



# **VULCAN COMAL QUARRY**

## **Water Pollution Abatement Plan**

**February 2024**



February 20, 2024

Ms. Lillian Butler  
Texas Commission on Environmental Quality (TCEQ)  
Region 13  
14250 Judson Road  
San Antonio, Texas 78233-4480

Re: Vulcan Comal Quarry  
Water Pollution Abatement Plan

Dear Ms. Butler:

Please find included herein the Vulcan Comal Quarry Water Pollution Abatement Plan. This Water Pollution Abatement Plan has been prepared in accordance with the regulations of the Texas Administrative Code (30 TAC 213) and current policies for development over the Edwards Aquifer Recharge Zone.

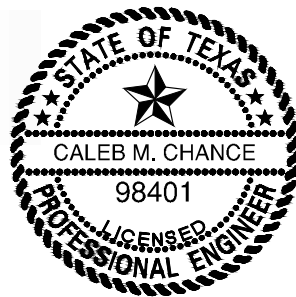
This Water Pollution Abatement Plan applies to an approximate 1,515.16-acre site as identified by the project limits. Please review the plan information for the items it is intended to address. If acceptable, please provide a written approval of the plan in order that construction may begin at the earliest opportunity.

Appropriate review fees (\$10,000) and fee application are included. If you have questions or require additional information, please do not hesitate to contact me at your earliest convenience.

Sincerely,  
Pape-Dawson Engineers



Caleb Chance, P.E.  
Vice President



Attachments

2/20/24

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# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

February 2024



**EDWARDS AQUIFER  
APPLICATION COVER PAGE  
(TCEQ-20705)**

# Texas Commission on Environmental Quality

## Edwards Aquifer Application Cover Page

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### 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.

<b>1. Regulated Entity Name:</b>				<b>2. Regulated Entity No.:</b>					
<b>3. Customer Name:</b>				<b>4. Customer No.:</b>					
<b>5. Project Type:</b> (Please circle/check one)	<input checked="" type="radio"/> New	Modification			Extension		Exception		
<b>6. Plan Type:</b> (Please circle/check one)	<input checked="" type="radio"/> WPAP	<input type="radio"/> CZP	<input type="radio"/> SCS	<input type="radio"/> UST	<input type="radio"/> AST	<input type="radio"/> EXP	<input type="radio"/> EXT	Technical Clarification	Optional Enhanced Measures
<b>7. Land Use:</b> (Please circle/check one)	<input type="radio"/> Residential		<input checked="" type="radio"/> Non-residential			<b>8. Site (acres):</b>			
<b>9. Application Fee:</b>			<b>10. Permanent BMP(s):</b>						
<b>11. SCS (Linear Ft.):</b>			<b>12. AST/UST (No. Tanks):</b>						
<b>13. County:</b>			<b>14. Watershed:</b>						

# 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:

[http://www.tceq.texas.gov/assets/public/compliance/field\\_ops/eapp/EAPP%20GWCD%20map.pdf](http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf)

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

<b>Austin Region</b>			
<b>County:</b>	<b>Hays</b>	<b>Travis</b>	<b>Williamson</b>
Original (1 req.)	—	—	—
Region (1 req.)	—	—	—
County(ies)	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Barton Springs/ Edwards Aquifer <input type="checkbox"/> Hays Trinity <input type="checkbox"/> Plum Creek	<input type="checkbox"/> Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	<input type="checkbox"/> Austin <input type="checkbox"/> Buda <input type="checkbox"/> Dripping Springs <input type="checkbox"/> Kyle <input type="checkbox"/> Mountain City <input type="checkbox"/> San Marcos <input type="checkbox"/> Wimberley <input type="checkbox"/> Woodcreek	<input type="checkbox"/> Austin <input type="checkbox"/> Bee Cave <input type="checkbox"/> Pflugerville <input type="checkbox"/> Rollingwood <input type="checkbox"/> Round Rock <input type="checkbox"/> Sunset Valley <input type="checkbox"/> West Lake Hills	<input type="checkbox"/> Austin <input type="checkbox"/> Cedar Park <input type="checkbox"/> Florence <input type="checkbox"/> Georgetown <input type="checkbox"/> Jerrell <input type="checkbox"/> Leander <input type="checkbox"/> Liberty Hill <input type="checkbox"/> Pflugerville <input type="checkbox"/> Round Rock

<b>San Antonio Region</b>					
<b>County:</b>	<b>Bexar</b>	<b>Comal</b>	<b>Kinney</b>	<b>Medina</b>	<b>Uvalde</b>
Original (1 req.)	—	—	—	—	—
Region (1 req.)	—	—	—	—	—
County(ies)	—	—	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Trinity-Glen Rose	<input type="checkbox"/> Edwards Aquifer Authority	<input type="checkbox"/> Kinney	<input type="checkbox"/> EAA <input type="checkbox"/> Medina	<input type="checkbox"/> EAA <input type="checkbox"/> Uvalde
City(ies) Jurisdiction	<input type="checkbox"/> Castle Hills <input type="checkbox"/> Fair Oaks Ranch <input type="checkbox"/> Helotes <input type="checkbox"/> Hill Country Village <input type="checkbox"/> Hollywood Park <input type="checkbox"/> San Antonio (SAWS) <input type="checkbox"/> Shavano Park	<input type="checkbox"/> Bulverde <input type="checkbox"/> Fair Oaks Ranch <input type="checkbox"/> Garden Ridge <input type="checkbox"/> New Braunfels <input type="checkbox"/> Schertz	NA	<input type="checkbox"/> San Antonio ETJ (SAWS)	NA

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.

Print Name of Customer/Authorized Agent

Signature of Customer/Authorized Agent

Date

**\*\*FOR TCEQ INTERNAL USE ONLY\*\***

Date(s) Reviewed:		Date Administratively Complete:	
Received From:		Correct Number of Copies:	
Received By:		Distribution Date:	
EAPP File Number:		Complex:	
Admin. Review(s) (No.):		No. AR Rounds:	
Delinquent Fees (Y/N):		Review Time Spent:	
Lat./Long. Verified:		SOS Customer Verification:	
Agent Authorization Complete/Notarized (Y/N):		Fee Check:	Payable to TCEQ (Y/N):
Core Data Form Complete (Y/N):			Signed (Y/N):
Core Data Form Incomplete Nos.:			Less than 90 days old (Y/N):



**GENERAL INFORMATION  
FORM (TCEQ-0587)**

# 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: Caleb Chance, P.E.

Date: 2/20/24

Signature of Customer/Agent:

  
\_\_\_\_\_

## Project Information

1. Regulated Entity Name: Vulcan Comal Quarry
2. County: Comal
3. Stream Basin: West Fork Dry Comal Creek
4. Groundwater Conservation District (If applicable): Edwards Aquifer; Comal Trinity
5. Edwards Aquifer Zone:  
 Recharge Zone  
 Transition Zone
6. Plan Type:  
 WPAP  
 SCS  
 Modification  
 AST  
 UST  
 Exception Request

7. Customer (Applicant):

Contact Person: Richard Spry

Entity: Vulcan Construction Materials, LLC

Mailing Address: 10101 Reunion Pl, Ste 500

City, State: San Antonio, TX

Zip: 78216

Telephone: (205) 298-3000

FAX: \_\_\_\_\_

Email Address: spryr@vmcmail.com

8. Agent/Representative (If any):

Contact Person: Caleb Chance, P.E.

Entity: Pape-Dawson Engineers, Inc.

Mailing Address: 2000 NW Loop 410

City, State: San Antonio, Texas

Zip: 78213

Telephone: (210) 375-9000

FAX: (210) 375-9010

Email Address: cchance@pape-dawson.com

9. Project Location:

- The project site is located inside the city limits of \_\_\_\_\_.
- 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.

From TCEQ's Regional office, turn right onto Judson Road to travel 0.6 miles to Nacogdoches Road. Travel east on Nacogdoches for approximately 6.0 miles, before turning left onto FM 3009 N. Travel 11.9 miles north to the intersection of SH 46 and FM 3009. The site is located southwest of the intersection of SH 46 and FM 3009.

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: when advised by TCEQ

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:

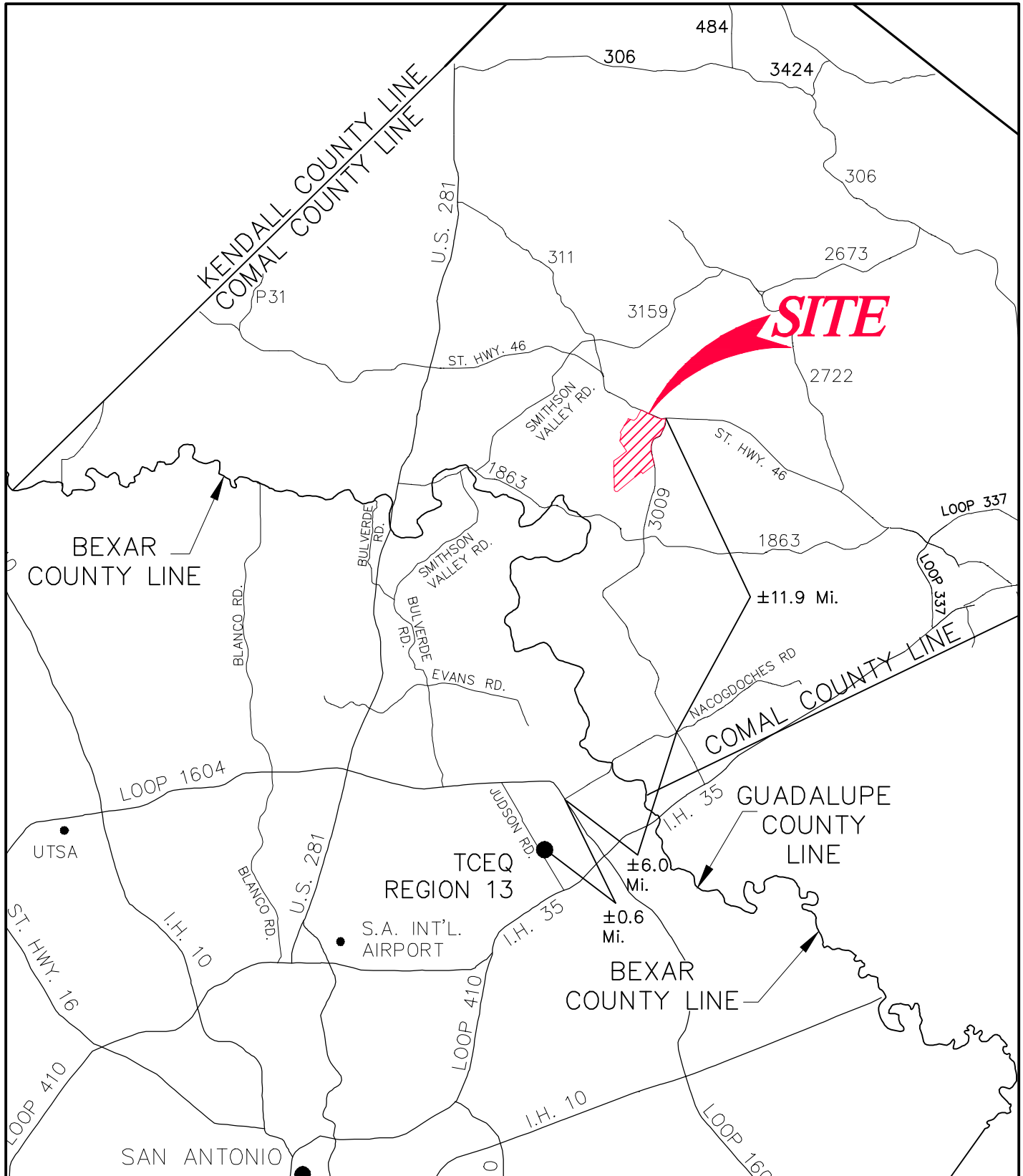
- TCEQ cashier
- Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)
- San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

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.

**ATTACHMENT A**


**VULCAN COMAL QUARRY**  
**Water Pollution Abatement Plan**

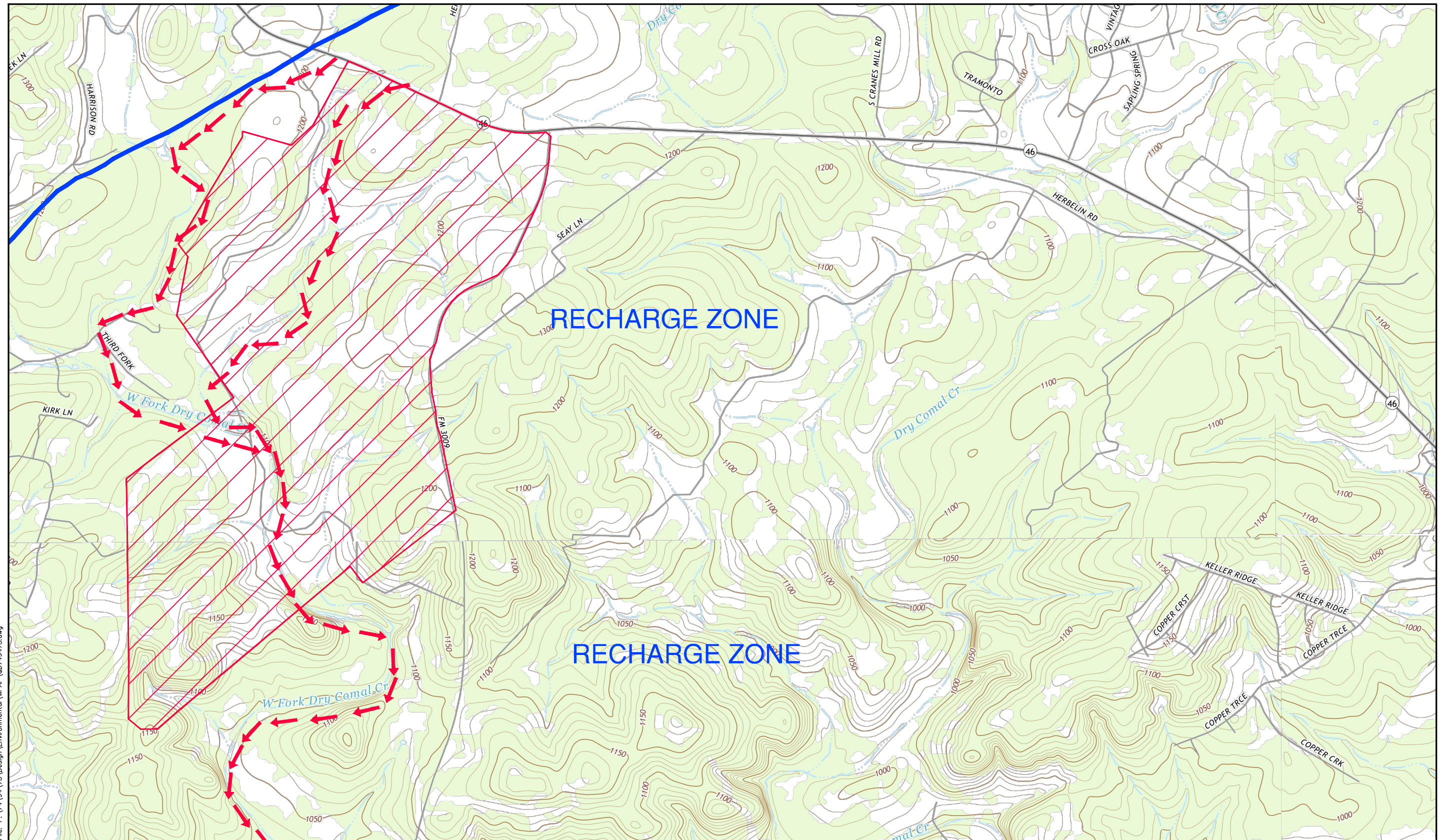


**ATTACHMENT B**




**VULCAN COMAL QUARRY  
Water Pollution Abatement Plan**

  
SCALE: 1" = 2000'



Date: Jan 24, 2024, 2:44pm User ID: mgregory  
File: P:\74\94\75\Design\Environmental\WPAP\00749475.dwg

GENERAL LOCATION MAP - SATTLER, TX QUAD; SMITHSON VALLEY, TX QUAD;  
NEW BRAUNFELS WEST, TX QUAD; BATCAVE, TX QUAD  
DRAINAGE FLOW   
Pape-Dawson Engineers, Inc.

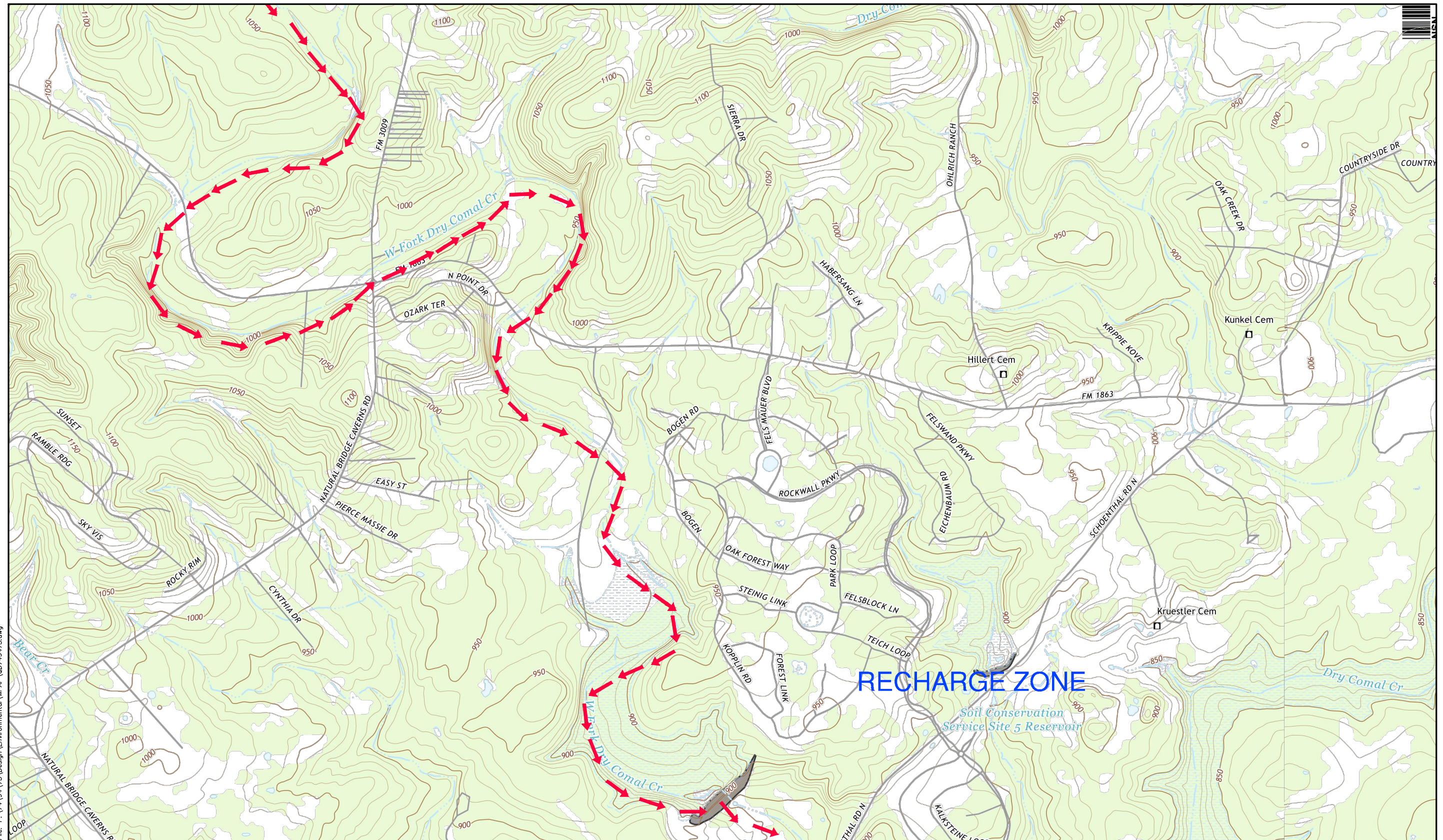
MATCHLINE See Sheet 2 of 3

USGS/EDWARDS RECHARGE ZONE MAP  
ATTACHMENT B

**VULCAN COMAL QUARRY  
Water Pollution Abatement Plan**

MATCHLINE See Sheet 1 of 3

**N**  
SCALE: 1" = 2000'



Date: Jan 24, 2024, 2:45pm User ID: mgregory  
File: P:\74\94\75\Design\Environmental\WPAP\00749475.dwg

GENERAL LOCATION MAP - SATTLER, TX QUAD; SMITHSON VALLEY, TX QUAD;  
NEW BRAUNFELS WEST, TX QUAD; BATCAVE, TX QUAD  
DRAINAGE FLOW   
Pape-Dawson Engineers, Inc.

MATCHLINE See Sheet 3 of 3

USGS/EDWARDS RECHARGE ZONE MAP  
Sheet 2 Of 3  
ATTACHMENT B



**ATTACHMENT C**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment C – Project Description

The Vulcan Comal Quarry Water Pollution Abatement Plan (WPAP) proposes the construction of a quarry with associated plant areas, office, shop areas, and driveway on approximately 1,515.16 acres. The nine (9) proposed quarry Mining Areas comprise approximately 956 acres. Impervious cover is contributed by the Plant area, Primary area, stockpile areas, and haul roads. This quarry is located on the southwest corner of FM 3009 and SH-46, Comal County, Texas.

The Geologic Assessment (GA) conducted by Pape-Dawson Engineers is included with this application. Temporary buffers around naturally occurring sensitive features have been illustrated and will be maintained until those located within the mining areas are mined in standard quarry practice and compliance with RG-500; 2.2.3.

The proposed essential impervious cover will be comprised of compacted base and stockpile areas which totals the proposed 13.81 acres of impervious cover, or 0.9% of the 1515.16 ac site. Compacted base materials, used to create the haul roads, Plant areas, and additional impervious cover areas will be treated by fifty-foot (50') natural vegetative filter strips which will utilize large stones or boulders to restrict driving on or across to maintain the integrity but not inhibit the sheet flow. All PBMPs have been designed in accordance with the Texas Commission on Environmental Quality's (TCEQ) Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in Total Suspended Solids (TSS) from the site. Additional compensatory treatment is available for turn lane improvement to be submitted under a future separate plan.

Construction of the Plant, truck loading, and haul roads is approximately 13.81 acres of the 1,515.16 acre site limit. The nine (9) proposed quarry Mining Areas comprise approximately 956 acres thereby leaving the remaining approximately 545 acres as floodplain and buffer/berm areas. Once permits are obtained, a portable plant will be placed into operation. The mining of Mining Area 1 will be initiated and once at final grade will expand into the Plant and stockpile area to serve the rest of the additional mining areas. Two (2) HDPE-lined pond systems (A and B) will be utilized for settling ponds to alternate during mining operations. The water will be allowed to settle and discharge into a second pond where the fresh water is recovered and used in the plant.

The mining of the quarry will progress in small increments of 10 to 15 acres per year. Clearing and stripping will be delayed until it is necessary for mining. Blasting agents will be utilized in the mining process but will not be stored onsite over the recharge zone. A buffer of approximately 100 feet will be maintained adjacent to all neighboring properties. A large portion of said buffer will be left in its native condition. Vulcan will not mine into jurisdictional water ways without proper agency approvals, including the Comal County Floodplain Administrator. As the quarries are mined, Vulcan will insure that the banks of the dry creeks are maintained at elevations which will not allow flooding. In order to accomplish this, prior to any excavation near the FEMA Zone "A", proper submittals will be made to the Comal County Floodplain Administrator and if necessary, FEMA. All compacted base Equipment Staging Areas along the creeks shall be approved by the floodplain administrator.

The mining areas will be graded to allow ponding within the mined-out areas thereby controlling stormwater within those areas and protect the floodplain. Short Term and Long Term rock berms and silt

## VULCAN COMAL QUARRY

### Water Pollution Abatement Plan

fences will be placed for additional protection near the floodplain. Mining areas will be considered re-stabilized when all loose rock material has been compacted or removed to solid rock. A one hundred-foot (100') natural buffer will be maintained along perimeter areas and a twenty-five foot (25') buffer on either side of the floodplain. Proposed Asphalt or concrete roads are limited to the 2-year floodplain areas within the floodplains, office area and road to the scale as illustrated on Exhibit 3. At stream crossings the road elevation will be maintained above the 2-year, 24-hour storm elevation. Prior approval from the floodplain administrator will be sought before construction through the floodplain.

General description of quarry process:

- Clear
- Strip
- Drill
- Blast
- Load into haul vehicles
- Haul to plant
- Process rock at plant
- Load to trucks for export.

In support of quarry mining operations, a plant area will be designed and constructed containing equipment for crushing, processing, washing, water recycling, stockpiling and distribution operations. The plant area will be protected by Temporary and Long Term BMP's. The overburden from the plant area will be used to create initial segments of permanent earth berms. As the Mining Areas are enlarged, prior to clearing and stripping of new areas, berms will be placed to prevent or minimize the sediment leaving the site.

A permanent one hundred-foot (100') buffer along the property will serve as final treatment for stormwater leaving the site as well as a safety barrier at ultimate quarry elevation. Temporary BMPs consisting of natural vegetated areas will be utilized to control and treat stormwater runoff. The natural vegetated areas will be maintained between the MSHA safety barrier and the 100' buffer along the property line as mining of the hills progress to the 100' buffer. Rock berms with silt fence, brush berms and other temp BMPs will be utilized on the downhill side (which allow drainage to flow through) at drainage ways.

As the quarry is mined, most (in the 95% range) of the material will be hauled to the plant for processing and distribution. This process removes more than 80% of the sediment load created by mining; based on the utilization of material above #200 sieve. Very fine sediments from the quarry operations will be disposed of to the two sets of settling ponds. The wash water recycle ponds will generate a cake-like by-product, consisting of very fine sediments, which will be placed in mined out areas of the quarry. The fresh water will be utilized for dust control and plant operations.

The Mining Areas will not be mined below 1040 ft-msl. Guidelines set forth in RG-500, in order to prevent pollution of groundwater in the Edwards Aquifer, the TCEQ recommends quarrying not proceed below the elevation of the potentiometric water surface, plus a 25' separation. Per RG-500, the TCEQ will accept the water-table elevation measured in December 2007 either on-site or in the nearest off-site well. Considering it will take over 5 - 10 years to get to that elevation, it is proposed to monitor the local water

## **VULCAN COMAL QUARRY**

### **Water Pollution Abatement Plan**

levels at the local wells and determine how the local water level correlates to the established monitored water levels offsite. We then can better determine what the local highest water table will be. There could be variations in the water table due to varying pressure gradients; therefore, we propose to monitor the static water level of the onsite well and monitor rainfall levels in order to define a more realistic potentiometric water surface relative to the area. Vulcan Materials will maintain a 25' separation from the potentiometric water surface correlating to local water levels at the local wells. Additionally, to ensure protection of the aquifer, a positive slope shall be maintained away from faults and other sensitive features to prevent flows from entering them. There will be nine (9) different Mining Areas over the life of the mine.

The proposed development will provide portable toilet facilities for domestic wastewater. These portable toilets will be properly maintained by a TCEQ-licensed maintenance provider.

**GEOLOGIC ASSESSMENT FORM**  
**(TCEQ-0585)**



# Geologic Assessment

## 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

*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

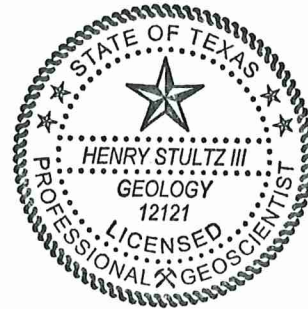
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: Henry E. Stultz III, P.G. Telephone: 210-375-9000

Date: August 1, 2023 Fax: 210-375-9090

Representing: Pape-Dawson Engineers, Inc., TBPB registration number 50351

Signature of Geologist:



Regulated Entity Name: Vulcan Comal Quarry

## Project Information

1. Date(s) Geologic Assessment was performed: July 10, 2019, through September 17, 2019

2. Type of Project:

WPAP  
 SCS

AST  
 UST

3. Location of Project:

Recharge Zone  
 Transition Zone  
 Contributing Zone within 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**

Soil Name	Group*	Thickness(feet)
Comfort-Rock outcrop complex, 1-8 % slopes (CrD)	D	1-2
Rumple-Comfort association, 1- 8 % slopes (RUD)	C	2-3
Eckrant-Rock outcrop association, 8-30 % slopes (ErG)	D	1-2

\* 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.

6.  **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.
7.  **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.
8.  **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" = 400'  
 Site Geologic Map Scale: 1" = 400'  
 Site Soils Map Scale (if more than 1 soil type): 1" = 2000'
9. Method of collecting positional data:
  - 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.
12.  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.
13.  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 **twelve (12)** 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 Chapter 76.
- There are no wells or test holes of any kind known to exist on the project site.

### ***Administrative Information***

15.  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.

**ATTACHMENT A**  
**Geologic Assessment Table**

GEOLOGIC ASSESSMENT TABLE						PROJECT NAME: Vulcan Comal Quarry														
LOCATION			FEATURE CHARACTERISTICS											EVALUATION		PHYSICAL SETTING				
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z								<40	>40	<1.6	>1.6	
WR-1	29.770979°	-98.302511°	MB	30	Kek	.7		962	-				X	5	35	35		X		Hillside
WR-2	29.768473°	-98.307756°	MB	30	Kek	.7		970	-				X	5	35	35		X		Hillside
WR-3	29.751478°	-98.320360°	MB	30	Kek	.7		976	-				X	5	35	35		X		Hillside
WR-4	29.747936°	-98.316890°	MB	30	Kgr	.7		1054	-				X	5	35	35		X		Hillside
WR-5	29.749045°	-98.311958°	MB	30	Kgr	.7		931	-				X	5	35	35		X		Hillside
WR-6	29.741425°	-98.321705°	MB	30	Kgr	.7		968	-				X	5	35	35		X		Hillside
S-1	29.770019°	-98.312197°	MB	30	Kek	1.3		270	-				N	10	40		40	X		Hillside
S-2	29.772232°	-98.303037°	MB	30	Kek	.7		Unk	-				N	20	50		50	X		Hillside
S-3	29.766466°	-98.319097°	MB	30	Kek	.7		Unk	-				N	20	50		50	X		Hillside
S-4	29.757740°	-98.307887°	MB	30	Kek	.7		Unk	-				N	20	50		50	X		Hillside
S-5	29.752889°	-98.316720°	MB	30	Kgr	.7		Unk	-				N	20	50		50	X		Floodplain
S-6	29.775249°	-98.309689°	CD	5	Kek	8	8	1	-				F,O	5	10	10		X		Hillside
S-7	29.774921°	-98.307454°	SC	20	Kek	0.4	1.5	2.5	N10°E				F,O	10	30	30		X		Hillside
S-8	29.774894°	-98.307453°	SC	20	Kek	0.5	0.5	2	-				F,O	10	30	30		X		Hillside
S-9	29.772911°	-98.312594°	CD	5	Kek	40	40	2	-				F,O	5	10	10		X		Hillside
S-10	29.772378°	-98.299727°	CD	5	Kek	6	6	1	-				F,O	5	10	10		X		Hillside
S-11	29.771226°	-98.318712°	SC	20	Kek	0.5	0.5	2	-				F,O	10	30	30		X		Hillside
S-12	29.771345°	-98.319094°	C	30	Kek	5	8	18	-				FS,O	35	65		65	X		Hillside
S-13	29.770010°	-98.319295°	SC	20	Kek	1	2	4	S50°E				F,O	10	30	30		X		Hillside
S-14	29.770036°	-98.315073°	SC	20	Kek	2	0.5	2	N30°E				F,O	10	30	30		X		Hillside
S-15	29.768065°	-98.318365°	C	30	Kek	4	4	<6	-				N,C	35	65		65	X		Hillside/Hilltop
S-16	29.770120°	-98.306140°	CD	5	Kek	6	6	1	-				F,O	5	10	10		X		Hillside
S-17	29.769824°	-98.305009°	CD	5	Kek	6	6	0.8	-				F,O	5	10	10		X		Hillside
S-18	29.769136°	-98.301532°	CD	5	Kek	6	6	1	-				F,O	5	10	10		X		Hillside
S-19	29.765175°	-98.316211°	SC	20	Kek	0.5	2	13	N50°E	10			N	35	65		65	X		Hillside
S-20	29.762367°	-98.321516°	MB	30	Kgr	250	100	6	-				F,O	5	35	35		X		Hillside
S-21	29.763878°	-98.312835°	SC	20	Kek	0.8	0.8	2	-				F,O	10	30	30		X		Hillside
S-22	29.763214°	-98.311983°	SC	20	Kek	1	0.2	2.5					F,O	10	30	30		X		Hillside
S-23	29.763513°	-98.308914°	C	30	Kek	4	5	7	S50°E				N,F	35	65		65	X		Hillside
S-24	29.763870°	-98.308468°	CD	5	Kek	6	6	1.5	-				F,O	5	10	10		X		Hillside
S-25	29.763434°	-98.308434°	SC	20	Kek	1.5	2	2.5	-				F,O	10	30	30		X		Hillside
S-26	29.765468°	-98.304301°	CD	5	Kek	7	7	6	-				C,F	5	10	10		X		Hillside
S-27	29.762910°	-98.305235°	SH	20	Kek	50	50	6	-				C,O	20	40		40	X		Hilltop

GEOLOGIC ASSESSMENT TABLE						PROJECT NAME: Vulcan Comal Quarry														
LOCATION			FEATURE CHARACTERISTICS										EVALUATION		PHYSICAL SETTING					
1A	1B*	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z	<40							>40	<1.6	>=1.6		
S-29	29.759110°	-98.309026°	SC	20	Kek	1.5	1.5	2	-				F,O	10	30	30		X		Hillside
S-30	29.758461°	-98.305924°	SC	20	Kek	0.8	2	3	N20°W				F,O	10	30	30		X		Hillside
S-31	29.750355°	-98.321427°	CD	5	Kek	10	20	4	N45°E	10			N	5	20	20		X		Drainage
S-32	29.750083°	-98.315002°	SC	20	Kgr	2	1	1	N25°W				F,O	10	30	30		X		Hillside
S-33	29.746785°	-98.324334°	SC	20	Kek	3	1	4	N75°E				N	20	40		40	X		Hillside/Hilltop
S-34	29.743604°	-98.320626°	SC	20	Kek	0.9	1	1.5	-				F,O	10	30	30		X		Hillside
S-35	29.740088°	-98.324487°	SH	20	Kek	12	12	2	-				C,F	20	40		40	X		Hillside
S-36	29.745539°	-98.322403°	MB	30	Kek	0.3		9.5	-				N,C	35	65		65	X		Hillside
S-37	29.766218°	-98.313883°	F	20	Kek/Kgr	>2000			N55°E	10			F,O	5	35	35			X	Hillside/Floodplain

\*\* DATUM: NAD 83

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY	
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed	



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.



Date August 1, 2023

**ATTACHMENT B**  
**Stratigraphic Column**

**VULCAN COMAL QUARRY**  
**Stratigraphic Column**

Period	Epoch	Group	Formation	Member	Thickness	Lithology	Hydro-logic Unit	Hydrostratigraphic Unit	Hydrologic Function	Porosity	Cavern Development		
Cretaceous	Early Cretaceous	Edwards	Kainer	Person	Regional dense	20–24	Dense, shaly limestone; oyster shell mudstone and iron wackestone; wispy iron staining; chert nodules rarer than in the rest of the chert-bearing Edwards Group	Edwards Aquifer	IV	Confining	FR, CV	Very few; only vertical fracture enlargement	
				Grainstone		40–50	Hard, dense limestone that consists mostly of a tightly cemented miliolid skeletal fragment grainstone; contains interspersed chalky mudstone and wackestone; chert as beds and nodules; crossbedding and ripple marks are common primarily at the contact with the overlying regional dense bed		V	Aquifer	IP, IG, BU, FR, BP, CV	Few	
				Kirschberg Evaporite		40–50	Highly altered crystalline limestone and chalky mudstone with occasional grainstone associated with tidal channels; chert as beds and nodules, boxwork molds are common, matrix recrystallized to a coarse grain spar; intervals of collapse breccia and travertine deposits		VI	Aquifer	IG, MO, VUG, FR, BR, CV	Probably extensive cave development	
				Dolomitic		90–120	Hard, dense to granular, dolomitic limestone; chert as beds and nodules (absent in lower 20 ft); <i>Toucasia</i> sp. abundant; lower three-fourths composed of sucrosic dolomites and grainstones with hard, dense limestones interspersed; upper one-fourth composed mostly of hard, dense mudstone, wackestone, packstone, grainstone, and recrystallized dolomites with bioturbated beds		VII	Aquifer	IP, IC, IG, MO, BU, VUG, FR, BP, CV	Caves related to structure or bedding planes	
				Basal nodular		40–50	Moderately hard, shaly, nodular, burrowed mudstone to miliolid grainstone that also contains dolomite; contains dark, spherical textural features known as black rotund bodies; <i>Ceratostreon texana</i> , <i>Caprina</i> sp., miliolids, and gastropods		VIII	Aquifer, confining unit in areas without caves	IP, MO, BU, BP, FR, CV	Large lateral caves at surface	
		Trinity	Glen Rose Limestone	Upper Glen Rose	0–120 (absent in northern Comal Co.)	Alternating resistant and nonresistant beds of blue shale, nodular marl, and impure, fossiliferous limestone; gray to yellowish gray; stair-step topography; contains two distinct evaporite zones; distinct <i>Corbula</i> sp. bed marks the contact with the underlying lower member of the Glen Rose Limestone; <i>Orbitulina texana</i>	Upper Trinity Lower confining unit to the Edwards aquifer	Cavernous	Aquifer	MO, BR, BP, FR, CV	Some surface cave development		
					120–230 (thicker in northern Comal Co.)			Camp Bullis	Confining	BU, BP, FR, occasional CV			
					0–10			Upper evaporite	Aquifer	IP, MO, BU, BR			
					0–40			Fossiliferous	Upper	Aquifer		MO, BU, FR, CV	
									Lower	Confining		MO, BU, FR	
					80–150			Lower evaporite	Aquifer	IP, MO, BU, BR			
				8–10									
				Lower Glen Rose		30–40 (typ. 30)	Massive, fossiliferous limestone grading upward into thin beds of limestone, dolomite, marl, and shale; numerous caves and reefs occur in the lower portion of the member; <i>Orbitulina texana</i> , <i>Caprina</i> sp., <i>Toucasia</i> sp., <i>Trigonia</i> sp., <i>Turritella</i> sp., miliolids, and various corals common; contains trace fossil burrows, oysters, pectens, and shell fragments	Middle Trinity	Bulverde	Semi-confining		MO, BR, BP, FR	--

Source: Clark, Golab, and Morris (2016); Cavern development modified from Stein and Ozuna (1995). Porosity types - Fabric selective: IP, interparticle porosity; IG, intergranular porosity; IC, intercrystalline porosity; SH, shelter porosity; MO, moldic porosity; BU, burrowed porosity; FE, fenestral; BP, bedding plane porosity. Not fabric selective: FR, fracture porosity; CH, channel porosity; BR, breccia; VUG, vug porosity; CV, cave porosity.



**ATTACHMENT C**  
**Site Geology**

# VULCAN COMAL QUARRY

## Geologic Assessment

### Attachment C – Site Geology

#### SUMMARY

The Vulcan Comal Quarry Tract is located in Comal County, Texas located on the southwest corner of FM 3009 and SH-46. The site is currently agricultural rangeland. Historical aerial photographs indicate the site was predominantly agricultural rangeland. Vegetation and path clearing have occurred on the site. Several ranch structures were observed on the southern portion of the site.

Based on the results of the field survey conducted in accordance with Instructions for Geologists for Geologic Assessments in the Edwards Aquifer Recharge/Transition Zones (TCEQ-0585 Instructions), seven (7) sensitive, natural geologic features were identified on site. A buffer around sensitive features was created in accordance with TCEQ RG-348 Complying with the Edwards Aquifer Rules Technical Guidance on Best Management Practices / Chapter 5 and RG-348 Addendum. Based on the size of the site and the frequency distribution of sensitive features, the overall potential for fluid migration to the Edwards Aquifer for the site is low.

#### SITE GEOLOGY

As observed through field evidence, the subject site is located within the dolomitic (Kekd) and basal nodular (Kekbn) members of the Kainer formation and the upper member of the Glen Rose (Kgru) formation.

- The Kekd is a massively bedded, mudstone to grainstone, crystalline limestone. Surficial weathering of bioturbated beds was observed over much of the site within this member. Karst development within the Kekd is characterized by small sinkholes and often caves develop as vertical shafts.
- The Kekbn is a massive, shaly, mudstone to grainstone, nodular limestone. Karst development within the Kekbn is characterized by vertical shafts as well as large lateral caves.
- The Kgru is characterized as yellowish-tan thinly bedded limestone and marl. Karst development within the Kgru is characterized by cave formation, with predominantly lateral large rooms.

The predominant trend of faults in the vicinity of the site is approximately N55°E, based on faults identified during this geologic assessment and previous mapping of the area.

# VULCAN COMAL QUARRY

## Geologic Assessment

### FEATURE DESCRIPTIONS:

A description of the features observed onsite is provided below:

#### Wells

- Features WR-1 through WR-6

Features WR-1 through WR-6 were 8.75" diameter pilot holes that were drilled for a water availability study in 2007. Very little water was found, therefore the wells were plugged and abandoned. As the wells were plugged according to State of Texas regulations, the probability for rapid infiltration is low. The well reports are attached.

- Feature S-1

Feature S-1 is an existing water well that was reported on the TWDB groundwater database as State Well #439830. The casing extends above a concrete slab and is capped. The well does not currently have a pump attached to it. Therefore, the probability for rapid infiltration is low. The well report is attached.

- Features S-2 through S-5

Features S-2 through S-5 are existing water wells that are not reported on the TWDB groundwater database. Because of the unknown ages and integrity, observed slab, and casing above the ground surface, the probability for rapid infiltration is intermediate.

- Feature S-36

Feature S-36 is an uncased borehole measuring approximately 4 inches in diameter and is open to the surface. No records of any borings were found at this location. As the borehole is open at the surface, the probability for rapid infiltration is high.

#### Caves

- Feature S-12

Feature S-12 is a cave. The cave entrance is covered with vegetation. The surface entrance to the cave is 5 feet wide by 5 feet long. The cave appears to extend approximately 18 feet deep and expands horizontally approximately 8 feet toward the west. Flowstone was observed within the cave. The probability for rapid infiltration is high.

- Feature S-15

Feature S-15 is a cave located near a hilltop. The surface entrance to the cave is 4 feet wide by 4 feet long. The cave appears to extend approximately 6 feet deep. Coarse and organic infilling were

## VULCAN COMAL QUARRY

### Geologic Assessment

observed washed down into the void. The probability for rapid infiltration is high.

- Feature S-23

Feature S-23 is a cave. The surface entrance to the cave is 2 feet wide by 2 feet long. The cave appears to extend approximately 7 feet deep and expands horizontally approximately 4 feet by 5 feet toward the southeast. The probability for rapid infiltration is high.

#### Solution Cavities

- Feature S-19

Feature S-19 is a solution cavity with smooth limestone walls observed below the surface. A lack of fine or organic infilling and evidence of karst origin suggest a high probability for rapid infiltration.

- Feature S-33

Feature S-33 is a solution cavity located near a hilltop. A small catchment area, sapping of fines, and evidence of karst origin suggest an intermediate probability for rapid infiltration.

- Features S-7, S-8, S-11, S-13, S-14, S-21, S-22, S-25, S-29, S-30, S-32, S-34

Features S-7, S-8, S-11, S-13, S-14, S-21, S-22, S-25, S-29, S-30, S-32, S-34 are solution cavities. The features are plugged with fines and organics a few feet below the surface. The features are also located on a hillside with a small catchment area. These properties suggest a low probability for rapid infiltration.

#### Sinkholes

- Features S-27 and S-35

Features S-27 and S-35 are sinkholes with coarse and organic infilling. Bedrock exposed at the surface near the features was observed higher than the lowest point of the features. Karst origin, a small catchment area, sapping of fines, and coarse infilling suggests an intermediate probability for rapid infiltration.

#### Non-Karst Closed Depressions

- Features S-6, S-10, S-16, S-17, S-18, S-24, S-28, S-31

Features S-6, S-10, S-16, S-17, S-18, S-24, S-28, S-31 are non-karst closed depressions likely caused by scour or uprooted and removed trees. The non-karst origin and presence of fine infilling suggests a low probability of rapid infiltration.

## VULCAN COMAL QUARRY

### Geologic Assessment

- Feature S-9

Feature S-9 is a closed-depression created by an earthen dam. The feature is located within the soil horizon and has a non-karst origin. The non-karst origin and evidence of ponding of water suggests a low probability for rapid infiltration.

- Feature S-20

Feature S-20 is a manmade closed depression. The depression is the result of excavation. The non-karst origin and evidence of ponding of water suggests a low probability for rapid infiltration.

- Feature S-26

Feature S-26 is a closed depression. The depression appears to be the result of washout of fine material within larger boulders in an area of fill material that was placed within the utility easement sometime between 1973 and 1986. The non-karst origin suggests a low probability for rapid infiltration.

#### **Faults**

- Feature S-37

Feature S-37 is a normal fault identified through field evidence, aerial photographs and formation displacement. This unnamed fault is situated between the Hidden Valley Fault and Bear Creek fault and extends from southern Travis County to northern Bexar County (Clark 2016). This fault is trending N51°E on the southwestern side and N57°E on the northwestern side of the site. Displacement of the fault is approximately 45 feet. Lack of direct evidence of enhanced permeability at the ground surface and the presence of a well-developed soil profile suggest the probability of rapid infiltration is low.

# VULCAN COMAL QUARRY

## Geologic Assessment

### REFERENCES

Clark, A.K., Golab, J.A., and Morris, R.R., 2016, Geologic Framework and Hydrostratigraphy of the Edwards and Trinity Aquifers Within Northern Bexar and Comal Counties, Texas: U.S. Geological Survey Scientific Investigations Map 3366, scale 1:24,000, 20 p. pamphlet.

Nationwide Environmental Title Research, LLC. Historical Aerials, HistoricAerials.com. <https://www.historicaerials.com/viewer>, July 9, 2019.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. <http://websoilsurvey.sc.egov.usda.gov/>, July 9, 2019.

Stein, W.G., and Ozuna, G.B., 1995, Geologic framework and hydrogeologic characteristics of the Edwards Aquifer recharge zone, Bexar County, Texas: U.S. Geological Survey Water-Resources Investigations Report 95-4030, 8 p.

Texas Water Development Board, Wells in TWDB Groundwater Database Viewer, <https://www3.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer>, July 9, 2019.

U.S. Geological Survey, National Water Information System: Mapper, <https://maps.waterdata.usgs.gov/mapper/index.html>, July 9, 2019.

# **WELL REPORTS**

## STATE OF TEXAS PLUGGING REPORT for Tracking #54645

Owner:	Eric W White	Owner Well #:	1
Address:	11301 Hwy 46 W New Braunfels, TX 78132	Grid #:	68-22-2
Well Location:	11301 HWY 46 W New Braunfels, TX 78132	Latitude:	29° 44' 26" N
Well County:	Comal	Longitude:	098° 19' 31" W
		Elevation:	No Data

Well Type: **Withdrawal of Water**

### Drilling Information

Company: <b>No Data</b>	Date Drilled: <b>10/27/2007</b>
Driller: <b>Davenport Drilling</b>	License Number: <b>6672</b>

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8.75</b>		<b>980</b>

### Plugging Information

Date Plugged: <b>1/2/2009</b>	Plugger: <b>Donny Davenport</b>
Plug Method: <b>See Comments</b>	

Casing Left in Well:

Plug(s) Placed in Well:

**No Data**

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
<b>0</b>	<b>365</b>	<b>Tremie Portalnd 5 bags Ce</b>
<b>365</b>	<b>980</b>	<b>Sterilized Pea gravel 12</b>

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



Company Information: **Davenport Drilling & Pump Service, INC.**

**11844 bandera Rd PMB 711  
Helotes, TX 78023**

Driller Name: **Donny Davenport**

License Number: **2671**

Apprentice Name: **Casey Cowart**

Apprentice Number: **57613**

Comments: **This well is a pilot hole. Very Little water was found therefore client requested to  
have well plugged.  
980-365 sterilized pea gravel  
365-0 tremie Portland**



Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	<b>352</b>	<b>No Data</b>

Chemical Analysis Made: **No**

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

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

Company Information: **DAVENPORT DRILLING AND PUMP SERVICE**  
**11844 BANDERA RD.**  
**SAN ANTONIO, TX 78023**

Driller Name: **Don L Davenport** License Number: **2671**

Comments: **Just entered well report because at the time these were drilled we did not know that pilot holes needed to be reported.**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>240</b>	<b>Edwards</b>
<b>240</b>	<b>545</b>	<b>Upper Glenrose</b>
<b>545</b>	<b>835</b>	<b>Lower Glenrose</b>
<b>835</b>	<b>900</b>	<b>Bexar Shale</b>
<b>900</b>	<b>962</b>	<b>Cow Creek</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>6</b>	<b>Blank</b>	<b>New PVC with 6" cap</b>	<b>40</b>	<b>0</b>	<b>40</b>

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

## STATE OF TEXAS PLUGGING REPORT for Tracking #54647

Owner: <b>Eric W White</b>	Owner Well #: <b>2</b>
Address: <b>11301 hwy 46 W New Braunfels, TX 78132</b>	Grid #: <b>68-14-8</b>
Well Location: <b>11301 HWY 46 W New Braunfels, TX 78132</b>	Latitude: <b>29° 46' 03" N</b>
Well County: <b>Comal</b>	Longitude: <b>098° 18' 23" W</b>
	Elevation: <b>No Data</b>

Well Type: **Withdrawal of Water**

### Drilling Information

Company: <b>No Data</b>	Date Drilled: <b>11/28/2007</b>
Driller: <b>Dean Davenport</b>	License Number: <b>2669</b>

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8.75</b>		<b>1000</b>

### Plugging Information

Date Plugged: <b>1/2/2009</b>	Plugger: <b>Donny Davenport</b>
Plug Method: <b>See Comments</b>	

Casing Left in Well:

**No Data**

Plug(s) Placed in Well:

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
<b>0</b>	<b>402</b>	<b>Tremie Cement 2 bags cem</b>
<b>402</b>	<b>1000</b>	<b>Steralized Pea Gravel 12.</b>

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

Company Information: **Davenport Drilling & Pump Service, INC.**

**11844 Bandera RD # 711  
Helotes, TX 78023**

Driller Name: **Donny davenport**

License Number: **2671**

Apprentice Name: **Casey Cowart**

Apprentice Number: **57613**

Comments: **This well is only a pilot hole. Very little water was found therefore client requested to have well plugged.  
1000-402 Steralized pea Gravel  
402- Surface Tremmie pipe Cement**

## STATE OF TEXAS WELL REPORT for Tracking #520688

Owner:	Eric W White	Owner Well #:	2
Address:	11301 HWY 46 W New Braunfels, TX 78132	Grid #:	68-22-2
Well Location:	11301 HWY 46 W New Braunfels, TX 78132	Latitude:	29° 44' 56.2" N
Well County:	Comal	Longitude:	098° 19' 30.5" W
Number of Wells Drilled:	6	Elevation:	1170 ft. above sea level

Type of Work: <b>New Well</b>	Proposed Use: <b>Irrigation</b>
-------------------------------	---------------------------------

Drilling Start Date: **11/2/2007**      Drilling End Date: **11/6/2007**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8.75</b>	<b>0</b>	<b>970</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Pilot hole**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>38</b>	<b>Benseal 4 Bags/Sacks</b>

Seal Method: **Poured**

Sealed By: **Driller**

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

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

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

Method of Verification: **No Data**

Surface Completion: **No Data**

**Surface Completion NOT by Driller**

Water Level: **402 ft.** below land surface on **2007-11-07**

Packers: **Rubber at 38 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted**      **Yield: 20 GPM with ? ft. drawdown after 2 hours**

Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	<b>335</b>	<b>No Data</b>

Chemical Analysis Made: **No**

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

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

Company Information: **DAVENPORT DRILLING AND PUMP SERVICE**  
**11844 BANDERA RD.**  
**SAN ANTONIO, TX 78023**

Driller Name: **Don L. Davenport** License Number: **2671**

Comments: **Just entered because at the time the hole was drilled, we did not realize pilot holes needed to be reported.**

Lithology:  
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
 BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>Top soil</b>
<b>1</b>	<b>285</b>	<b>Edwards</b>
<b>285</b>	<b>595</b>	<b>Upper Glenrose</b>
<b>595</b>	<b>860</b>	<b>Lower Glenrose</b>
<b>860</b>	<b>905</b>	<b>Bexar Shale</b>
<b>905</b>	<b>970</b>	<b>Cow Creek</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>6</b>	<b>Blank</b>	<b>New PVC with 6" cap</b>	<b>40</b>	<b>0</b>	<b>40</b>

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**(512) 334-5540**

## STATE OF TEXAS PLUGGING REPORT for Tracking #54650

Owner:	Eric W White	Owner Well #:	3
Address:	11301 Hway 46 W New Braunfels, TX 78132	Grid #:	68-14-8
Well Location:	11301 Hway 46 W New Braunfels, TX 78132	Latitude:	29° 45' 04" N
Well County:	Comal	Longitude:	098° 19' 13" W
		Elevation:	No Data

Well Type: **Withdrawal of Water**

### Drilling Information

Company: <b>No Data</b>	Date Drilled: <b>11/12/2007</b>
Driller: <b>Davenport Drilling</b>	License Number: <b>2669</b>

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8.75</b>		<b>1020</b>

### Plugging Information

Date Plugged: <b>1/2/2009</b>	Plugger: <b>Donny Davenport</b>
Plug Method: <b>See Comments</b>	

Casing Left in Well:

Plug(s) Placed in Well:

**No Data**

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
<b>0</b>	<b>315</b>	<b>Tremie Portland cement 10</b>
<b>315</b>	<b>1020</b>	<b>Steralized Pea gravel 13</b>

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



Company Information: **Davenport Drilling & Pump Service, INC.**

**11844 BANDERA RD # 711  
HELOTES, TX 78023**

Driller Name: **Donny davenport**

License Number: **2671**

Apprentice Name: **CASEY COWART**

Apprentice Number: **57613**

Comments: **This Well is only a pilot hole Very little water was found therefore the client requested to have well plugged.  
1020-315 Steralized PEa Gravel  
315-0 Tremie Portland Cement**



Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	<b>180</b>	<b>No Data</b>

Chemical Analysis Made: **No**

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

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

Company Information: **DAVENPORT DRILLING AND PUMP SERVICE**  
**11844 BANDERA RD.**  
**SAN ANTONIO, TX 78023**

Driller Name: **Don L Davenport** License Number: **2671**

Comments: **Just entered because at the time it was drilled we did not realize that pilot holes needed to be reported.**

Lithology:  
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
 BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>Top Soil</b>
<b>1</b>	<b>305</b>	<b>Edwards</b>
<b>305</b>	<b>585</b>	<b>Upper Glenrose</b>
<b>585</b>	<b>800</b>	<b>Lower Glenrose</b>
<b>800</b>	<b>865</b>	<b>Bexar Shale</b>
<b>865</b>	<b>925</b>	<b>Cow Creek</b>
<b>925</b>	<b>976</b>	<b>Pine Island Shale</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>6</b>	<b>Blank</b>	<b>New PVC with 6" PVC cap</b>	<b>40</b>	<b>0</b>	<b>40</b>

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## STATE OF TEXAS PLUGGING REPORT for Tracking #54651

Owner:	<b>Eric W White</b>	Owner Well #:	<b>4</b>
Address:	<b>11301 W hwy 46 W New Braunfels, TX 78132</b>	Grid #:	<b>68-22-2</b>
Well Location:	<b>11301 Hwy 46 W New Braunfels, TX 78132</b>	Latitude:	<b>29° 44' 53" N</b>
Well County:	<b>Comal</b>	Longitude:	<b>098° 19' 01" W</b>
		Elevation:	<b>No Data</b>

Well Type: **Withdrawal of Water**

### Drilling Information

Company:	<b>No Data</b>	Date Drilled:	<b>12/4/2007</b>
Driller:	<b>Dean Davenport</b>	License Number:	<b>2669</b>

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8.75</b>		<b>1060</b>

### Plugging Information

Date Plugged:	<b>1/6/2009</b>	Plugger:	<b>Donny Davenport</b>
Plug Method:	<b>See Comments</b>		

Casing Left in Well:

**No Data**

Plug(s) Placed in Well:

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
<b>0</b>	<b>135</b>	<b>Tremie Portland 5 bags ce</b>
<b>135</b>	<b>1060</b>	<b>STERILIZED PEA GRAVEL 14</b>

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

Company Information: **Davenport Drilling & Pump Service, INC.**

**11844 Bandera RD # 711  
Helotes, TX 78023**

Driller Name: **Donny davenport**

License Number: **2671**

Apprentice Name: **Mario gaudalajara**

Apprentice Number: **58186**

Comments: **This well is a pilot hole. Very little water was found thererfore the client requeusted to  
have well plugged  
1060-315 Steralized pea gravel  
135 to 0 Tremie Portland Cement**



Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	<b>190</b>	<b>No Data</b>

Chemical Analysis Made: **No**

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

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

Company Information: **DAVENPORT DRILLING AND PUMP SERVICE**  
**11844 BANDERA RD.**  
**SAN ANTONIO, TX 78023**

Driller Name: **Don L Davenport** License Number: **2671**

Comments: **Just entered because at the time it was drilled we did not realize pilot holes needed to be reported.**

Lithology:  
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
 BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>Topsoil</b>
<b>1</b>	<b>345</b>	<b>Edwards</b>
<b>345</b>	<b>610</b>	<b>Upper Glenrose</b>
<b>610</b>	<b>880</b>	<b>Lower Glenrose</b>
<b>880</b>	<b>945</b>	<b>Bexar Shale</b>
<b>945</b>	<b>1005</b>	<b>Cow Creek</b>
<b>1005</b>	<b>1054</b>	<b>Pine Island Shale</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>6</b>	<b>Blank</b>	<b>New PVC with 6" PVC cap</b>	<b>40</b>	<b>0</b>	<b>38</b>

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## STATE OF TEXAS PLUGGING REPORT for Tracking #54652

Owner:	Eric W White	Owner Well #:	5
Address:	11301 Hway 46 W New Braunfels, TX 78266	Grid #:	68-22-2
Well Location:	11301 Hway 46 W New Braunfels, TX 78132	Latitude:	29° 44' 56" N
Well County:	Comal	Longitude:	098° 18' 43" W
		Elevation:	No Data

Well Type: **Withdrawal of Water**

### Drilling Information

Company: <b>No Data</b>	Date Drilled: <b>10/16/2007</b>
Driller: <b>Dean Davenport</b>	License Number: <b>2669</b>

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8.75</b>		<b>940</b>

### Plugging Information

Date Plugged: <b>1/4/2009</b>	Plugger: <b>Donny Davenport</b>
Plug Method: <b>See Comments</b>	

Casing Left in Well:

**No Data**

Plug(s) Placed in Well:

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
<b>0</b>	<b>155</b>	<b>TREMIE cMENT 150 SACKS</b>
<b>155</b>	<b>940</b>	<b>Steralized pea gravel 13.</b>

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



Company Information: **Davenport Drilling & Pump Service, INC.**

**11844 BANDERA rd # 711  
HELOTES, TX 78023**

Driller Name: **DONNY DAVENPORT**

License Number: **2671**

Apprentice Name: **Mario gaudalajara**

Apprentice Number: **58186**

Comments: **This well is only a pilot hole. very little water was found therefore client requested to have well plugged.  
940-155 Steralized Pea gravel  
155-0 Tremie Portland Cement**

## STATE OF TEXAS WELL REPORT for Tracking #520691

Owner: <b>Eric W White</b>	Owner Well #: <b>5</b>
Address: <b>11301 HWY 46 W New Braunfels, TX 78132</b>	Grid #: <b>68-22-2</b>
Well Location: <b>11301 HWY 46 W New Braunfels, TX 78132</b>	Latitude: <b>29° 44' 56.6" N</b>
Well County: <b>Comal</b>	Longitude: <b>098° 18' 42.9" W</b>
Number of Wells Drilled: <b>6</b>	Elevation: <b>1120 ft. above sea level</b>

Type of Work: <b>New Well</b>	Proposed Use: <b>Irrigation</b>
-------------------------------	---------------------------------

Drilling Start Date: **10/12/2007**      Drilling End Date: **10/16/2007**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8.75</b>	<b>0</b>	<b>931</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Pilot Hole**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
Annular Seal Data:	<b>0</b>	<b>38</b>	<b>Benseal 4 Bags/Sacks</b>

Seal Method: **Poured**

Sealed By: **Driller**

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

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

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

Method of Verification: **No Data**

Surface Completion: <b>No Data</b>	<b>Surface Completion NOT by Driller</b>
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Water Level: **155 ft. below land surface on 2007-11-28**

Packers: **Rubber at 38 ft.**

Type of Pump: **No Data**

Well Tests: **Jetted**                      **Yield: 60 GPM with ? ft. drawdown after 2 hours**

Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	<b>160</b>	<b>No Data</b>

Chemical Analysis Made: **No**

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

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

Company Information: **DAVENPORT DRILLING AND PUMP SERVICE**  
**11844 BANDERA RD.**  
**SAN ANTONIO, TX 78023**

Driller Name: **Don L Davenport** License Number: **2671**

Comments: **Just entered because at time it was drilled, we did not realize pilot holes were required to be reported.**

Lithology:  
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
 BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>Topsoil</b>
<b>1</b>	<b>295</b>	<b>Edwards</b>
<b>295</b>	<b>530</b>	<b>Upper Glenrose</b>
<b>530</b>	<b>795</b>	<b>Lower Glenrose</b>
<b>795</b>	<b>860</b>	<b>Bexar Shale</b>
<b>860</b>	<b>931</b>	<b>Cow Creek</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>6</b>		<b>New PVC with 6" PVC Cap</b>	<b>40</b>	<b>0</b>	<b>40</b>

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**(512) 334-5540**

## STATE OF TEXAS PLUGGING REPORT for Tracking #54653

Owner: <b>Eric W White</b>	Owner Well #: <b>6</b>
Address: <b>11301 HWAY46 W NEW BRAUNFELS, TX 78132</b>	Grid #: <b>68-22-2</b>
Well Location: <b>HWAY 46 W NEW BRAUNFELS, TX 78132</b>	Latitude: <b>29° 44' 30" N</b>
Well County: <b>Comal</b>	Longitude: <b>098° 19' 18" W</b>
	Elevation: <b>No Data</b>

Well Type: **Withdrawal of Water**

### Drilling Information

Company: <b>No Data</b>	Date Drilled: <b>11/19/2007</b>
Driller: <b>Davenport Drilling</b>	License Number: <b>2669</b>

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8.75</b>		<b>980</b>

### Plugging Information

Date Plugged: <b>1/7/2009</b>	Plugger: <b>Donny Davenport</b>
Plug Method: <b>See Comments</b>	

Casing Left in Well:

Plug(s) Placed in Well:

**No Data**

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description (number of sacks &amp; material)</i>
<b>0</b>	<b>380</b>	<b>TREMIE PORTLAND 3 BAGS CE</b>
<b>380</b>	<b>980</b>	<b>STERALIZED PEA GRAVEL 11</b>

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

Company Information: **Davenport Drilling & Pump Service, INC.**

**11844 BANDERA RD  
HELOTES, TX 78023**

Driller Name: <b>DONNY DAVENPORT</b>	License Number: <b>2671</b>
--------------------------------------	-----------------------------

Apprentice Name: <b>Mario gaudalajara</b>	Apprentice Number: <b>58186</b>
---	---------------------------------

Comments: **THIS WELL IS ONLY A PILOT HOLE. VERY LITTLE WATER WAS FOUND THEREFORE CLIENT REQUESTED TO HAVE WELL PLUGGED. 980-380 STERALIZED PEA GRAVEL**



Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	<b>170</b>	<b>No Data</b>

Chemical Analysis Made: **No**

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

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

Company Information: **DAVENPORT DRILLING AND PUMP SERVICE**  
**11844 BANDERA RD.**  
**SAN ANTONIO, TX 78023**

Driller Name: **Don L Davenport** License Number: **2671**

Comments: **Just entered because at the time it was drilled we did not realize that pilot holes needed to be reported.**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
<b>0</b>	<b>1</b>	<b>Topsoil</b>
<b>1</b>	<b>240</b>	<b>Edwards</b>
<b>240</b>	<b>475</b>	<b>Upper Glenrose</b>
<b>475</b>	<b>795</b>	<b>Lower Glenrose</b>
<b>795</b>	<b>865</b>	<b>Bexar Shale</b>
<b>865</b>	<b>920</b>	<b>Cow Creek</b>
<b>920</b>	<b>968</b>	<b>Pine Island Shale</b>

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
<b>6</b>		<b>New PVC with 6" PVC Cap</b>	<b>40</b>	<b>0</b>	<b>40</b>

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

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

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

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

## STATE OF TEXAS WELL REPORT for Tracking #439830

Owner: <b>Blue Pine Holdings LLC</b>	Owner Well #: <b>one</b>
Address: <b>One Federal Place 1819 5th Ave N Birmingham , AL 35203</b>	Grid #: <b>68-14-8</b>
Well Location: <b>10901 TX 46 New Braunfels, TX HWY 3009/ TX 46</b>	Latitude: <b>29° 46' 12.07" N</b>
Well County: <b>Comal</b>	Longitude: <b>098° 18' 43.91" W</b>
	Elevation: <b>1143 ft. above sea level</b>
Type of Work: <b>New Well</b>	
Proposed Use: <b>Irrigation</b>	

Drilling Start Date: **11/23/2016**      Drilling End Date: **1/2/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	<b>16</b>	<b>0</b>	<b>143</b>
	<b>9.875</b>	<b>143</b>	<b>983</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Open Hole**

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	<b>0</b>	<b>270</b>	<b>Cement 81 Bags/Sacks</b>

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **+150**

Distance to Septic Field or other  
concentrated contamination (ft.): **+150**

Distance to Septic Tank (ft.): **+150**

Method of Verification: **No Data**

Surface Completion: **Surface Slab Installed**

**Surface Completion by Driller**

Water Level: **No Data**

Packers: **Rubber at 270 ft.  
Rubber at 275 ft.**

Type of Pump: **No Data**

Well Tests: **Estimated      Yield: 150 GPM**

Water Quality:

Strata Depth (ft.)	Water Type
843 - 943	Trinity

Chemical Analysis Made: **No**

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

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

Company Information: **C&C Groundwater Services LLC**  
**29143 Old Fredericksburg Rd**  
**Boerne, TX 78015**

Driller Name: **Richard Kyle Courtney** License Number: **2546**

Comments: **10" surface casing has been set and cemented through cavernous voids in Edwards formation. Primary casing has not been cemented yet as the hole is currently a test hole that will be completed and cemented in the very near future (6 months or so). We may determine to lower the casing after further testing to insure that the pump setting depth protects the pump. We will cement the annular space at that time.**

**Report Amended on 10/10/2017 by Request #23328**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	23	Limestone / tan clay
23	43	Dark Reddish Clay Tan Limestone
43	63	Limestone/Clay
63	143	Lost Cuttings
143	163	Gray Shell
163	183	Hard Gray Shell speckled with black
183	203	Gray shell / Gray Soft Shell w Clay
203	223	Gray Shell with pockets of Clay
223	243	Soft Shell
243	263	Slate Shell w/ Dark Gray pours shell
263	283	Slate Shell/Tan Limestone
283	303	Off white tan rock
303	323	Tan and gray shell

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
10	Blank	New Steel		0	104
6	Blank	New Steel		0	632



323	343	Dark Tan w gray shell/tan limestone
343	383	Hard Tan Limestone
383	403	Tan Limestone w gray shell
403	560	Hard Gray Shell
560	563	Limestone
563	583	Tan/slate limestone
583	603	Gray shell
603	623	Limestone
623	643	Tan limestone
643	663	Tan and Gray shell
663	703	Sandy limestone mix
703	743	Limestone/Sandy Limestone
743	763	Hard Gray Porous Rock
763	783	Tan and Gray sandy rock
783	823	Dark Gray /slate porous rock
823	843	Dark Gray shell w white rock
843	863	Tan rock
863	883	Tan sandy mix/dark tan sandy mix
883	903	Dark Gay Shell
903	950	Light and Dark Gray Shell
950	983	Blue/Green Clay

---

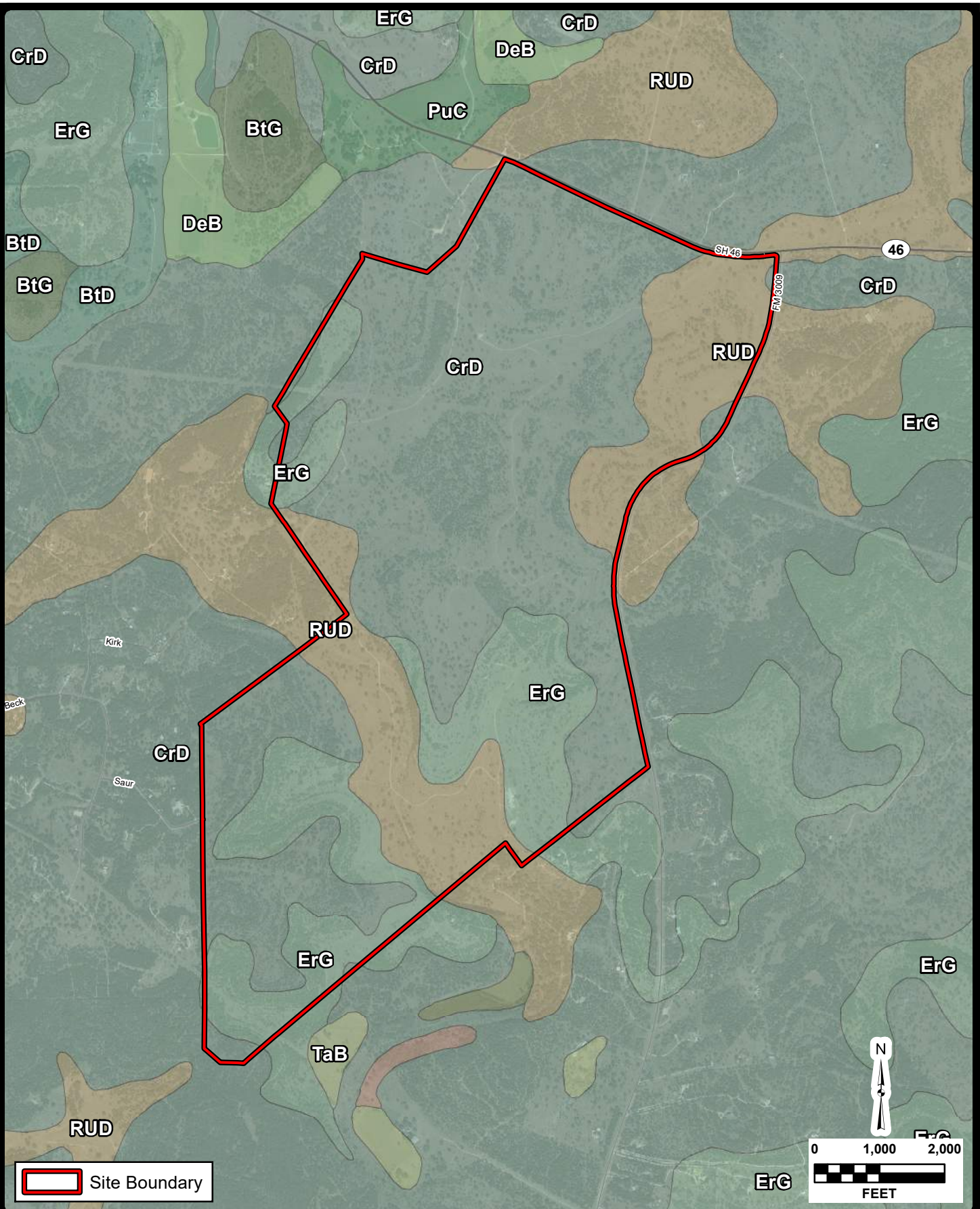
**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

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

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

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

**ATTACHMENT D**  
**Site Geologic Map(s)**



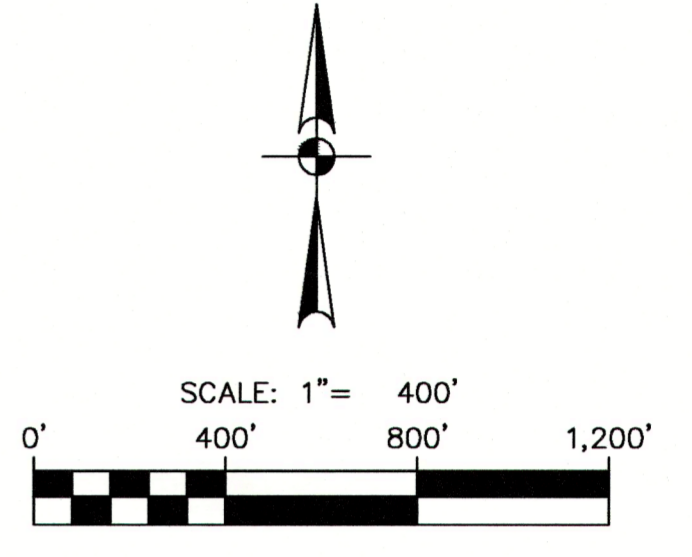
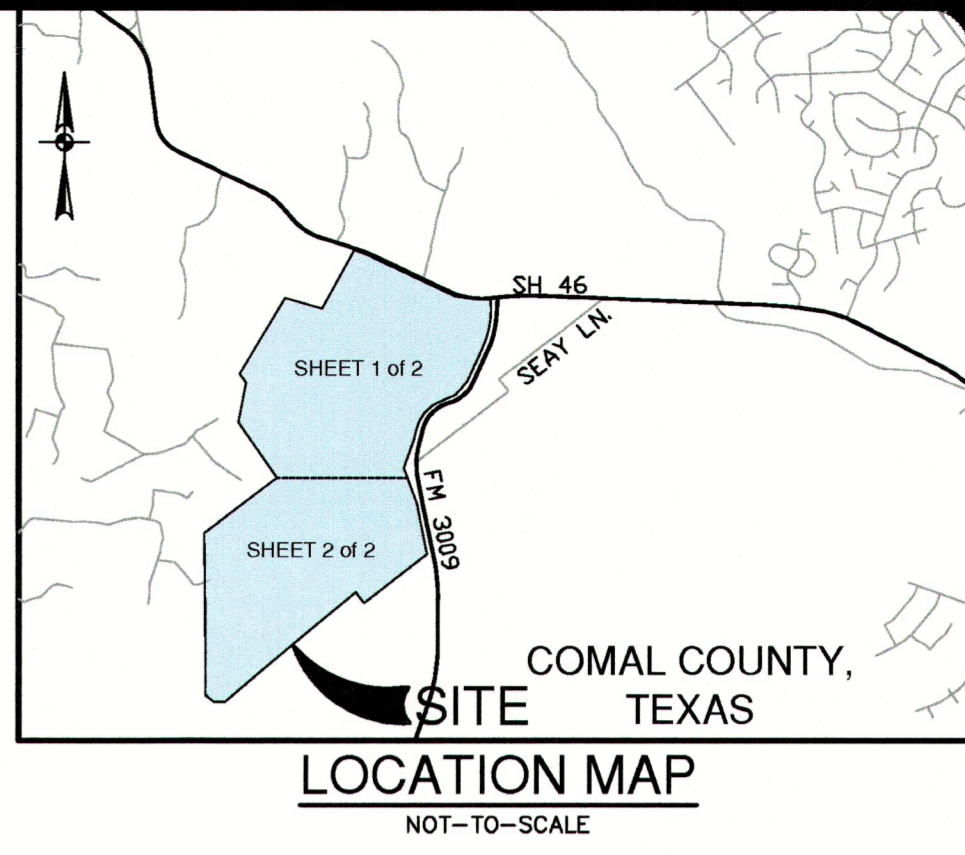
 Site Boundary

JOB NO. 7494-71  
 DATE Sep 2019  
 DESIGNER HS  
 CHECKED HDJ DRAWN HS  
 SHEET Attachment D

**VULCAN COMAL QUARRY**  
**COMAL COUNTY, TEXAS**  
**SITE SOILS MAP**

**PAPE-DAWSON ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 4101 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800





**LEGEND**

GEOLOGIC FORMATIONS			
<b>Qal</b>	ALLUVIUM	<b>Kgt</b>	GEORGETOWN
<b>Kef</b>	EAGLE FORD	<b>Kep</b>	PERSON
<b>Kbu</b>	BUDA	<b>Kek</b>	KAINER
<b>Kdr</b>	DEL RIO	<b>Kgr</b>	GLEN ROSE

**SYMBOLS AND LINES**

<b>S-1</b>	POTENTIAL RECHARGE FEATURE
<b>S-1</b>	POTENTIAL SENSITIVE RECHARGE FEATURE
<b>- - -</b>	CONTACT, LOCATED APPROXIMATELY
<b>- - -</b>	CONTACT, INFERRED
<b>- - -</b>	FAULT, LOCATED APPROXIMATELY (U, DOWNTHROWN SIDE; L, UPTHROWN SIDE)
<b>- - -</b>	FAULT, EXTRAPOLATED
<b>- - -</b>	FAULT, INFERRED
<b>- - -</b>	STRIKE AND DIP OF BEDDING
<b>- - -</b>	STRIKE AND DIP OF JOINTS
<b>- - -</b>	STRIKE OF VERTICAL JOINTS
<b>○</b>	CAVE
<b>○</b>	SOLUTION CAVITY
<b>○</b>	SWALLOW HOLE
<b>○</b>	SINKHOLE
<b>[ ]</b>	NON-KARST CLOSED DEPRESSION ZONE
<b>○</b>	OTHER NATURAL BEDROCK FEATURES
<b>MB</b>	MAN-MADE FEATURE IN BEDROCK
<b>○</b>	WATER WELL
<b>- - -</b>	SANITARY SEWER LINE

NOTE: THE GEOSCIENTIST SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR PURPOSES OF GEOLOGIC INFORMATION. ALL OTHER INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SIGNED AND SEALED CIVIL ENGINEERING DRAWINGS.

NOTE: THE RECHARGE ZONE BOUNDARY IS NOT WITHIN THE AREA SHOWN ON THIS SHEET. THE SITE IS LOCATED ENTIRELY WITHIN THE RECHARGE ZONE.

NO.	REVISION	DATE



**PAPE-DAWSON ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.575.9000  
 TPOE FIRM REGISTRATION #470 | TPOE FIRM REGISTRATION #03581

**VULCAN COMAL QUARRY**  
 COMAL COUNTY, TEXAS  
 SITE GEOLOGIC MAP  
 WATER POLLUTION ABATEMENT PLAN

JOB NO.	7494-71
DATE	SEPTEMBER 2019
DESIGNER	HS
CHECKED_HD	DRAWN_HS
ATTACHMENT D	
SHEET 2 of 2	

**WATER POLLUTION  
ABATEMENT PLAN  
APPLICATION FORM (TCEQ-  
0584)**

# 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: Caleb Chance, P.E.

Date: 2/20/24

Signature of Customer/Agent:

  
\_\_\_\_\_

Regulated Entity Name: Vulcan Comal Quarry

## 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): 1,515.16

3. Estimated projected population: N/A

4. The amount and type of impervious cover expected after construction are shown below:

**Table 1 - Impervious Cover Table**

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	258,249	÷ 43,560 =	5.93
Parking		÷ 43,560 =	
Other paved surfaces	343,253	÷ 43,560 =	7.88
Total Impervious Cover	601,502	÷ 43,560 =	13.81

**Total Impervious Cover  $\frac{13.81}{13.81} \div$  Total Acreage  $\frac{1,515.16}{1,515.16} \times 100 = 0.9\%$  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
- Asphaltic concrete pavement
- Other: \_\_\_\_\_

9. Length of Right of Way (R.O.W.): \_\_\_\_\_ feet.

Width of R.O.W.: \_\_\_\_\_ feet.

$L \times W =$  \_\_\_\_\_  $\text{Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} =$  \_\_\_\_\_ acres.

10. Length of pavement area: \_\_\_\_\_ feet.

Width of pavement area: \_\_\_\_\_ feet.

$L \times W =$  \_\_\_\_\_  $\text{Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} =$  \_\_\_\_\_ acres.

Pavement area \_\_\_\_\_ acres  $\div$  R.O.W. area \_\_\_\_\_ acres  $\times 100 =$  \_\_\_\_\_ % 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:

_____ % Domestic	_____ Gallons/day
_____ % Industrial	_____ Gallons/day
_____ % Commingled	_____ Gallons/day
TOTAL gallons/day <u>N/A</u>	

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 \_\_\_\_\_ (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" = 400'.

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): DFIRM (Digital Flood Insurance Rate Map for Comal County, Texas Panel No. 48091C0240F & 48091C0245F, Dated 9/2/2009

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 12 (#) 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).  
 N/A
27.  Locations where stormwater discharges to surface water or sensitive features are to occur.  
 There will be no discharges to surface water or sensitive features.
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**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### 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 material 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 which may fall off vehicles; and
- Miscellaneous trash and litter.

**ATTACHMENT B**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment B – Volume and Character of Stormwater

Stormwater runoff will increase as a result of this development. For a 25-year storm event, the overall project will generate approximately 8,845 cfs. The runoff coefficient for the site changes from approximately 0.77 before development to 0.84 after development. Values are based on the Rational Method using runoff coefficients per the City of Bulverde Drainage Manual.

**TEMPORARY STORMWATER  
SECTION (TCEQ-0602)**



# 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)(I) 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: Caleb Chance, P.E.

Date: 2/20/24

Signature of Customer/Agent:

  
\_\_\_\_\_

Regulated Entity Name: Vulcan Comal Quarry

## 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: construction staging area

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: West Fork Dry Comal Creek

### ***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.

- There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.
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**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment A – Spill Response Actions

#### Vulcan Construction Materials, LP Spill Prevention, Countermeasure and Control Plan

The objective of this Plan 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 be implemented to reduce the stormwater impacts of leaks and spills:

#### *Education of Employees*

1. 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 a 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. Post a summary of the spill prevention procedures in appropriate locations (such as meeting rooms, the cafeteria, and areas with a high spill potential). The summary should identify the spill-cleanup coordinators, the locations of cleanup kits, and the phone numbers of regulatory agencies to be contacted in the event of a spill.
5. Establish a continuing education program to indoctrinate new employees.
6. Have the plant manager 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.

## VULCAN COMAL QUARRY

### Water Pollution Abatement Plan

2. Develop an inventory of potentially polluting materials, including their estimated quantities and size and number of storage containers. Use this inventory to determine the size and type of spill kits that should be present at the site.
3. Store hazardous materials and wastes in covered containers and protect from vandalism.
4. Provide spill-cleanup kits at locations where spills are most likely to occur such as fueling and maintenance areas. Kits are available from several manufacturers or may be prepared by the facility owner. Each spill kit should have sufficient adsorbent capacity to handle a spill of the largest movable container at that location.
5. Train employees in spill prevention and cleanup.
6. Designate responsible individuals to oversee and enforce control measures.
7. Spill must be contained and cleaned up immediately.
8. Spills should be covered and protected from stormwater run-on during rainfall to the extent that it doesn't compromise clean-up activities.
9. Do not bury or wash spills with water.
10. 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 BMP's.
11. Contaminated soils and cleanup materials will be sampled for waste characterization. When the analysis results are known the contaminated soils and cleanup materials will be removed from the site and disposed in a permitted landfill in accordance with applicable regulations.
12. 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.
13. 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.



## VULCAN COMAL QUARRY

### Water Pollution Abatement Plan

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.

#### 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 foremen, etc. This response may require the cessation of all other activities.

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

Spills should be cleaned up immediately:

1. Contain spread of the spill.
2. Notify the Plant Manager 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.
2. Edwards Aquifer Authority at (210) 222-2204
3. State Emergency Response Center (800) 832-8224 (if after hours)
4. 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.
5. Notification should first be made by telephone and followed up with a written report.
6. Agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

### 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 runoff of stormwater and the runoff of spills.
2. Regularly inspect onsite vehicles and equipment for leaks and repair immediately.

## VULCAN COMAL QUARRY

### Water Pollution Abatement Plan

3. Check incoming vehicles and equipment for leaking oil and fluids.
4. Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
5. Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
6. Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
7. 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.
8. 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 run-on 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.

Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 1.4.16. Contractor shall review this section.

**ATTACHMENT B**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment B – Potential Sources of Contamination

Other potential sources of contamination during construction include:

- |                      |   |  |
|----------------------|---|--|
| Potential Source     | ● | Asphalt products used on this project.   |
| Preventative Measure | ■ | 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. |
| Potential Source     | ● | Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.  |
| Preventative Measure | ■ | 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.   |
| Potential Source     | ● | 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.   |
| Preventative Measure | ■ | Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures.  |
|                      | ■ | Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures.   |
|                      | ■ | Hazardous materials and wastes shall be stored in covered containers and protected from vandalism.   |
|                      | ■ | A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.  |
| Potential Source     | ● | Miscellaneous trash and litter from construction workers and material wrappings.   |
| Preventive Measure   | ■ | Trash containers will be placed throughout the site to encourage proper trash disposal.  |
| Potential Source     | ● | Construction debris.   |
| Preventive Measure   | ■ | 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.  |

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

- |                      |   |   |
|----------------------|---|---|
| Potential Source     | ● | Spills/Overflow of waste from portable toilets  |
| Preventative Measure | ■ | Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets.  |
|                      | ■ | Portable toilets will be placed 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**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment C – Sequence of Major Activities

*The construction of the quarry plant site will be accomplished first. This will involve the following general list of activities:*

- *Placement of Temporary and Long Term Temporary BMP's*
- *Construction of haul roads*
- *Crushing operations in support of construction activities*
- *Clearing and stripping for roads, office, shop*
- *Rough grading (cut and fill)*
- *Construction and erection of quarry equipment*

*Some of these activities may occur simultaneously. However, all required Temporary BMP's will be in place prior to the activity.*

*Plant areas, office and shop area will disturb approximately 13.81 acres.*

#### Quarry Mining Areas

*The mining of the quarry on the remainder of the 1,515.16 acres will begin and progress in accordance with TCEQ-0584 WPAP application exhibit. Over the life of the quarry, these activities will disturb approximately 956 acres.*



**ATTACHMENT D**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment D – Temporary Best Management Practices and Measures

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.

***Prior to excavation in areas receiving off-site drainage, permanent berms will be built. The drainage ways themselves will have rock berms with silt fence to filter out any sediments. Vegetative filter strips will be designated areas downstream of construction activities.***

b. 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.

***Site preparation, which is the initiation of all activity on the project, will disturb the largest amount of soil. Therefore, before any of this work can begin, the clearing and grading contractor will be responsible for the installation of all on-site control measures. The methodology for pollution prevention of on-site stormwater will include: (1) designation of vegetative buffers along the downgradient boundary of construction activities for temporary erosion and sedimentation controls, (2) installation of rock berms with silt fencing downgradient from areas of concentrated stormwater flow for temporary erosion control, (3) installation of stabilized construction entrance/exit(s) to reduce the dispersion of sediment from the site, and (4) installation of construction staging area(s) and concrete wash-out pit.***

***Prior to the initiation of construction, all previously installed control measures will be repaired or reestablished for their designed or intended purpose. This work, which is the remainder of all activity on the project, may also disturb additional soil. The construction contractor will be responsible for the installation of all remaining on-site control measures that includes installation of the concrete truck washout pit(s), as construction phasing warrants.***

***Once the mining areas are excavated, run off will be contained in them. Additional measures to include haul roads dampened for dust control and any excavation material shall be placed on the uphill side of the trench whenever possible.***

***Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.***

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

***In order to maintain recharge to the maximum extent possible, Vulcan will not mine into the creeks or water ways receiving off-site drainage. Also, the mining areas will be developed to not allow water to exit the site.***

***Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By***

## VULCAN COMAL QUARRY

### Water Pollution Abatement Plan

*containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.*

- d. 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.

*In order to maintain recharge to the maximum extent possible, Vulcan will not mine into the creeks or water ways receiving off-site drainage. Also, the mining areas do not allow water to exit the site.*

*BMP measures utilized in this plan are intended to allow stormwater to continue downstream after passing through the BMPs. This will allow stormwater runoff to continue downgradient to streams or features that may exist downstream of the site.*

**ATTACHMENT F**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment F – Structural Practices

The following structural measures will be installed prior to the initiation of site preparation activities as well as some long-term TBMPs:

- Erection of rock berms with silt fence for secondary protection, as located on Exhibit 1 and illustrated in Exhibit 2.
- Designation of vegetative buffers as located on Exhibit 1
- Installation of stabilized construction entrance/exit(s) and construction staging area(s), as located on Exhibit 1, and illustrated on Exhibit 2.

The following structural measures will be installed at the initiation of construction activities or as appropriate based on the construction sequencing:

- Installation of concrete truck washout pit(s), as required and located on Exhibit 1 and illustrated on Exhibit 2.

**ATTACHMENT G**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment G – Drainage Area Map

As the mining progresses, the quarry floor will be developed to allow stormwater to be maintained in the mining areas to protect the onsite floodplain. More than ten (10) acres will be disturbed within a common drainage area at one time as construction of the Primary and Plant site are established. Mining areas will be considered re-established when all loose rock material has been compacted or removed to solid rock. All TBMPs utilized are adequate for the drainage areas served.

**ATTACHMENT I**



# **VULCAN COMAL QUARRY**

## **Water Pollution Abatement Plan**

### **INSPECTIONS**

Designated and qualified person(s) shall inspect Pollution Control Measures weekly and within 24 hours after a storm event. An inspection report that summarizes the scope of the inspection, names and qualifications of personnel conducting the inspection, date of the inspection, major observations, and actions taken as a result of the inspection shall be recorded and maintained as part of Storm Water TPDES data for a period of three years after the Notice of Termination (NOT) has been filed. A copy of the Inspection Report Form is provided in this Storm Water Pollution Prevention Plan.

As a minimum, the inspector shall observe: (1) significant disturbed areas for evidence of erosion, (2) storage areas for evidence of leakage from the exposed stored materials, (3) structural controls (rock berm outlets, silt fences, drainage swales, etc.) for evidence of failure or excess siltation (over 6 inches deep), (4) vehicle exit point for evidence of off-site sediment tracking, (5) vehicle storage areas for signs of leaking equipment or spills, (6) concrete truck rinse-out pit for signs of potential failure, (7) embankment, spillways, and outlet of sediment basin (where applicable) for erosion damage, and (8) sediment basins (where applicable) for evidence that basin has accumulated 50% of its volume in silt. Deficiencies noted during the inspection will be corrected and documented within seven calendar days following the inspection or before the next anticipated storm event if practicable.

Contractor shall review Sections 1.3 and 1.4 of TCEQ's Technical Guidance Manual for additional BMP inspection and maintenance requirements.

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

Pollution Prevention Measure	Inspected in Compliance	Corrective Action Required	
		Description (use additional sheet if necessary)	Date Completed
<b>Best Management Practices</b>			
Natural vegetation buffer strips			
Temporary vegetation			
Permanent vegetation			
Sediment control basin			
Silt fences			
Rock berms			
Gravel filter bags			
Drain inlet protection			
Other structural controls			
Vehicle exits (off-site tracking)			
Material storage areas (leakage)			
Equipment areas (leaks, spills)			
Concrete washout pit (leaks, failure)			
General site cleanliness			
Trash receptacles			
<b>Evidence of Erosion</b>			
Site preparation			
Roadway or parking lot construction			
Utility construction			
Drainage construction			
Building construction			
<b>Major Observations</b>			
Sediment discharges from site			
BMPs requiring maintenance			
BMPs requiring modification			
Additional BMPs required			

\_\_\_\_\_ A brief statement describing the qualifications of the inspector is included in this SWP3.

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

"I further certify I am an authorized signatory in accordance with the provisions of 30 TAC §305.128."

\_\_\_\_\_  
Inspector's Name

\_\_\_\_\_  
Inspector's Signature

\_\_\_\_\_  
Date

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### PROJECT MILESTONE DATES

Date when major site grading activities begin:

<u>Construction Activity</u>	<u>Date</u>
Installation of BMPs	
_____	_____
_____	_____
_____	_____
_____	_____

Dates when construction activities temporarily or permanently cease on all or a portion of the project:

<u>Construction Activity</u>	<u>Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

Dates when stabilization measures are initiated:

<u>Stabilization Activity</u>	<u>Date</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
Removal of BMPs	
_____	_____

**ATTACHMENT J**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

Interim on-site stabilization measures, which are continuous, will include minimizing soil disturbances by exposing 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 with pages 1-35 to 1-60 of TCEQ's Technical Guidance Manual (TGM) RG-348 (2005). Mulching, netting, erosion blankets and seeding are acceptable.

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 14<sup>th</sup> day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practicable.

Conventional soil stabilization practices are not practical in a quarry. Access for quarry equipment, haul vehicles, etc. is provided across the plant site. The plant will sit on relatively flat compacted pad; therefore, runoff of the plant area surface material is not likely. Stabilization on the plant area is provided through compaction and drainage controls.

Vulcan will not mine within 100' of the property line or 25' of the floodplain.

Stabilization measures to include:

- Product Stockpiles
- Compacted Materials
- Exposed Rock
- Native Buffers
- Entrance Landscape
- Vegetation of perimeter earth berms and disturbed adjacent areas.

**PERMANENT STORMWATER  
SECTION (TCEQ-0600)**

# 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)(li), (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: Caleb Chance, P.E.

Date: 2/20/24

Signature of Customer/Agent

  
\_\_\_\_\_

Regulated Entity Name: Vulcan Comal Quarry

## Permanent Best Management Practices (BMPs)

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

- Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.  
 N/A
- 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.**



- 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.
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 or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.
  - Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, 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

**ATTACHMENT B**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment B – BMPs for Upgradient Stormwater

#### PLANT AREA

Upgradient water will not flow across the project limits.

Permanent BMPs will be fifty-foot (50') natural vegetative filter strips, which will utilize large stones or boulders to inhibit driving on or across to maintain the integrity but not inhibit the sheet flow. All PBMPs have been designed in accordance with the Texas Commission on Environmental Quality's (TCEQ) Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in Total Suspended Solids (TSS) from the site.

**ATTACHMENT C**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment C – BMPs for On-Site Stormwater

Permanent BMPs will be fifty-foot (50') natural vegetative filter strips, which will utilize large stones or boulders to inhibit driving on or across to maintain the integrity but not inhibit the sheet flow. All PBMPs have been designed in accordance with the Texas Commission on Environmental Quality's (TCEQ) Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in Total Suspended Solids (TSS) from the site.

**ATTACHMENT D**

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment D – BMPs for Surface Streams

At stream crossings the paved road elevation will be maintained above the 2-year, 24-hour storm elevation. Prior approval from the flood-plain administrator will be sought before construction through the floodplain.

Permanent BMPs will be fifty-foot (50') natural vegetative filter strips, which will utilize large stones or boulders to inhibit driving on or across to maintain the integrity but not inhibit the sheet flow. All PBMPs have been designed in accordance with the Texas Commission on Environmental Quality's (TCEQ) Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in Total Suspended Solids (TSS) from the site.



**ATTACHMENT F**

**VULCAN COMAL QUARRY**  
**Water Pollution Abatement Plan**

**Attachment F – Construction Plans**

Please refer to the Exhibits Section of this application for the Water Pollution Abatement Site Plans.

**ATTACHMENT G**

**VULCAN COMAL QUARRY**  
**Water Pollution Abatement Plan**

**PERMANENT POLLUTION ABATEMENT MEASURES**  
**MAINTENANCE SCHEDULE AND MAINTENANCE PROCEDURES**

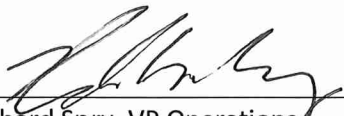
This document has been prepared to provide a description and schedule for the performance of maintenance on permanent pollution abatement measures. Maintenance measures to be performed will be dependent on what permanent pollution abatement measures are incorporated into the project. The project specific 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 but may not be altered without TCEQ approval.

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 owner's 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.

  
\_\_\_\_\_  
Richard Spry, VP Operations  
Vulcan Construction Materials, LLC

1/29/2024  
\_\_\_\_\_  
Date

**VULCAN COMAL QUARRY**  
**Water Pollution Abatement Plan**

**INSPECTION AND MAINTENANCE SCHEDULE  
 FOR  
 PERMANENT POLLUTION ABATEMENT MEASURES**

Recommended Frequency	Task to be Performed	
	1	2
After Rainfall	√	√
Biannually*	√	√
Annually <sup>†</sup>	√	√

*\*At least one biannual inspection must occur during or immediately after a rainfall event.  
 †Inspections to occur quarterly during the first year of operation.  
 √Indicates a maintenance procedure that applies to this specific site.*

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 will be kept of inspection results and maintenance performed.

<b><i>Task No. &amp; Description</i></b>	<b><i>Included in this project</i></b>	
1. Grassy Swale	Yes	No
2. Vegetated Filter Strips	Yes	No

# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### MAINTENANCE PROCEDURES FOR PERMANENT POLLUTION ABATEMENT MEASURES

**Note: Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 3.5.**

1. **Grassy Swales:** Insect and weed control will be performed using the Integrated Pest Management Plan (IPM) designed for this site. Vegetation height shall be limited to no more than 18-inches. When vegetation exceeds that height, the vegetative swale shall be cut to a height of approximately 4-inches. Grass shall be limited to a height of 4-inches with regular maintenance that utilizes a mulching mower. Check the vegetative swale for accumulation of silt, trash, or other debris. Any potential obstructions to flow shall be removed promptly and disposed of properly. Sediment should be removed from the vegetative swale when accumulation reaches 3-inches in any spot or covers the existing vegetation. Excess sediment shall be removed by hand or with flat-bottomed shovels.

Additionally, the vegetative swale should be checked for signs of erosion. Visual inspections should include verification that sufficient vegetation exists within the vegetative swale to prevent future erosion. Areas of the swale displaying signs of erosion shall be repaired by fill, compaction, and re-seeding so that the final grade is level with the bottom of the swale. If possible, flow should be diverted from the damaged areas until grass is firmly established. *A written record should be kept of inspection results and maintenance performed.*

2. **Vegetated Filter Strips:** Once a vegetated area is well established, little additional maintenance is generally necessary. The key to establishing a viable vegetated feature is the care and maintenance it receives in the first few months after it is planted. Once established, all vegetated BMPs require some basic maintenance to insure the health of the plants. An Integrated Pest Management (IPM) Plan should be developed for vegetated areas. This plan should specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.

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-inches with regular maintenance that utilizes a mulching mower. Trash and debris shall be removed from filter strip prior to cutting. Sediment removal is not

## VULCAN COMAL QUARRY

### Water Pollution Abatement Plan

normally required in filter strips since the vegetation normally grows through it and binds it to the soil. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand or with flat-bottomed shovels.

Check filter strip for signs of concentrated flow and erosion. Areas of filter strip showing signs of erosion shall be repaired by scarifying the eroded area, reshaping, re-grading and placement of solid block sod over the affected area. Construction of a level spreader device may be necessary to reestablish shallow overland flow. Corrective maintenance, such as weeding, or replanting should be done more frequently in the first two to three years after installation to ensure stabilization. Dense vegetation may require irrigation immediately after planting, and during particularly dry periods, particularly as the vegetation is initially established. *A written record will be kept of inspection results and corrective measures taken.*

#### Recordkeeping Procedures for Inspections, Maintenance, Repairs, and Retrofits:

- Written records shall be kept by the party responsible for maintenance or a designated representative.
- Written records shall be retained for a minimum of five years.

**ATTACHMENT I**



# VULCAN COMAL QUARRY

## Water Pollution Abatement Plan

### Attachment I – Measures for Minimizing Surface Stream Contamination

Any points where discharge from the site is concentrated and erosive velocities exist will include appropriately sized energy dissipators to reduce velocities to non-erosive levels.

**AGENT AUTHORIZATION FORM  
(TCEQ-0599)**

**Agent Authorization Form**  
For Required Signature  
Edwards Aquifer Protection Program  
Relating to 30 TAC Chapter 213  
Effective June 1, 1999

I Richard Spry,  
Print Name  
VP Operations,  
Title - Owner/President/Other  
of Vulcan Construction Materials, LLC,  
Corporation/Partnership/Entity Name  
have authorized **Pape-Dawson Consulting Engineers, LLC**  
Print Name of Agent/Engineer  
of **Pape-Dawson Consulting Engineers, LLC**  
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:

[Handwritten Signature]  
Applicant's Signature

1/29/2024.  
Date

THE STATE OF Texas §

County of Bexar §

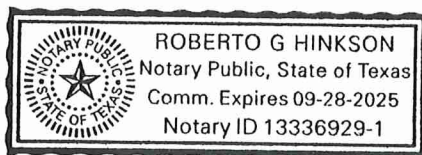
BEFORE ME, the undersigned authority, on this day personally appeared Richard Spzy known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 29 day of January, 2024.

Roberto G. Hinkson  
NOTARY PUBLIC

Roberto G. Hinkson  
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 09/28/2025





February 8, 2024

To Whom It May Concern:

Blue Pine Holdings, LLC a Delaware limited liability company merged into Vulcan Lands, Inc. on November 13, 2020, attached as Exhibit A are the documents evidencing this merger.

Vulcan Lands, Inc., a New Jersey corporation is a wholly owned subsidiary of Legacy Vulcan, LLC a Delaware limited liability company, which is wholly owned by Vulcan Materials Company, a New Jersey corporation.

Vulcan Construction Materials, LLC, a Delaware limited liability company is a wholly owned subsidiary of Legacy Vulcan, LLC, a Delaware limited liability company, which is wholly owned by Vulcan Materials Company.

Vulcan Lands, Inc. and Vulcan Construction Materials, LLC are affiliate entities both wholly owned by Vulcan Materials Company.

Sincerely,

A DocuSign signature block showing a stylized signature in blue ink inside a rounded rectangular box. Above the signature, the text "DocuSigned by:" is visible.

Jennifer Commander

Assistant Secretary

Vulcan Materials Company

**APPLICATION FEE FORM**  
**(TCEQ-0574)**

# Application Fee Form

## Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: Vulcan Comal Quarry

Regulated Entity Location: SW corner of SH 46 and FM 3009 intersection

Name of Customer: Vulcan Construction Materials, LLC

Contact Person: Richard Spry

Phone: (205) 298-3000

Customer Reference Number (if issued): CN 600355465

Regulated Entity Reference Number (if issued): RN \_\_\_\_\_

### 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

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

Mail Code 214

P.O. Box 13088

Austin, TX 78711-3088

12100 Park 35 Circle

Building A, 3rd Floor

Austin, TX 78753

(512)239-0357

### Site Location (Check All That Apply):

Recharge Zone

Contributing Zone

Transition Zone

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	1,515.16 Acres	\$ 10,000
Sewage Collection System	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: 

Date: 2/20/24

# 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***

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

### ***Organized Sewage Collection Systems and Modifications***

<b><i>Project</i></b>	<b><i>Cost per Linear Foot</i></b>	<b><i>Minimum Fee- Maximum Fee</i></b>
Sewage Collection Systems	\$0.50	\$650 - \$6,500

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

<b><i>Project</i></b>	<b><i>Cost per Tank or Piping System</i></b>	<b><i>Minimum Fee- Maximum Fee</i></b>
Underground and Aboveground Storage Tank Facility	\$650	\$650 - \$6,500

### ***Exception Requests***

<b><i>Project</i></b>	<b><i>Fee</i></b>
Exception Request	\$500

### ***Extension of Time Requests***

<b><i>Project</i></b>	<b><i>Fee</i></b>
Extension of Time Request	\$150



**CORE DATA FORM  
(TCEQ-10400)**



TCEQ Use Only

# TCEQ Core Data Form

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

<b>1. Reason for Submission</b> (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input type="checkbox"/> Other	
<b>2. Customer Reference Number</b> (if issued)	<a href="#">Follow this link to search for CN or RN numbers in Central Registry**</a>	<b>3. Regulated Entity Reference Number</b> (if issued)
CN 600355465		RN

## SECTION II: Customer Information

<b>4. General Customer Information</b>		<b>5. Effective Date for Customer Information Updates</b> (mm/dd/yyyy)	
<input type="checkbox"/> New Customer		<input type="checkbox"/> Update to Customer Information	
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)		<input type="checkbox"/> Change in Regulated Entity Ownership	
<b>The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).</b>			
<b>6. Customer Legal Name</b> (If an individual, print last name first: eg: Doe, John)		If new Customer, enter previous Customer below:	
Vulcan Construction Materials, LLC			
<b>7. TX SOS/CPA Filing Number</b>	<b>8. TX State Tax ID</b> (11 digits)	<b>9. Federal Tax ID</b> (9 digits)	<b>10. DUNS Number</b> (if applicable)
<b>11. Type of Customer:</b>	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship	<input type="checkbox"/> Other:	
<b>12. Number of Employees</b>		<b>13. Independently Owned and Operated?</b>	
<input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>14. Customer Role</b> (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following			
<input type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Owner & Operator			
<input type="checkbox"/> Occupational Licensee <input type="checkbox"/> Responsible Party <input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other:			
<b>15. Mailing Address:</b>	10101 Reunion Pl, Ste 500		
	City	San Antonio	State TX ZIP 78216 ZIP + 4
<b>16. Country Mailing Information</b> (if outside USA)		<b>17. E-Mail Address</b> (if applicable)	
		spryr@vmcmail.com	
<b>18. Telephone Number</b>		<b>19. Extension or Code</b>	<b>20. Fax Number</b> (if applicable)
( 205 ) 298-3000			( ) -

## SECTION III: Regulated Entity Information

<b>21. General Regulated Entity Information</b> (If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)	
<input checked="" type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information	
<b>The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).</b>	
<b>22. Regulated Entity Name</b> (Enter name of the site where the regulated action is taking place.)	
Vulcan Comal Quarry	

23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>							
	City		State		ZIP		ZIP + 4
24. County	Comal						

**Enter Physical Location Description if no street address is provided.**

25. Description to Physical Location:	SW corner of SH 46 and FM 3009 intersection						
26. Nearest City					State	Nearest ZIP Code	
Bulverde					TX	78132	
27. Latitude (N) In Decimal:	29.767692 N			28. Longitude (W) In Decimal:	-98.307675 W		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
29	46	03.7	-98	18	27.6		
29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)		31. Primary NAICS Code (5 or 6 digits)		32. Secondary NAICS Code (5 or 6 digits)		
1429			212319				
33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>							
Quarry							
34. Mailing Address:	10101 Reunion Pl, Ste 500						
	City	San Antonio	State	TX	ZIP	78216	ZIP + 4
35. E-Mail Address:	spryr@vmcmail.com						
36. Telephone Number		37. Extension or Code			38. Fax Number <i>(if applicable)</i>		
( 205 ) 298-3000					( ) -		

**39. TCEQ Programs and ID Numbers** Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

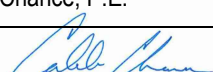
<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

**SECTION IV: Preparer Information**

40. Name:	Jean Autrey, P.E., CESSWI	41. Title:	Project Manager
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
( 210 ) 375-9000		( 210 ) 375-9010	jautrey@pape-dawson.com

**SECTION V: Authorized Signature**

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

Company:	Pape-Dawson Engineers	Job Title:	Vice President
Name <i>(In Print)</i> :	Caleb Chance, P.E.	Phone:	( 210 ) 375- 9000
Signature:		Date:	2/20/24

# **POLLUTANT LOAD AND REMOVAL CALCULATIONS**

**Vulcan Comal Quarry**

**Treatment Summary by Watershed**

<b>Watershed</b>	<b>Total Watershed Area (ac.)</b>	<b>Proposed Impervious Cover (ac.)</b>	<b>PBMP</b>	<b>Required TSS Removal Annually (lbs)</b>	<b>TSS Removed Annually (lbs)</b>
A	93.70	10.05	50' Natural VFS	9,021	11,021
B	20.50	3.70	50' Natutal VFS	3,321	3,845
Uncaptured	0.06	0.06	Overtreatment	54	0
<b>TOTAL</b>	<b>114.26</b>	<b>13.81</b>	---	<b>12,396</b>	<b>14,866</b>

\*Additional compensatory treatment available for turn lane improvement to be submitted under a future separate plan

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 spre

**1. The Required Load Reduction for the total project:**

Calculations from RG-348

Pages 3-27 to 3-30

Page 3-29 Equation 3.3:  $L_M = 27.2(A_N \times P)$

where:

$L_{M \text{ TOTAL PROJECT}}$  = Required TSS removal resulting from the proposed development = 80% of  $i_r$   
 $A_N$  = Net increase in impervious area for the project  
 $P$  = Average annual precipitation, inches

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

County = **Comal**  
Total project area included in plan \* = **1515.16** acres  
Predevelopment impervious area within the limits of the plan \* = **0.00** acres  
Total post-development impervious area within the limits of the plan \* = **13.81** acres  
Total post-development impervious cover fraction \* = **0.01**  
P = **33** inches

$L_{M \text{ TOTAL PROJECT}}$  = **12396** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **2**

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

Drainage Basin/Outfall Area No. = **A**  
Total drainage basin/outfall area = **93.70** acres  
Predevelopment impervious area within drainage basin/outfall area = **0.00** acres  
Post-development impervious area within drainage basin/outfall area = **10.05** acres  
Post-development impervious fraction within drainage basin/outfall area = **0.11**  
 $L_{M \text{ THIS BASIN}}$  = **9021** lbs.



*Caleb M. Chance*  
2/20/24

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = **Vegetated Filter Strips**  
Removal efficiency = **85** percent

- Aqualogic Cartridge Filte
- 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 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

$A_C$  = **93.70** acres  
 $A_i$  = **10.05** acres  
 $A_p$  = **83.65** acres  
 $L_R$  = **11021** lbs

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

Desired  $L_{M \text{ THIS BASIN}}$  = **11021** lbs.

additional for OT  
2000

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:**

Calculations from RG-348

Pages 3-27 to 3-30

Page 3-29 Equation 3.3:  $L_M = 27.2(A_N \times P)$

where:

$L_{M \text{ TOTAL PROJECT}}$  = Required TSS removal resulting from the proposed development = 80% of  
 $A_N$  = Net increase in impervious area for the project  
 $P$  = Average annual precipitation, inches

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

County = **Comal**  
Total project area included in plan \* = **1515.16** acres  
Predevelopment impervious area within the limits of the plan \* = **0.00** acres  
Total post-development impervious area within the limits of the plan \* = **13.81** acres  
Total post-development impervious cover fraction \* = **0.01**  
 $P$  = **33** inches

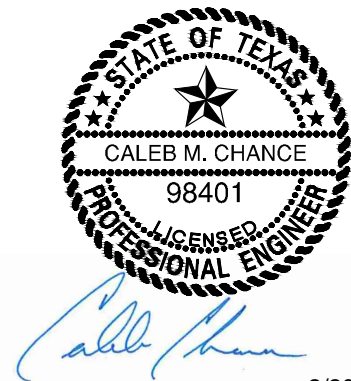
$L_{M \text{ TOTAL PROJECT}}$  = **12396** lbs.

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

Number of drainage basins / outfalls areas leaving the plan area = **2**

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

Drainage Basin/Outfall Area No. = **B**  
Total drainage basin/outfall area = **20.50** acres  
Predevelopment impervious area within drainage basin/outfall area = **0.00** acres  
Post-development impervious area within drainage basin/outfall area = **3.70** acres  
Post-development impervious fraction within drainage basin/outfall area = **0.18**  
 $L_{M \text{ THIS BASIN}}$  = **3321** lbs.



2/20/24

**3. Indicate the proposed BMP Code for this basin.**

Proposed BMP = **Vegetated Filter Strips**  
Removal efficiency = **85** 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 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

$A_C$  = **20.50** acres  
 $A_I$  = **3.70** acres  
 $A_P$  = **16.80** acres  
 $L_R$  = **3845** lbs

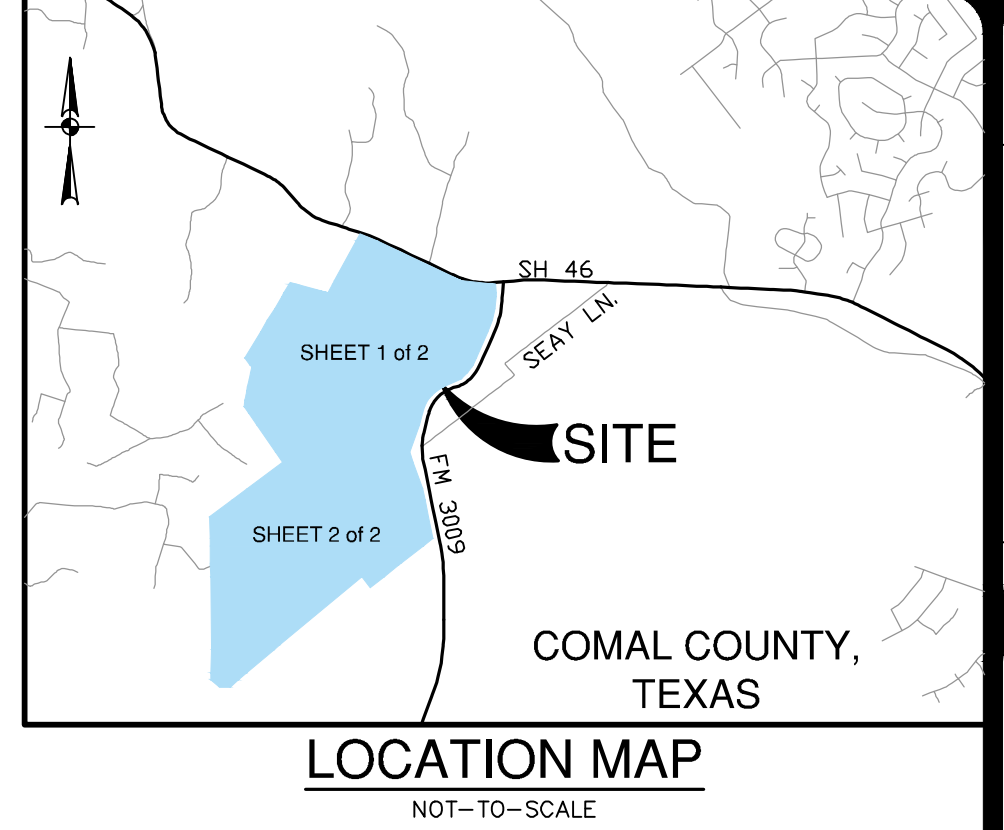
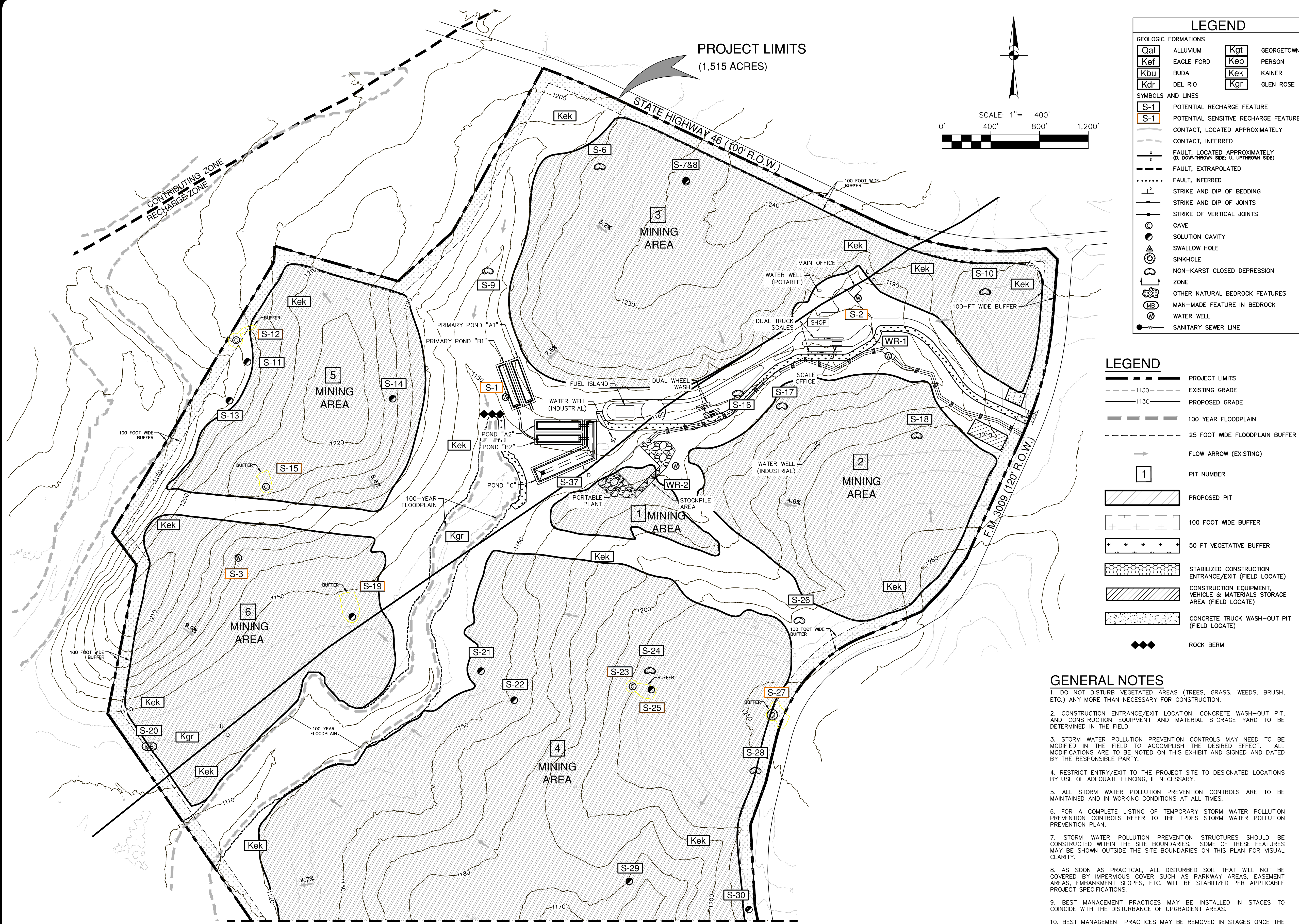
**5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area**

Desired  $L_{M \text{ THIS BASIN}}$  = **3845** lbs.

additional for OT  
524

# **EXHIBITS**





**LEGEND**

GEOLOGIC FORMATIONS	
Qal	ALLUVIUM
Kef	EAGLE FORD
Kbu	BUDA
Kdr	DEL RIO
Kgt	GEORGETOWN
Kep	PERSON
Kkn	KAINER
Kgr	GLEN ROSE

**SYMBOLS AND LINES**

S-1	POTENTIAL RECHARGE FEATURE
S-1	POTENTIAL SENSITIVE RECHARGE FEATURE
- - -	CONTACT, LOCATED APPROXIMATELY
- - -	CONTACT, INFERRED
- - -	FAULT, LOCATED APPROXIMATELY (S, DOWNTHROW SIDE; U, UPTHROW SIDE)
- - -	FAULT, EXTRAPOLATED
- - -	FAULT, INFERRED
- - -	STRIKE AND DIP OF BEDDING
- - -	STRIKE AND DIP OF JOINTS
- - -	STRIKE OF VERTICAL JOINTS
○	CAVE
○	SOLUTION CAVITY
○	SWALLOW HOLE
○	SINKHOLE
○	NON-KARST CLOSED DEPRESSION ZONE
○	OTHER NATURAL BEDROCK FEATURES
○	MAN-MADE FEATURE IN BEDROCK
○	WATER WELL
○	SANITARY SEWER LINE

**LEGEND**

- - -	PROJECT LIMITS
- - -	EXISTING GRADE
- - -	PROPOSED GRADE
- - -	100 YEAR FLOODPLAIN
- - -	25 FOOT WIDE FLOODPLAIN BUFFER
→	FLOW ARROW (EXISTING)
1	PIT NUMBER
▭	PROPOSED PIT
▭	100 FOOT WIDE BUFFER
▭	50 FT VEGETATIVE BUFFER
▭	STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)
▭	CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)
▭	CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)
◆◆◆	ROCK BERM

- GENERAL NOTES**
- DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
  - CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.
  - STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.
  - RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.
  - ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.
  - FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.
  - STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.
  - AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.
  - BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADE AREAS.
  - BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.
  - UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.
  - WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.
  - PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITH TDDOT RIGHT-OF-WAY WITH TDDOT.

- TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER POLLUTION ABATEMENT PLAN GENERAL CONSTRUCTION NOTES**
- A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
    - THE NAME OF THE APPROVED PROJECT;
    - THE ACTIVITY START DATE; AND
    - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
  - ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS ARE REQUIRED TO KEEP ON-SITE COPIES OF THE APPROVED PLAN AND APPROVAL LETTER.
  - IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPROPRIATE TCEQ REGIONAL OFFICE MUST BE IMMEDIATELY NOTIFIED OF ANY SENSITIVE FEATURES ENCOUNTERED DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.
  - NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
  - PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
  - ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
  - SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
  - LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
  - ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER E&S CONTROLS. FOR STORAGE OR DISPOSAL OF SPOILS AT ANOTHER SITE ON THE EDWARDS AQUIFER RECHARGE ZONE, THE OWNER OF THE SITE MUST RECEIVE APPROVAL OF A WATER POLLUTION ABATEMENT PLAN FOR THE PLACEMENT OF FILL MATERIAL OR MASS GRADING PRIOR TO THE PLACEMENT OF SPOILS AT THE OTHER SITE.
  - IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
  - THE FOLLOWING RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
    - 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.
  - THE HOLDER OF ANY APPROVED EDWARDS AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
    - ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO POND(S), DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;
    - ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED OR A CHANGE WHICH WOULD SIGNIFICANTLY IMPACT THE ABILITY OF THE PLAN TO PREVENT POLLUTION OF THE EDWARDS AQUIFER;
    - ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

**TEMPORARY BMP MODIFICATIONS**

DATE	SIGNATURE	DESCRIPTION

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

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DATE: \_\_\_\_\_

NO. REVISION: \_\_\_\_\_

**STATE OF TEXAS**  
 CABLED IN CHARGE  
 98401  
 LICENSED PROFESSIONAL ENGINEER  
 2/20/24

**PAPE-DAWSON ENGINEERS**  
 SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TPE FIRM REGISTRATION #470 | TPEIS FIRM REGISTRATION #1088860

**VULCAN COMAL QUARRY**  
 COMAL COUNTY, TEXAS

**WATER POLLUTION ABATEMENT PLAN**  
**TEMPORARY WATER POLLUTION ABATEMENT PLAN**

PLAT NO. \_\_\_\_\_  
 JOB NO. 7494-75  
 DATE FEB 2024  
 DESIGNER JA  
 CHECKED JA DRAWN MG  
 SHEET 1 OF 2

MATCH LINE SEE SHEET 1 OF 2

PROJECT LIMITS  
(1,515 ACRES)



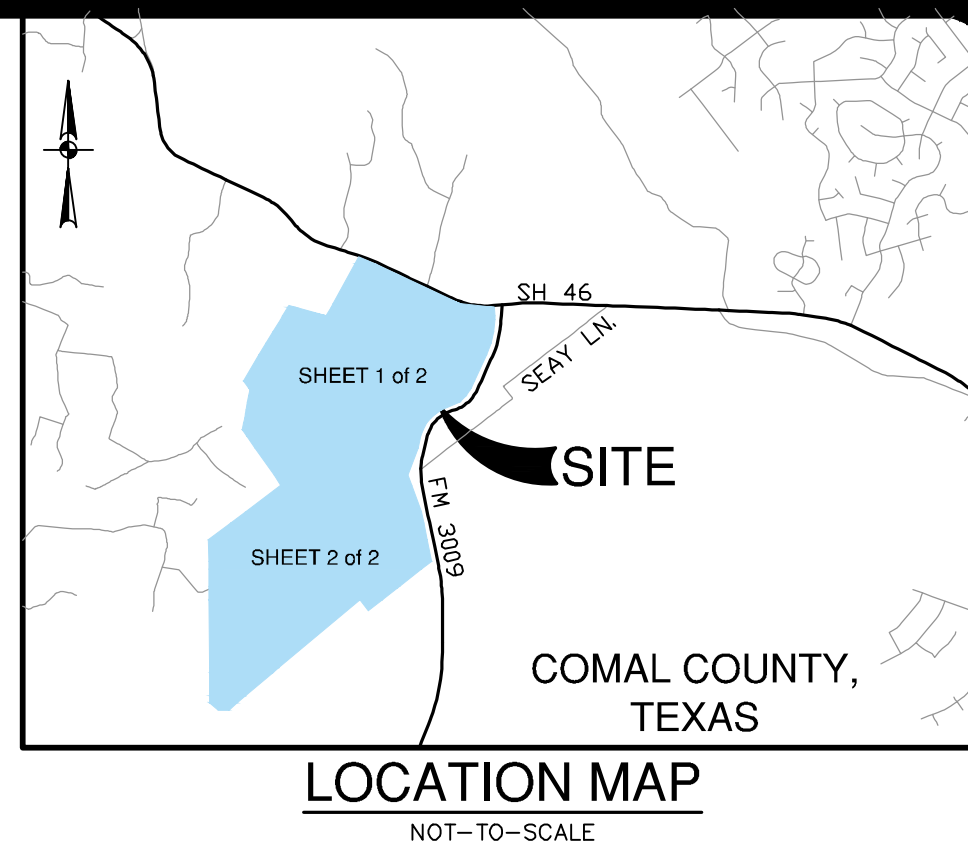
**LEGEND**

**GEOLOGIC FORMATIONS**

Qal	ALLUVIUM	Kgt	GEORGETOWN
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Kbu	BUDA	Kek	KAINER
Kdr	DEL RIO	Kgr	GLEN ROSE

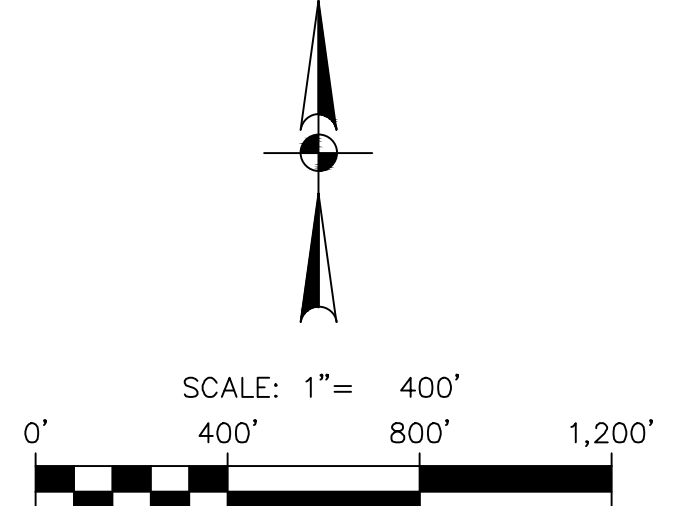
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**LEGEND**

- PROJECT LIMITS
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- - - PROPOSED GRADE
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SAN ANTONIO REGIONAL OFFICE  
14250 JUDSON ROAD  
SAN ANTONIO, TEXAS 78233-4480  
PHONE (210) 490-3096  
FAX (210) 545-4329

**TEMPORARY BMP MODIFICATIONS**

DATE	SIGNATURE	DESCRIPTION

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

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**EXHIBIT 1**

DATE: \_\_\_\_\_

NO. REVISION: \_\_\_\_\_

STATE OF TEXAS  
CALEB M. CHANCE  
98401  
LICENSED PROFESSIONAL ENGINEER  
2/20/24

**PAPE-DAWSON ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TPE FIRM REGISTRATION #470 | TPEIS FIRM REGISTRATION #1008880

**VULCAN COMAL QUARRY**  
COMAL COUNTY, TEXAS

**WATER POLLUTION ABATEMENT PLAN**  
**TEMPORARY WATER POLLUTION ABATEMENT PLAN**

PLAT NO. \_\_\_\_\_

JOB NO. 7494-75

DATE FEB 2024

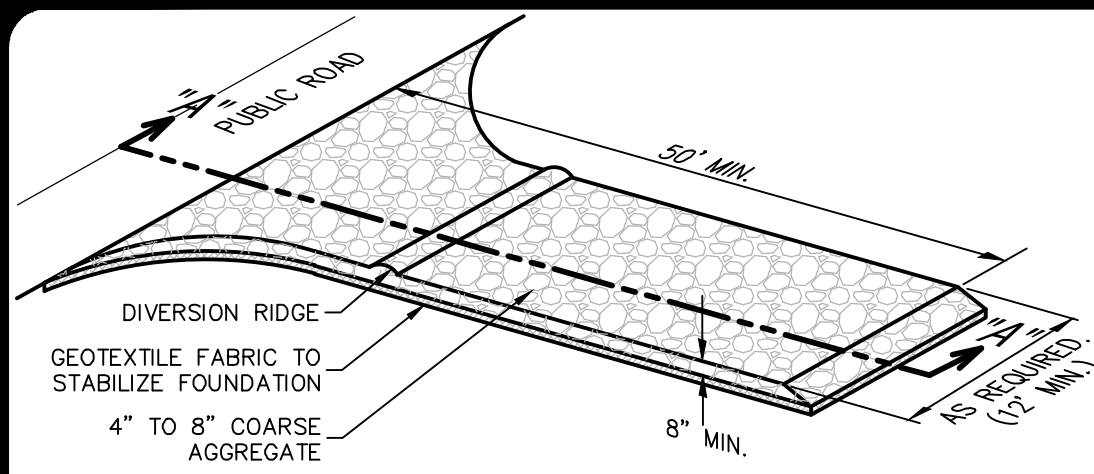
DESIGNER JA

CHECKED JA DRAWN MG

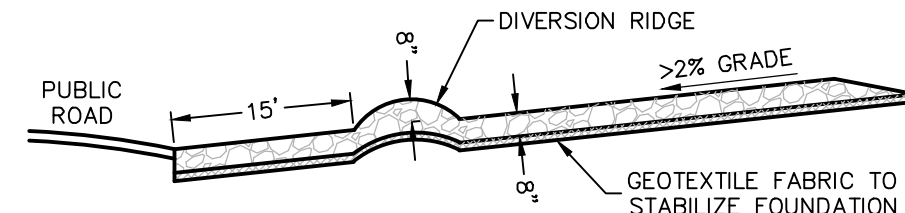
SHEET 2 OF 2

DATE: Feb 05, 2024, 8:21 am User: mcgregory  
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**SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT**



**SECTION "A-A" OF A CONSTRUCTION ENTRANCE/EXIT**

**MATERIALS**

1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD<sup>2</sup>, A MULLEN BURST RATING OF 140 LB/IN<sup>2</sup>, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4-INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

**INSTALLATION**

1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6-INCHES TO 8-INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

**COMMON TROUBLE POINTS**

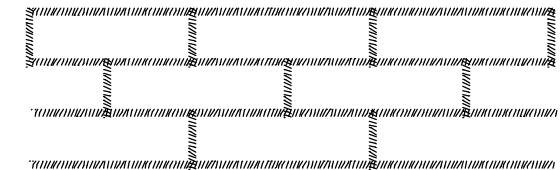
1. INADEQUATE RUNOFF CONTROL—SEDIMENT WASHES ONTO PUBLIC ROAD.
2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.
3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC—EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY.
4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD.
5. UNSTABLE FOUNDATION — USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

**INSPECTION AND MAINTENANCE GUIDELINES**

1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

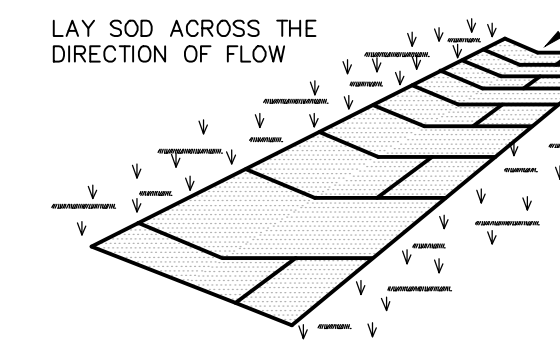
**STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL**

NOT-TO-SCALE

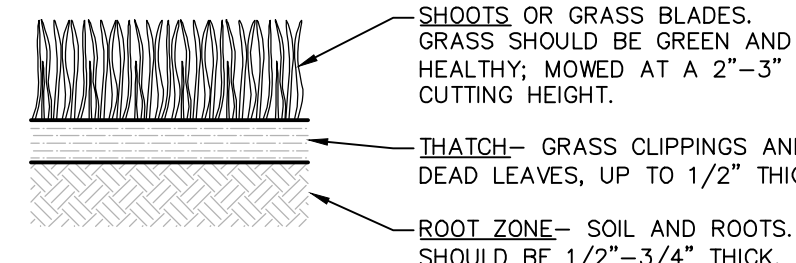


LAY SOD IN A STAGGERED PATTERN. BUTT THE STRIPS TIGHTLY AGAINST EACH OTHER. DO NOT LEAVE SPACES AND DO NOT OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE ENDS AND TRIMMING PIECES.

**BUTTING** — ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.

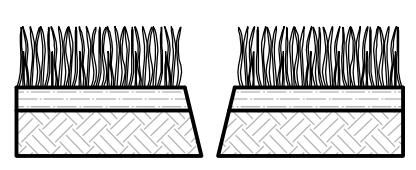
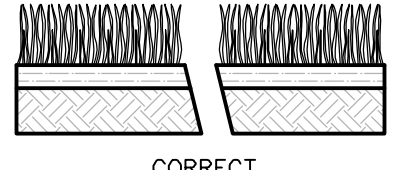


LAY SOD ACROSS THE DIRECTION OF FLOW

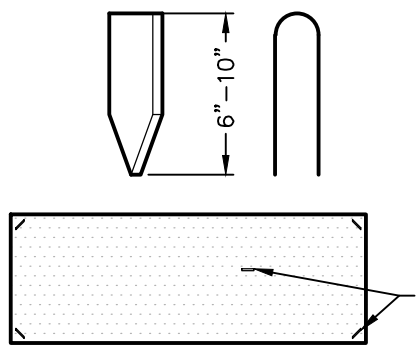


**APPEARANCE OF GOOD SOD**

- NOTES:
1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.
  2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.
  3. MOW WHEN THE SOD IS ESTABLISHED — IN 2-3 WEEKS. SET THE MOWER HIGH (2"-3").



**SOD INSTALLATION**



USE PEGS OR STAPLES TO FASTEN SOD FIRMLY — AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3-4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE PEGS OR STAPLES FLUSH WITH THE GROUND.

**GENERAL INSTALLATION (VA. DEPT. OF CONSERVATION, 1992)**

1. SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN.
2. DURING PERIODS OF HIGH TEMPERATURE, THE SOIL SHOULD BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD, TO COOL THE SOIL AND REDUCE ROOT BURNING AND DIEBACK.
3. THE FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE).
4. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY STAPLING OR OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PERPENDICULAR TO THE SLOPE (ON CONTOUR).
5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.
6. AFTER ROLLING, SOD SHOULD BE IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDERSIDE OF THE SOD PAD AND THE SOIL 4 INCHES BELOW THE SOD IS THOROUGHLY WET.
7. UNTIL SUCH TIME A GOOD ROOT SYSTEM BECOMES DEVELOPED, IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHOULD BE PERFORMED AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4 INCHES.
8. THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2-3 WEEKS. NOT MORE THAN ONE THIRD OF THE GRASS LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

**SITE PREPARATION**

1. PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.
2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.
3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE FINAL HARROWING OR OTHER SOIL PREPARATION SHOULD BE IN THE DIRECTION OF FLOW.

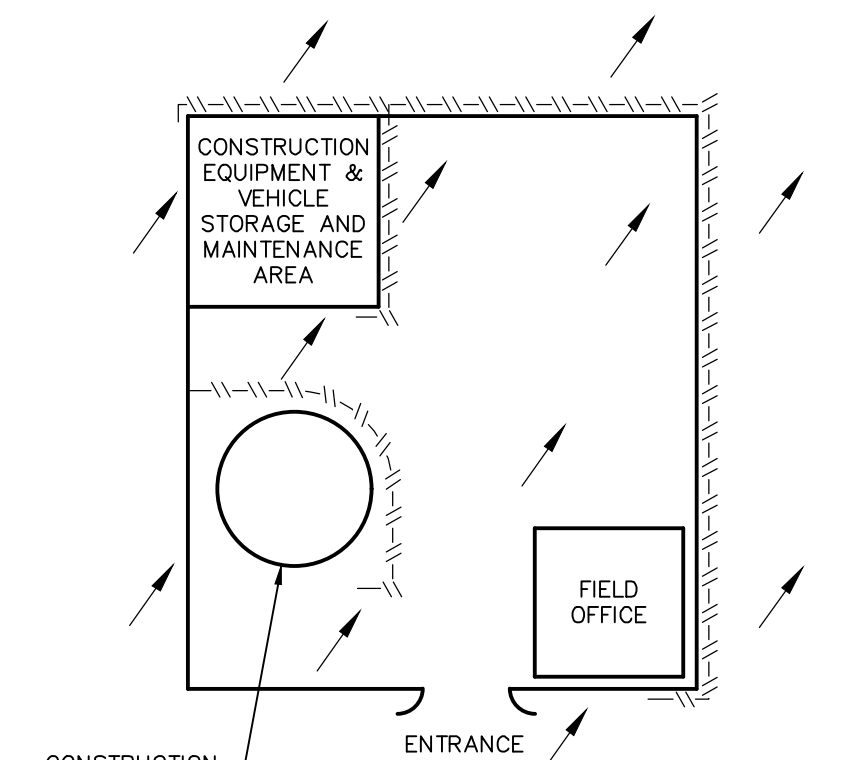
**TEMPORARY BMP MODIFICATIONS**

**INSTALLATION IN CHANNELS**

1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).
2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PERFORMED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

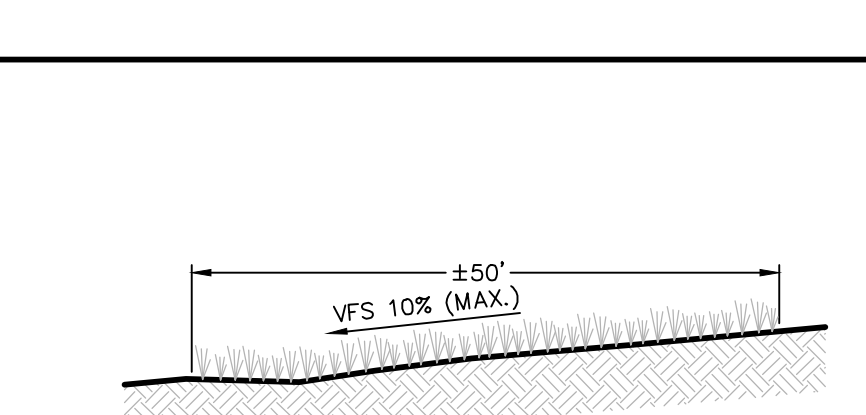
**SOD INSTALLATION DETAIL**

NOT-TO-SCALE



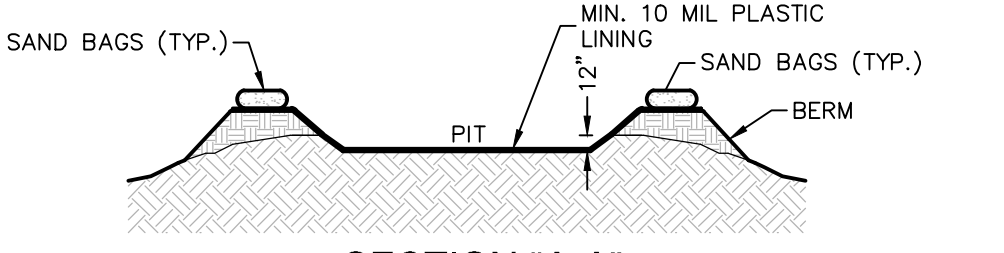
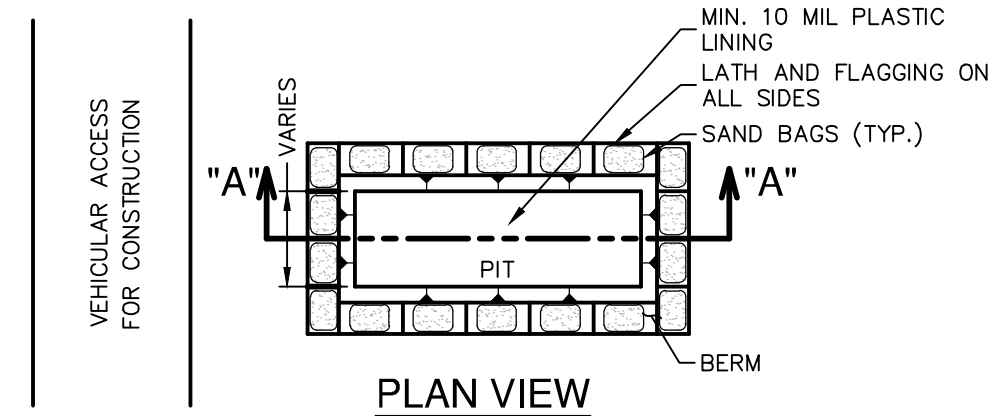
**CONSTRUCTION STAGING AREA**

NOT-TO-SCALE



**NATURAL VEGETATIVE BUFFER DETAIL**

NOT-TO-SCALE



**CONCRETE TRUCK WASHOUT PIT DETAIL**

NOT-TO-SCALE

- GENERAL NOTES**
1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
  2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
  3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.
  4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES OR WATER BODIES.
  5. TEMPORARY CONCRETE WASHOUT FACILITY SHOULD BE CONSTRUCTED WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

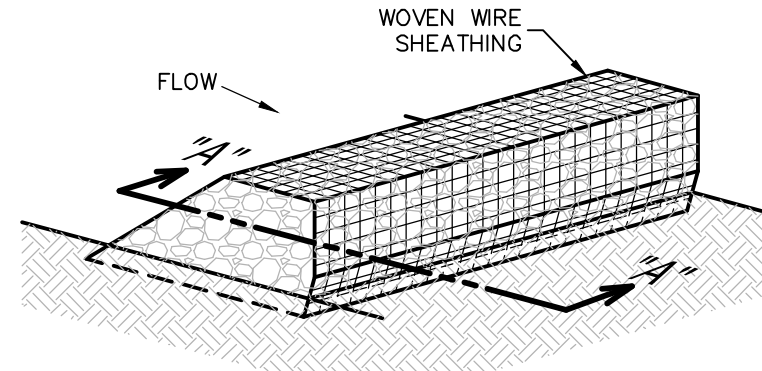
**MATERIALS**  
PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

**MAINTENANCE**

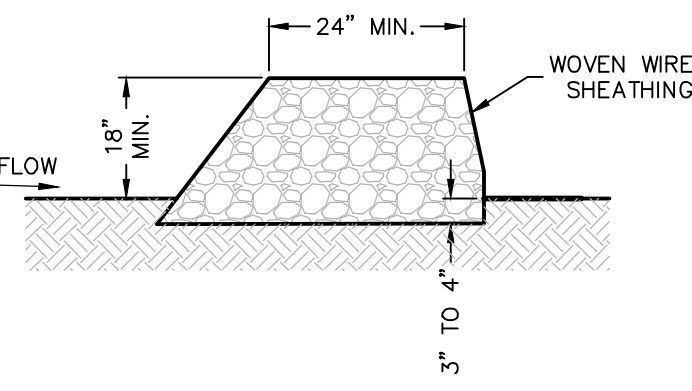
1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.
2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.
3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

**CONCRETE TRUCK WASHOUT PIT DETAIL**

NOT-TO-SCALE



**ISOMETRIC PLAN VIEW**



**SECTION "A-A"**

**ROCK BERMS**

THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE VOLUME OF RUNOFF IS TOO GREAT FOR A SILT FENCE TO CONTAIN. THEY ARE LESS EFFECTIVE FOR SEDIMENT REMOVAL THAN SILT FENCES, PARTICULARLY FOR FINE PARTICLES, BUT ARE ABLE TO WITHSTAND HIGHER FLOWS THAN A SILT FENCE. AS SUCH, ROCK BERMS ARE OFTEN USED IN AREAS OF CHANNEL FLOWS (DITCHES, GULLIES, ETC.). ROCK BERMS ARE MOST EFFECTIVE AT REDUCING BED LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FURTHER UP THE WATERSHED.

**INSPECTION AND MAINTENANCE GUIDELINES**

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.
3. REPAIR ANY LOOSE WIRE SHEATHING.
4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

**MATERIALS**

1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.

2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-INCH TO 8-INCH DIAMETER ROCKS MAY BE USED.

**INSTALLATION**

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.
2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO A HEIGHT NOT LESS THAN 18".
4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH THE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.
6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

**COMMON TROUBLE POINTS**

1. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).
2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

**ROCK BERM DETAIL**

NOT-TO-SCALE

NO.	REVISION	DATE



**PAPE-DAWSON ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
 2000 HWY LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
 TEXAS FIRM REGISTRATION #470 | TEPIS FIRM REGISTRATION #1008800

**VULCAN COMAL QUARRY**  
 COMAL COUNTY, TEXAS

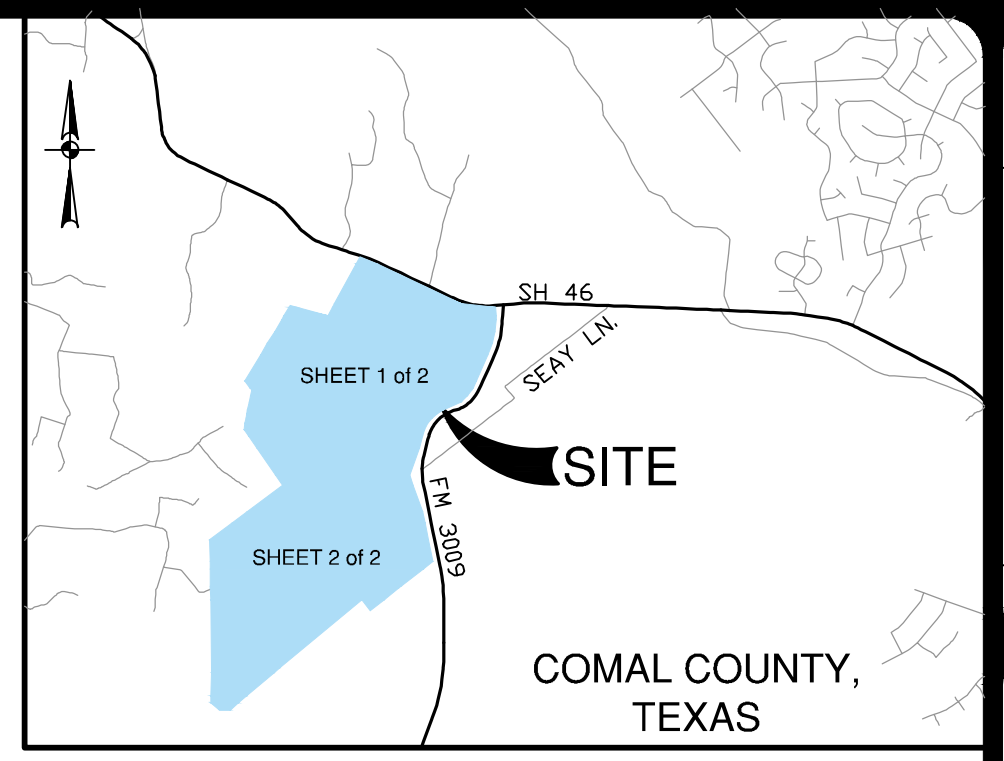
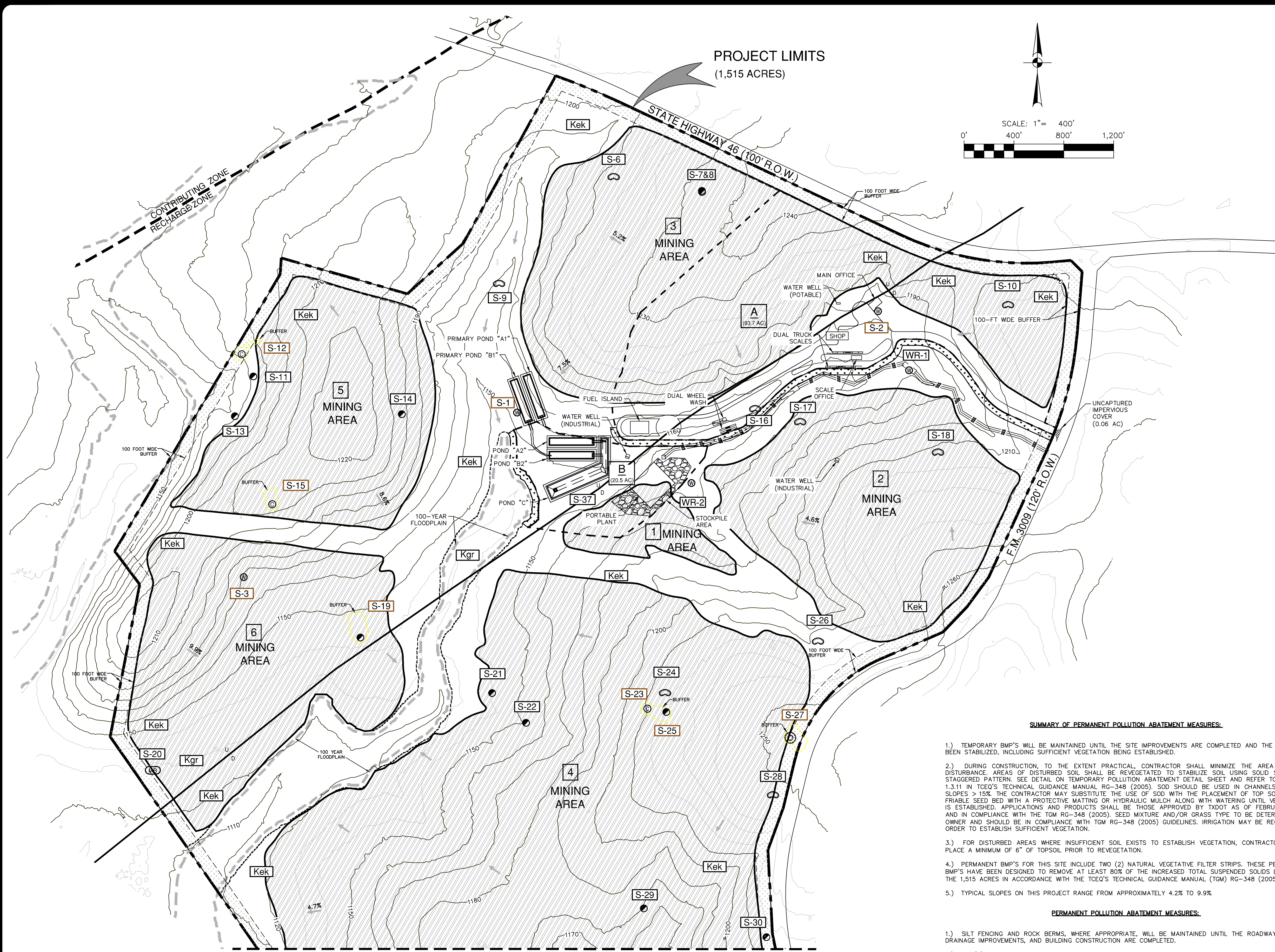
WATER POLLUTION ABATEMENT PLAN  
 TEMPORARY WATER POLLUTION ABATEMENT PLAN DETAILS

PLAT NO.	7494-75
JOB NO.	FEB 2024
DATE	JAN
DESIGNER	JA
CHECKED	JA DRAWN MG
SHEET	1 OF 1

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF POLLUTION ABATEMENT ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

**EXHIBIT 2**



**LEGEND**  
NOT-TO-SCALE

GEOLOGIC FORMATIONS	
Qal	ALLUVIUM
Kef	EAGLE FORD
Kbu	BUDA
Kdr	DEL RIO
Kgt	GEORGETOWN
Kep	PERSON
Kek	KAINER
Kgr	GLEN ROSE

**SYMBOLS AND LINES**

- S-1 POTENTIAL RECHARGE FEATURE
- S-1 POTENTIAL SENSITIVE RECHARGE FEATURE
- CONTACT, LOCATED APPROXIMATELY
- CONTACT, INFERRED
- FAULT, LOCATED APPROXIMATELY (D, DOWNTHROWN SIDE; U, UPTHROWN SIDE)
- FAULT, EXTRAPOLATED
- FAULT, INFERRED
- STRIKE AND DIP OF BEDDING
- STRIKE AND DIP OF JOINTS
- STRIKE OF VERTICAL JOINTS
- CAVE
- SOLUTION CAVITY
- SWALLOW HOLE
- SINKHOLE
- NON-KARST CLOSED DEPRESSION
- ZONE
- OTHER NATURAL BEDROCK FEATURES
- MAN-MADE FEATURE IN BEDROCK
- WATER WELL
- SANITARY SEWER LINE

**LEGEND**

- PROJECT LIMITS
- EXISTING GRADE
- PROPOSED GRADE
- 100 YEAR FLOODPLAIN
- 25 FOOT WIDE FLOODPLAIN BUFFER
- FLOW ARROW (EXISTING)
- PIT NUMBER
- PROPOSED PIT
- 100 FOOT WIDE BUFFER
- 50 FT VEGETATIVE FILTER STRIP
- UNCAPTURED IMPERVIOUS COVER
- WATERSHED
- WATERSHED BOUNDARY

**SUMMARY OF PERMANENT POLLUTION ABATEMENT MEASURES:**

- TEMPORARY BMP'S WILL BE MAINTAINED UNTIL THE SITE IMPROVEMENTS ARE COMPLETED AND THE SITE HAS BEEN STABILIZED, INCLUDING SUFFICIENT VEGETATION BEING ESTABLISHED.
- DURING CONSTRUCTION, TO THE EXTENT PRACTICAL, CONTRACTOR SHALL MINIMIZE THE AREA OF SOIL DISTURBANCE. AREAS OF DISTURBED SOIL SHALL BE REVEGETATED TO STABILIZE SOIL USING SOLID SOD IN A STAGGERED PATTERN. SEE DETAIL ON TEMPORARY POLLUTION ABATEMENT DETAIL SHEET AND REFER TO SECTION 1.3.11 IN TCEQ'S TECHNICAL GUIDANCE MANUAL RG-348 (2005). SOD SHOULD BE USED IN CHANNELS AND ON SLOPES > 15% THE CONTRACTOR MAY SUBSTITUTE THE USE OF SOD WITH THE PLACEMENT OF TOP SOIL AND A FRIABLE SEED BED WITH A PROTECTIVE MATTING OR HYDRAULIC MULCH ALONG WITH WATERING UNTIL VEGETATION IS ESTABLISHED. APPLICATIONS AND PRODUCTS SHALL BE THOSE APPROVED BY TxDOT AS OF FEBRUARY 2001 AND IN COMPLIANCE WITH THE TGM RG-348 (2005). SEED MIXTURE AND/OR GRASS TYPE TO BE DETERMINED BY OWNER AND SHOULD BE IN COMPLIANCE WITH TGM RG-348 (2005) GUIDELINES. IRRIGATION MAY BE REQUIRED IN ORDER TO ESTABLISH SUFFICIENT VEGETATION.
- FOR DISTURBED AREAS WHERE INSUFFICIENT SOIL EXISTS TO ESTABLISH VEGETATION, CONTRACTOR SHALL PLACE A MINIMUM OF 6" OF TOPSOIL PRIOR TO REVEGETATION.
- PERMANENT BMP'S FOR THIS SITE INCLUDE TWO (2) NATURAL VEGETATIVE FILTER STRIPS. THESE PERMANENT BMP'S HAVE BEEN DESIGNED TO REMOVE AT LEAST 80% OF THE INCREASED TOTAL SUSPENDED SOLIDS (TSS) FOR THE 1,515 ACRES IN ACCORDANCE WITH THE TCEQ'S TECHNICAL GUIDANCE MANUAL (TGM) RG-348 (2005).
- TYPICAL SLOPES ON THIS PROJECT RANGE FROM APPROXIMATELY 4.2% TO 9.9%.

**PERMANENT POLLUTION ABATEMENT MEASURES:**

- SILT FENCING AND ROCK BERMS, WHERE APPROPRIATE, WILL BE MAINTAINED UNTIL THE ROADWAY, UTILITY, DRAINAGE IMPROVEMENTS, AND BUILDING CONSTRUCTION ARE COMPLETED.
- TWO (2) NATURAL VEGETATIVE FILTER STRIPS WILL SERVE AS THE PERMANENT BEST MANAGEMENT PRACTICE (BMP) FOR DRAINAGE AREAS "A" & "B".
- ENERGY DISSIPATORS (TO HELP REDUCE EROSION) WILL BE PROVIDED AT POINTS OF CONCENTRATED DISCHARGE WHERE EXCESSIVE VELOCITIES MAY BE ENCOUNTERED.

**NOTES:**

- CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION FOR SOIL STABILIZATION PRIOR TO SITE CLOSEOUT.
- ALL PERMANENT BMP'S MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.

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**EXHIBIT 3**

DATE	
NO.	REVISION



**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TDEP FIRM REGISTRATION #470 | TDEP FIRM REGISTRATION #1088800

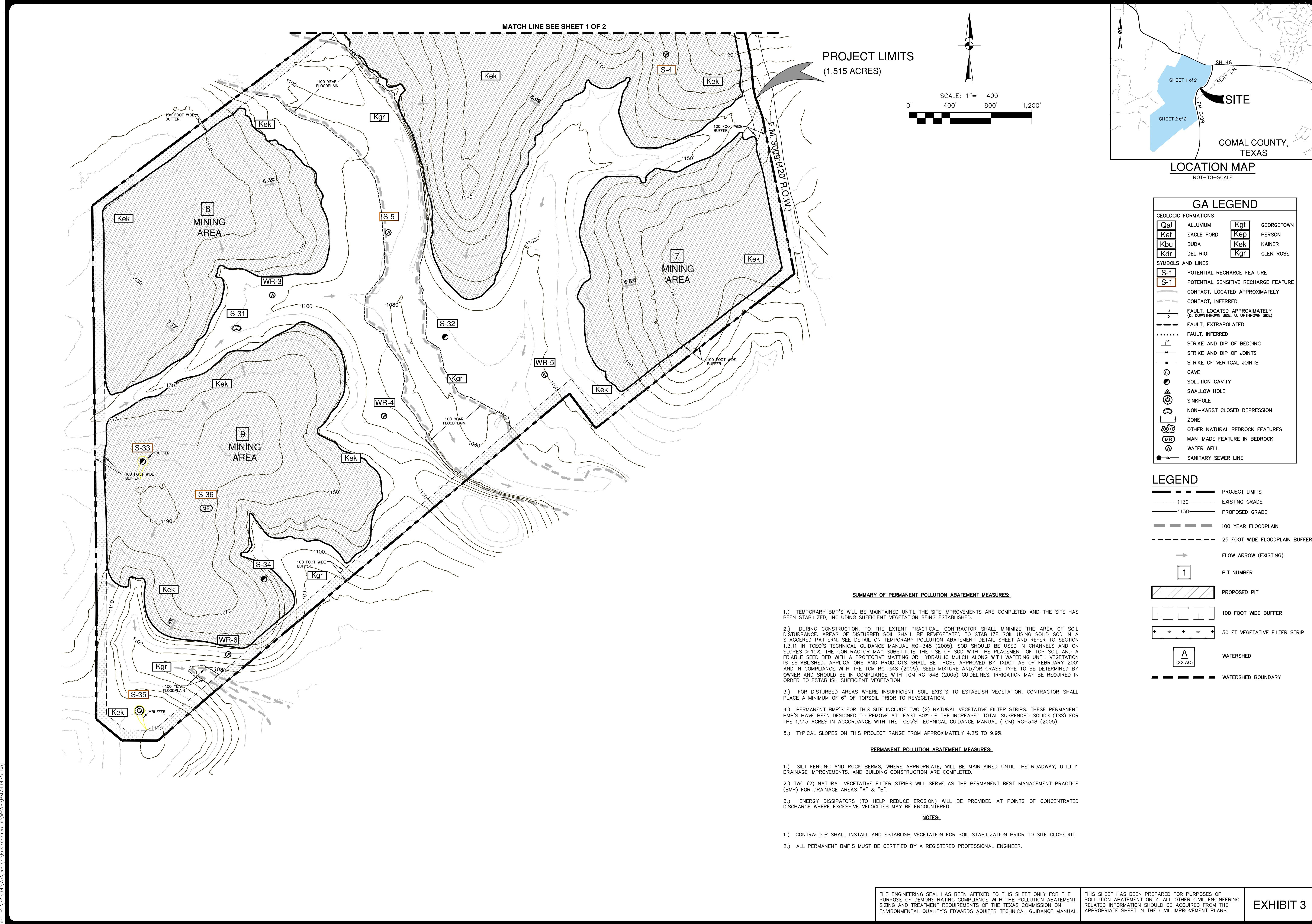
**VULCAN COMAL QUARRY**  
COMAL COUNTY, TEXAS  
WATER POLLUTION ABATEMENT PLAN  
PERMANENT WATER POLLUTION ABATEMENT PLAN

PLAT NO.	
JOB NO.	7494-75
DATE	FEB 2024
DESIGNER	JA
CHECKED	JA DRAWN
SHEET	1 OF 2

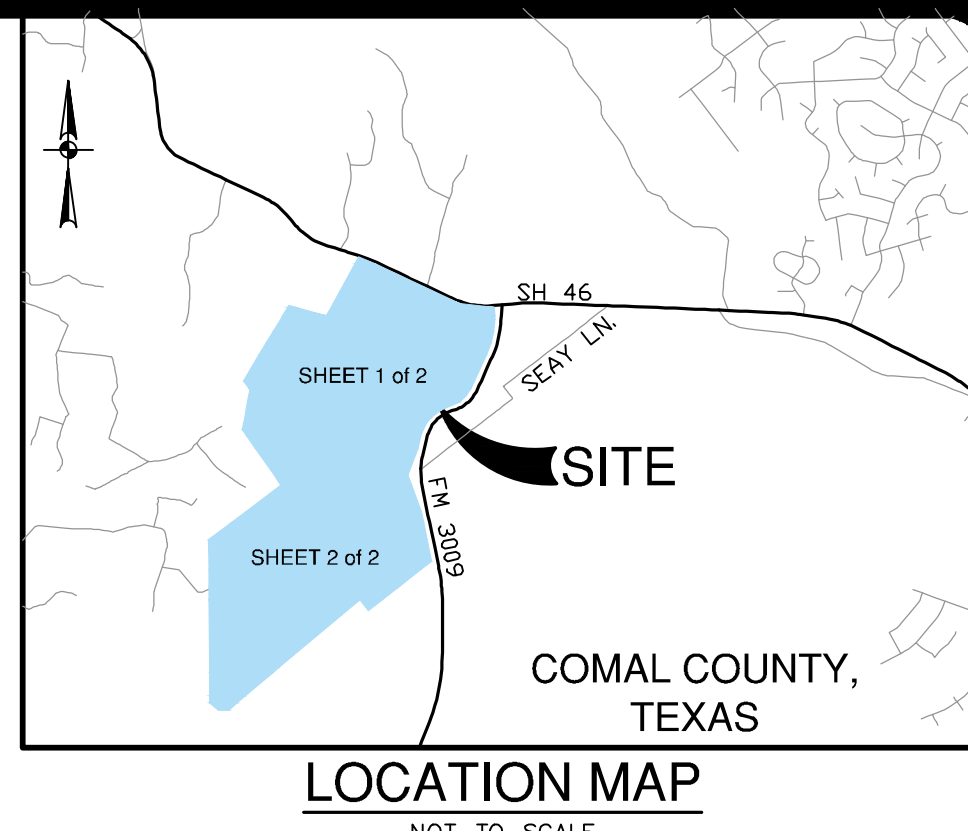
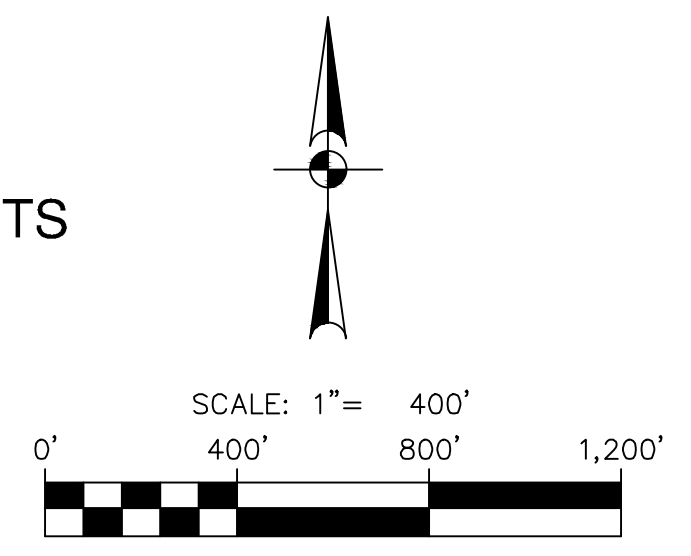
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**PROJECT LIMITS**  
(1,515 ACRES)



**LOCATION MAP**  
NOT-TO-SCALE

GA LEGEND			
<b>GEOLOGIC FORMATIONS</b>			
<b>Qal</b>	ALLUVIUM	<b>Kgt</b>	GEORGETOWN
<b>Kef</b>	EAGLE FORD	<b>Kep</b>	PERSON
<b>Kbu</b>	BUDA	<b>Kek</b>	KAINER
<b>Kdr</b>	DEL RIO	<b>Kgr</b>	GLEN ROSE
<b>SYMBOLS AND LINES</b>			
<b>S-1</b>	POTENTIAL RECHARGE FEATURE		
<b>S-1</b>	POTENTIAL SENSITIVE RECHARGE FEATURE		
	CONTACT, LOCATED APPROXIMATELY		
	CONTACT, INFERRED		
	FAULT, LOCATED APPROXIMATELY (D. DOWNTHROW SIDE, U. UPRITHROW SIDE)		
	FAULT, EXTRAPOLATED		
	FAULT, INFERRED		
	STRIKE AND DIP OF BEDDING		
	STRIKE AND DIP OF JOINTS		
	STRIKE OF VERTICAL JOINTS		
	CAVE		
	SOLUTION CAVITY		
	SWALLOW HOLE		
	SINKHOLE		
	NON-KARST CLOSED DEPRESSION		
	ZONE		
	OTHER NATURAL BEDROCK FEATURES		
	MAN-MADE FEATURE IN BEDROCK		
	WATER WELL		
	SANITARY SEWER LINE		

LEGEND	
	PROJECT LIMITS
	EXISTING GRADE
	PROPOSED GRADE
	100 YEAR FLOODPLAIN
	25 FOOT WIDE FLOODPLAIN BUFFER
	FLOW ARROW (EXISTING)
	PIT NUMBER
	PROPOSED PIT
	100 FOOT WIDE BUFFER
	50 FT VEGETATIVE FILTER STRIP
	WATERSHED
	WATERSHED BOUNDARY

**SUMMARY OF PERMANENT POLLUTION ABATEMENT MEASURES:**

- TEMPORARY BMP'S WILL BE MAINTAINED UNTIL THE SITE IMPROVEMENTS ARE COMPLETED AND THE SITE HAS BEEN STABILIZED, INCLUDING SUFFICIENT VEGETATION BEING ESTABLISHED.
- DURING CONSTRUCTION, TO THE EXTENT PRACTICAL, CONTRACTOR SHALL MINIMIZE THE AREA OF SOIL DISTURBANCE. AREAS OF DISTURBED SOIL SHALL BE REVEGETATED TO STABILIZE SOIL USING SOLID SOD IN A STAGGERED PATTERN. SEE DETAIL ON TEMPORARY POLLUTION ABATEMENT DETAIL SHEET AND REFER TO SECTION 1.3.11 IN TCEQ'S TECHNICAL GUIDANCE MANUAL RG-348 (2005). SOD SHOULD BE USED IN CHANNELS AND ON SLOPES > 15%. THE CONTRACTOR MAY SUBSTITUTE THE USE OF SOD WITH THE PLACEMENT OF TOP SOIL AND A FRIABLE SEED BED WITH A PROTECTIVE MATTING OR HYDRAULIC MULCH ALONG WITH WATERING UNTIL VEGETATION IS ESTABLISHED. APPLICATIONS AND PRODUCTS SHALL BE THOSE APPROVED BY TxDOT AS OF FEBRUARY 2001 AND IN COMPLIANCE WITH THE TGM RG-348 (2005). SEED MIXTURE AND/OR GRASS TYPE TO BE DETERMINED BY OWNER AND SHOULD BE IN COMPLIANCE WITH TGM RG-348 (2005) GUIDELINES. IRRIGATION MAY BE REQUIRED IN ORDER TO ESTABLISH SUFFICIENT VEGETATION.
- FOR DISTURBED AREAS WHERE INSUFFICIENT SOIL EXISTS TO ESTABLISH VEGETATION, CONTRACTOR SHALL PLACE A MINIMUM OF 6" OF TOPSOIL PRIOR TO REVEGETATION.
- PERMANENT BMP'S FOR THIS SITE INCLUDE TWO (2) NATURAL VEGETATIVE FILTER STRIPS. THESE PERMANENT BMP'S HAVE BEEN DESIGNED TO REMOVE AT LEAST 80% OF THE INCREASED TOTAL SUSPENDED SOLIDS (TSS) FOR THE 1,515 ACRES IN ACCORDANCE WITH THE TCEQ'S TECHNICAL GUIDANCE MANUAL (TGM) RG-348 (2005).
- TYPICAL SLOPES ON THIS PROJECT RANGE FROM APPROXIMATELY 4.2% TO 9.9%.

**PERMANENT POLLUTION ABATEMENT MEASURES:**

- SILT FENCING AND ROCK BERMS, WHERE APPROPRIATE, WILL BE MAINTAINED UNTIL THE ROADWAY, UTILITY, DRAINAGE IMPROVEMENTS, AND BUILDING CONSTRUCTION ARE COMPLETED.
- TWO (2) NATURAL VEGETATIVE FILTER STRIPS WILL SERVE AS THE PERMANENT BEST MANAGEMENT PRACTICE (BMP) FOR DRAINAGE AREAS "A" & "B".
- ENERGY DISSIPATORS (TO HELP REDUCE EROSION) WILL BE PROVIDED AT POINTS OF CONCENTRATED DISCHARGE WHERE EXCESSIVE VELOCITIES MAY BE ENCOUNTERED.

**NOTES:**

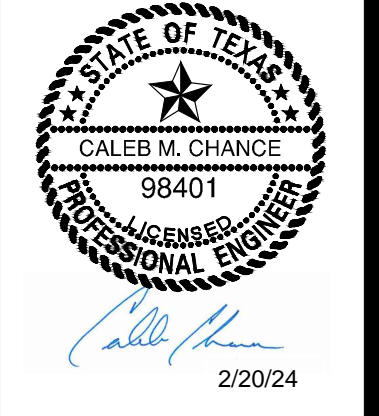
- CONTRACTOR SHALL INSTALL AND ESTABLISH VEGETATION FOR SOIL STABILIZATION PRIOR TO SITE CLOSEOUT.
- ALL PERMANENT BMP'S MUST BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER.

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF POLLUTION ABATEMENT ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

**EXHIBIT 3**

DATE	
NO.	
REVISION	



**PAPE-DAWSON ENGINEERS**  
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS  
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TDEP FIRM REGISTRATION #470 | TDEP FIRM REGISTRATION #1008800

**VULCAN COMAL QUARRY**  
COMAL COUNTY, TEXAS  
**WATER POLLUTION ABATEMENT PLAN**  
**PERMANENT WATER POLLUTION ABATEMENT PLAN**

PLAT NO.	
JOB NO.	7494-75
DATE	FEB 2024
DESIGNER	JA
CHECKED	JA DRAWN MG
SHEET	2 OF 2