WATER POLLUION ABATEMENT PLAN

Pinnacle Montessori Academy Georgetown

2451 TX-29
Georgetown, TX 78628

09/13/19
Texas Commission on Environmental Quality
Edwards Aquifer Application Cover Page

Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with 30 TAC 213.

Administrative Review

1. Edwards Aquifer applications must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: http://www.tceq.texas.gov/field/eapp.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.

3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.

4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.

6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the Instructions to Geologists (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be
Clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied the application fee will be forfeited.

4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

**Mid-Review Modifications**

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a “Mid-Review Modification”. Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ’s Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ’s San Antonio Regional Office at 210-490-3096.

Please fill out all required fields below and submit with your application.

<table>
<thead>
<tr>
<th>1. Regulated Entity Name: Pinnacle Montessori Academy Georgetown</th>
<th>2. Regulated Entity No.: N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Customer Name: Alex Freeman</td>
<td>4. Customer No.: N/A</td>
</tr>
<tr>
<td>5. Project Type: (Please circle/check one)</td>
<td>New</td>
</tr>
<tr>
<td>6. Plan Type: (Please circle/check one)</td>
<td>WPAP</td>
</tr>
<tr>
<td>7. Land Use: (Please circle/check one)</td>
<td>Commercial</td>
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<tr>
<td>9. Application Fee:</td>
<td>$4,000</td>
</tr>
<tr>
<td>11. SCS (Linear Ft.):</td>
<td>N/A</td>
</tr>
<tr>
<td>13. County:</td>
<td>Williamson</td>
</tr>
</tbody>
</table>
Application Distribution

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the “Texas Groundwater Conservation Districts within the EAPP Boundaries” map found at:


For more detailed boundaries, please contact the conservation district directly.

### Austin Region

<table>
<thead>
<tr>
<th>County:</th>
<th>Hays</th>
<th>Travis</th>
<th>Williamson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original (1 req.)</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>Region (1 req.)</td>
<td>—</td>
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<table>
<thead>
<tr>
<th>Groundwater Conservation District(s)</th>
<th>Edwards Aquifer Authority</th>
<th>Barton Springs/Edwards Aquifer</th>
<th>Barton Springs/Edwards Aquifer</th>
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<tbody>
<tr>
<td>County(ies)</td>
<td>Hays Trinity</td>
<td>Plum Creek</td>
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<th>Buda</th>
<th>Bee Cave</th>
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<tr>
<td></td>
<td>Dripping Springs</td>
<td>Kyle</td>
<td>Pflugerville</td>
<td>Florence</td>
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<td></td>
<td>Mountain City</td>
<td>San Marcos</td>
<td>Sunset Valley</td>
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<td></td>
<td>—</td>
<td>Wimberley</td>
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<tr>
<td></td>
<td>—</td>
<td>Woodcreek</td>
<td>—</td>
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### San Antonio Region

<table>
<thead>
<tr>
<th>County:</th>
<th>Bexar</th>
<th>Comal</th>
<th>Kinney</th>
<th>Medina</th>
<th>Uvalde</th>
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<tbody>
<tr>
<td>Original (1 req.)</td>
<td>—</td>
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<td>Region (1 req.)</td>
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<th>Groundwater Conservation District(s)</th>
<th>Edwards Aquifer Authority</th>
<th>Edwards Aquifer Authority</th>
<th>Kinney</th>
<th>EAA</th>
<th>EAA</th>
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<tbody>
<tr>
<td>County(ies)</td>
<td>Trinity-Glen Rose</td>
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<td>—</td>
<td>Medina</td>
<td>Uvalde</td>
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</table>
I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.

Harum Rashid, PE, RPLS

Print Name of Customer/Authorized Agent

Signature of Customer/Authorized Agent

Date

---

**FOR TCEQ INTERNAL USE ONLY**

<table>
<thead>
<tr>
<th>Date(s)Reviewed:</th>
<th>Date Administratively Complete:</th>
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<tbody>
<tr>
<td>Received From:</td>
<td>Correct Number of Copies:</td>
</tr>
<tr>
<td>Received By:</td>
<td>Distribution Date:</td>
</tr>
<tr>
<td>EAPP File Number:</td>
<td>Complex:</td>
</tr>
<tr>
<td>Admin. Review(s) (No.):</td>
<td>No. AR Rounds:</td>
</tr>
<tr>
<td>Delinquent Fees (Y/N):</td>
<td>Review Time Spent:</td>
</tr>
<tr>
<td>Lat./Long. Verified:</td>
<td>SOS Customer Verification:</td>
</tr>
<tr>
<td>Agent Authorization Complete/Notarized (Y/N):</td>
<td>Fee Payable to TCEQ (Y/N):</td>
</tr>
<tr>
<td>Core Data Form Complete (Y/N):</td>
<td>Check: Signed (Y/N):</td>
</tr>
<tr>
<td>Core Data Form Incomplete Nos.:</td>
<td>Less than 90 days old (Y/N):</td>
</tr>
</tbody>
</table>
Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I ________________________________________________
Print Name

Title - Owner/President/Other

of ____________________________________________
Corporation/Partnership/Entity Name

have authorized ________________________________
Print Name of Agent/Engineer

of ____________________________________________
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.
SIGNATURE PAGE:

[Signature]
Applicant's Signature

[Signature]
Date

THE STATE OF ___TX___

County of ___Dallas___

BEFORE ME, the undersigned authority, on this day personally appeared ___Alex Freeman___ known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this ___24___ day of ___July___ 2019.

[Signature]
CLAIRED Q. WANG
Notary ID #125199444
My Commission Expires
March 1, 2021

NOTARY PUBLIC

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: ___03/01/2021___
Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: PINNACLE FREEMAN PROPERTIES, LLC.
Regulated Entity Location: 2451 HWY- 29, GEORGETOWN, TX- 78628
Name of Customer: ALEX FREEMAN
Contact Person: HARUN RASHID, PE. RPLS
Customer Reference Number (if issued): CN N/A
Regulated Entity Reference Number (if issued): RN N/A

Austin Regional Office (3373)

☐ Hays
☐ Travis
☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar
☐ Medina
☐ Uvalde

☐ Comal
☐ Kinney

Application fees must be paid by check, certified check, or money order, payable to the Texas Commission on Environmental Quality. Your canceled check will serve as your receipt. This form must be submitted with your fee payment. This payment is being submitted to:

☑ Austin Regional Office
☐ Mailed to: TCEQ - Cashier

☐ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier

Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

Site Location (Check All That Apply):

☑ Recharge Zone
☐ Contributing Zone
☐ Transition Zone

<table>
<thead>
<tr>
<th>Type of Plan</th>
<th>Size</th>
<th>Fee Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family</td>
<td>Acres</td>
<td>$</td>
</tr>
<tr>
<td>Residential Dwelling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single</td>
<td>Acres</td>
<td>$</td>
</tr>
<tr>
<td>Family Residential and Parks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential</td>
<td>2.30</td>
<td>$ 4,000.00</td>
</tr>
<tr>
<td>Sewage Collection System</td>
<td>L.F.</td>
<td>$</td>
</tr>
<tr>
<td>Lift Stations without sewer lines</td>
<td>Acres</td>
<td>$</td>
</tr>
<tr>
<td>Underground or Aboveground Storage Tank Facility</td>
<td>Tanks</td>
<td>$</td>
</tr>
<tr>
<td>Piping System(s)(only)</td>
<td>Each</td>
<td>$</td>
</tr>
<tr>
<td>Exception</td>
<td>Each</td>
<td>$</td>
</tr>
<tr>
<td>Extension of Time</td>
<td>Each</td>
<td>$</td>
</tr>
</tbody>
</table>

Signature: [Signature]
Date: 7/24/19

TCEQ-0574 (Rev. 02-24-15)
## Application Fee Schedule

**Texas Commission on Environmental Quality**  
Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

### Water Pollution Abatement Plans and Modifications

#### Contributing Zone Plans and Modifications

<table>
<thead>
<tr>
<th>Project</th>
<th>Project Area in Acres</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Single Family Residential Dwelling</td>
<td>&lt; 5</td>
<td>$650</td>
</tr>
<tr>
<td>Multiple Single Family Residential and Parks</td>
<td>5 &lt; 10</td>
<td>$1,500</td>
</tr>
<tr>
<td></td>
<td>10 &lt; 40</td>
<td>$3,000</td>
</tr>
<tr>
<td></td>
<td>40 &lt; 100</td>
<td>$4,000</td>
</tr>
<tr>
<td></td>
<td>100 &lt; 500</td>
<td>$6,500</td>
</tr>
<tr>
<td></td>
<td>≥ 500</td>
<td>$8,000</td>
</tr>
<tr>
<td>Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)</td>
<td>&lt; 1</td>
<td>$3,000</td>
</tr>
<tr>
<td></td>
<td>1 &lt; 5</td>
<td>$4,000</td>
</tr>
<tr>
<td></td>
<td>5 &lt; 10</td>
<td>$5,000</td>
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<td>40 &lt; 100</td>
<td>$6,500</td>
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<td></td>
<td>≥ 100</td>
<td>$10,000</td>
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</table>

### Organized Sewage Collection Systems and Modifications

<table>
<thead>
<tr>
<th>Project</th>
<th>Cost per Linear Foot</th>
<th>Minimum Fee - Maximum Fee</th>
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</thead>
<tbody>
<tr>
<td>Sewage Collection Systems</td>
<td>$0.50</td>
<td>$650 - $6,500</td>
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</table>

### Underground and Aboveground Storage Tank System Facility Plans and Modifications

<table>
<thead>
<tr>
<th>Project</th>
<th>Cost per Tank or Piping System</th>
<th>Minimum Fee - Maximum Fee</th>
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</thead>
<tbody>
<tr>
<td>Underground and Aboveground Storage Tank Facility</td>
<td>$650</td>
<td>$650 - $6,500</td>
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### Exception Requests

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<thead>
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<tr>
<td>Exception Request</td>
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### Extension of Time Requests

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<tbody>
<tr>
<td>Extension of Time Request</td>
<td>$150</td>
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</table>
General Information Form

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This General Information Form is hereby submitted for TCEQ review. The application was prepared by:

Print Name of Customer/Agent: Harun Rashid, PE, RPLS

Date: September 13, 2019

Signature of Customer/Agent:

[Signature]

Project Information

1. Regulated Entity Name: Pinnacle Freeman Properties, LLC.
2. County: Williamson
3. Stream Basin: South Fork San Gabriel River
4. Groundwater Conservation District (If applicable): N/A
5. Edwards Aquifer Zone:
   - [X] Recharge Zone
   - [ ] Transition Zone
6. Plan Type:
   - [X] WPAP
   - [ ] SCS
   - [ ] Modification
   - [ ] AST
   - [ ] UST
   - [ ] Exception Request

TCEQ-0587 (Rev. 02-11-15)
7. Customer (Applicant):

Contact Person: Alex Freeman
Entity: Pinnacle Freeman Properties, LLC.
Mailing Address: 811 S central Expressway, Suite 306
City, State: Richardson, TX  Zip: 75080
Telephone: 469-2334774  FAX: ____
Email Address: afreeman@pinnaclemontessori.com

8. Agent/Representative (If any):

Contact Person: Harun Rashid, PE, RPLS
Entity: MHR Engineering, LLC.
Mailing Address: 16845 Blanco Road, Suite 106
City, State: San Antonio, TX  Zip: 78232
Telephone: 210-317-7241  FAX: 210-497-2229
Email Address: hrashid@mhreng.com

9. Project Location:

☒ The project site is located inside the city limits of Georgetown.
☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of ____.
☐ The project site is not located within any city’s limits or ETJ.

10. ☒ The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ’s Regional staff can easily locate the project and site boundaries for a field investigation.

   Property is located to the south of TX-29 approximately at a distance of 2.42 miles west of IH-35

11. ☒ Attachment A – Road Map. A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.

12. ☒ Attachment B - USGS / Edwards Recharge Zone Map. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:

   ☒ Project site boundaries.
   ☒ USGS Quadrangle Name(s).
   ☒ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
   ☒ Drainage path from the project site to the boundary of the Recharge Zone.

13. ☒ The TCEQ must be able to inspect the project site or the application will be returned.

   Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.
Survey staking will be completed by this date: ______

14. *Attachment C – Project Description.* Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:

- Area of the site
- Offsite areas
- Impervious cover
- Permanent BMP(s)
- Proposed site use
- Site history
- Previous development
- Area(s) to be demolished

15. Existing project site conditions are noted below:

- Existing commercial site
- Existing industrial site
- Existing residential site
- Existing paved and/or unpaved roads
- Undeveloped (Cleared)
- Undeveloped (Undisturbed/Uncleared)
- Other: ______

**Prohibited Activities**

16. *I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:*

   (1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
   
   (2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
   
   (3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;
   
   (4) The use of sewage holding tanks as parts of organized collection systems; and
   
   (5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).
   
   (6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

17. *I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:*

   (1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and
(3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

**Administrative Information**

18. The fee for the plan(s) is based on:

- For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
- For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
- For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems.
- A request for an exception to any substantive portion of the regulations related to the protection of water quality.
- A request for an extension to a previously approved plan.

19. ☑ Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

- ☐ TCEQ cashier
- ☑ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- ☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

20. ☑ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

21. ☑ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.
PINNACLE MONTESSORI ACADEMY - GEORGETOWN
GENERAL INFORMATION

ATTACHMENT- A

LOCATION MAP
PINNACLE MONTESSORI ACADEMY - GEORGETOWN
GENERAL INFORMATION

ATTACHMENT- B

USGS MAP

TCEQ-0587 (Rev. 02-11-15)
ATTACHMENT- C

Project Descriptions

Proposed development of “Pinnacle Montessori Academy-Georgetown” will include one 6,000 sf building for after school and one 11,437 sf building for day-care along a playground on a 2.326 acre property. Total impervious cover is 55,725 sf which includes 17,437 sf structures, 32,546 sf parking and 5,742 sf sidewalk and other paved surfaces. Estimated impervious cover is 55%.

The site will be treated by a sedimentation and filter basin to be located at the southwest corner of the property. Permanent BMP will be constructed to treat Total Suspended Solids (TSS) generated by the proposed development. These BMPs have been designed to remove 89% of the increased TSS for the entire development in accordance with the TCEQ Technical Guidance Manual RG-348 (2005).
Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This Water Pollution Abatement Plan Application Form is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

Print Name of Customer/Agent: Harun Rashid, PE, RPLS

Date: September 13, 2019

Signature of Customer/Agent:

Regulated Entity Name: Pinnacle Freeman Properties, LLC.

Regulated Entity Information

1. The type of project is:
   □ Residential: Number of Lots: _____
   □ Residential: Number of Living Unit Equivalents: _____
   □ Commercial
   □ Industrial
   □ Other: _____

2. Total site acreage (size of property): 2.326 acres

3. Estimated projected population: 60

4. The amount and type of impervious cover expected after construction are shown below:
Table 1 - Impervious Cover Table

<table>
<thead>
<tr>
<th>Impervious Cover of Proposed Project</th>
<th>Sq. Ft.</th>
<th>Sq. Ft./Acre</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structures/Rooftops</td>
<td>17,437</td>
<td>÷ 43,560 =</td>
<td>0.400</td>
</tr>
<tr>
<td>Parking</td>
<td>32,546</td>
<td>÷ 43,560 =</td>
<td>0.747</td>
</tr>
<tr>
<td>Other paved surfaces</td>
<td>5,742</td>
<td>÷ 43,560 =</td>
<td>0.132</td>
</tr>
<tr>
<td>Total Impervious Cover</td>
<td>55,725</td>
<td>÷ 43,560 =</td>
<td>1.279</td>
</tr>
</tbody>
</table>

Total Impervious Cover 1.279 + Total Acreage 2.326 X 100 = 55% Impervious Cover

5. ☑ Attachment A - Factors Affecting Surface Water Quality. A detailed description of all factors that could affect surface water and groundwater quality that addresses ultimate land use is attached.

6. ☐ Only inert materials as defined by 30 TAC §330.2 will be used as fill material.

**For Road Projects Only**

Complete questions 7 - 12 if this application is exclusively for a road project.

7. Type of project:
   ☑ TXDOT road project.
   ☐ County road or roads built to county specifications.
   ☐ City thoroughfare or roads to be dedicated to a municipality.
   ☐ Street or road providing access to private driveways.

8. Type of pavement or road surface to be used:
   ☑ Concrete
   ☐ Asphaltdic concrete pavement
   ☐ Other: _____

   Width of R.O.W.: _____ feet.
   \[ L \times W = \text{Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{acres} \]

10. Length of pavement area: _____ feet.
    Width of pavement area: _____ feet.
    \[ L \times W = \text{Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{acres} \]
    Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = _____% impervious cover.

11. ☑ A rest stop will be included in this project.
    ☐ A rest stop will not be included in this project.
12. □ Maintenance and repair of existing roadways that do not require approval from the
TCEQ Executive Director. Modifications to existing roadways such as widening
roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing
lane require prior approval from the TCEQ.

**Stormwater to be generated by the Proposed Project**

13. □ Attachment B - Volume and Character of Stormwater. A detailed description of the
volume (quantity) and character (quality) of the stormwater runoff which is expected to
occur from the proposed project is attached. The estimates of stormwater runoff
quality and quantity are based on the area and type of impervious cover. Include the
runoff coefficient of the site for both pre-construction and post-construction conditions.

**Wastewater to be generated by the Proposed Project**

14. The character and volume of wastewater is shown below:

<table>
<thead>
<tr>
<th>% Domestic</th>
<th>100% Domestic</th>
<th>720 Gallons/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Industrial</td>
<td>% Commingled</td>
<td>Gallons/day</td>
</tr>
</tbody>
</table>

TOTAL gallons/day ______

15. Wastewater will be disposed of by:

□ On-Site Sewage Facility (OSSF/Septic Tank):

□ Attachment C - Suitability Letter from Authorized Agent. An on-site sewage facility
will be used to treat and dispose of the wastewater from this site. The appropriate
licensing authority's (authorized agent) written approval is attached. It states that
the land is suitable for the use of private sewage facilities and will meet or exceed
the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285
relating to On-site Sewage Facilities.

□ Each lot in this project/development is at least one (1) acre (43,560 square feet) in
size. The system will be designed by a licensed professional engineer or registered
sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter
285.

□ Sewage Collection System (Sewer Lines):

□ Private service laterals from the wastewater generating facilities will be connected
to an existing SCS.

□ Private service laterals from the wastewater generating facilities will be connected
to a proposed SCS.

□ The SCS was previously submitted on___.

□ The SCS was submitted with this application.

□ The SCS will be submitted at a later date. The owner is aware that the SCS may not
be installed prior to Executive Director approval.
The sewage collection system will convey the wastewater to the Dove Springs (name) Treatment Plant. The treatment facility is:

- Existing.
- Proposed.

16. All private service laterals will be inspected as required in 30 TAC §213.5.

**Site Plan Requirements**

*Items 17 – 28 must be included on the Site Plan.*

17. The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = 30'.

18. 100-year floodplain boundaries:

- Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
- No part of the project site is located within the 100-year floodplain. The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): _____

19. The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, open space, etc. are shown on the plan.

- The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, open space, etc. are shown on the site plan.

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

- There are __ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)
  - The wells are not in use and have been properly abandoned.
  - The wells are not in use and will be properly abandoned.
  - The wells are in use and comply with 16 TAC §76.
- There are no wells or test holes of any kind known to exist on the project site.

21. Geologic or manmade features which are on the site:

- All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
- No sensitive geologic or manmade features were identified in the Geologic Assessment.
- **Attachment D - Exception to the Required Geologic Assessment.** A request and justification for an exception to a portion of the Geologic Assessment is attached.
22. ☒ The drainage patterns and approximate slopes anticipated after major grading activities.

23. ☒ Areas of soil disturbance and areas which will not be disturbed.

24. ☒ Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.

25. ☒ Locations where soil stabilization practices are expected to occur.

26. ☐ Surface waters (including wetlands).

27. ☐ Locations where stormwater discharges to surface water or sensitive features are to occur.

28. ☒ Legal boundaries of the site are shown.

**Administrative Information**

29. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

30. ☒ Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.
ATTACHMENT A

Factors Affecting Water Quality:

Potential Sources of Pollution that may reasonably be expected to affect the quality of Storm Water discharges from the site during construction include:

- Soil erosion due to the clearing of the site
- Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle drippings
- Hydrocarbons from asphalt paving operations
- Miscellaneous trash and litter from construction workers and materials wrappings
- Concrete truck washout
- Potential overflow/spills from portable toilets

Potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the site after development include:

- Oil, grease, fuel and hydraulic fluid contamination from vehicle drippings
- Dirt and dust may fall off vehicles
- Miscellaneous trash and litter
ATTACHMENT B

Stormwater Runoff to be Generated by the Proposed Project:

For a 25-year storm event, the entire 2.326 acre site generates approximately 6.12 cfs prior to development and 9.38 cfs after development based on C values (runoff coefficient) of 0.47 and 0.72 respectively. Rational Method has been used for the hydrologic calculation.
Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(l) and (G); Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This Temporary Stormwater Section is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Harun Rashid, PE, RPLS

Date: September 13, 2019

Signature of Customer/Agent:

[Signature]

Regulated Entity Name: Pinnacle Freeman properties, LLC.

Project Information

Potential Sources of Contamination

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

☐ The following fuels and/or hazardous substances will be stored on the site: _____

These fuels and/or hazardous substances will be stored in:

☐ Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.
Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

Fuels and hazardous substances will not be stored on the site.

2. **Attachment A - Spill Response Actions.** A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. **Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.**

4. **Attachment B - Potential Sources of Contamination.** A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

**Sequence of Construction**

5. **Attachment C - Sequence of Major Activities.** A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

- For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.
- For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: **South Fork San Gabriel River**

**Temporary Best Management Practices (TBMPs)**

*Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.*

7. **Attachment D – Temporary Best Management Practices and Measures.** TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:
☐ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

☐ A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

☐ A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.

☐ A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

8. ☐ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

☐ Attachment E - Request to Temporarily Seal a Feature. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. ☒ Attachment F - Structural Practices. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. ☒ Attachment G - Drainage Area Map. A drainage area map supporting the following requirements is attached:

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

☒ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.
11. **Attachment H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

   ☐ N/A

12. **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☐ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer’s specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☐ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. ☐ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☐ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

**Soil Stabilization Practices**

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. ☐ **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices.** A schedule of the interim and permanent soil stabilization practices for the site is attached.
18. ❚ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

19. ❚ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

**Administrative Information**

20. ❚ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. ❚ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ❚ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.
ATTACHMENT A

Spill Response Actions

In the event of an accident leak or spill:

- Contractor shall take immediate action to contain a spill. the contractor may use sand or other absorbent material stockpile on site to absorb a spill. Absorbent material should be spread over the spill area to absorb the spilled product.
- In the event of an uncontained discharge the contractor shall utilize onsite equipments to construct berms down gradient of the spill with sand or other absorbent material to contain and absorb the spilled product.
- Sand or material used to contain the spill should be collected and stored in such a way so as not to continue to affect additional ground. Once the spill has been contained, collected material should be placed on poly or plastic sheeting until removed from the site. In the event of potential rainfall, the material should be covered with poly or plastic sheeting to prevent contaminating runoff.
- The contractor will be required to notify the owner, who will in turn contact TCEQ to notify them in the event of a spill. Additional notifications as required by the type and amount of spill be conducted by the owner or owner's representative.

In the event of an accidental significant or hazardous spill:

- The contractor will be required to report significant or hazardous spills in reportable quantities to:
  - the national Response center at (800)424-8802
  - the Edwards Aquifer Authority at (210)222-2204
  - the TCEQ Regional Office (210)222-2204
  - the State Emergency Response Center (800)832-8224 (if after hours)

- Contaminated soils will b sampled for waste characterization. When the analysis results are known the contaminated soils will be removed from the site and disposed off in a permitted landfill in accordance with applicable regulations.

Additional guidance can be obtained from TCEQ's Technical Guidance manual 9TGM) RG-348 92005) Section 1.4.16. Contractor shall review this section.
TCEQ’s TGM Section 1.4.16
Spill Prevention and Control

The objective of this section is to describe measures to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

1. Be aware that different materials pollute in different amounts. Make sure that each employee knows what a “significant spill” is for each material they use, and what is the appropriate response for “significant” and “insignificant” spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.

2. Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.

3. Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).

4. Establish a continuing education program to indoctrinate new employees.

5. Have contractor’s superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

1. To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.

2. Store hazardous materials and wastes in covered containers and protect from vandalism.

3. Place a stockpile of spill cleanup materials where it will be readily accessible.

4. Train employees in spill prevention and cleanup.

5. Designate responsible individuals to oversee and enforce control measures.
(6) Spills should be covered and protected from stormwater runoff during rainfall to the extent that it doesn’t compromise clean up activities.

(7) Do not bury or wash spills with water.

(8) Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.

(9) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.

(10) Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.

(11) Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.

(12) Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

(1) Clean up leaks and spills immediately.

(2) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.

(3) Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

(1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.

(2) Use absorbent materials on small spills rather than hosing down or burying the spill.
(3) Absorbent materials should be promptly removed and disposed of properly.

(4) Follow the practice below for a minor spill:

(5) Contain the spread of the spill.

(6) Recover spilled materials.

(7) Clean the contaminated area and properly dispose of contaminated materials.

**Semi-Significant Spills**

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

Spills should be cleaned up immediately:

(1) Contain spread of the spill.

(2) Notify the project foreman immediately.

(3) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.

(4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.

(5) If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

**Significant/Hazardous Spills**

For significant or hazardous spills that are in reportable quantities:

(1) Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.

(2) For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
(3) Notification should first be made by telephone and followed up with a written report.

(4) The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.

(5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc. More information on spill rules and appropriate responses is available on the TCEQ website at: http://www.tnrcc.state.tx.us/enforcement/emergency_response.html

Vehicle and Equipment Maintenance

(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.

(2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately.

(3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.

(4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.

(5) Place drip pans or absorbent materials under paving equipment when not in use.

(6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.

(7) Promptly transfer used fluids to the proper waste or recycling drums. Don’t leave full drip pans or other open containers lying around.

(8) Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.

(9) Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.
Vehicle and Equipment Fueling

(1) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runoff of stormwater and the runoff of spills.

(2) Discourage “topping off” of fuel tanks.

(3) Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.
ATTACHMENT B

Potential Sources of Contamination

Potential Sources:

1. Asphalt products used by this product.
2. Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.
3. Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.
4. Miscellaneous trash and litter from construction workers and materials wrappings.
5. Construction debris.

Prevention Measures:

1. After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.
2. Vehicle maintenance when possible will be performed within the construction staging area. Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.
3. Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures. Contractor's superintendent or representative oversee shall enforce proper spill prevention and control measures. Hazardous materials and waste shall be stored on site where it will be readily accessible.
4. Trash containers will be placed throughout the site to encourage proper trash disposal.
5. Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.
6. Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets on a level ground surface. Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.
ATTACHMENT C

Sequence of Major Activities

The sequence of major activities which disturb soil during construction on this site will consist of two stages. Stage one will include site preparation that will include clearing and grubbing of vegetation where applicable and rough grading. This will disturb approximately 1.85 acres. The second stage is the construction stage that will include the buildings, paved parking, sidewalks, landscaping and site cleanup. This will disturb approximately 1.85 acres.
ATTACHMENT D

Temporary Best Management Practices and Measures

Inceptor Swales
- Shallow swales place along the boundary of the property to catch upgradient water and redirect the flow away from disturbed areas. These swales will utilize vegetation to slow the water and allow for any sediment particles to settle out before leaving the site, thus minimizing the amount of contaminants leaving the site. See location and details on the SWPPP sheet.

Silt Fence
- Placed on the down gradient slope of the disturbed areas to catch sediment before it leaves the site. Temporary measure, to be removed once the disturbance activities have ceased and stabilization completed. See details on the SWPPP sheet.

Rock Berm and Silt Fence
- Placed in areas where flows are concentrated and silt fence alone will not contain the flows. Consists of rocks held in place with wire mesh and silt fence placed along the face of the rock. Stops sediments from leaving the site from runoff flowing through the site. See details on the SWPPP sheet.

Inlet Protection
- Placed around inlets to catch and stop sediment from entering the storm drain system before filtration systems are in place. For material and details see SWPPP sheet.

Construction Exit
- Located at the entrance/exit of the site and used to reduce materials from being tracked onto existing roads from construction vehicles. Usually consists of oversized rock gravel that will allow for material to fall off vehicles therefore reducing the amount of material that leaves the site. See SWPPP sheet for location and specifications.

Truck Washout Pit
- Designed to trap and store waste from concrete and similar activities. This allows for safe storage and removal from the site by not allowing contaminants to enter the storm water. Contaminants can be kept in a location that will not allow storm water to mix and flow off the site. See SWPPP sheet for location and specifications.
ATTACHMENT I

Inspections and Maintenance for BMPs

The designated and qualified person(s) shall inspect the Pollution Control Measures weekly and within 24 hours after a storm event. A report that summarizes the inspections scope, name and qualification of person(s) conducting the inspection, date of inspection, any actions taken as a result of inspection, and observations shall be recorded and maintained for a period of three years after the date of the inspection as part of the Storm Water TPDES data. A copy of the Inspection Report Form is provided in the Storm Water Pollution Prevention Plan.

The inspector shall observe the following as a minimum:
1. Significant disturbed areas for evidence of erosion
2. Storage areas for evidence of leakage from the exposed stored materials
3. Structural controls for evidence of failure of excess siltation
   a. Rock berms
   b. Silt fences
   c. Drainage swales
   d. Inlet protection
   e. Sediment over 6 inches
   f. Outlet structures (ponds or basins outfalls)
4. Construction entrance/exit for evidence of offsite sediment tracking
5. Construction staging areas for evidence of vehicle leakage or spills
6. Concrete truck washout pit for signs of failure
7. Basin erosion or sediment buildup

Any deficiencies noted during the inspection will be corrected and documented within seven (7) calendar days following the inspection or before the next anticipated storm event.

Contractor shall review Sections 1.3 and 1.4 of the TCEQ Technical Guidance Manual for any additional BMP maintenance and inspection requirements.
ATTACHMENT J

Schedule of Interim & Permanent Stabilization

Interim on-site stabilization measures, which are continuous, will include minimizing soil disturbances by exposing only the smallest practical area of land required for the shortest period of time and maximizing use of natural vegetation. As soon as practical, all disturbed soil will be stabilized as per project specifications in accordance to pages 1-35 to 1-60 of RG-348 (2005). Approved practices include mulching, sodding, netting, and erosion blankets. Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided below, will be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practicable.
Permanent Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(iii), (E), and (5), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This Permanent Stormwater Section is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Harun Rashid, PE, RPLS

Date: September 13, 2018

Signature of Customer/Agent

Regulated Entity Name: Pinnacle Freeman Properties, LLC.

Permanent Best Management Practices (BMPs)

Permanent best management practices and measures that will be used during and after construction is completed.

1. ☒ Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

☐ N/A

2. ☒ These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

☒ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.
☐ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: _____

☐ N/A

3. ☒ Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

☐ N/A

4. Where a site is used for low density single-family residential development and has 20% or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

☐ The site will be used for low density single-family residential development and has 20% or less impervious cover.

☐ The site will be used for low density single-family residential development but has more than 20% impervious cover.

☒ The site will not be used for low density single-family residential development.

5. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

☐ Attachment A - 20% or Less Impervious Cover Waiver. The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.

☐ The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.

☒ The site will not be used for multi-family residential developments, schools, or small business sites.

6. ☒ Attachment B - BMPs for Upgradient Stormwater.
7. **Attachment C - BMPs for On-site Stormwater.**
   - A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
   - No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.
   - Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

8. **Attachment D - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.
   - N/A

9. The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.
   - The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.
   - **Attachment E - Request to Seal Features.** A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. **Attachment F - Construction Plans.** All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:
   - Design calculations (TSS removal calculations)
   - TCEQ construction notes
   - All geologic features
   - All proposed structural BMP(s) plans and specifications
   - N/A
11.  **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

- Prepared and certified by the engineer designing the permanent BMPs and measures
- Signed by the owner or responsible party
- Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
- A discussion of record keeping procedures

N/A

12.  **Attachment H - Pilot-Scale Field Testing Plan.** Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.

N/A

13.  **Attachment I - Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that results in water quality degradation.

N/A

**Responsibility for Maintenance of Permanent BMP(s)**

*Responsibility for maintenance of best management practices and measures after construction is complete.*

14.  The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner’s association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.

N/A

15.  A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

N/A
Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.

Characters shown in red are data entry fields.

Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project:

   \[ L_M = 27.2(A_N \times P) \]

   where:

   \[ L_M \] = Required TSS removal resulting from the proposed development = 80% of increased \( k \)

   \[ A_N \] = Net increase in impervious area for the project

   \[ P \] = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

<table>
<thead>
<tr>
<th>County</th>
<th>Williamson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total project area included in plan (^*)</td>
<td>2.33 acres</td>
</tr>
<tr>
<td>Predevelopment impervious area within the limits of the plan (^*)</td>
<td>0.00 acres</td>
</tr>
<tr>
<td>Total post-development impervious area within the limits of the plan (^*)</td>
<td>1.28 acres</td>
</tr>
<tr>
<td>Total post-development impervious cover fraction (^*)</td>
<td>0.55 inches</td>
</tr>
<tr>
<td>[ P ]</td>
<td>32 inches</td>
</tr>
</tbody>
</table>

\[ L_M \] TOTAL PROJECT = 1113 lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 1

2. Drainage Basin Parameters (This information should be provided for each basin):

   Drainage Basin/Outfall Area No. = A

   Total drainage basin/outfall area = 2.33 acres

   Predevelopment impervious area within drainage basin/outfall area = 0.00 acres
Post-development impervious area within drainage basin/outfall area = 1.28 acres
Post-development impervious fraction within drainage basin/outfall area = 0.55

\[ L_M \text{ THIS BASIN} = 1113 \text{ lbs.} \]

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Sand Filter**
Removal efficiency = 89 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

4. Calculate Maximum TSS Load Removed (\(L_R\)) for this Drainage Basin by the selected BMP Type.

\[
RG-348 \text{ Page 3-33 Equation 3.7: } L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)
\]

where:

- \(A_C\) = Total On-Site drainage area in the BMP catchment area
- \(A_I\) = Impervious area proposed in the BMP catchment area
- \(A_P\) = Pervious area remaining in the BMP catchment area
- \(L_R\) = TSS Load removed from this catchment area by the proposed BMP

\[
\begin{align*}
A_C &= 2.33 \text{ acres} \\
A_I &= 1.28 \text{ acres} \\
A_P &= 1.05 \text{ acres} \\
L_R &= 1276 \text{ lbs}
\end{align*}
\]

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired \(L_M \text{ THIS BASIN} = 1053 \text{ lbs.} \)
6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth = 1.16 inches
Post Development Runoff Coefficient = 0.39
On-site Water Quality Volume = 3787 cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP = 0.00 acres
Off-site Impervious cover draining to BMP = 0.00 acres
Impervious fraction of off-site area = 0
Off-site Runoff Coefficient = 0.00
Off-site Water Quality Volume = 0 cubic feet

Storage for Sediment = 757
Total Capture Volume (required water quality volume(s) x 1.20) = 4544 cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP. The values for BMP Types not selected in cell C45 will show NA.

7. Retention/Irrigation System Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin = NA cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate = 0.1 in/hr
Irrigation area = NA square feet
NA acres

Enter determined permeability rate or assumed value of 0.1

8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

Required Water Quality Volume for extended detention basin = NA cubic feet

9. Filter area for Sand Filters Designed as Required in RG-348 Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System
9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins = 4544 cubic feet
Minimum filter basin area = 379 square feet
Maximum sedimentation basin area = 1515 square feet  
  For minimum water depth of 2 feet
Minimum sedimentation basin area = 95 square feet  
  For maximum water depth of 8 feet

10. Bioretention System

Designed as Required in RG-348  Pages 3-63 to 3-65

Required Water Quality Volume for Bioretention Basin = NA cubic feet

11. Wet Basins

Designed as Required in RG-348  Pages 3-66 to 3-71

Required capacity of Permanent Pool = NA cubic feet  
  Permanent Pool Capacity is 1.20 times the WQV
Required capacity at WQV Elevation = NA cubic feet  
  Total Capacity should be the Permanent Pool Capacity plus a second WQV.

12. Constructed Wetlands

Designed as Required in RG-348  Pages 3-71 to 3-73

Required Water Quality Volume for Constructed Wetlands = NA cubic feet

13. AquaLogic™ Cartridge System

Designed as Required in RG-348  Pages 3-74 to 3-78

** 2005 Technical Guidance Manual (RG-348) does not exempt the required 20% increase with maintenance contract with AquaLogic™.

Required Sedimentation chamber capacity = NA cubic feet
Filter canisters (FCs) to treat WQV = NA cartridges
Filter basin area (RIA_F) = NA square feet
This document has been prepared to provide a description and schedule for the performance of maintenance on permanent pollution abatement measures. Maintenance measures to be performed will be dependent on what permanent pollution abatement measures are incorporated into the project. The project specific water pollution abatement plan should be reviewed to determine what permanent pollution abatement measures are incorporated into a project.

It should also be noted that the timing and procedures presented herein are general guidelines, adjustment to the timing and procedures may have to be made depending on project specific characteristics as well as weather related conditions.

Where a project is occupied by the owner, the owner may provide for maintenance with his own skilled forces or contract for recommended maintenance of Permanent Best Management Practices. Where a project is occupied or leased by a tenant, the owner shall require tenants to contract for such maintenance services either through a lease agreement, property owners association covenants, or other binding document.

I understand that I am responsible for maintenance of the Permanent Pollution Abatement Measures included in this project until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property or ownership is transferred.

I, the owner, have read and understand the requirements of the attached Maintenance Plan and Schedule.

Signature

Date 7/26/19
## INSPECTION AND MAINTENANCE SCHEDULE

**FOR**

**PERMANENT POLLUTION ABATEMENT MEASURES**

<table>
<thead>
<tr>
<th>Recommended Frequency</th>
<th>Task to be Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>After Rainfall</td>
<td>√</td>
</tr>
<tr>
<td>Monthly</td>
<td>√</td>
</tr>
<tr>
<td>Quarterly</td>
<td>√</td>
</tr>
<tr>
<td>Yearly</td>
<td>√</td>
</tr>
</tbody>
</table>

See description of maintenance task to be performed on the following pages. Frequency of maintenance tasks may vary depending on amount of rainfall and other weather related conditions.

A written record should be kept of inspection results and maintenance performed.

<table>
<thead>
<tr>
<th>Task No. &amp; Description</th>
<th>Included in this project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Check Depth of Vegetation</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Check Depth of Silt Deposit in Basin</td>
<td>Yes</td>
</tr>
<tr>
<td>3. Removal of Debris and Trash</td>
<td>Yes</td>
</tr>
<tr>
<td>4. Cut-off Valve</td>
<td>Yes</td>
</tr>
<tr>
<td>5. Inlet Splash Pad</td>
<td>Yes</td>
</tr>
<tr>
<td>6. Underdrain System</td>
<td>Yes</td>
</tr>
<tr>
<td>7. Structural Integrity</td>
<td>Yes</td>
</tr>
<tr>
<td>8. Discharge Pipe</td>
<td>Yes</td>
</tr>
<tr>
<td>9. Drawdown Time</td>
<td>Yes</td>
</tr>
<tr>
<td>10. Vegetated Filter Strips</td>
<td>Yes</td>
</tr>
<tr>
<td>11. For Pump Stations</td>
<td>Yes</td>
</tr>
<tr>
<td>12. For Pump Stations</td>
<td>Yes</td>
</tr>
<tr>
<td>13. For Pump Stations</td>
<td>Yes</td>
</tr>
<tr>
<td>14. Visually Inspect Security Fencing for Damage or Breach</td>
<td>Yes</td>
</tr>
</tbody>
</table>
MAINTENANCE PROCEDURES FOR PERMANENT POLLUTION ABATEMENT MEASURES

1. **Check Depth of Vegetation.** Vegetation in the basin shall not exceed 18-inches in depth. When vegetation needs to be cut, it shall be cut to an approximately 4-inch height. *A written record should be kept of inspection results and maintenance performed.*

2. **Check Depth of Silt Deposit in Basin.** Top of cleanouts shall be set 4-inches above sand layer. When silt has accumulated to top of cleanouts, the silt shall be removed the top 2 inches of the sand media shall also be removed and replaced with clean silica based sand. Written record should be kept of inspection results and maintenance performed.

3. **Removal of Debris and Trash.** The basin and inlet structure shall be checked for the accumulation of debris and trash such as brush, limbs, leaves, paper cups, aluminum cans, plastic bottles etc. Accumulated trash and debris shall be raked or collected from the basin and inlet structure and disposed of properly. *The sedimentation and filtration basin will have permanent metal ladder with wall. In addition during sediment removal, debris removal and sand removal and replacement any extra heavy duty ladder may be used for temporary usage. The wet well and splitter box will have separate metal ladder with wall.*

4. **Written record should be kept of inspection results and maintenance performed.**

5. **Cut-off Valve.** The cut-off valve shall be turned to confirm full opening and full closure. Prior to operating the valve, the valve setting shall be checked to determine the position to which the valve is to be returned (which should limit drawdown time of the basin between 24-hours and 48-hours). Count should be kept of number of turns to open and close the valve so that the valve can be reset to the starting position. Defects
in the operation of the cut-off valve shall be corrected within 7 working days. A written record should be kept of inspection results and maintenance performed.

6. **Inlet Splash Pad.** The filter area around the inlet splash pad shall be checked for erosion and for the condition of the rock rubble. Erosion or disturbance of the rock rubble should be corrected by removing the rock rubble, restoring missing sand media to appropriate depth and replacement of the rock rubble. If the condition persists in subsequent inspections, the size of the rock rubble should be increased. Rubble should be placed to a density that minimizes the amount of exposed sand between the rock rubble. Deficiencies should be corrected within seven working days. A written record should be kept of inspection results and maintenance performed.

7. **Underdrain System.** The underdrain system shall be visually inspected for the accumulation of silt in the pipe system. The pipe clean-outs shall have the caps removed and visually inspected for accumulation of silt deposits. If silt deposits appear to have accumulated so as to significantly reduce the drain capacity of the pipes then maintenance shall be performed. When silt deposits have accumulated to the stage described above, the clean-outs and drainpipes can be flushed with a high-pressure water flushing process. Clean-out caps must be replaced onto the clean-outs after maintenance so as to avoid the possibility of short circuiting the filtering process. Sediment accumulation at outlet pipe or in wet well due to flushing shall be removed and disposed of properly. A written record should be kept of inspection results and the maintenance performed.

8. **Structural Integrity.** In addition to Items 1 through 6 the following are measures which should be reviewed during a check of structural integrity:

- Observe the height of the confining berm for visible signs of erosion or potential breach. Signs of erosion should be corrected within 2 weeks or immediately in case of emergency conditions. Corrective measures include but are not limited to addition of topsoil or appropriate soil material so as to restore the original berm
height of the sand filter basin. Restored areas shall be protected through placement of block sod in a checkerboard pattern.

- Bypass of filter process. This condition can manifest itself in several ways. One way is by visually inspecting the clean-outs for accumulation of silt as described in Item 6. Significant accumulations of silt could be a sign of a torn filter fabric. Observations should be made over several inspection cycles to determine whether the condition persists. A second non-intrusive way of making observations for structural condition would be to visually look for collapsed or depressed areas along the edge of the filter media interface with basin side slope. If condition exists, corrective action should be performed within 15 working days. Removal of sand and replacement of filter fabric and/or pipe and gravel may be necessary. A written record should be kept of inspection results and corrective measures taken.

9. Discharge Pipe. The basin discharge pipe shall be checked for accumulation of silt, debris or other obstructions which could block flow. Soil accumulations, vegetative overgrowth and other blockages should be cleared from the pipe discharge point. Erosion at the point of discharge shall be monitored. If erosion occurs, the addition of rock rubble to disperse the flow should be accomplished. A written record should be kept of inspection results and corrective measures taken.

10. Drawdown Time. This characteristic can be a sign of the need for maintenance. The minimum drawdown time is 24 hours. If drawdown time is less than 24 hours, the gate valve shall be checked and partially closed to limit the drawdown time. Extensive drawdown time greater than 48 hours may indicated blockage of the sand media, the underdrain system and/or the discharge pipe. Corrective actions should be performed and completed within 15 working days. A written record of the inspection findings and corrective actions performed should be made.

11. Vegetated Filter Strips. Vegetation height for native grasses shall be limited to no more than 18-inches. When vegetation exceeds that height, the filter strip shall be cut to a height of approximately 4 inches. Turf grass shall be limited to a height of 4-
ATTACHMENT B

BMPs for Upgradient Stormwater.

Proposed development will not receive any offsite runoff and there will not be any need to have any BMPs for the upgradient stormwater.
ATTACHMENT C

BMPs for Onsite Stormwater:

The BMPs for the project will be a Water Quality Basin to be installed at the southwest property corner. Sand filter treatment basin will be constructed and designed in accordance with the TCEQ Technical Guidance Manual (TGM) and complies with 30 TAC Chapter 213 requirements to remove at least 80% of the increase in TSS from Development.
ATTACHMENT F

Construction Plans for BMPs are being accompanied with this report.
1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH GENERAL SITE NOTES.

2. CITY SPECIFICATIONS WILL GOVERN WHERE OTHER SPECIFICATIONS DO NOT APPLY. IN ANY CASE, UNLESS SPECIFICATIONS ARE MORE STRINGENT THAN THE CITY SPECIFICATIONS.

3. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE PRIOR TO CONSTRUCTION TO DETERMINE EXISTING CONDITIONS.

4. THE EXISTING CONDITIONS WERE PROVIDED BY THE TOPOGRAPHIC SURVEY, THE FINAL GEOTECH REPORT AND ALL ISSUED ADDENDUM(S), AND HAVE BEEN REVIEWED AND VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION TO DETERMINE EXISTING CONDITIONS.

5. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS, ELEVATIONS AND FIELD CONDITIONS THAT MAY AFFECT THE BENCHMARKS SHOWN. THE CONTRACTOR SHALL UTILIZE THE SAME REFERENCES FOR DETERMINING EXISTING CONDITIONS AS APPLICABLE. COMMONLY ACCEPTED CONSTRUCTION STANDARDS.

6. THE CONTRACTOR SHALL REVISE AND VERIFY ALL DIMENSIONS, ELEVATIONS AND FIELD CONDITIONS THAT MAY AFFECT THE BENCHMARKS SHOWN. THE CONTRACTOR SHALL UTILIZE THE SAME REFERENCES FOR DETERMINING EXISTING CONDITIONS AS APPLICABLE. COMMONLY ACCEPTED CONSTRUCTION STANDARDS.

7. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS, ELEVATIONS AND FIELD CONDITIONS THAT MAY AFFECT THE BENCHMARKS SHOWN. THE CONTRACTOR SHALL UTILIZE THE SAME REFERENCES FOR DETERMINING EXISTING CONDITIONS AS APPLICABLE. COMMONLY ACCEPTED CONSTRUCTION STANDARDS.

8. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES THAT MAY HAVE AFFECTED OR MAY BE AFFECTED BY THE PROJECT. THE CONTRACTOR SHALL PROVIDE ADEQUATE MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION.

9. CONTRACTOR SHALL CALL 811, AN ADEQUATE AMOUNT OF TIME PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE ADEQUATE MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION.

10. THE CONTRACTOR SHALL REVIEW AND VERIFY THE HORIZONTAL AND DIMENSIONAL CONTROL FOR THE CONSTRUCTION AREA BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE ADEQUATE MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION.
1. All work performed shall be done in a good and workmanlike manner.
2. All work performed shall be in accordance with plans and specifications.
3. All work performed shall be in accordance with all applicable codes, laws, and regulations.
4. All work performed shall be in accordance with all applicable standards.
5. All work performed shall be in accordance with all applicable guidelines.
6. All work performed shall be in accordance with all applicable criteria.
7. All work performed shall be in accordance with all applicable practices.
8. All work performed shall be in accordance with all applicable procedures.
9. All work performed shall be in accordance with all applicable techniques.
10. All work performed shall be in accordance with all applicable standards.
11. All work performed shall be in accordance with all applicable guidelines.
12. All work performed shall be in accordance with all applicable criteria.
13. All work performed shall be in accordance with all applicable practices.
14. All work performed shall be in accordance with all applicable procedures.
15. All work performed shall be in accordance with all applicable techniques.
16. All work performed shall be in accordance with all applicable standards.
17. All work performed shall be in accordance with all applicable guidelines.
18. All work performed shall be in accordance with all applicable criteria.
19. All work performed shall be in accordance with all applicable practices.
20. All work performed shall be in accordance with all applicable procedures.
21. All work performed shall be in accordance with all applicable techniques.
22. All work performed shall be in accordance with all applicable standards.
23. All work performed shall be in accordance with all applicable guidelines.
24. All work performed shall be in accordance with all applicable criteria.
25. All work performed shall be in accordance with all applicable practices.
26. All work performed shall be in accordance with all applicable procedures.
27. All work performed shall be in accordance with all applicable techniques.
28. All work performed shall be in accordance with all applicable standards.
29. All work performed shall be in accordance with all applicable guidelines.
30. All work performed shall be in accordance with all applicable criteria.
31. All work performed shall be in accordance with all applicable practices.
32. All work performed shall be in accordance with all applicable procedures.
33. All work performed shall be in accordance with all applicable techniques.
34. All work performed shall be in accordance with all applicable standards.
Geologic Assessment

11,721 SF Day-Care and 6,000 SF After School Building
2451 Texas State Highway 29
Georgetown, Williamson County, Texas

Prepared for:
MHR Engineering, LLC
16845 Blanco Road, Suite 106
San Antonio, Texas 78232

Prepared by:
TTL, Inc.
San Antonio, Texas

Project No. 000190900602.00
July 10, 2019
July 15, 2019

Mr. Harun Rashid  
MHR Engineering, LLC  
16845 Blanco Road, Suite 106  
San Antonio, Texas 78232

C: 210.641.0543  
E: hrashid@mhreng.com

RE: Geologic Assessment  
Pinnacle Freeman Properties, LLC  
11,721 sf Day-Care and 6,000 SF After School Building  
2451 Texas State Highway 29  
Georgetown, Williamson County, Texas  
TTL Project No. 000190900602.00

Dear Mr. Rashid:

TTL, Inc. (TTL) is pleased to submit this Geologic Assessment (“Report”) for the 11,721 SF Day-Care and 6,000 SF After School Building project, herein after referred to as the “Project”. If you have any questions regarding our Report or if additional services are needed, please do not hesitate to contact us.

Thank you for selecting TTL to provide professional services for this phase of the Project. We appreciate the opportunity to work with you, and we look forward to working with you on future projects.

Respectfully submitted,

Jeremy Moheit  
Project Professional

TTL, Inc.

Tomas Hernandez, Jr., P.G.  
Environmental Services Group  
Department Manager

JDM/TH/set – 000190900602.00

cc: Addressee: (1) Bound & (1) Electronic

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INTRODUCTION

TTL, Inc. (TTL) is pleased to submit this Geologic Assessment Report (GA) for a proposed commercial development consisting of an 11,721 square-foot (sf) daycare building and a 6,000 sf after school building to be located at 2451 Texas State Highway 29 near Georgetown, Williamson County, Texas. The Project will involve the development of a 2.3-acre tract of land located within the Edwards Aquifer Recharge Zone (EARZ). The GA will be used to develop a Water Pollution Abatement Plan (WPAP) as part of the Project development in accordance to with the Texas Commission on Environmental Quality (TCEQ) Edwards Aquifer Protection Program (EAPP) rules specified in Title 30 of the Texas Administrative Code (TAC), Section 210 (30 TAC § 213).

Purpose and Scope of Services

The purpose of this environmental service is to evaluate the general surface conditions to identify sensitive recharge features. The GA was performed in general accordance with methods outlined in the TCEQ guidance document, Instructions to Geologist for Geologic Assessments, TCEQ-0585, revised October 1, 2004. This GA is intended to identify and locate karst features with a potential for hydraulic interconnectedness between the surface and the Edwards Aquifer at the Project Site and does not include the assessment of karst features as they relate to suitable habitat for endangered karst invertebrates.

Project Information

The following information was provided to us by the Client (MHR Engineering, LLC), design professionals working on the Project, or was collected by our firm:

<table>
<thead>
<tr>
<th>Project Location</th>
<th>The Project Site is located at 2451 Texas State Highway 29 outside of Georgetown in Williamson County, Texas. The Project Site consists of a single lot that is 2.3 acres in size. The Project Site is located within the Edwards Aquifer Recharge Zone (EARZ). The general vicinity of the Project Site is illustrated on Exhibit 1: Site Location Map.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>The Project will involve the design and construction of new development.</td>
</tr>
<tr>
<td>Current Site Conditions</td>
<td>At the time of our pedestrian field reconnaissance, the Project Site was relatively undeveloped and had typical tall bunch grasses and native trees across the property.</td>
</tr>
<tr>
<td>Current Topography</td>
<td>Based on visual observations, the Project Site gently slopes down towards the southwest on the western portion of the Site.</td>
</tr>
</tbody>
</table>

Interpretation of Report

TTL understands that its report is used by the Client, various individuals, and firms involved with the design and construction of the Project. TTL should be invited to attend Project meetings (in person or teleconferencing) or be contacted in writing to address applicable issues relating to the geologic and environmental aspects of the Project as they relate to this report.
Limitations of Report

This report is based upon the information provided to us by the Client and various other individuals and entities associated with the Project. The Client and readers of this report, should realize that subsurface variations and anomalies can and will exist across the Project Site that cannot be observed at the surface. This includes, but is not limited to, subsurface or near-surface solution enlarged fractures, caves, cavities, and other karst related features that are associated with the Edwards Aquifer that lack visible surface expression. The Client and readers should realize that Project Site conditions will change due to the modifying effects of grading and general land development.

The nature and extent of such site or subsurface variations may not become evident until construction commences or is in progress. If site and subsurface anomalies or variations exist or develop, TTL should be contacted immediately so that the situation can be evaluated and addressed with applicable recommendations. If features are encountered during construction, construction activities should be halted and the TCEQ should be contacted and notified of the new site conditions immediately in accordance with 30 TAC §213(f)(2).

The Client, design team, contractors and applicable subcontractors should:

- familiarize themselves with this report prior to the start of their design and construction activities,
- contact TTL for any interpretation or clarification of the report,
- retain the services of their own consultants to interpret this report, or
- perform additional investigation prior to completing design, bidding and construction.

Unless stated otherwise in this report, or the contract between Client and TTL, our scope of services for this Project did not include, either specifically or by implication, any other environmental or biological assessment of the site, or any identification or prevention of pollutants, hazardous materials or conditions at the site or within buildings. No warranties, express or implied, are intended or made. If the Client is concerned about the potential for such contamination or pollution, TTL should be contacted to provide a scope of services to address the specific environmental or biological concerns.

Should the nature, design, or location of the Project, as outlined in this report, be modified, recommendations and guidelines provided in this document will not be considered valid unless TTL reviews the changes and either verifies or modifies the applicable Project changes in writing.
GEOLOGIC ASSESSMENT FORM

Texas Commission on Environmental Quality

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), Effective June 1, 1999.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a Geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Tomas Hernandez, Jr., P.G. Telephone: 210-888-6100

Date: July 15, 2019 Fax: 210-888-6101

Representing: TTL, Inc. (TBPG# 50456) (Name of Company and TBPG registration No.)

Signature of Geologist: 

Regulated Entity Name: Pinnacle Freeman Properties, LLC

Project Information

1. Date(s) Geologic Assessment was performed: May 31, 2019

2. Type of Project:
   - WPAP
   - SCS
   - AST

3. Location of Project:
   - Recharge Zone
   - Transition Zone
   - Contributing Zone with the Transition Zone

4. Attachment A - Geologic Assessment Table. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.

5. Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.
Table 1 - Soil Units, Infiltration Characteristics and Thickness

<table>
<thead>
<tr>
<th>Soil Name</th>
<th>Group*</th>
<th>Thickness (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eckrant extremely stony clay, 0-3 % slopes</td>
<td>B</td>
<td>~ 0.5 – 1.25</td>
</tr>
</tbody>
</table>

* Soil Group Definitions (Abbreviated)

A. Soils having a high infiltration rate when thoroughly wetted.
B. Soils having a moderate infiltration rate when thoroughly wetted.
C. Soils having a slow infiltration rate when thoroughly wetted.
D. Soils having a very slow infiltration rate when thoroughly wetted.

Attachment B – Stratigraphic Column. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.

Attachment C – Site Geology. A narrative description of the site-specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.

Attachment D – Site Geologic Map(s). The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

Applicant's Site Plan Scale: 1" = 30'
Site Geologic Map Scale: 1" = 30'
Site Soils Map Scale (if more than 1 soil type): N/A

9. Method of collecting positional data:
   - [X] Global Positioning System (GPS) technology.
   - □ Other method(s). Please describe method of data collection:

10. The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

11. Surface geologic units are shown and labeled on the Site Geologic Map.

   Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

   Geologic or manmade features were not discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

12. The Recharge Zone boundary is shown and labeled, if appropriate.
14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.

☐ There are 0 (#) well present on the project site and the location is shown and labeled.

(Check all of the following that apply).

☐ The wells are not in use and have been properly abandoned.

☐ The wells are not in use and will be properly abandoned.

☐ The wells are in use and comply with 16 TAC Chapter 76.

☒ There are no wells or test holes of any kind known to exist on the project site.

Administrative Information

Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office. These copies will be submitted by the civil engineer for the project as part of their submission.
**ATTACHMENT A – GEOLOGIC ASSESSMENT TABLE**

**PROJECT NAME:** Pinnacle Freeman Properties, LLC

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>FEATURE CHARACTERISTICS</th>
<th>EVALUATION</th>
<th>PHYSICAL SETTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>1B *</td>
<td>1C*</td>
<td>2A</td>
</tr>
<tr>
<td>FEATURE ID</td>
<td>LATITUDE</td>
<td>LONGITUDE</td>
<td>FEATURE TYPE</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>-----------</td>
<td>---------------</td>
</tr>
<tr>
<td>S-1</td>
<td>30.632990</td>
<td>-97.733644</td>
<td>SC</td>
</tr>
</tbody>
</table>

* DATUM: NAD 83

<table>
<thead>
<tr>
<th>2A TYPE</th>
<th>TYPE</th>
<th>2B POINTS</th>
<th>8A INFILLING</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Cave</td>
<td>30</td>
<td>N: None, exposed bedrock</td>
</tr>
<tr>
<td>SC</td>
<td>Solution cavity</td>
<td>20</td>
<td>C: Coarse - cobbles, breakdown, sand, gravel</td>
</tr>
<tr>
<td>SF</td>
<td>Solution-avgd fracture(s)</td>
<td>20</td>
<td>F: Fines, compacted clay-rich sediment, soil profile, gray or red colors</td>
</tr>
<tr>
<td>F</td>
<td>Fault</td>
<td>20</td>
<td>V: Vegetation. Give details in narrative description</td>
</tr>
<tr>
<td>D</td>
<td>Other natural bedrock features</td>
<td>5</td>
<td>FS: Flowstone, cements, cave deposits</td>
</tr>
<tr>
<td>MB</td>
<td>Mammal feature in bedrock</td>
<td>30</td>
<td>X: Other materials</td>
</tr>
<tr>
<td>SW</td>
<td>Swallow hole</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>SH</td>
<td>Sinkhole</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>CD</td>
<td>Non-karst closed depression</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>Zone, clustered or aligned features</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

I have read, I understood, and I have followed the Texas Commission on Environmental Quality’s Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

---

TCEQ-0585-Table (Rev. 10-01-04)

© 2019, TTL, Inc.
**ATTACHMENT B – STRATIGRAPHIC COLUMN**

<table>
<thead>
<tr>
<th>Hydrogeologic Subdivision</th>
<th>Group, Formation, Or Member</th>
<th>Hydrologic Function</th>
<th>Thickness (Feet)</th>
<th>Lithology</th>
<th>Field Identification</th>
<th>Cavern Development</th>
<th>Porosity/Permeability Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Cretaceous</td>
<td>Eagle Ford Group</td>
<td>CU</td>
<td>30 – 50</td>
<td>Brown, flaggy shale and argillaceous limestone</td>
<td>Thin flagstones; petroliferous</td>
<td>None</td>
<td>Primary porosity lost/low permeability</td>
</tr>
<tr>
<td></td>
<td>Buda Limestone</td>
<td>CU</td>
<td>40–50</td>
<td>Buff, light-gray, dense mudstone</td>
<td>Porcelaneous limestone</td>
<td>Minor surface karst</td>
<td>Low porosity/low permeability</td>
</tr>
<tr>
<td></td>
<td>Del Rio Clay</td>
<td>CU</td>
<td>50–60</td>
<td>Blue-green to yellow-brown clay</td>
<td>Fossiliferous; Ilymatogrya arietina</td>
<td>None</td>
<td>None/primary upper confining unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Georgetown Formation</td>
<td>AQ</td>
<td>100</td>
<td>Gray to light tan marly limestone</td>
<td>Marker fossil: Wacopelia wacoensis</td>
<td>None</td>
<td>Low porosity/low permeability</td>
</tr>
<tr>
<td></td>
<td>Edwards Formation Undivided</td>
<td>AQ</td>
<td>180–210</td>
<td>Massive limestone; mudstone to grainstone; chert; collapsed breccia; chert</td>
<td>Bioturbated iron-stained beds separated by massive limestone beds</td>
<td>Many subsurface might be associated with earlier karst development; Extensive lateral development; large rooms</td>
<td>Laterally extensive; both fabric and not fabric/water-yielding; one of most permeable</td>
</tr>
<tr>
<td></td>
<td>Comanche Peak Limestone</td>
<td>AQ</td>
<td>50–80</td>
<td>Fine-grained limestone and shale</td>
<td>Nodular and fossiliferous marly limestone</td>
<td>Extensive lateral development; large rooms</td>
<td>Majority not fabric/one of the most permeable</td>
</tr>
<tr>
<td></td>
<td>Walnut Formation</td>
<td>CU</td>
<td>130–150</td>
<td>Fine-grained limestone and shale</td>
<td>Massive Oyster banks</td>
<td>Minor karstification</td>
<td>Low porosity/low permeability</td>
</tr>
<tr>
<td></td>
<td>Paluxy Formation</td>
<td>CU</td>
<td>Up to 10</td>
<td>Fine quartz sand cemented by calcium carbonate</td>
<td>Fine quartz sand</td>
<td>None</td>
<td>Low porosity/low permeability</td>
</tr>
<tr>
<td></td>
<td>Upper member of Gel Rose Limestone</td>
<td>CU; evaporite beds Upper Trinity AQ</td>
<td>350–500</td>
<td>Yellowish-tan, thinly bedded limestone and marl</td>
<td>Stair-step topography; alternating limestone and</td>
<td>Some surface cave development</td>
<td>Some water production at evaporite beds/relatively</td>
</tr>
</tbody>
</table>

Note: The Project Site is located in the Edwards Formation - Undivided.
ATTACHMENT C – SITE GEOLOGY

Location

The Project Site is located south along Texas State Highway 29 near Georgetown in Williamson County, Texas. The center of the Project Site is located at Latitude 30.632689 and Longitude: 97.733347 (NAD 83). The Project Site is located in the Edwards Recharge Zone according to the Texas Commission on Environmental Quality (TCEQ) Edwards Aquifer Map Viewer, illustrated on Exhibit 1, the Site Location Map.

Methodology

Mr. Tomas Hernandez, Jr., P.G., with TTL, performed the Geologic Assessment on May 31, 2019. TTL researched the geology of the area surrounding the Project Site in Williamson County, Texas. The research included, but was not limited to, the Geologic Atlas of Texas, Austin Sheet, various U.S. Geological Survey (USGS) publications, Federal Emergency Management Agency (FEMA) Maps, EARZ Maps, USGS 7.5-Minute Quadrangle Maps, United States Department of Agriculture (USDA) Soil Survey of Williamson County, Texas, and other online digital data.

After reviewing the available information, a field investigation was performed to identify any geologic or man-made potential recharge features. A transect spacing of approximately 25-50 feet, was used to inspect the Project Site. A 2019 aerial photograph, in conjunction with a hand held global positioning system (GPS) unit with an estimated potential error ranging from 9 to 12 feet, was used to navigate on the Project Site and identify the locations of potential recharge features, as recommended in the Instructions to Geologist for Geologic Assessments, TCEQ-0585, revised October 1, 2004. The Geologic Assessment Form, Stratigraphic Column, and the Geologic Assessment Table have been filled with the appropriate information for this Project Site and are included in this report.

Soil Description

The soil beneath the Project Site consists of Eckrant extremely stony clay (EeB), 0 to 3 percent slopes.

The Eckrant series consists of well drained, moderately slowly permeable soils that are very shallow to shallow over indurated limestone bedrock. These nearly level to very steep soils formed in residuum derived from limestone and occur on summits, shoulders, and backslopes of ridges on dissected plateaus. Slope ranges from 1 to 60 percent. Typical profile is 4 to 16 inches.

Site Specific Geologic

Based on literature research and pedestrian field reconnaissance, the Project Site is located within the EARZ. The Project Site is located within the Edwards Formation undivided (Ked) which in this area is similar to the Kainer Formation. The lithology of the Edwards Formation undivided consists of mudstone to miliolid grainstone to crystalline limestone to dense, argillaceous mudstone. The Project Site consists of primary of dense shaly limestone with some vugs.
Site Specific Geologic Features Descriptions

One feature was observed and assessed during the pedestrian field survey conducted on May 31, 2019. This feature was a solution cavity that is located in bedrock. Some outcropping was observed on the Project Site. Review of geological data from the Bureau of Economic Geology, Geologic Atlas of Texas, Austin Sheet, 1981, depicts the Project Site in the Edwards Formation undivided (Ked). The geologic units are illustrated on Exhibit 2, the Site Geologic Map. Below is a summary of the features encountered.

- **S-1 Solution Cavity (SC):** This feature is a small vertical solution cavity, approximately 18” x 26” x 64” located in an upland area on the northern portion of the Site. The feature has a small drainage area above the feature. The feature is located in a grassy area and several large pieces of gravel lined in clay and other debris were observed in the opening. The feature was probed and appears to taper off at depth. The probability of rapid infiltration associated with the feature is low and is not considered to be sensitive.

The western adjoining property has a cave feature that abuts the Project Site. The feature is identified as Three-Mile Cave (The Tin Can Hole) which was surveyed in 1963. TTL provided a depiction of the cave based on the 1963 survey scaled and positioned based on magnetic north at the time as it was mapped. The depiction of the cave is located on Exhibit 2. Based on the cave overlay on Exhibit 2, the southeast corner of the cave appears to be located on a small segment of western boundary of the Project Site; however, entry to the cave to verify this was not possible. The cave appears to abut the highway.
ATTACHMENT D – SITE GEOLOGIC MAPS

Exhibit 1 – Site Location Map

Exhibit 2 – Site Geologic Map
SITE LOCATION MAP

GEOLOGIC ASSESSMENT

2.3-ACRE TRACT
2451 TEXAS HIGHWAY 29
GEORGETOWN, WILLIAMSON COUNTY, TEXAS

Legend
- Site Boundary
- Edwards Aquifer Zone Boundary

Project Site

Edwards Aquifer Recharge Zone

Edwards Aquifer Contributing Zone

Site Boundary
Edwards Aquifer Zone Boundary
ATTACHMENT E – PHOTOGRAPHS

1. View of S-1, solution cavity.

2. Photo of the solution cavity.

3. Typical view across the Project Site.

4. Typical view across the Project Site.
5. Typical view across the Project Site.

6. Typical view across the Project Site.

7. Typical view across the Project Site.

8. Typical view across the Project Site.
ATTACHMENT F – REFERENCES


Texas Natural Resource Conservation Commission (TCEQ), Instructions to Geologists, TCEQ-0585 Instructions, revised October 1, 2004.

