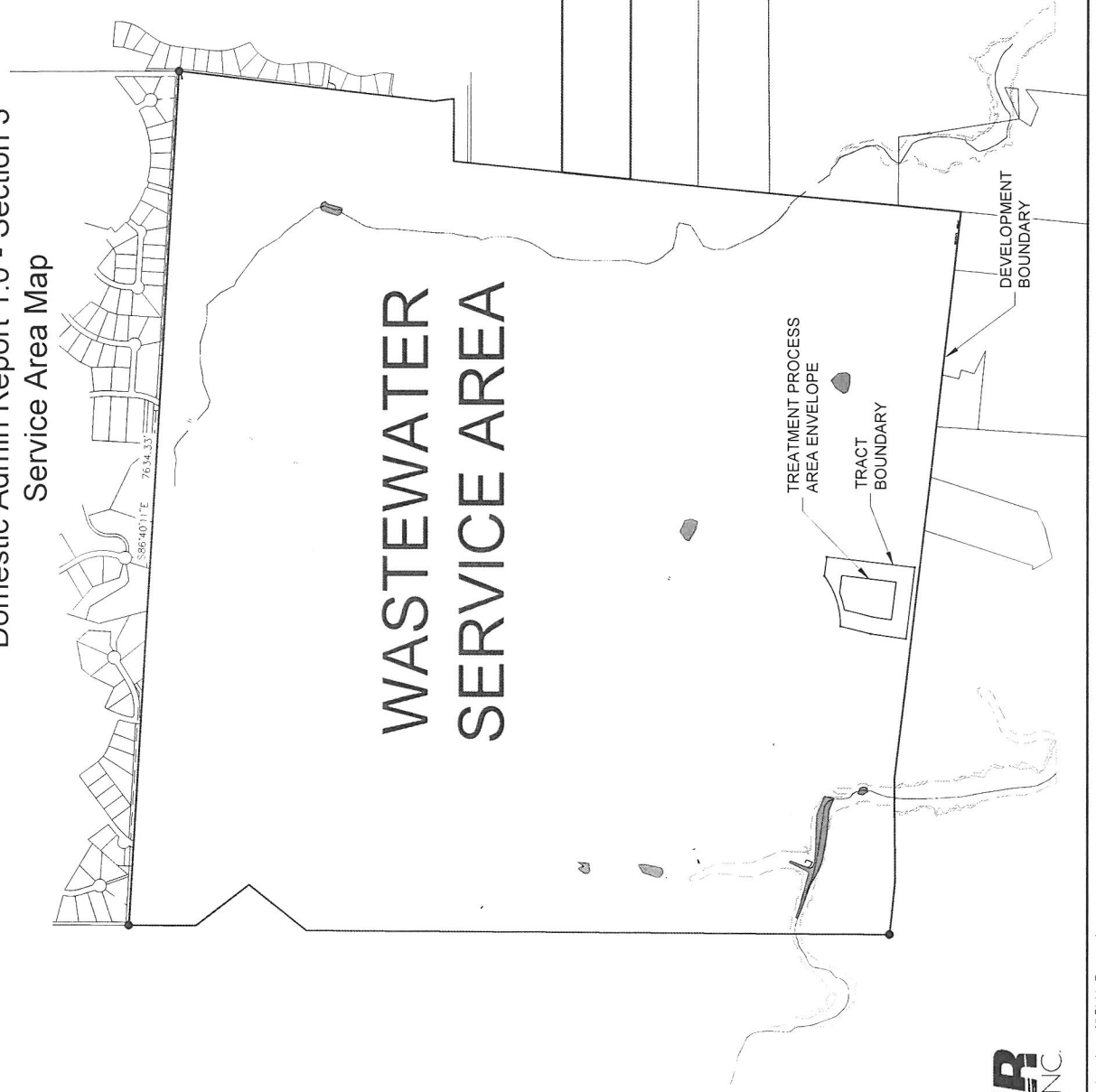


Guajolote Ranch WRRF Permit
Domestic Admin Report 1.0 - Section 3
Site Map



Guajolote Ranch WRRF Permit
Domestic Admin Report 1.0 - Section 3
Service Area Map

WASTEWATER SERVICE AREA



SPECIAL CONDITIONS OF THE UTILITY SERVICE AGREEMENT

WASTEWATER SERVICE

S.C.1.00 Tract Location and Ultimate Demand.

Guajolote Ranch, a 1160-acre tract outside the City of San Antonio limits, is located on the western ROW of Scenic Loop Rd approximately 800 feet north of Babcock Rd, as shown in Attachment VI (the "Tract") and lies within SAWS' Upper Collection and Treatment Area (UCTA). The Tract is located partially over the Edwards Aquifer Recharge or Contributing Zone and is located within the 5-mile Awareness Zone of Camp Bullis. The proposed Tract is located inside SAWS' water CCN, outside SAWS' wastewater CCN and does require SAWS' financial participation in the development of infrastructure through oversizing or impact fee credits, therefore, Board Action is required.

The ultimate demand from the proposed development, on SAWS' wastewater infrastructure, shall not exceed 0 equivalent dwelling units (EDUs) of wastewater discharge.

S.C.2.00 Infrastructure Requirements.

The proposed development is not permitted to discharge into SAWS wastewater system.

Should the Developer choose to utilize on-site septic systems. Developer agrees to secure appropriate utility permits from the Bexar County Public Works Department. All septic wastewater utilities shall be aerobic and shall be designed and constructed in accordance with the requirements of the Bexar County Public Works Department.

Should the Developer choose to utilize an on-site wastewater treatment facility, the Developer shall ensure that the wastewater treatment plant will, at a minimum, meet all required design and treatment standards for facilities discharging within 5 miles of the Edwards Aquifer Recharge Zone in accordance with Texas Commission on Environmental Quality Rules and Regulations. In addition, the Developer shall ensure that increased treatment requirements, to include advanced nutrient removal and effluent filtration, are implemented with a goal of protecting the Edwards Aquifer.

The Developer agrees that the Discharge Permit will not be increased in capacity or modified to a different type of permit in the future and that the wastewater treatment plant will only serve properties within the boundaries of the 1,160-acre Tract and the resulting wastewater which is generated from those properties. Developer agrees to notify SAWS in writing within 3 days of filing any application to modify the permit. Furthermore, the Developer agrees to coordinate with SAWS regarding the discharge location and that the wastewater effluent will be discharged on the Developers property at least 1-mile upstream of any other properties before exiting the property.



The Developer agrees that the plant will be operated and managed by a wastewater operator licensed at the A level and in good standing, and to request that TCEQ include such a requirement in any wastewater discharge permit issued authorizing the operation of the plant. The Developer also agrees that any irrigation use of the wastewater discharge shall include soil supplementation to the area being irrigated to properly absorb the effluent, which shall also be a part of the request for a discharge permit.

The Developer agrees to setting aside 50 percent of this project as open space and restricting the site to 30 percent impervious cover.

Nothing in this Agreement shall be construed as a waiver of any rights that the City of San Antonio or SAWS may have to protest or oppose an application for a discharge permit at the Texas Commission on Environmental Quality or a certificate of convenience and necessity at the Texas Public Utility Commission.

A handwritten signature in black ink, consisting of a stylized, cursive letter 'J' or 'I' followed by a horizontal line.

Domestic Technical Report 1.1 – Attachment: Design Calculations

All phases of the treatment facility will be designed according to the requirements of 30 TAC Chapter 217 (Design Criteria for Domestic Wastewater Systems)

Influent Wastewater Quality Characteristics – The raw sewage characteristics used for design purposes in both Phase I and Final Phase are as follows:

Parameter	Concentration
BOD ₅	300 mg/L
TSS	300 mg/L
TKN	60 mg/L
TP	10 mg/L

Phase I Influent Flow Characteristics – The Phase I facility process and hydraulic design flows are as follows:

Flow	Gallons Per Day	Gallons Per Minute
Average Daily Flow (Q _{avg})	200,000	138.9
Peak 2-Hour Flow (Q _{pk})	800,000	555.6

Loading	Pounds Per Day
BOD ₅	500.7
TSS	500.7

Phase II Influent Flow Characteristics – The Phase I facility process and hydraulic design flows are as follows:

Flow	Gallons Per Day	Gallons Per Minute
Average Daily Flow (Q _{avg})	400,000	277.8
Peak 2-Hour Flow (Q _{pk})	1,200,000	1,111.1

Loading	Pounds Per Day
BOD ₅	1,001.4
TSS	1,001.4

Final Phase Influent Flow Characteristics – The Final Phase facility process and hydraulic design flows are as follows:

Flow	Gallons Per Day	Gallons Per Minute
Average Daily Flow (Q _{avg})	1,00,000	694.4
Peak 2-Hour Flow (Q _{pk})	4,000,000	2,777.8

Loading	Pounds Per Day
BOD ₅	2,504
TSS	2,504

Process Design – The treatment facility will be designed to produce an effluent quality that complies with the proposed permitted parameters:

Parameter	Concentration
BOD ₅	5 mg/L
TSS	5 mg/L
TKN	2 mg/L
DO	4 mg/L

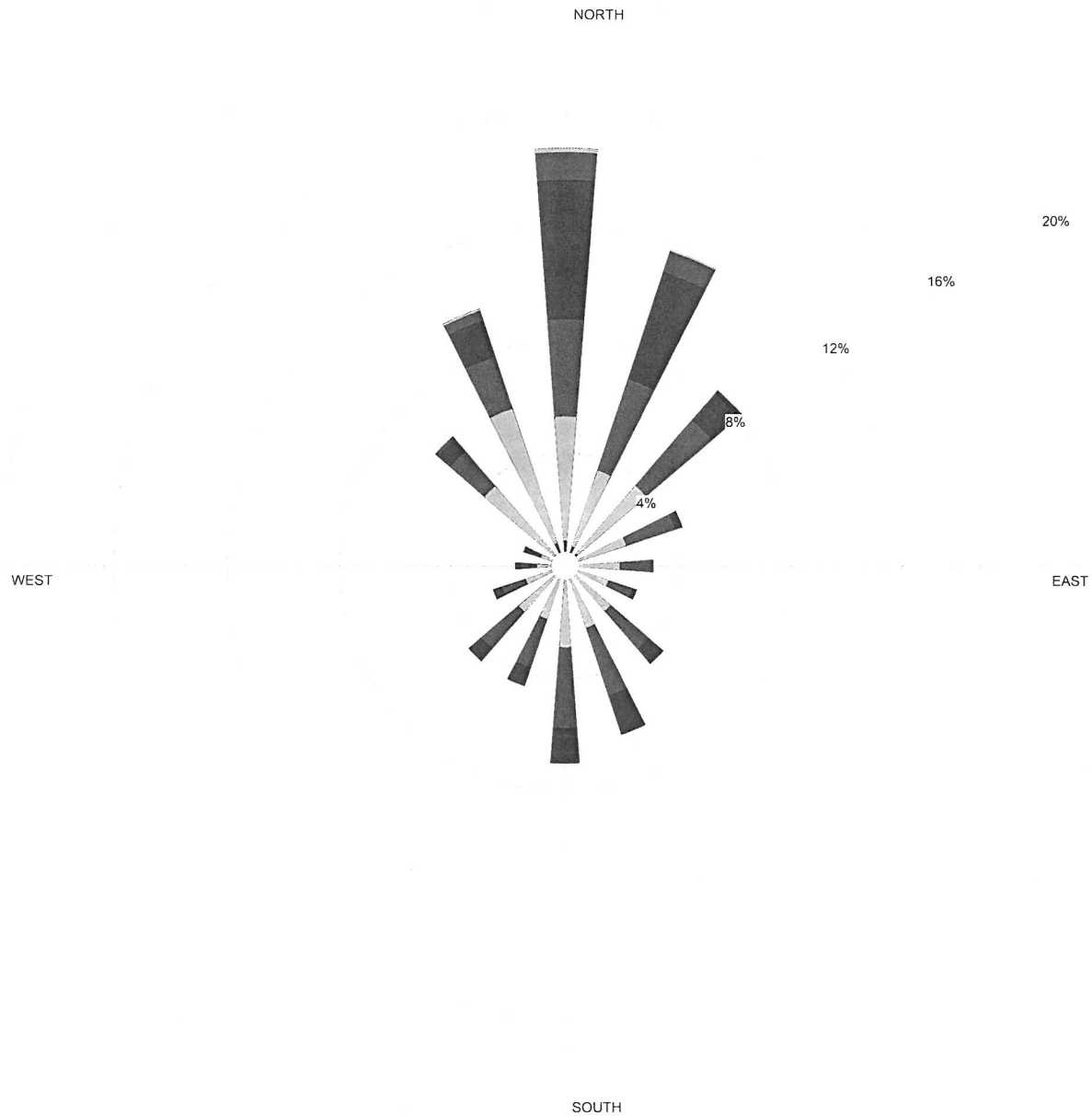
Facility Design Features

1. Excessive Inflow
 - a. A peaking factor of 4.0 is used to insure adequate hydraulic capacity.
 - b. Pumping systems have been designed to operate at peak flow with the largest pump out of service.
 - c. All piping is sized to handle anticipated peak flows.
 - d. Overflow from open top basins will be caught and redirected to largest holding tank to further prevent any spill incidents.
2. Emergency Power Requirements
 - a. Emergency/back-up power will be supplied by an on-site generator that will be designed to provide continuous and sufficient power to all process equipment (i.e. pumps, blowers, mixers, etc.)
3. Equipment Malfunction
 - a. Cascading flow design and limited equipment minimizes points of failure and tendency of malfunction.
 - b. All pumps and blowers used throughout the process will maintain at least a 1.5X redundancy factor during operation.
4. Facility Maintenance and Repair
 - a. Equipment monitoring will take place for all process equipment and will record usage according to the appropriate metrics. Maintenance schedules will be developed per these metrics and manufacturer specifications.

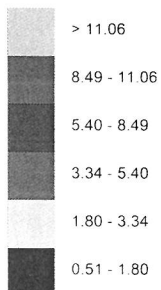
Domestic Technical Report 1.1 - Attachment: Wind Rose

WIND ROSE PLOT

Station #12921 - SAN ANTONIO/WSFO, TX



Wind Speed (m/s)



MODELER

Sara West

DISPLAY

Wind Speed

AVG. WIND SPEED

4.06 m/s

ORIENTATION

**Direction
(blowing from)**

DATE

8/29/2002

UNIT

m/s

CALM WINDS

6.40%

PLOT YEAR-DATE-TIME

**1961
Dec 1 - Dec 31
Midnight - 11 PM**

COMPANY NAME

USDA-ARS

COMMENTS

Domestic Technical Report 1.1 – Attachment: Sludge Management Plan

- (a) Dimensions and capacities of all sewage sludge handling and treatment units and processes include the following:

For Phase I: 0.200MGD

Treatment Unit	Number of Units	Dimensions	Capacity
Aerobic Digester	2	9' x 33' x 14'SWD	62,000 gal

For Phase II: 0.400 MGP

Treatment Unit	Number of Units	Dimensions	Capacity
Aerobic Digester	4	9' x 33' x 14'SWD	124,000 gal
Sludge Press	1	40' x 25' (L x W)	2 ton per day

For Final Phase: 1.000 MGD

Treatment Unit	Number of Units	Dimensions	Capacity
Aerobic Digester	4	9' x 33' x 14'SWD	124,000 gal
Aerobic Digester	2	10' x 48' x 14'SWD	100,000 gal
Sludge Press	1	40' x 25' (L x W)	2 ton per day

- (b) The amount of solids generated at expected increments of the design flows is provided in the following table:

Sludge Production (Gal Per Day)				
Phase	100% Flow	75% Flow	50% Flow	25% Flow
Phase I	4,000	3,000	2,000	1,000
Phase II	8,000	6,000	4,000	2,000
Final Phase	20,000	15,000	10,000	5,000

- (c) The plant, in all phases, is designed to operate at a mixed liquor suspended solids (MLSS) concentration of 3,750 mg/L. Adjustments will be made to maintain this MLSS concentration at lower flow rates.
- (d) For Phase I, wet solids will be removed from the aerobic digester as needed to maintain MLSS and SRT. Wet solids will be hauled and disposed of at the ultimate disposal site. For Phase II and Final Phase, MLSS concentration and solid removal will be maintained through means of a sludge press. Wet solids will be cycled through a sludge press, where dewatered solids will then be removed and hauled to the ultimate disposal site.
- (e) The ultimate disposal site will be the Steven M Clouse Water Recycling Center, which is owned by SAWS. Documentation of disposal will be recorded on a disposed weight basis.