H. L. Zumwalt Quarry Operations, LLC.

# Water Pollution Abatement Plan (WPAP) Modification

## FM 1283 Ranch Quarry

## Mico, Texas

## Medina County

Submitted to: TCEQ Region 13, San Antonio

Prepared By:

WESTWARD
Environmental. Engineering. Natural Resources.

Boerne, Texas
830-249-8284

Date: November 2023
Project No. 10022-080
-BGB-


Signature: _____

Nicolas E. Mercado, PE – License No. 144228
TX PE Firm No. 4524

Date: 11/14/2023

## Texas Commission on Environmental Quality

# Edwards Aquifer Application Cover Page

### Our Review of Your Application

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

### Administrative Review

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

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

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

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

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

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

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

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

### Technical Review

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

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

**Mid-Review Modifications**

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

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

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

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

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

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

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

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **1. Regulated Entity Name:** FM 1283 Ranch Quarry | | | | | **2. Regulated Entity No.:** 105835375 | | | | |
| **3. Customer Name:** H.L. Zumwalt Quarry Operations, LLC | | | | | **4. Customer No.:** NEW | | | | |
| **5. Project Type:** **(Please circle/check one)** | New | | Modification | | Extension | | Exception | | |
| **6. Plan Type:** **(Please circle/check one)** | WPAP | CZP | SCS | UST | AST | EXP | EXT | Technical Clarification | Optional Enhanced Measures |
| **7. Land Use:** **(Please circle/check one)** | Residential | | Non-residential | | | **8. Site (acres):** | | 561 | |
| **9. Application Fee:** | $10,000 | | **10. Permanent BMP(s):** | | | Earthen Berms, Vegetative Buffers | | | |
| **11. SCS (Linear Ft.):** | N/A | | **12. AST/UST (No. Tanks):** | | | N/A | | | |
| **13. County:** | Medina | | **14. Watershed:** | | | San Antonio River Basin | | | |

# 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

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

| **Austin Region** | | | |
|---|---|---|---|
| **County:** | **Hays** | **Travis** | **Williamson** |
| Original (1 req.) | ___ | ___ | ___ |
| Region (1 req.) | ___ | ___ | ___ |
| County(ies) | ___ | ___ | ___ |
| Groundwater Conservation District(s) | ___Edwards Aquifer Authority<br>___Barton Springs/ Edwards Aquifer<br>___Hays Trinity<br>___Plum Creek | ___Barton Springs/ Edwards Aquifer | NA |
| City(ies) Jurisdiction | ___Austin<br>___Buda<br>___Dripping Springs<br>___Kyle<br>___Mountain City<br>___San Marcos<br>___Wimberley<br>___Woodcreek | ___Austin<br>___Bee Cave<br>___Pflugerville<br>___Rollingwood<br>___Round Rock<br>___Sunset Valley<br>___West Lake Hills | ___Austin<br>___Cedar Park<br>___Florence<br>___Georgetown<br>___Jerrell<br>___Leander<br>___Liberty Hill<br>___Pflugerville<br>___Round Rock |

| **San Antonio Region** | | | | | |
|---|---|---|---|---|---|
| **County:** | **Bexar** | **Comal** | **Kinney** | **Medina** | **Uvalde** |
| Original (1 req.) | ___ | ___ | ___ | __X__ | ___ |
| Region (1 req.) | ___ | ___ | ___ | __X_ | ___ |
| County(ies) | ___ | ___ | ___ | __X_ | ___ |
| Groundwater Conservation District(s) | ___ Edwards Aquifer Authority<br>___Trinity-Glen Rose | ___Edwards Aquifer Authority | ___Kinney | __X_EAA<br>__X_ Medina | ___EAA<br>___Uvalde |
| City(ies) Jurisdiction | ___Castle Hills<br>___Fair Oaks Ranch<br>___Helotes<br>___Hill Country Village<br>___Hollywood Park<br>___San Antonio (SAWS)<br>___Shavano Park | ___Bulverde<br>___Fair Oaks Ranch<br>___Garden Ridge<br>___New Braunfels<br>___Schertz | NA | ___ 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.

Nicolas E. Mercado, PE – License No. 144228

Print Name of Customer/Authorized Agent

Nicolas E Mercado

11/14/2023

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): | |

# Article I. 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.***

## *Section 1.01 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: Nicolas E. Mercado, PE

TX License No. 144228 | TX Firm No. 4524

Date: 11/14/2023

Signature of Customer/Agent:


## *Section 1.02 Project Information*

1. Regulated Entity Name: FM 1283 Ranch Quarry
2. County: Medina County
3. Stream Basin: San Antonio River Basin
4. Groundwater Conservation District (If applicable): Medina County GCD
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

   ☒ WPAP
   ☐ SCS
   ☒ Modification
   ☒ AST
   ☐ UST
   ☐ Exception Request

7. Customer (Applicant):

   Contact Person: Bonnie Zumwalt
   Entity: H.L. Zumwalt Quarry Operations, LLC
   Mailing Address: 17511 FM 1283

   City, State: Mico, TX  Zip: 78056-9203

   Telephone: 210-695-3541  FAX: _____

   Email Address: bonnie@hlzumwalt.com

8. Agent/Representative (If any):

   Contact Person: Nicolas E. Mercado, PE
   Entity: Westward Environmental, Inc
   Mailing Address: PO Box 2205

   City, State: Boerne, TX  Zip: 78006

   Telephone: 830-249-8284  FAX: 830-249-0221

   Email Address: nmercado@westwardenv.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.

    Three and a half (3.5) miles West of FM 471 & FM 1283 on the North side of 1283.

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: Property is fenced.

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: _____

## *Section 1.03 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.

## *Section 1.04 Administrative Information*

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

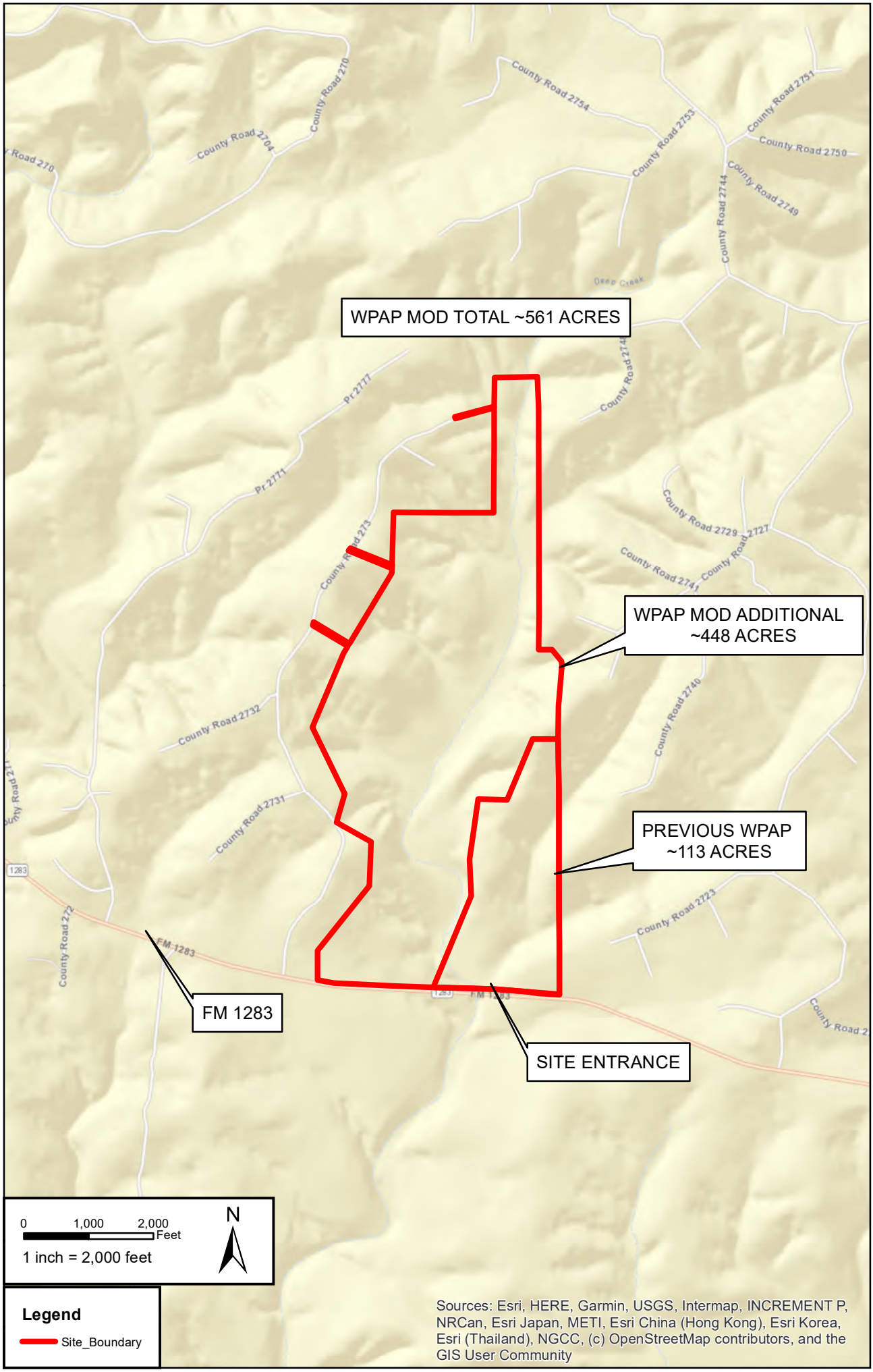
☒ For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.
☐ For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.
☐ For a UST Facility Plan or Modification or an AST Facility 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.




WESTWARD
Environmental. Engineering. Natural Resources.
P.O. Box 2205, Boerne, Texas 78006
(830) 249-8284 Fax: (830) 249-0221
TBPE REG. NO.: F-4524
TBPG REG. NO.: 50112

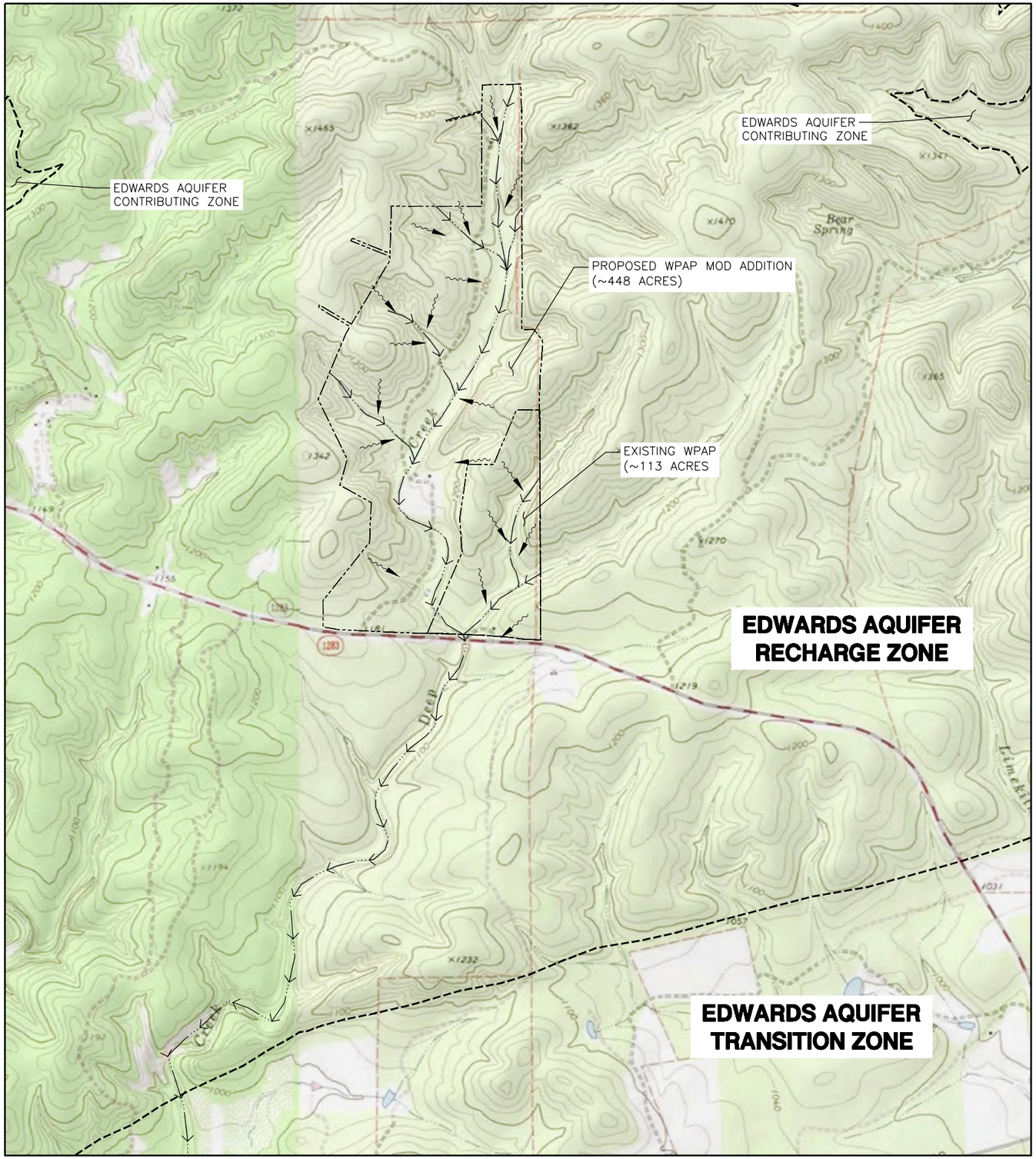
# ROAD MAP

WPAP MODIFICATION
H.L. ZUMWALT QUARRY OPERATIONS, LLC
FM 1283 RANCH QUARRY, MEDINA COUNTY, TX

| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| | | | |
| | | | |

| | |
|---|---|
| IMAGE: | ESRI IMAGERY |
| ISSUE DATE: | 11/10/2023 |
| DRAWN BY: | BGB |
| CHECKED BY: | NEM |
| SCALE: 1" = | 2,000' |
| JOB NO.: | 10020-080 |

SHEET NO.:
01
OF 01




N

0 1000 2000 4000

SCALE: 1" = 2000'

**LEGEND**

- PROPERTY LINE
- FLOW PATH
- EDWARDS ZONE BOUNDARY
- FLOW ARROW

STATE OF TEXAS
NICOLAS E. MERCADO
144228
LICENSED
PROFESSIONAL ENGINEER

11/14/2023

NOTE:

US TOPO 7.5-MINUTE MAP FOR SAN GERONIMO, TX


WESTWARD
Environmental. Engineering. Natural Resources.
P.O. Box 2205 Boerne, Texas 78006
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TBPE REG. NO.: F-4524
TBPG REG. NO.: 50112

Nicolas E. Mercado, P.E.
License No. 144228


# USGS / RECHARGE ZONE MAP

WPAP MODIFICATION
H.L. ZUMWALT QUARRY OPERATIONS, LLC
17511 FM 1283, MICO, TEXAS 78056

| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| | | | |

| | |
|---|---|
| IMAGE: | SAN GERONIMO QUADRANT |
| ISSUE DATE: | 11/09/2023 |
| DRAWN BY: | WBE |
| CHECKED BY: | NEM |
| SCALE: 1" = | 2000' |
| JOB NO.: | 10022-080 |

SHEET NO.:

**001**

OF 001

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

**General Information Form Attachment A**

## Road Map

Please see attached Road Map.

**General Information Form Attachment B**

## USGS / Edwards Recharge Zone Map

Please see attached USGS / Edwards Recharge Zone Map.

**General Information Form (TCEQ-0587)**
**Attachment C**

## Project Description

This Water Pollution Abatement Plan Modification (WPAP Mod) has been prepared on behalf of H.L. Zumwalt Quarry Operations, LLC (Zumwalt) at FM 1283 Ranch Quarry (Site). The site is located in Medina County, Texas and wholly situated over the Edwards Aquifer Recharge Zone. Zumwalt currently operates a limestone quarry on ~113-acres located in the SE portion of the Site. Quarry operations at the site were originally authorized under EAPP ID No. 13-09110601 on February 2, 2010 and then re-submitted and re-approved on October 5, 2010. This initial plan authorized approximately 30-acres of active mine area within a 113-acre property. Approved activities included quarrying, rock crushing, stockpiles and installation/operation of screens, conveyors, truck scales, and a scale house. The pit floor elevation was set at 1115 ft. asml. An exception was granted to the requirement for Permanent BMPs.

The primary intention of this modification is to add an additional ~448-acres to the North and West of the current ~113-acre site. The final overall site will be an approximate 561-acre property that is to be developed for a limestone quarry operation. The additional 448-acres of the Site have been largely undeveloped, with the exception of two residences, unpaved ranch roads, and various agricultural buildings. Until mining progresses further, the undeveloped land will be utilized for ongoing ranching and agricultural activities. Existing ranch roads (as shown on the Existing Conditions Site Map) will continue to be used for access around the site. The Site may be entered at either of two paved entrances from FM 1283 on the South side of the property. As a result of this modification, earthen berms will be established around all currently disturbed areas in order to contain all on-site stormwater and divert run-on from upgradient areas. Runoff from all impervious cover will be fully contained within the earthen berms and/or quarry pits, with the exception of the portion of the main entry/exit drive which extends outside of the bermed area. This portion of the driveway will be treated by natural vegetative filter strips on either side. See the attached Existing Conditions and Interim Conditions plan sheets. As quarry operations expand,

areas of more than 10-acres of common drainage may be disturbed at a time, however these areas will be contained within temporary earthen berms, which will expand with the operation up to the Final Earthen Berm (as shown on the Proposed Conditions Map), and all run-off from these areas will remain contained on-site, ultimately draining to the pit. Mining equipment, including but not limited to the crushing plant, may be relocated within the quarry pit to meet operational needs throughout the life of the operation.

Natural existing vegetation will be maintained in a 25-foot buffer along each side of the centerline or the FEMA 100-year floodplain (as applicable) of Deep Creek. A 25-foot buffer will be maintained on either side of the centerline of the unnamed tributaries of Deep Creek and the FEMA 100-year floodplain areas (including streams or creeks with drainage areas of over 40-acres) until/unless appropriate permits can be obtained from FEMA and/or USACE to allow mining in these areas. The unnamed tributaries of Deep Creek may be diverted around proposed pit areas to maintain flow. The existing ranch roads make one raised crossing and several on-grade crossings through Deep Creek & associated tributaries (as shown on the Existing and Interim Conditions site plans). These existing crossings will continue to be utilized for both quarry and agricultural activities. One new crossing is proposed near the southeast corner of the site (as shown on the Interim Conditions site plan). This proposed crossing will be installed with culverts sized to pass the 2-year, 24-hour storm.

Any fueling of mobile equipment and portable screen will occur over compacted base material via mobile refueler.

Trash generated on-site will be disposed of in a dumpster and handled by a licensed waste service provider. Three private septic systems are currently located in the maintenance area. There is one septic system dedicated to the living quarters, office, and maintenance shop. All three septic systems and the associated buildings will be removed before mining progresses into this area. More than 50% of significant construction for this operation is already complete, and all imperatives under 30 TAC 213.4(h) & 30 TAC 213.4(h)(3) have been met.

A geologic assessment (GA) of the site was performed from November 1-4 and November 28-November 30, 2022 and May 11, 2023. This GA covered the ~561-acre tract under the supervision of John J. Sackrider, PG. Of the fifty-five (55) features identified, seven (7) features were classified as sensitive. The sensitive features were labeled as: S-3, S-8, S-11, S-23, S-24, S-26, and S-35. Features S-11 and S-24 are to be left in place with an appropriate naturally-vegetated buffer in accordance with RG-500. All other sensitive features are proposed to be temporarily sealed before being removed through mining. Based on the published geologic data of the area, as well as field reconnaissance during the GA, it was determined that the Edwards Aquifer is not present at the site, therefore the requirement for separation from groundwater prescribed in RG-500 is not applicable. It is not expected that groundwater will be encountered in the quarry excavation. This modification proposes to remove the limitation on quarry depth. A copy of the geologic assessment is included with this application.

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**
**WATER POLLUTION ABATEMENT PLAN**
**GENERAL CONSTRUCTION NOTES**

1. WRITTEN CONSTRUCTION NOTIFICATION 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

2. 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.

3. 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.

4. NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.

5. 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 DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

6. 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.

7. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.

8. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.

9. 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.

10. 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 DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.

11. 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.

12. THE HOLDER OF ANY APPROVED EDWARD 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:

   A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY WATER POLLUTION ABATEMENT STRUCTURE(S), INCLUDING BUT NOT LIMITED TO PONDS, DAMS, BERMS, SEWAGE TREATMENT PLANTS, AND DIVERSIONARY STRUCTURES;
   B. 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;
   C. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE ORIGINAL WATER POLLUTION ABATEMENT PLAN.

| AUSTIN REGIONAL OFFICE | SAN ANTONIO REGIONAL OFFICE |
|---|---|
| 12100 PARK 35 CIRCLE, BLDG A | 14250 JUDSON ROAD |
| AUSTIN, TEXAS 78753-1808 | SAN ANTONIO, TEXAS 78233-4480 |
| PHONE (512) 339-2929 | PHONE (210) 490-3096 |
| FAX (512) 339-3795 | FAX (210) 545-4329 |

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

BMP CONSTRUCTION NOTES

1. COMPACTED EARTHEN BERM
   INSTALLATION:
   COMPRISED OF SOIL AND OVERBURDEN MATTER EITHER GENERATED ONSITE OR DELIVERED FROM OFFSITE. COMPACT WITH HEAVY EQUIPMENT IN 12" (MAX) LIFTS.

   MAINTENANCE (TEMPORARY):
   INSPECT BERMS ONCE A MONTH UNTIL SUFFICIENTLY VEGETATED. REPLACE AS NECESSARY.

2. ROCK BERM
   SHOULD BE SECURED WITH A WOVEN WIRE SHEATING, MAX. OPENING 1" AND MIN. WIRE DIA. 20 GAUGE GALVANIZED. SECURE WITH SHOAT RINGS.

   INSTALLATION:
   AGGREGATE USED SHOULD BE COMPRISED OF OPEN GRADED 3-5" DIAMETER ROCK. BERM SHOULD BE PLACED PERPENDICULAR TO FLOW LINE. SIDE SLOPE MUST BE 2:1 OR FLATTER. WIRE SHEATHING MUST BE SECURED WITH TIE WIRE SO THEY OVERLAP AT LEAST 2".
   BERM SHOULD BE BURIED IN A TRENCH APPROX. 4" DEEP.

   MAINTENANCE (TEMPORARY):
   INSPECT BERMS ONCE A WEEK. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6". REPLACE WHEN ROCK BECOMES CLOGGED WITH SEDIMENT.
   ALTERNATE #1 & #2 ROCK BERMS (WE)

   INSTALLATION:
   AGGREGATE USED SHOULD BE COMPRISED OF OPEN GRADED 3-5" DIAMETER ROCK. BERM SHOULD BE PLACED PERPENDICULAR TO FLOW LINE.

   MAINTENANCE (TEMPORARY):
   INSPECT BERMS ONCE A WEEK. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6". REPLACE WHEN ROCK BECOMES CLOGGED WITH SEDIMENT.
3. SILT FENCE W/ TRENCHED TOE
   INSTALLATION:
   3.1 STEEL POSTS SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MIN. OF 1' DEEP AND SPACED NOT MORE THAN 8' ON CENTER. WHERE WATER CONCENTRATES, THE MAX. SPACING SHOULD BE 6'.
   3.2 LAY OUT FENCING DOWN SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE.
   3.3 THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G. PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 IN. OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
   3.4 THE TRENCH MUST BE A MIN. OF 6 IN. DEEP AND 6 IN. WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
   3.5 SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
   3.6 INSPECT SILT FENCES ONCE A WEEK. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6". REPLACE SILT FENCES WHEN TORN OR OTHERWISE UNABLE TO FILTER SEDIMENT.

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

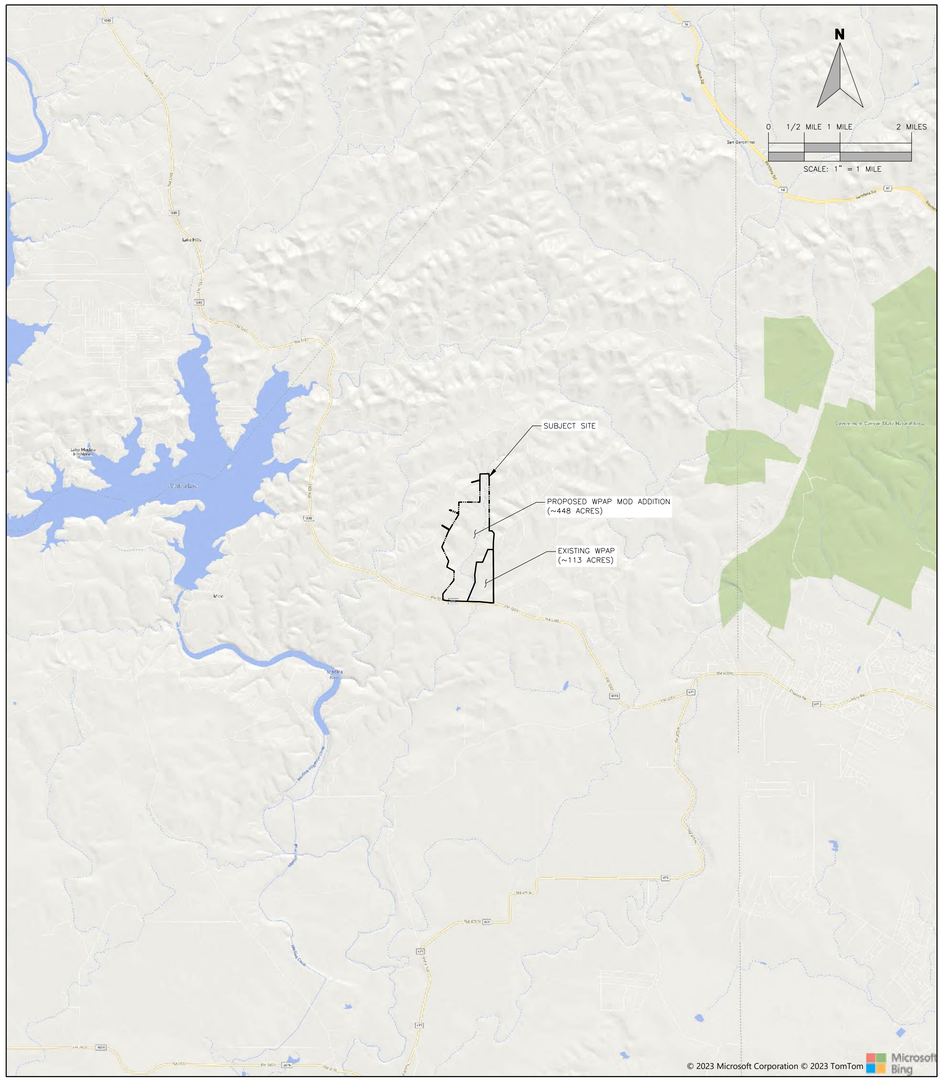
   MAINTENANCE: INSPECT WEEKLY. REPLACE STONE AS NECESSARY TO PREVENT TRACKING OFF-SITE.

GENERAL NOTES

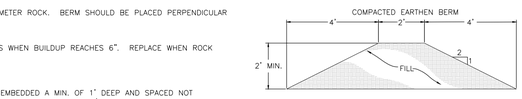
1. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED FACILITIES FROM DAMAGE OR DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY, AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
2. FACILITIES PROPOSED HEREIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS. DEVIATIONS FROM THE APPROVED PLANS MUST BE APPROVED IN ADVANCE BY THE ENGINEER OF RECORD.
3. UPON COMPLETION OF CONSTRUCTION AND PRIOR TO FINAL ACCEPTANCE OF THE WORK, A FINAL INSPECTION SHALL VERIFY PROPER ADHERENCE TO ALL FACETS OF THE PLANS AND SPECIFICATIONS.
4. AS-BUILT DRAWINGS SHALL BE PREPARED BY A REGISTERED LAND SURVEYOR, REGISTERED IN THE STATE OF TEXAS, AND SUBMITTED BY THE CONTRACTOR TO THE ENGINEER OF RECORD. CONTRACTOR TO PROVIDE RECORD INFORMATION WHICH LOCATES ALL UNDERGROUND UTILITIES, SITE GRADING AND CLEARANCE TO WATER MAIN FROM OTHER UTILITIES HORIZONTAL AND VERTICAL.
5. CONTRACTOR SHALL NOTIFY TEXAS811 ONE CALL SYSTEM (1-800-344-8377) 48 HOURS IN ADVANCE OF CONSTRUCTION.
6. ALL VEGETATION, DEBRIS, CONCRETE OR OTHER UNSUITABLE MATERIAL SHALL BE LEGALLY DISPOSED OF OFF-SITE IN AN APPROPRIATE AREA AT THE CONTRACTORS EXPENSE.
7. CONTRACTOR SHALL UTILIZE CONSTRUCTION METHODS AND DEVICES, SUCH AS TURBIDITY SCREENS, CURTAINS AND FLOATING SILT BARRIERS WHERE NECESSARY IN ORDER TO COMPLY WITH ALL STATE AND LOCAL WATER QUALITY STANDARDS.
8. ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER, SPECIFICALLY, THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES SHALL BE STRICTLY OBSERVED.
9. MINIMUM COVER SHALL BE 3.0 FEET FOR ALL PIPES. (TYPICAL) UNLESS OTHERWISE NOTED ON DRAWINGS.
10. ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAY OR WALKWAYS SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
11. CONTRACTOR SHALL MONITOR AND PROHIBIT THE DEFACING OF FRESHLY PLACED CONCRETE SURFACES. ANY CONCRETE SURFACES DEFACED SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
12. CLEARING AND GRUBBING SHALL INCLUDE REMOVAL OF ALL VEGETATION AS REQUIRED TO CONSTRUCT THE REQUIRED IMPROVEMENTS.
13. PROJECT SITE SAFETY:
   13.1. THE ENGINEER/OWNER OR THEIR EMPLOYEES HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER THE CONTRACTOR, ANY SUB-CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY JOBSITE HEALTH OR SAFETY PRECAUTIONS.
   13.2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOBSITE SAFETY, AND WARRANTS THAT THIS INTENT IS MADE EVIDENT BY THE AGREEMENT BETWEEN OWNER AND CONTRACTOR.
   13.3. ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS OR ENCOUNTERED THROUGH THE PROGRESSION OF WORK AT THIS PROJECT SITE ARE ASSUMED TO BE LIVE, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS WHEN WORKING AROUND EXISTING OVERHEAD OR UNDERGROUND UTILITIES.
14. ALL CONCRETE SHALL DEVELOP A MINIMUM OF 4000 p.s.i. COMPRESSIVE STRENGTH AT 28 DAYS, UNLESS OTHERWISE STATED.
15. THE SEQUENCE OF CONSTRUCTION SHALL BE SUCH THAT ALL UNDERGROUND INSTALLATION OF ANY KIND THAT WILL COME UNDER THE PAVEMENT OR WITHIN 10 FEET OF ITS EDGES SHALL BE INSTALLED PRIOR TO THE CONSTRUCTION OF THE BASE.
16. TRENCHES SHALL BE DRY WHEN PIPES ARE INSTALLED. PIPES PLACED BELOW THE WATER TABLE SHALL BE BEDDED ON PEA GRAVEL AND WELL POINT SYSTEMS SHALL BE USED. ALL DEWATERING PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
17. SIX (6) COPIES OF ALL SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION. ALL REQUESTS FOR MATERIAL SUBSTITUTIONS MUST BE APPROVED PRIOR TO DELIVERY TO THE SITE. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL MANUFACTURED ITEMS.
18. ALL ROOTS IN THE PAVED AREA MUST BE REMOVED ONE FOOT BELOW THE BOTTOM OF SUB GRADE.
19. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STDS OF TCEQ
20. CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO LOCATE, EXCAVATE AND PREPARE FOR CONNECTIONS TO THE EXISTING SYSTEMS AS SHOWN ON THE DRAWINGS.
21. IF SOD IS USED ONSITE, IT SHALL BE PLACED 2" BELOW THE EDGES OF PAVEMENT TO ALLOW WATER TO DRAIN.
22. CONTOURS SHOWN ARE PRE DEVELOPMENT CONTOURS
23. COMPACTION NOTES:
   FOR FILL AREAS WHERE WATER WILL BE IMPOUNDED:
   23.1. PLACE FILL IN LIFTS NO MORE THAN 12" DEEP AT NEAR OPT. MOISTURE CONTENT.
   23.2. COMPACT TO AT LEAST 95% RC (ASTM D698)
   23.3. COMPACT TO SLOPE OF FACE
   FOR ON GRADE BERMS AND OTHER MISC. FILL
   23.4. PLACE CLEAN FILL IN 12" LIFTS
   23.5. COMPACT WITH ON-SITE HEAVY EQUIPMENT
24. ALL CONCRETE SURFACES TO BE BROOM FINISH UNO
25. DRAINAGE STRUCTURES TO MEET MIN. TxDOT SPECIFICATIONS FOR CONSTRUCTION AND PLACEMENT OF TYPE 3 DROP INLET
26. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND GRADING PRIOR TO CONSTRUCTION. ENGINEER OF RECORD SHALL BE NOTIFIED OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
27. ALL RIP RAP SHALL BE COURSE GRADED ROCK AND SHALL BE SIZED IN ACCORDANCE WITH THE FOLLOWING TABLE

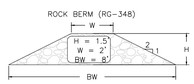
| SLOPE | RIP RAP SIZE |
|---|---|
| 0.5%-1% | 4" ROCK |
| 1.1% TO 2% | 6" ROCK |
| 2.1% TO 4% | 8" ROCK |
| 4.1% TO 5% | 8"-12" ROCK |

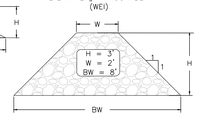
28. MIN THICKNESS OF RIPRAP TO BE 1.5 TIMES THE STONE DIAMETER UNO
29. GEOTEXTILE FABRIC (FILTER FABRIC) SHALL BE A NON-WOVEN POLYPROPALENE FABRIC DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA w/ APPROX. WEIGHT 6 OZ/YD^2, A MULLEN BURST RATTING OF 140 PSI, AND AN EQUIVALENT OPENING SIZE (ESO) GREATER THAN #50 SIEVE. TENCATE MIRIFI N-SERIES OF APPROVED EQUAL.
30. BASIN LINERS SHALL COMPLY w/ RG-348 FOR COMPACTED CLAY LINERS
31. ALL DISTURBED AREAS TO BE SEEDED AND MULCHED FOR SLOPE STABILIZATION. SEED TO BE BERMUDA GRASS OR APPROVED ALTERNATES.
32. ALL CONCRETE SLABS TO HAVE #5 BARS EACH WAY AT 12" c/c IN CENTER OF SLAB UNO.

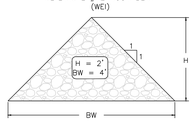


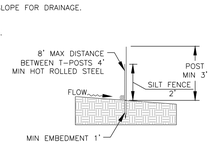

**VICINITY ROAD MAP**
SCALE: 1" = 1 MILE

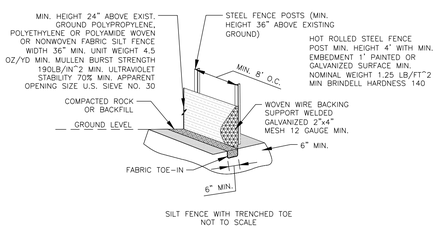


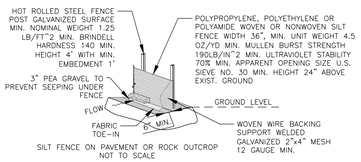



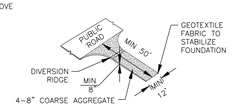



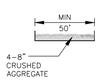



SILT FENCE WITH TRENCHED TOE
NOT TO SCALE



SILT FENCE ON PAVEMENT OR ROCK OUTCROP
NOT TO SCALE




**SHEET INDEX**


1. C1 - COVER PAGE
2. C2 - EXISTING CONDITIONS PLAN
3. C3 - INTERIM CONDITIONS PLAN
4. C4 - INTERIM CONDITIONS PLAN - DETAILS
5. C5 - FINAL CONDITIONS PLAN


IMAGE:

| | |
|---|---|
| ISSUE DATE: | 11/09/2023 |
| DRAWN BY: | WBE |
| CHECKED BY: | NEM |
| SCALE: 1" = | MILE |
| JOB NO.: | 10022-080 |

SHEET NO.:
**C1**
OF C5


WESTWARD
Environmental, Engineering, Natural Resources.
P.O. Box 2205 Boerne, Texas 78006
(830) 249-8284 Fax: (830) 249-0221
TBPE REG. NO.: F-4524
TBPG REG. NO.: 50112


DESCRIPTION | BY | DATE | REV.

STATE OF TEXAS
NICOLAS E. MERCADO
144228
LICENSED PROFESSIONAL ENGINEER
11/14/2023
Nicolas E. Mercado, P.E.
License No. 144228

**COVER PAGE**
WPAP MODIFICATION
H.L. ZUMWALT QUARRY OPERATIONS, LLC
17511 FM 1283, MICO, TEXAS 78056

H. L. ZUMWALT QUARRY OPERATIONS, LLC

# GEOLOGIC ASSESSMENT

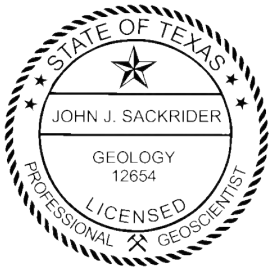
## FM 1283 RANCH QUARRY
## 17511 FM 1283
## MICO, TEXAS 78056
## MEDINA COUNTY

Submitted to: TCEQ Region 13, San Antonio

Prepared By:

WESTWARD
Environmental. Engineering. Natural Resources.
Boerne, Texas
830-249-8284

Date: November 2023
Project No. 10022-080
-JG-




Signature: _____
John J. Sackrider, P.G. - License No. 12654
TX PG Firm No. 50112
Date: 11/13/2023

# Article I. 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.***

## *Section 1.01 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.

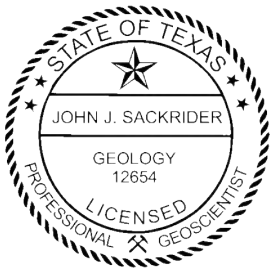
Print Name of Geologist: Telephone: 830-249-8284

John J. Sackrider, P.G. #12654 Fax: 830-249-0221

Date: 11/13/2023

Representing: Westward Environmental, Inc., TBPG Registered Geoscience Firm 50012
(Name of Company and TBPG or TBPE registration number)

Signature of Geologist:




**Regulated Entity Name:** FM 1283 Ranch Quarry

## *Section 1.02 Project Information*

1. Date(s) Geologic Assessment was performed: November 1-4; 28-30, 2022 & May 11, 2023
2. Type of Project:

   ☒ WPAP ☐ AST
   ☐ SCS ☐ 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.

**Article II. Table 1 - Soil Units, Infiltration Characteristics and Thickness**

| Soil Name | Group* | Thickness(feet) |
|---|---|---|
| PrB | C | < 4 |
| TAD | D | < 2 |
| TAF | D | < 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" = 300'
   Site Geologic Map Scale: 1" = 300'
   Site Soils Map Scale (if more than 1 soil type): 1" = 300'

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 8 (#) 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.

## *Section 2.01 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 (Form TCEQ-0585)

## GEOLOGIC ASSESSMENT TABLE

**PROJECT NAME:** FM 1283 RANCH 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 | GEO UNIT | DIMENSIONS (FEET) | | | TREND (DEGREES) | DOM | DENSITY (NO/FT) | APERTURE (FEET) | INFILL | RELATIVE INFILTRATION RATE | TOTAL | SENSITIVITY | | CATCHMENT AREA (ACRES) | | TOPOGRAPHY |
| | | | | | | X | Y | Z | | 10 | | | | | 10 | <40 | >40 | <1.6 | >1.6 | |
| S-1 | 29.562387 | -98.864806 | SC | 20 | Kkbn | 0.33 | 0.17 | 3+ | 140 | | | | N | 5 | 25 | X | | X | | Hillside |
| S-2 | 29.560772 | -98.864077 | SC | 20 | Kkbn | 2.17 | 3.33 | 0.75 | 80 | | | | N | 5 | 25 | X | | X | | Hillside |
| S-3 | 29.560715 | -98.864860 | MB | 30 | Kkbn | 0.5 | | unknown | N/A | | | | N, X | 10 | 40 | | X | X | | Hillside |
| S-4 | 29.560650 | -98.864897 | MB | 30 | Kkbn | 0.75 | | 760 | N/A | | | | X | 5 | 35 | X | | X | | Hillside |
| S-5 | 29.560650 | -98.863739 | SC | 20 | Kkd | 0.25 | 0.25 | 0.92 | None | | | | O | 5 | 25 | X | | X | | Hillside |
| S-6 | 29.558076 | -98.863507 | Z-SC | 30 | Kkd | 20 | 8 | 2.67 | 108 | | | | O,V | 5 | 35 | X | | X | | Hillside |
| S-7 | 29.557330 | -98.863687 | SC | 20 | Kkbn | 0.33 | 0.25 | 1.83 | None | | | | N | 5 | 25 | X | | X | | Hillside |
| S-8 | 29.559172 | -98.864116 | C | 30 | Kkbn | 10 | 8.33 | 2.3 | 75 | 10 | | | N | 5 | 45 | | X | X | | Hillside |
| S-9 | 29.560456 | -98.864617 | CD | 5 | Kkbn | 30 | 15 | 1.5 | N/A | | | | F,V | 5 | 10 | X | | X | | Hillside |
| S-10 | 29.560252 | -98.864686 | CD | 5 | Kkbn | 27 | 11 | 1 | N/A | | | | F,V | 5 | 10 | X | | X | | Hillside |
| S-11 | 29.557465 | -98.866352 | C | 20 | Kkd | 3 | 3 | 6 | 140 | | | | N | 20 | 40 | | X | X | | Hilltop |
| S-12 | 29.555424 | -98.867654 | C | 30 | Kkbn | 4.5 | 6 | 7.5 | None | | | | N | 5 | 35 | X | | X | | Hillside |
| S-13 | 29.553690 | -98.870579 | Z-SC | 30 | Kkd | 12 | 1 | 3 | 30 | | | | N | 5 | 35 | X | | X | | Hillside |
| S-14 | 29.553915 | -98.864013 | SC | 20 | Kkbn | 5 | 4 | 0.5 | 104 | | | | N | 5 | 25 | X | | X | | Floodplain |
| S-15 | 29.553536 | -98.865020 | SC | 20 | Kgrc | 2.42 | 3.67 | 4 | 90 | | | | N | 5 | 25 | X | | X | | Hillside |
| S-16 | 29.552977 | -98.871493 | SC | 20 | Kkd | 2 | 3.33 | 1 | 110 | | | | N | 5 | 25 | X | | X | | Hillside |
| S-17 | 29.552366 | -98.871654 | SC | 20 | Kkd | 4.58 | 3.58 | 1 | None | | | | N | 5 | 25 | X | | X | | Hillside |
| S-18 | 29.551190 | -98.863095 | Z-SC | 30 | Kkbn | 2.5 | 2 | 0.83 | None | | | | N | 5 | 35 | X | | X | | Hillside |
| S-19 | 29.550636 | -98.862650 | SC | 20 | Kkd | 1.67 | 2 | 0.58 | 155 | | | | N | 5 | 25 | X | | X | | Hillside |
| S-20 | 29.546450 | -98.866031 | SC | 20 | Kkd | 0.83 | 2.67 | 0.58 | 136 | | | | N | 5 | 25 | X | | X | | Hillside |
| S-21 | 29.546110 | -98.862843 | Z-SC | 20 | Kkd | 1 | 2.5 | 0.75 | 110 | | | | N | 5 | 25 | X | | X | | Hillside |
| S-22 | 29.551190 | -98.871274 | MB | 30 | Kkd | 0.67 | | unknown | N/A | | | | X | 5 | 35 | X | | X | | Hilltop |

* 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.

STATE OF TEXAS
JOHN J. SACKRIDER
GEOLOGY
12654
LICENSED
PROFESSIONAL GEOSCIENTIST

Date 11/13/2023

## GEOLOGIC ASSESSMENT TABLE

**PROJECT NAME:** FM 1283 RANCH 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/ MEMBER | DIMENSIONS (FEET) | | | TREND (DEGREES) | DOM | DENSITY (NO/FT) | APERTURE (FEET) | INFILL | RELATIVE INFILTRATION RATE | TOTAL | SENSITIVITY | | CATCHMENT AREA (ACRES) | | TOPOGRAPHY |
| | | | | | | X | Y | Z | | 10 | | | | | | <40 | >40 | <1.6 | >1.6 | |
| S-23 | 29.549192 | -98.872180 | SC | 20 | Kkbn | 1.17 | 1.08 | 7.5 | None | | | | N | 20 | 40 | | X | X | | Hillside |
| S-24 | 29.549370 | -98.847332 | SC | 20 | Kkbn | 0.33 | 0.42 | 2.42 | 155 | | | | N | 35 | 55 | | X | | X | Streambed |
| S-25 | 29.540433 | -98.872464 | SC | 20 | Kkd | 0.5 | 0.33 | 0.33 | 140 | | | | O | 5 | 25 | X | | X | | Hillside |
| S-26 | 29.538417 | -98.868746 | SC | 20 | Kkbn | 1.33 | 1.17 | 7.08 | 75 | 10 | | | N | 20 | 50 | | X | X | | Hillside |
| S-27 | 29.543791 | -98.863220 | CD | 5 | Kkbn | 10 | 12 | 3 | N/A | | | | C,O | 5 | 10 | X | | X | | Streambed |
| S-28 | 29.537834 | -98.864369 | MB | 30 | Kkd | 0.83 | | 709 | N/A | | | | X | 5 | 35 | X | | X | | Hillside |
| S-29 | 29.537776 | -98.864291 | MB | 30 | Kkd | 0.67 | | 740 | N/A | | | | X | 5 | 35 | X | | X | | Hillside |
| S-30 | 29.540890 | -98.865947 | MB | 30 | Kkd | 0.83 | | 892 | N/A | | | | X | 5 | 35 | X | | X | | Hillside |
| S-31 | 29.538370 | -98.867893 | CD | 5 | Kgrc | 210 | 65 | 3 | N/A | | | | X | 5 | 10 | X | | | X | Floodplain |
| S-32 | 29.537561 | -98.866362 | CD | 5 | Kgrc | 175 | 50 | 20 | N/A | | | | X | 5 | 10 | X | | | X | Floodplain |
| S-33 | 29.538044 | -98.865503 | CD | 5 | Kkbn | 300 | 70 | 10 | N/A | | | | X | 5 | 10 | X | | | X | Floodplain |
| S-34 | 29.539891 | -98.868267 | CD | 5 | Kgrc | 295 | 70 | 6 | N/A | | | | F,V | 5 | 10 | X | | | X | Floodplain |
| S-35 | 29.544349 | -98.868640 | MB | 30 | Kkbn | 0.33 | | 500 | N/A | | | | X | 35 | 65 | | X | X | | Hillside |
| S-36 | 29.545216 | -98.868152 | MB | 30 | Kkbn | 0.75 | | 700 | N/A | | | | X | 5 | 35 | X | | X | | Hillside |
| S-37 | 29.546220 | -98.869555 | CD | 5 | Kkbn | 250 | 175 | unknown | N/A | | | | X | 5 | 10 | X | | | X | Hillside |
| S-38 | 29.546728 | -98.869645 | CD | 5 | Kkbn | 185 | 55 | 6 | N/A | | | | F,V | 5 | 10 | X | | | X | Streambed |
| S-39 | 29.550535 | -98.867577 | CD | 5 | Kgrc | 255 | 85 | 4 | N/A | | | | X | 5 | 10 | X | | | X | Streambed |
| S-40 | 29.549140 | -98.866526 | CD | 5 | Kkbn | 230 | 60 | 4 | N/A | | | | X | 5 | 10 | X | | | X | Hillside |
| S-41 | 29.556922 | -98.863728 | CD | 5 | Kkbn | 130 | 15 | 4 | N/A | | | | F,V | 5 | 10 | X | | | X | Streambed |
| S-42 | 29.560922 | -98.864267 | CD | 5 | Kkbn | 320 | 150 | 4 | N/A | | | | F,V | 5 | 10 | X | | | X | Hillside |
| S-43 | 29.556086 | -98.866191 | CD | 5 | Kkbn | 40 | 15 | 2 | N/A | | | | F,V | 5 | 10 | X | | | X | Hillside/Streambed |
| S-44 | 29.556184 | -98.866434 | CD | 5 | Kkbn | 150 | 100 | 2 | N/A | | | | X | 5 | 10 | X | | | X | Hillside |

* 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 |
|---|
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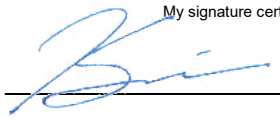

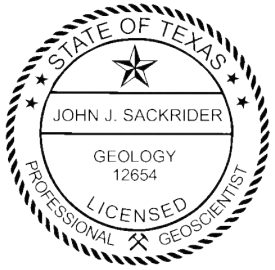


Date 11/13/2023

## GEOLOGIC ASSESSMENT TABLE

**PROJECT NAME:** FM 1283 RANCH 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 | | 10 | | | | | | <40 | >40 | <1.6 | >1.6 | |
| S-45 | 29.545474 | -98.866969 | CD | 5 | Kkbn | 165 | 70 | 6 | N/A | | | | X | 5 | 10 | X | | | X | Hillside |
| S-46 | 29.538910 | -98.865448 | F | 20 | Kkbn/Kgrc | 2,350 | | unknown | 67 | 10 | | | N,X | 5 | 15 | X | | | X | Hillside |
| S-47 | 29.539816 | -98.863990 | CD | 5 | Kkbn | 135 | 60 | 2 | N/A | | | | X | 5 | 10 | X | | X | | Hillside |
| S-48 | 29.543706 | -98.866013 | MB | 30 | Kkd | 530 | 230 | 85 | N/A | | | | N | 5 | 35 | X | | | X | Hillside |
| S-49 | 29.539803 | -98.866815 | MB | 30 | Kkbn | 415 | 245 | 10 | N/A | | | | F,X | 5 | 35 | X | | | X | Hillside |
| S-50 | 29.538511 | -98.866919 | MB | 30 | Kkbn | 700 | 200 | 35 | N/A | | | | F | 5 | 35 | X | | | X | Hillside |
| S-51 | 29.562623 | -98.863435 | F | 20 | Kkbn/Kgrc/Kkd | 790 | | unknown | 64 | 10 | | | X | 5 | 35 | X | | | X | Hillside |
| S-52 | 29.556431 | -98.864210 | F | 20 | Kkbn/Kgrc | 4,850 | | unknown | 10 | | | | X | 5 | 25 | X | | | X | Streambed/Floodplain |
| S-53 | 29.548812 | -98.868169 | F | 20 | Kkbn/Kgrc/Kkd | 3,785 | | unknown | 75 | 10 | | | X | 5 | 35 | X | | | X | Hillside |
| S-54 | 29.542677 | -98.864303 | F | 20 | Kkbn/Kgrc/Kkd | 3,750 | | unknown | 45 | | | | X | 5 | 25 | X | | | X | Hillside |
| S-55 | 29.551958 | -98.868807 | F | 20 | Kkbn/Kgrc/Kkd | 4,116 | | unknown | 138 | | | | X | 5 | 25 | X | | | X | Hillside |
| | | | | | | | | | | | | | | | 0 | | | | | |
| | | | | | | | | | | | | | | | 0 | | | | | |
| | | | | | | | | | | | | | | | 0 | | | | | |
| | | | | | | | | | | | | | | | 0 | | | | | |
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| | | | | | | | | | | | | | | | 0 | | | | | |
| | | | | | | | | | | | | | | | 0 | | | | | |
| | | | | | | | | | | | | | | | 0 | | | | | |

* DATUM: NAD 83

| 2A TYPE | TYPE | 2B POINTS |
|---|---|---|
| C | Cave | 30 |
| SC | Solution cavity | 20 |
| SF | Solution-enlarged fracture(s) | 20 |
| F | Fault | 20 |
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| SH | Sinkhole | 20 |
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|---|---|
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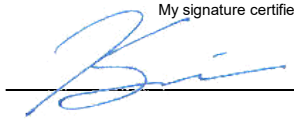
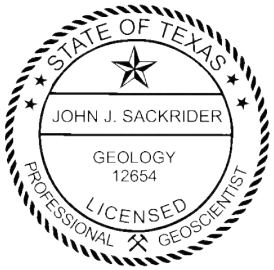
My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.






Date 11/13/2023

# Attachment B

# Stratigraphic Column

# Generalized Stratigraphic Column – Medina County, Texas

[Hydrogeologic subdivisions modified from Maclay and Small (1976); groups, formations, and members modified from Holt (1956), Stricklin and others (1971), Rose (1972), and Ashworth (1983); lithology modified from Dunham (1962); and porosity type modified from Choquette and Pray (1970). CU, confining unit; *, not exposed in the study area; AQ, aquifer]

| Hydrogeologic subdivision | | | Group, formation, or member | | | | | Hydrologic function | Thickness (feet) | Lithology | Field identification | Cavern development | Porosity/ permeability type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quaternary | | | Alluvium | | | | | AQ | 0–30 | Siltstone to sandstone | Sandstone and silt | None | High porosity/high permeability |
| | | | Leona Formation | | | | | AQ | 0–65 | Sand, gravel, silt, and clay | Chert and limestone | Rare to none | Low to high porosity/ low permeability |
| Upper Cretaceous | Upper confining unit | | Escondido Formation | | | | | AQ | 300 | Shale, sandstone, and limestone | Gray sandstone and shale | Rare to none | Low to high porosity/ low permeability |
| | | | Anacacho Limestone | | | | | CU | 240–400 | Fossiliferous limestone and marl | Red-brown to light-gray limestone; marl | Rare | Low to high porosity/ low permeability |
| | | | Austin Group | | | | | CU | 225–350 | Buff to white chalk; limestone and marl | White, light-gray limestone | Rare | Low porosity/low permeability |
| | | | Eagle Ford Group | | | | | CU | 30–50 | Brown, flaggy shale and argillaceous limestone | Dark-brown shale; petroliferous odor | None | Low porosity/low permeability |
| | | | Buda Limestone | | | | | CU | 40–50 | Buff, light-gray, dense mudstone | White, dense limestone | None | Low porosity/low permeability |
| | | | Del Rio Clay | | | | | CU | 40–50 | Blue-green to yellow-brown clay | Blue-green to medium-brown shale; *Ilymatogyra arietina* | None | Low porosity/low permeability |
| Lower Cretaceous | I | Edwards aquifer | Georgetown Formation | | | | | Karst AQ; not karst CU | 0–20 | Reddish-brown, gray to light-tan, marly limestone | Red-brown to gray marly limestone; *Waconella wacoensis* | None | Low porosity/low permeability |
| | II | | Devils River Formation | Edwards Group | Segovia Formation | Person Formation | Cyclic and marine members, undivided | AQ | 0–10 | Mudstone to packstone; *miliolid* grainstone; chert | * | Many subsurface; might be associated with earlier karst development | Laterally extensive; both fabric and not fabric/water-yielding |
| | III | | | | | | Leached and collapsed members, undivided | AQ | 70–90 | Crystalline limestone; mudstone to grainstone; chert; collapsed breccia | Bioturbated iron-stained beds separated by massive limestone beds; stromatolitic limestone | Extensive lateral development; large rooms | Majority not fabric/one of the most porous and permeable |
| | IV | | | | | | Regional dense member | CU | 16–20 | Dense, argillaceous mudstone | Wispy iron-oxide stains | Very few; only vertical fracture enlargement | Not fabric/low permeability; vertical barrier |
| | V | | | | Fort Terrett Formation | Kainer Formation | Grainstone member | AQ | 50–60 | *Miliolid* grainstone; mudstone to wackestone; chert | White crossbedded grainstone | Few | Not fabric/ recrystallization reduces permeability |
| | VI | | | | | | Kirschberg evaporite member | AQ | 50–60 | Highly altered crystalline limestone; chalky mudstone; chert | Boxwork voids, with neospar and travertine frame | Probably extensive cave development | Majority fabric/one of the most porous and permeable |
| | VII | | | | | | Dolomitic member | AQ | 110–140 | Mudstone to grainstone; crystalline limestone; chert | Massively bedded, light gray; *Toucasia* abundant | Caves related to structure or bedding planes | Mostly not fabric; some bedding-plane fabric/water-yielding |
| | VIII | | | | | | Basal nodular member | Karst AQ; not karst CU | 50–60 | Shaly, nodular limestone; mudstone and *miliolid* grainstone | Massive, nodular and mottled; abundant gastropods and *Exogyra texana* | Large lateral caves at surface; a few caves near Koenig Creek (see plate 1) | Fabric; stratigraphically controlled/large conduit flow at surface; no permeability in subsurface |
| | Trinity aquifer | | Lower confining unit | Upper member of Glen Rose Limestone | | | | CU; evaporite beds AQ | 350–500 | Yellowish tan, thinly bedded limestone and marl | Stair-step topography; alternating limestone and marl; *Orbitolina minuta* | Some surface cave development | Some water production at evaporite beds/relatively impermeable |

**Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Medina County, Texas**

Indicates surface unit mapped onsite. Note: CU = confining unit; AQ = Aquifer

# Attachment C

# Site Geology (Geologic Narrative)

# Geologic Narrative

## 1.0 PURPOSE

Westward Environmental, Inc. (WESTWARD) was retained by H. L. Zumwalt Quarry Operations, LLC (Client) to prepare a Geologic Assessment (GA) on a ~561-acre tract (Site). This GA was prepared as a required attachment to a Water Pollution Abatement Plan (WPAP) modification for the Site as required by the Texas Commission on Environmental Quality (TCEQ).

## 2.0 REGULATORY GUIDANCE

Title 30, Chapter 213 of the Texas Administrative Code

This report was prepared in accordance with *Instructions for Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones (TCEQ-0585 (Rev. 10-01-04))* and will be reviewed pursuant to Title 30, Chapter 213 of the Texas Administrative Code.

## 3.0 PROJECT LOCATION

The Site is located approximately 2.7 miles west of the FM 1283 and CR 371/Red Wing Rd. intersection in Mico, Medina County, Texas. The address is listed as 17511 FM 1283, Mico, Texas. The entire Site is located over the Edwards Aquifer Recharge Zone (EARZ).

## 4.0 METHODOLOGY

As part of the GA, WESTWARD performed a desktop review of selected published information. WESTWARD also conducted a field investigation in accordance with *TCEQ-0585 (Rev. 10-01-04)*.

### 4.1 Desktop Review

WESTWARD conducted a review of aerial imagery, the University of Texas Bureau of Economic Geology (BEG) Geologic Atlas of Texas (GAT) San Antonio Sheet, applicable U.S. Geological Survey (USGS) Topographic quadrangle(s) and geospatial dataset(s), the Texas Natural Resources Information System (TNRIS), the Texas Water Development Board's Water Data Interactive Groundwater Data Viewer (TWDB Viewer), the Railroad Commission of Texas (RRC), and the U.S. Department of Agriculture (USDA) National Resource Conservation Service (NRCS) Web Soil Survey prior to the field investigation.

### 4.2 Field Investigation

A field investigation was performed in the Assessment Area by WESTWARD staff under the direction of John J. Sackrider, P.G. (TBPG Lic. No. 12654) from November 1-4 and 28-30, 2022 and on May 11, 2023. Field transects of the Assessment Area were walked in accordance with TCEQ-0585 (rev. 10-01-04).

## 5.0 DESKTOP REVIEW

The desktop review was utilized for preliminary planning of the field investigation. The accuracy of the desktop review was limited by the accessibility, scale, and age of the data available.

### 5.1 Published Surface Geology

A review of published geologic maps revealed early Cretaceous-aged geologic formations mapped at the surface of the Site. These include the Kainer Formation of the Edwards Group and the Upper Glen Rose Formation (Kgrc) of the Trinity Group.

The Kainer Formation of the Edwards Group is further divided by hydraulic characteristics into hydrostratigraphic units which include (from youngest to oldest) the Grainstone (Kkg), Kirschberg evaporite (Kkke), Dolomitic (Kkd), and the Basal nodular (Kkbn) members. A Site Geologic Map is included in Attachment D.

### 5.2 Published Structure

The Site is located within the Balcones Fault Zone (BFZ). The desktop review revealed three (3) published certain faults and two (2) published inferred faults mapped at the Site. The faults are shown on the Site Geologic Map (Attachment D). The published certain faults trend from southwest to northeast with an average approximate bearing of 64°. This average was used to set the dominant fault trend range of the Site for the purposes of this GA and is approximated to be between 49° and 79°.

### 5.3 Karst Features

The desktop review did not reveal karst features within the Site.

### 5.4 Non-karst & Manmade Features

The desktop review of aerial imagery revealed pits associated with active mining activities on the southern portion of the site and three (3) stock ponds in the open areas north of the active quarry.

A review of the TWDB WDIGDV revealed six (6) onsite groundwater wells (Well Report Tracking #77807, #408650, #416867, #87171, #77799 from the TWDB Submitted Driller's Reports Database and State Well #6826403 from the TWDB Groundwater Database). Well reports are included in Attachment E.

### 5.5 Soils

Three (3) soil units were identified on the Site through the NRCS Web Soil Survey. They are detailed below as well as included on the Geologic Assessment Form TCEQ-0585 (Rev. 02-11-15). A Site Soils Map is included in Attachment D.

| Published Soil Unit Descriptions | | | |
|---|---|---|---|
| *Soil Name* | *Group* | *Thickness (Feet)* | *Description* |
| Pratley clay (PrB), 0 to 3 percent slopes | C | < 4 | Up to 46 inches to paralithic bedrock, well drained, moderately low to moderately high (0.06 to 0.57 in/hr) Ksat capacity |
| Eckrant-Rock outcrop association (TAD), 1 to 10 percent slopes | D | < 2 | Up to 20 inches to lithic bedrock, well drained, moderately low to moderately high (0.06 to 0.57 in/hr) Ksat capacity |
| Eckrant-Rock outcrop association (TAF), 8 to 30 percent slopes | D | < 2 | Up to 20 inches to lithic bedrock, well drained, moderately low to moderately high (0.06 to 0.57 in/hr) Ksat capacity |

## 6.0 FIELD INVESTIGATION

The field investigation was performed on November 1-4 and 28-30, 2022 and on May 11, 2023 by WESTWARD staff under the direction of John J. Sackrider, P.G. to verify the presence or absence of recharge features identified in the desktop review and to identify recharge features not found during the desktop review. Field reconnaissance was performed in accordance with the *TCEQ-0585-Instructions (Rev. 10-1-04)*.

### 6.1 Surface Geology

The published surface geology was confirmed in a few places where bedrock was exposed across the Site. However, many areas were covered with thick vegetation and tree litter, making it difficult to distinguish the surface geology in those places.

WESTWARD performed subsurface exploration on the Site from July 8-11, 2023 and created cross sections correlating the units across the Site which resulted in some changes in the published contacts between the Dolomitic (Kkd), Basal nodular (Kkbn), and the Glen Rose (Kgrc) members. The Grainstone (Kkg) and Kirschberg evaporite (Kkke) were not observed at the surface. The attached Site Geologic Map reflects the interpreted surface geology based on this field investigation in conjunction with the recent subsurface exploration.

### 6.2 Structure

Feature S-46 was the only structural feature observed as direct evidence of a mapped fault and recorded at the Site during the field investigation. Features S-51 through S-54 are faults that are included in this report because they are published in the geologic literature. However, they were not observed during the field investigation. Feature S-55 was added after the drilling effort revealed an additional fault at the Site.

## 6.3 Karst Features

Fourteen (14) solution cavities, four (4) zones of solution cavities, and three (3) caves were identified and recorded during the field investigation. Five (5) of these karst features (S-8, S-11, S-23, S-24, and S-26) are rated sensitive.

## 6.4 Non-karst & Manmade Features

Seventeen (17) non-karst closed depressions and eleven (11) manmade features in bedrock were identified and recorded during the field investigation. The manmade features in bedrock consist of eight (8) water wells and three (3) pits associated with mining activities. Two (2) of the wells (S-3 and S-35) are rated sensitive.

## 6.5 Feature Descriptions

**S-1 (SC)** **Not Sensitive**

Feature S-1 is a solution cavity located on the northern part of the Site that measures approximately 0.33 ft. x 0.17 ft and has an approximate depth of at least 3 ft. Broken rock and tree litter surrounded the feature which revealed exposed bedrock after some excavating by hand. The approximate trend of the feature is 140°. There did not appear to be a direct drainage path to the feature at the time of field investigation and the catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-2 (SC)** **Not Sensitive**

Feature S-2 is a solution cavity located on the hillside along the Deep Creek drainage area on the eastern part of the Site. The feature measures approximately 2.17 ft. x 3.33 ft and has an approximate depth of 0.75 ft. that extends up into the slope with an approximate trend of 80°. It appeared that any flow of water would likely come out of the feature rather than go into it. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-3 (MB)** **Sensitive**

Feature S-3 is a water well that is classified as a manmade feature in bedrock. At the time of the field investigation, the well was uncapped and the concrete pad was broken and degraded. The diameter of the well measures approximately 0.5 ft. and the depth is unknown. The concrete pad measures approximately 0.83 ft. and the steel well collar also extended 0.83 ft. above the ground surface. The well was not found on any database for public wells during the desktop review or during further research after the field investigation and did not appear to be in use at the time of field investigation. The catchment area is less than 1.6 acres. Due to the small catchment area, the height above the ground surface, and the fact that there was no degradation of the well collar at the time of field investigation, the interpreted probability of rapid infiltration is low. However, it is recommended that this well be plugged. This feature is rated sensitive.

**S-4 (MB)** **Not Sensitive**

Feature S-4 is a water well (Tracking #77799) that is classified as a manmade feature in bedrock. According to the TWDB WDIGDV, the borehole diameter for this well is 0.75 ft. This feature was drilled in 2006 as a stock well. It has a 0.35 ft. PVC casing surrounded by an 0.67 ft. steel sleeve that extends 2.08 ft. above the ground surface. The PVC casing

extends 4" from a steel plate that caps the sleeve. The depth of the well is recorded to be 760 ft. The well appeared to be in use and in compliance at the time of the field investigation and the 4" tall concrete pad was in good condition. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-5 (SC)** **Not Sensitive**

Feature S-5 is a small round solution cavity measuring approximately 0.25 ft. in diameter and was plugged with dark soil at a depth of 0.92 ft. Loose dark soil, dried twigs, and broken limestone rocks surrounded the feature at the time of field investigation. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-6 (Z-SC)** **Not Sensitive**

Feature S-6 is a zone of three solution cavities located along the vegetated hillside east of Deep Creek on the northern part of the Site. The zone measures approximately 20 ft. x 8 ft. with an approximate trend of 108°. The largest solution cavity measures 2.25 ft. x 0.83 ft. x 2.67 ft. and a smaller, possibly connected solution cavity measures 0.5 ft. x 1 ft. x 2.33 ft. The floor was covered with tree litter and due to excessive debris infill, the connectivity could not be confirmed at the time of the field investigation. The third solution cavity had a persimmon tree growing out of it. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-7 (SC)** **Not Sensitive**

Feature S-7 is a small, nearly round solution cavity located along the hillside of a drainage to the east of Deep Creek. The feature measures approximately 0.33 ft. x 0.25 ft x 1.83 ft. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-8 (C)** **Sensitive**

Feature S-8 is a horizontal cave located along the hillside to the east of Deep Creek. The feature measures approximately 10 ft. x 8.33 ft x 2.3 ft. with an approximate trend of 75°. The feature is surrounded by a few solution cavities and all voids go into the hillside horizontal to the ground surface. The catchment area is greater than 1.6 acres and the interpreted probability of rapid infiltration is low. However, because the trend of this feature is within the dominant fault trend range of this Site, this feature is rated sensitive.

**S-9 (CD)** **Not Sensitive**

Feature S-9 is a non-karst closed depression located in the low relief area just west of Deep Creek on the northern part of the Site. The feature measures approximately 30 ft. x 15 ft. x 1.5 ft. and was floored with fine-grained sediment and new growth vegetation at the time of the field investigation. The catchment area is less than 1.6 acres, and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-10 (CD)** **Not Sensitive**

Feature S-10 is a non-karst closed depression located adjacent to the south of S-9. The feature measures approximately 27 ft. x 11 ft. x 1 ft. and was floored with fine-grained

sediment and new growth vegetation at the time of the field investigation. The catchment area for this feature is greater than 1.6 acres and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-11 (C)** **Sensitive**
Feature S-11 is a cave located on a hilltop to the west of the main road that runs north to south across the Site and near the Site boundary on the northwestern part of the Site. The opening measures approximately 1 ft x 1.5 ft. and extends 6 ft. down along an approximate trend of 140° into a larger circular cave that measures approximately 3 ft. x 3 ft. There was no airflow observed at the time of the field investigation. The catchment area is less than 1.6 acres. Due to the low likelihood of drainage into the cave system from the hilltop, the interpreted probability of rapid infiltration is intermediate. The feature is rated sensitive.

**S-12 (C)** **Not Sensitive**
Feature S-12 is a small cave located near a small streambed in a heavily vegetated area on the north-central part of the Site. The feature measures approximately 4.5 ft. x 6 ft x 7.5 ft. and extends straight into the ground with no apparent trend. The feature was plugged at the bottom with soil, organic debris, and broken blocky limestone at the time of field investigation. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-13 (Z-SC)** **Not Sensitive**
Feature S-13 is a zone of three solution cavities located in a heavily vegetated area near the western Site boundary. The zone measures approximately 12 ft. x 1 ft. x 3 ft. and has an approximate trend of 30°. The solution cavities were filled in with soil and organic debris at the time of field investigation. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-14 (SC)** **Not Sensitive**
Feature S-14 is a solution cavity located within the floodplain along the streambed of Deep Creek on the central-eastern part of the Site. The feature measures approximately 5 ft. x 4 ft. x 0.5 ft. and opens into the hillside horizontally with an approximate trend of 104°. Due to the orientation of the feature, the catchment area is less than 1.6 acres, and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-15 (SC)** **Not Sensitive**
Feature S-15 is a solution cavity located on the rocky hillside just outside the floodplain on the west side of Deep Creek. The feature measures approximately 2.42 ft. x 3.67 ft. x 4 ft. and opens into the hillside horizontally with an approximate trend of 90°. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-16 (SC)** **Not Sensitive**
Feature S-16 is a solution cavity located in a heavily vegetated area on the western part of the Site. The feature measures approximately 2 ft. x 3.33 ft. x 1 ft. and has an approximate trend of 110°. It was infilled with soil and organic debris at the time of the field

investigation. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-17 (SC)** **Not Sensitive**

Feature S-17 is a solution cavity located in a small streambed in a heavily vegetated area on the western part of the Site. The feature measures approximately 4.58 ft. x 3.58 ft x 1 ft. The feature was infilled with organic debris and the surrounding bedrock appeared to be partially covered in moss at the time of field investigation. The catchment area is less than 1.6 acres, and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-18 (Z-SC)** **Not Sensitive**

Feature S-18 is a zone of multiple small solution cavities located along a streambed bank in a heavily vegetated area on the eastern part of the Site. The feature measures approximately 2.5 ft. x 2 ft. x 0.83 ft. and is filled with organic debris. The catchment area is less than 1.6 acres, and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-19 (SC)** **Not Sensitive**

Feature S-19 is a solution cavity located near the eastern Site boundary. The feature measures approximately 1.67 ft. x 2 ft x 0.58 ft and has an approximate trend of 155°. It was infilled with dark soil and organic debris at the time of the field investigation. The catchment area is less than 1.6 acres, and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-20 (SC)** **Not Sensitive**

Feature S-20 is a solution cavity that measures approximately 0.83 ft. x 2.67 ft x 0.58 ft with an approximate trend of 136° that extends into the hillside and then down towards the ground. The feature is infilled with loose soil and organic debris. The catchment area is less than 1.6 acres, and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-21 (SC)** **Not Sensitive**

Feature S-21 is a solution cavity located near the eastern Site boundary. The feature measures approximately 1 ft. x 2.5 ft x 0.75 ft with an approximate trend of 110°. It was floored with soil and organic debris at the time of the field investigation. The catchment area is less than 1.6 acres, and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-22 (MB)** **Not Sensitive**

Feature S-22 is a water well that is classified as a manmade feature in bedrock. It is located on a hilltop clearing on the western part of the Site. The well was surrounded by a 0.34 ft. tall concrete pad that was in good condition at the time of field investigation and extended to a height of 2.08 ft. above the concrete. The casing measured 0.67 ft. and was surrounded by a metal sleeve wrapped in insulating material and secured. The depth of the well is unknown as it was not found on any database for public wells during the desktop review or during further research after the field investigation. The well appeared to be in use and

in compliance at the time of the field investigation. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-23 (SC)** **Sensitive**

Feature S-23 is a circular-shaped solution cavity located in the vegetated area on the west-central part of the Site. The feature measures approximately 1.17 ft. x 1.08 ft x 7.5 ft. and was floored with dark soil. It could not be determined whether the feature continued laterally. There was no airflow observed at the time of the field investigation. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is medium. This feature is rated sensitive.

**S-24 (SC)** **Sensitive**

Feature S-24 is a solution cavity located near the western Site boundary in a streambed that flows into Deep Creek. The feature measures approximately 0.33 ft. x 0.42 ft x 2.42 ft and has an approximate trend of 155°. The feature had some leaves at the base but was mostly clear of debris at the time of the field investigation. The catchment area is greater than 1.6 acres. The interpreted probability of rapid infiltration is high. This feature is rated sensitive.

**S-25 (SC)** **Not Sensitive**

Feature S-25 is a solution cavity located along the south-central Site boundary. The feature measures approximately 0.5 ft. x 0.33 ft x 0.33 ft and has an approximate trend of 140°. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-26 (SC)** **Sensitive**

Feature S-26 is a solution cavity located on the southern part of the Site near Deep Creek. The feature measures approximately 1.33 ft. x 1.17 ft x 7.08 ft with an approximate trend of 75°. The feature has a narrow opening that opens into a larger cavity. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is medium to high. This feature is rated sensitive.

**S-27 (CD)** **Not Sensitive**

Feature S-27 is a non-karst closed depression located in a streambed near the eastern Site boundary and to the east of the active pit. The feature measures approximately 10 ft. x 12 ft. x 3 ft. and was floored with soil and gravel. It appears that it may have been an old borrow pit and similar features were identified nearby at the time of the field investigation. The feature was bermed so the catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-28 (MB)** **Not Sensitive**

Feature S-28 is a water well (Tracking #416867) that is classified as a manmade feature in bedrock. It is located on the southeastern part of the Site near the main office. According to the TWDB WDIGDV, the borehole diameter for this well is 0.83 ft. This feature was drilled in 2015 as a domestic well. It has a 0.5 ft. diameter PVC casing surrounded by a steel sleeve that extends 0.67’ above the ground surface and is capped with a metal plate. The PVC casing extends 1.25’ from the steel plate that caps the sleeve. The depth of the

well is recorded to be 709 ft. The well appeared to be in use and in compliance at the time of the field investigation and the 4" concrete pad was in good condition. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-29 (MB)** **Not Sensitive**

Feature S-29 is a water well (Tracking #87171) that is classified as a manmade feature in bedrock. It is located in a well house approximately 30 ft. from S-28. According to the TWDB WDIGDV, the borehole diameter for this well is 0.75 ft. This feature was drilled in 2006 as a domestic well with a 0.38 ft. PVC casing. However, only a 0.67 ft. diameter open well was observed at the time of the field investigation. The top of the well extended 0.5 ft. above a concrete pad that is 0.67 ft. high. The depth of the well is recorded to be 740 ft. The catchment area is less than 1.6 acres. This feature is rated not sensitive.

**S-30 (MB)** **Not Sensitive**

Feature S-30 is a water well (Tracking #408650) that is classified as a manmade feature in bedrock. It is located between the plant and the main pit of the Site. According to the TWDB WDIGDV, the borehole diameter for this well is 0.83 ft. This feature was drilled in 2015 as an industrial well with a 0.5 ft. PVC casing that extends 3.17 ft above a concrete pad that is 0.25 ft. high. The depth of the well is recorded to be 892 ft. The well appeared to be in use and in compliance at the time of the field investigation and the concrete pad was in good condition. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-31 (CD)** **Not Sensitive**

Feature S-31 is a non-karst closed depression located in the floodplain on the southern part of the Site. The feature measures approximately 210 ft. x 65 ft. x 3 ft. The feature was holding some water and was surrounded with fine-grained sediment and short, new growth vegetation at the time of the field investigation. The catchment area is greater than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-32 (CD)** **Not Sensitive**

Feature S-32 is a non-karst closed depression located in the floodplain along the southern Site boundary. The feature measures approximately 175 ft. x 50 ft. x 20 ft. and is floored with fine-grained sediment and short, new growth vegetation. The feature was holding water at the time of the field investigation. The catchment area is greater than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-33 (CD)** **Not Sensitive**

Feature S-33 is a non-karst closed depression located in the floodplain across the main haul road from S-32. The feature measures approximately 300 ft. x 70 ft. x 10 ft. and is floored with fine-grained sediment and short, new growth vegetation. The feature was holding some water at the time of the field investigation. The catchment area is greater than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-34 (CD)** **Not Sensitive**

Feature S-34 is a non-karst closed depression located in the floodplain to the west of Deep Creek on the south-central part of the Site. The feature measures approximately 295 ft. x 70 ft. x 6 ft. and is floored with fine-grained sediment and short, new growth vegetation. Broken cobble and pebble-sized limestone were also observed scattered on the floor of the feature at the time of the field investigation. The catchment area is greater than 1.6 acres. The interpreted probability of rapid infiltration is low.

**S-35 (MB)** **Sensitive**

Feature S-35 is a windmill water well (State Well ##6826403) that is classified as a manmade feature in bedrock. There is no drill date on record with the TWDB WDIGDV, but the first water level was recorded on 01/08/1934 by the USGS. At that time, it was identified as Well D-7-17. The well is recorded as a historical observation well and not in use for the withdrawal of water. The depth of the well is recorded to be 500 ft. The well measured approximately 0.33 ft. in diameter and was open and flush with the ground surface at the time of the field investigation. The concrete pad around it was broken and in very poor condition. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is high. This feature is rated sensitive.

**S-36 (MB)** **Not Sensitive**

Feature S-36 is a water well (Tracking #77807) that is classified as a manmade feature in bedrock. It is located behind the residence just west of the main pit. According to the TWDB WDIGDV, the borehole diameter for this well is 0.75 ft. This feature was drilled in 2006 as a domestic well. It has a 0.38 ft. PVC casing surrounded by a 0.67 ft. diameter steel sleeve that extends 2 ft. above the ground surface. The PVC casing extends 1 ft. from the plate that caps the sleeve. The concrete pad surrounding the well measures approximately 2 ft. x 2 ft. and is approximately 0.17 ft. high. The depth of the well is recorded to be 700 ft. The well appeared to be in use and in compliance at the time of the field investigation. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-37 (CD)** **Not Sensitive**

Feature S-37 is a non-karst closed depression located in the central part of the Site that appears to have been created by an agricultural dam that was formed by the road where a stream flows into Dry Creek from the west side. The feature measures approximately 250 ft. x 175 ft. with an unknown depth. The feature was holding water at the time of field reconnaissance. The catchment area for this feature is greater than 1.6 acres and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-38 (CD)** **Not Sensitive**

Feature S-38 is a non-karst closed depression located along the streambed across the road from S-37. The feature measures approximately 185 ft. x 55 ft. x 6 ft. and is floored with fine-grained sediment and some short growth vegetation. There was also an abundance of broken limestone cobbles concentrated at the edges of the feature at the time of field reconnaissance. The catchment area for this feature is greater than 1.6 acres and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-39 (CD)** **Not Sensitive**

Feature S-39 is a non-karst closed depression located along a stream that flows into Deep Creek from the west side and appears to have been created by an agricultural dam that was formed by the road where a stream flows into Dry Creek from the west side. The feature measures approximately 255 ft. x 85 ft. x 4 ft. The feature was holding water at the time of field reconnaissance. The catchment area for this feature is greater than 1.6 acres and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-40 (CD)** **Not Sensitive**

Feature S-40 is a non-karst closed depression located within the floodplain of Deep Creek and appears to have been created by an agricultural dam. The feature measures approximately 230 ft. x 60 ft. x 4 ft. The feature was holding water at the time of the field investigation. The catchment area for this feature is greater than 1.6 acres and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-41 (CD)** **Not Sensitive**

Feature S-41 is a non-karst closed depression located along a stream that flows into Deep Creek from the east side. The feature measures approximately 130 ft. x 15 ft. x 4 ft. Large trees surrounded the feature and it was holding some water at the time of the field investigation. The catchment area for this feature is greater than 1.6 acres and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-42 (CD)** **Not Sensitive**

Feature S-42 is a large non-karst closed depression located on the northern part of the Site where a stream flows into Deep Creek from the northwest. The feature measures approximately 320 ft. x 150 ft. x 4 ft. and was floored with compacted fine-grained sediment and short growth vegetation at the time of the field investigation. The catchment area for this feature is greater than 1.6 acres and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-43 (CD)** **Not Sensitive**

Feature S-43 is a non-karst closed depression located along a streambed flowing into Deep Creek from the west side. It appears to be a low area along the path of the stream created between a pathway and the main road. A culvert that had been previously installed was plugged at the time of the field investigation. The feature measures approximately 40 ft. x 15 ft. x 2 ft. and is floored with compacted fine-grained sediment and short growth vegetation. The catchment area for this feature is greater than 1.6 acres and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-44 (CD)** **Not Sensitive**

Feature S-44 is a non-karst closed depression located opposite of the road of S-43 and along the same streambed flowing into Deep Creek from the west side. The feature measures approximately 150 ft. x 100 ft. x 2 ft. The feature was holding water at the time of the field investigation. The catchment area for this feature is greater than 1.6 acres and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-45 (CD)** **Not Sensitive**

Feature S-45 is a non-karst closed depression located between Deep Creek and the main pit on the central part of the Site. The feature measures approximately 165 ft. x 70 ft. x 6 ft. The feature was holding water at the time of the field investigation. The catchment area for this feature is greater than 1.6 acres and the interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-46 (F)** **Not Sensitive**

Feature S-46 is a fault that was observed on the southern part of the Site that runs southwest to northeast with an approximate trend of 67°. This observation confirms the presence of one of the three published faults that was discovered during the desktop review. The extent of the fault within the Site boundaries measures approximately 2,350 ft. The catchment area is greater than 1.6 acres. Where observed the fault area was vegetated with an established soil profile. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-47 (CD)** **Not Sensitive**

Feature S-47 is a non-karst closed depression located along a road east of the plant on the southeastern part of the Site. The feature consists of a bermed area that measures approximately 135 ft. x 60 ft. x 2 ft. The feature was holding water at the time of the field investigation. The catchment area is less than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-48 (MB)** **Not Sensitive**

Feature S-48 is a manmade feature in bedrock that consists of the main pit of the quarry operations. The feature measures approximately 530 ft. x 230 ft. x 85 ft. The floor consists of bedrock with rock piles and loose fine-grained sediment. The catchment area is greater than 1.6 acres. The interpreted probability of rapid infiltration is low because there was no solutioning observed in the bedrock or other conduit extending to the subsurface. This feature is rated not sensitive.

**S-49 (MB)** **Not Sensitive**

Feature S-49 is a manmade feature in bedrock that consists of a system of settlement ponds located just west of the plant. The feature measures approximately 415 ft. x 245 ft. and the ponds are estimated to range from 1 ft. to 10 ft. in depth. They were holding water at the time of the field investigation. The catchment area is greater than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-50 (MB)** **Not Sensitive**

Feature S-50 is a manmade feature in bedrock that consists of an inactive pit located southeast of S-49 on the southern part of the main quarry operation. The feature measures approximately 700 ft. x 200 ft. x 35 ft. The floor consists of compacted fine-grained sediment with sediment piles and vegetation. Part of the feature was holding some water at the time of the field investigation. The catchment area is greater than 1.6 acres. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-51 (F)** **Not Sensitive**

Feature S-51 is a published fault that is mapped on the northernmost part of the Site and runs southwest to northeast with an approximate trend of 64°. This fault was not observed onsite during field investigation but is included in this report because it is part of the published geologic literature. The extent of the mapped fault within the Site boundaries measures approximately 790 ft. The catchment area is greater than 1.6 acres. Vegetation and an established soil profile were observed in the mapped fault areas. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-52 (F)** **Not Sensitive**

Feature S-52 is a published fault that extends between faults S-51 and S-53 along Deep Creek. It runs almost north to south with an average approximate trend of 10°. This fault was not observed onsite during field investigation but is included in this report because it is part of the published geologic literature. The entire feature is mapped within the Site and measures approximately 4,850 ft. The catchment area is greater than 1.6 acres. Vegetation and an established soil profile were observed in the mapped fault areas. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-53 (F)** **Not Sensitive**

Feature S-53 is published fault that is mapped across the center of the Site and runs southwest to northeast with an approximate trend of 75°. This fault was not observed onsite during field investigation but is included in this report because it is part of the published geologic literature. The extent of the mapped fault within the Site boundaries measures approximately 3,785 ft. The catchment area is greater than 1.6 acres. Vegetation and an established soil profile were observed in the mapped fault areas. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-54 (F)** **Not Sensitive**

Feature S-54 is a published inferred fault that is mapped on the southern part of the Site that runs southwest to northeast with an approximate trend of 45°. This fault was not observed onsite during field investigation but is included in this report because it is part of the published geologic literature. The extent of the fault within the Site boundaries measures approximately 3,750 ft. The catchment area is greater than 1.6 acres. Vegetation and an established soil profile were observed in the mapped fault areas. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

**S-55 (F)** **Not Sensitive**

Feature S-55 is a fault that was observed on the southern part of the Site that runs northwest to southeast with an approximate trend of 138°. This fault was observed during an exploratory drilling campaign. The extent of the fault within the Site boundaries measures approximately 4,116 ft. The catchment area is greater than 1.6 acres. Vegetation and an established soil profile were observed in the mapped fault areas. The interpreted probability of rapid infiltration is low. This feature is rated not sensitive.

## SELECT PHOTOGRAPHS

S-2: Solution cavity that extends horizontally into flow path.


S-3: Uncapped well that is no longer in use.


S-4: Water well (Tracking #77799) that is in use and compliant.


S-5: Small solution cavity located on the northern part of the Site.


S-6: Small solution cavity located within a zone on the northeast part of the Site.


S-7: Solution cavity located along a drainage area on the northeast part of the Site.

.

S-8: Cave surrounded by solution cavities along the Deep Creek streambed.

S-8: Close-up view inside the feature.

S-12: Solution small cave located on a hilltop on the north-central part of the Site.

S-14: Large cavity located along the Deep Creek streambed.


S-21: Solution cavity located on the eastern part of the Site.

S-23: Large solution cavity located on the west part of the Site.


S-24: Small solution cavity on a streambed on the west part of the Site.


S-26: Opening to a cave located on the south-central part of the Site.


S-29: Water well (Tracking #87171) found uncapped inside a well house.


S-30: Water well (Tracking #408650) that is in use and compliant.


S-32: Non-karst closed depression along Deep Creek near the main entrance to the quarry.

S-35: Historical observation well (State Well #6826403) located on the central part of the Site.


S-36: Water well (Tracking #77807) that is in use and compliant.


S-37: Non-karst closed depression along Deep Creek on the central part of the Site.


S-38: Non-karst closed depression along the same stream and just opposite the road of S-37.


S-44: Non-karst closed depression along a stream located on the northern part of the Site.

S-47: Stormwater pond classified as a non-karst closed depression.

S-49: Settlement ponds near the active quarry on the southern part of the Site.

S-50: Inactive pit, view to the northeast.

S-50: View to the west/southwest which includes evidence of the fault (S-46).

Vegetated area on the western part of the Site mapped as Ked.

Deep Creek drainage, view to the north.

Exposed bedrock on the northeast part of the Site mapped as Kgru.

Deep Creek drainage on the northern part of the Site, view to the southeast.

# Attachment D

# Site Geologic Map
# Site Soils Map

## LEGEND

- Approximate Project Boundary
- GA Features
- FEMA Floodplain (NFHL*)

**Site Geology*****

**Group - Formation - Member**

- Kkd - Edwards - Kainer - Dolomitic
- Kkbn - Edwards - Kainer - Basal nodular
- Kgrc - Trinity Group - Glen Rose Limestone (Upper)
- Inferred Fault
- Fault
- Observed Fault

U = Upthrown
D = Downthrown

*National Flood Hazard Layer

**National Hydrography Dataset

*** From field observations, drillling data, and Pedraza, D. E., & Clark, A. K. (2020). Geospatial Dataset for the Geologic Framework and Hydrostratigraphy of the Edwards andTrinity Aquifers within Northern Medina County, Texas at 1:24,000 [Data set]. U.S. Geological Survey. https://doi.org/10.5066/P9HHMBX8.

N

0 150 300 600 Feet

1 inch = 300 feet

S-1, S-51, S-42, S-2, S-3, S-4, S-5, S-9, S-10, S-8, S-6, S-11, S-7, S-41, S-44, S-43, S-52, S-12, S-14, S-13, S-15, S-16, S-17, S-55, S-22, S-18, S-39, S-19, S-24, S-23, S-40, S-53, S-38, S-37, S-20, S-21, S-45, S-36, S-35, S-48, S-27, S-54, S-30, S-25, S-34, S-49, S-47, S-46, S-26, S-31, S-50, S-33, S-28, S-29, S-32

Kkd, Kkbn, Kgrc

U D

Deep Creek

FM 1283

The entire area shown here is mapped within the Edwards Aquifer Recharge Zone (EARZ).

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

# SITE GEOLOGIC MAP

FM 1283 RANCH QUARRY - GEOLOGIC ASSESSMENT
H.L. ZUMWALT QUARRY OPERATIONS, LLC
MICO, MEDINA COUNTY, TX

STATE OF TEXAS
JOHN J. SACKRIDER
GEOLOGY
12654
LICENSED
PROFESSIONAL GEOSCIENTIST

11/13/2023

| REV | DESCRIPTION | BY | DATE |
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(830) 249-8284 Fax: (830) 249-0221
TBPE REG. NO.: F-4524
TBPG REG. NO.: 50112


SHEET NO.: 01 OF 02

| | |
|---|---|
| JOB NO.: | 10022-080 |
| SCALE: 1" = | 300' |
| CHECKED BY: | JJS |
| DRAWN BY: | JG |
| ISSUE DATE: | 10/31/2023 |
| IMAGE: ESRI WORLD IMAGERY | |

**LEGEND**

- Approximate Project Boundary
- GA Features

**Published Soils (USDA NRCS*)**

- PrB - Pratley clay, 0 to 3% slopes
- TAD - Eckrant-Rock outcrop association, 1 to 10% slopes
- TAF - Eckrant-Rock outcrop association, 8 to 30% slopes

** US Department of Agriculture National Resources Conservation Service*

N

0 150 300 600 Feet

1 inch = 300 feet

S-1 S-51 S-42 S-2 S-5 S-TAF S-3 S-9 S-10 S-8 S-6 S-11 S-7 S-41 S-52 S-44 S-43 S-12 PrB S-14 S-15 S-13 TAD S-16 S-17 S-55 S-18 S-22 TAD S-19 S-39 S-24 S-23 S-40 S-53 TAF S-38 S-20 TAD S-37 S-21 S-45 S-36 PrB S-35 S-48 S-27 S-54 S-30 S-25 TAD S-34 S-49 S-47 S-46 S-26 S-31 S-50 S-33 S-28 S-29 S-32 FM 1283

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

# SITE SOILS MAP

FM 1283 RANCH QUARRY - GEOLOGIC ASSESSMENT
H.L. ZUMWALT QUARRY OPERATIONS, LLC
MICO, MEDINA COUNTY, TX

STATE OF TEXAS
JOHN J. SACKRIDER
GEOLOGY
12654
LICENSED
PROFESSIONAL GEOSCIENTIST

11/13/2023

| REV | DESCRIPTION | BY | DATE |
|---|---|---|---|
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TBPE REG. NO.: F-4524
TBPG REG. NO.: 50112


SHEET NO.: 02 OF 02

| | |
|---|---|
| JOB NO.: | 10022-080 |
| SCALE: 1" = | 300' |
| CHECKED BY: | JJS |
| DRAWN BY: | JG |
| ISSUE DATE: | 10/31/2023 |
| IMAGE: ESRI WORLD IMAGERY | |

# Attachment E

## Well Reports for:

## Tracking #77799
## Tracking #416867
## Tracking #87171
## Tracking #408650
## State Well #6826403
## Tracking #77807

# STATE OF TEXAS WELL REPORT for Tracking #77799

| | | | |
|---|---|---|---|
| Owner: | **Henry Zumwalt** | Owner Well #: | **C102-075** |
| Address: | **12354 FM 1560 N<br>Helotes, TX 78023** | Grid #: | **68-26-4** |
| | | Latitude: | **29° 33' 38" N** |
| Well Location: | **1866 FM 1283<br>Mico, TX 78056** | Longitude: | **098° 51' 54" W** |
| Well County: | **Medina** | Elevation: | **1226 ft. above sea level** |
| Type of Work: | **New Well** | Proposed Use: | **Stock** |

Drilling Start Date: **2/13/2006** Drilling End Date: **2/15/2006**

Borehole:

| *Diameter (in.)* | *Top Depth (ft.)* | *Bottom Depth (ft.)* |
|---|---|---|
| **9** | **0** | **167** |
| **8** | **167** | **760** |

Drilling Method: **Air Hammer; Air Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

| *Top Depth (ft.)* | *Bottom Depth (ft.)* | *Filter Material* | *Size* |
|---|---|---|---|
| **600** | **760** | **Gravel** | **3/8 in** |

Annular Seal Data:

| *Top Depth (ft.)* | *Bottom Depth (ft.)* | *Description (number of sacks & material)* |
|---|---|---|
| **0** | **6** | **3 Portland** |
| **6** | **600** | **52 Bentonite** |

Seal Method: **Bentonite pumped through trimmie**

Sealed By: **Driller**

Distance to Property Line (ft.): **320**

Distance to Septic Field or other concentrated contamination (ft.): **none**

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

Method of Verification: **owner**

Surface Completion: **Alternative Procedure Used**

Water Level: **297 ft.** below land surface on **2006-02-15** Measurement Method: **Unknown**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **Estimated** **Yield: 20 GPM**

Water Quality:

| Strata Depth (ft.) | Water Type |
|---|---|
| **650** | **fresh** |

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: **Pipe Creek Water Well, Inc.**

**PO Box 63333**
**Pipe Creek, TX 78063**

Driller Name: **Randy Roberts** License Number: **2450**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

| Top (ft.) | Bottom (ft.) | Description |
|---|---|---|
| **0** | **10** | **soil** |
| **10** | **110** | **white/tan limestone** |
| **110** | **180** | **gray limestone** |
| **180** | **760** | **no returns** |

Casing:
BLANK PIPE & WELL SCREEN DATA

| Dia. (in.) | New/Used | Type | Setting From/To (ft.) |
|---|---|---|---|
| **4.5** | **new** | **pvc** | **0-760** |
| **perf.** | | | **640-760** |

**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 #416867

| | | | |
|---|---|---|---|
| Owner: | **HENRY L ZUMWALT** | Owner Well #: | **No Data** |
| Address: | **18665 FM 1283<br>MICO, TX 78056** | Grid #: | **68-26-7** |
| Well Location: | **17511 FM 1283<br>MICO, TX 78056** | Latitude: | **29° 32' 16" N** |
| | | Longitude: | **098° 51' 51.5" W** |
| Well County: | **Medina** | Elevation: | **1150 ft. above sea level** |

Type of Work: **New Well** Proposed Use: **Domestic**

Drilling Start Date: **12/20/2015** Drilling End Date: **1/17/2016**

| | *Diameter (in.)* | *Top Depth (ft.)* | *Bottom Depth (ft.)* |
|---|---|---|---|
| Borehole: | **10** | **0** | **709** |

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

| *Top Depth (ft.)* | *Bottom Depth (ft.)* | *Description (number of sacks & material)* |
|---|---|---|
| **0** | **2** | **Cement 2 Bags/Sacks** |
| **2** | **678** | **Bentonite 48 Bags/Sacks** |

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **120**

Distance to Septic Field or other concentrated contamination (ft.): **100**

Distance to Septic Tank (ft.): **100**

Method of Verification: **MEASURED**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **No Data**

Packers: **Plastic at 455 ft.**
**Plastic at 460 ft.**

Type of Pump: **Submersible**

Well Tests: **No Test Data Specified**

Water Quality:

| Strata Depth (ft.) | Water Type |
|---|---|
| **No Data** | **No Data** |

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: **Landowner Drilled**

**18665 FM 1283**
**MICO, TX 78056**

Driller Name: **HENRY L ZUMWALT** License Number: **N/A**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

| Top (ft.) | Bottom (ft.) | Description |
|---|---|---|
| **0** | **3** | **BLACK DIRT** |
| **3** | **7** | **WHITE LIMESTONE** |
| **7** | **10** | **ORANGE CLAY** |
| **10** | **40** | **WHITE LIMESTONE** |
| **40** | **44** | **YELLOW LIMESTONE** |
| **44** | **60** | **RED CLAY** |
| **60** | **70** | **LOST CIRCULATION** |

Casing:
BLANK PIPE & WELL SCREEN DATA

| Dia (in.) | Type | Material | Sch./Gage | Top (ft.) | Bottom (ft.) |
|---|---|---|---|---|---|
| **6** | | **New Plastic (PVC)** | **17** | **0** | **509** |
| **6** | **Perforated or Slotted** | **New Plastic (PVC)** | **17** | **509** | **709** |

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

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

# STATE OF TEXAS WELL REPORT for Tracking #87171

| | | | |
|---|---|---|---|
| Owner: | **Henry Zumwalt** | Owner Well #: | **C102-178** |
| Address: | **12354 F M 1560<br>Helotes, TX 78023** | Grid #: | **68-26-7** |
| Well Location: | **18865 FM 1283<br>Mico, TX 78056** | Latitude: | **29° 32' 16" N** |
| | | Longitude: | **098° 51' 51" W** |
| Well County: | **Medina** | Elevation: | **1150 ft. above sea level** |
| Type of Work: | **New Well** | Proposed Use: | **Domestic** |

Drilling Start Date: **6/7/2006** Drilling End Date: **6/12/2006**

Borehole:

| *Diameter (in.)* | *Top Depth (ft.)* | *Bottom Depth (ft.)* |
|---|---|---|
| **9** | **0** | **740** |

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

| *Top Depth (ft.)* | *Bottom Depth (ft.)* | *Filter Material* | *Size* |
|---|---|---|---|
| **630** | **740** | **Gravel** | **3/8** |

Annular Seal Data:

| *Top Depth (ft.)* | *Bottom Depth (ft.)* | *Description (number of sacks & material)* |
|---|---|---|
| **0** | **8** | **3 portland** |
| **8** | **630** | **46 bentonite** |

Seal Method: **pumped thru tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **120**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

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

Method of Verification: **owner**

Surface Completion: **Alternative Procedure Used**

Water Level: **230 ft.** below land surface on **2006-06-12** Measurement Method: **Unknown**

Packers: **none**

Type of Pump: **No Data**

Well Tests: **Estimated** **Yield: 100 GPM**

Water Quality:

| Strata Depth (ft.) | Water Type |
|---|---|
| **680** | **fresh** |

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: **Pipe Creek Water Well, Inc.**

**PO BOX 63333**
**Pipe Creek, TX 78063**

Driller Name: **Randy Roberts** License Number: **2450**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

| Top (ft.) | Bottom (ft.) | Description |
|---|---|---|
| **0** | **80** | **hard Edwards limestone** |
| **80** | **680** | **no returns** |
| **680** | **730** | **tan porous glenrose reef** |
| **730** | **740** | **solid gray limestone** |

Casing:
BLANK PIPE & WELL SCREEN DATA

| Dia. (in.) | New/Used | Type | Setting From/To (ft.) |
|---|---|---|---|
| **4.5** | **new** | **sch40 & sdr17** | **0-740** |
| **slotted** | | | **680-740** |

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

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**P.O. Box 12157**
**Austin, TX 78711**
**(512) 334-5540**

# STATE OF TEXAS WELL REPORT for Tracking #408650

| | | | |
|---|---|---|---|
| Owner: | **Henry L Zumwalt** | Owner Well #: | **C104-623** |
| Address: | **12354 FM 1560 N<br>Helotes, TX 78023** | Grid #: | **68-26-7** |
| | | Latitude: | **29° 32' 27.24" N** |
| Well Location: | **18865 FM 1283<br>Mico, TX 78056** | Longitude: | **098° 51' 57.48" W** |
| Well County: | **Medina** | Elevation: | **1150 ft. above sea level** |
| Type of Work: | **New Well** | Proposed Use: | **Industrial** |

Drilling Start Date: **9/10/2015** Drilling End Date: **9/22/2015**

Borehole:

| *Diameter (in.)* | *Top Depth (ft.)* | *Bottom Depth (ft.)* |
|---|---|---|
| **10** | **0** | **805** |
| **9** | **805** | **892** |

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:

| *Top Depth (ft.)* | *Bottom Depth (ft.)* | *Description (number of sacks & material)* |
|---|---|---|
| **0** | **2** | **Cement 2 Bags/Sacks** |
| **2** | **600** | **Bentonite 56 Bags/Sacks** |

Seal Method: **Tremie**

Sealed By: **Aquatech Drilling, Inc.**

Distance to Property Line (ft.): **100**

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

Distance to Septic Tank (ft.): **100**

Method of Verification: **measured**

Surface Completion: **Surface Slab Installed**

**Surface Completion NOT by Driller**

Water Level: **322 ft.** below land surface on **2015-09-16** Measurement Method: **Steel Tape**

Packers: **Rubber at 600 ft.**
**Rubber at 620 ft.**

Type of Pump: **Submersible**

Pump Depth (ft.): **693**

Well Tests: **No Test Data Specified**

Water Quality:

| Strata Depth (ft.) | Water Type |
|---|---|
| **810 - 892** | **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: **Aquatech Drilling, Inc.**

**P.O. Box 3340**
**Bandera, TX 78003**

Driller Name: **Owner and Reed Scruby** License Number: **54402**

Comments: **Well was drilled by owner. Owner certified that after 20 feet, circulation was lost and there were no identified cuttings. Casing, pressure grouting, slab, and steel sleeve were installed by Aquatech Drilling, Inc. - Licensed driller/pump installer - Reed Scruby #54402**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

| Top (ft.) | Bottom (ft.) | Description |
|---|---|---|
| **0** | **3** | **Black dirt** |
| **3** | **20** | **caliche** |
| **20** | **892** | **lost circulation per driller/owner** |

Casing:
BLANK PIPE & WELL SCREEN DATA

| Dia (in.) | Type | Material | Sch./Gage | Top (ft.) | Bottom (ft.) |
|---|---|---|---|---|---|
| **6** | **Blank** | **New Plastic (PVC)** | **SDR 17** | **2** | **790** |
| **6** | **Screen** | **New Plastic (PVC)** | **SDR-17 0.032** | **790** | **890** |

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

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

# Texas Water Development Board (TWDB)
# Groundwater Database (GWDB)
# Well Information Report for State Well Number 68-26-403

GWDB Reports and Downloads

## Well Basic Details

Scanned Documents

| | |
|---|---|
| **State Well Number** | 6826403 |
| **County** | Medina |
| **River Basin** | San Antonio |
| **Groundwater Management Area** | 10 |
| **Regional Water Planning Area** | L - South Central Texas |
| **Groundwater Conservation District** | Medina County GCD |
| **Latitude** (decimal degrees) | 29.544722 |
| **Latitude** (degrees minutes seconds) | 29° 32' 41" N |
| **Longitude** (decimal degrees) | -98.868055 |
| **Longitude** (degrees minutes seconds) | 098° 52' 05" W |
| **Coordinate Source** | +/- 10 Seconds |
| **Aquifer Code** | 218GLRS - Glen Rose Limestone |
| **Aquifer** | Trinity |
| **Aquifer Pick Method** | |
| **Land Surface Elevation** (feet above sea level) | 1152 |
| **Land Surface Elevation Method** | Interpolated From Topo Map |
| **Well Depth** (feet below land surface) | 500 |
| **Well Depth Source** | Another Government Agency |
| **Drilling Start Date** | |
| **Drilling End Date** | |
| **Drilling Method** | |
| **Borehole Completion** | |

| | |
|---|---|
| **Well Type** | Withdrawal of Water |
| **Well Use** | Unused |
| **Water Level Observation** | Historical Observation Well |
| **Water Quality Available** | No |
| **Pump** | None |
| **Pump Depth** (feet below land surface) | |
| **Power Type** | |
| **Annular Seal Method** | |
| **Surface Completion** | |
| **Owner** | A Haby |
| **Driller** | |
| **Other Data Available** | |
| **Well Report Tracking Number** | |
| **Plugging Report Tracking Number** | |
| **U.S. Geological Survey Site Number** | |
| **Texas Commission on Environmental Quality Source Id** | |
| **Groundwater Conservation District Well Number** | |
| **Owner Well Number** | |
| **Other Well Number** | |
| **Previous State Well Number** | |
| **Reporting Agency** | U.S. Geological Survey |
| **Created Date** | 6/10/1999 |
| **Last Update Date** | 6/10/1999 |

| | |
|---|---|
| **Remarks** | Well D-7-17 in B-5601. |

***Casing - No Data***

***Well Tests - No Data***

***Lithology - No Data***

***Annular Seal Range - No Data***

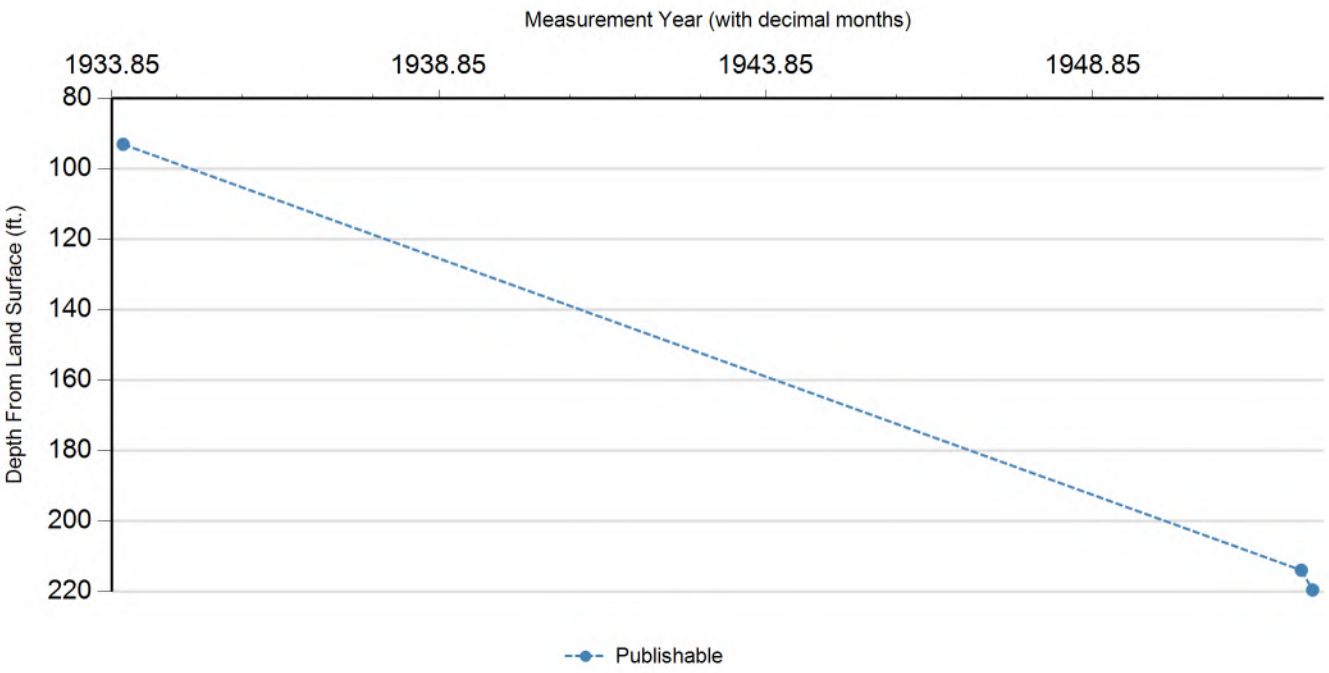
***Borehole - No Data***

***Plugged Back - No Data***

***Filter Pack - No Data***

***Packers - No Data***

## Water Level Measurements




| Status Code | Date | Time | Water Level (ft. below land surface) | Change value in ( ) indicates rise in level | Water Elevation (ft. above sea level) | Meas # | Measuring Agency | Method | Remark ID | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| P | 1/8/1934 | | 93.1 | | 1058.9 | 1 | U.S. Geological Survey | Steel Tape | | |
| P | 1/16/1952 | | 213.9 | 120.80 | 938.1 | 1 | U.S. Geological Survey | Steel Tape | | |
| P | 3/19/1952 | | 219.5 | 5.60 | 932.5 | 1 | U.S. Geological Survey | Steel Tape | | |

## Code Descriptions

| Status Code | Status Description |
|---|---|
| P | Publishable |

## Water Quality Analysis - No Data Available

Texas Water Development Board
Well Schedule

State Well No. 68 26 403 Previous Well No. 0-7-17 County MEDINA 325

River Basin SAN ANTONIO 19 Zone 1 Lat. 29 32 40 Long. 98 52 04 Source of Coord. 3

Owner's Well No. _____ Location ____ 1/4, ____ 1/4, Section ____, Block ____, Survey ____

Owner A HABY

Driller

Address _____ Tenant/Oper. _____

Date Drilled Depth 500 Source of Depth Datum A Altitude 1152 Source of Alt. Datum M

Aquifer GLEN ROSE LS. 218GLRS Well Type W User

AQUIPER IO=28

Well Construction: Const. Method _____ Casing Material _____

Completion _____ Screen Material _____

Lift Data: Pump Mfr. _____ Type NONE N No. Stages _____

Bowls Diam. _____ in. Setting _____ ft. Column Diam. _____ in.

Motor Mfr. _____ Fuel or Power _____ Horsepower _____

Yield: Flow ____ GPM Pump ____ GPM Meas.,Repr.,Est. _____ Date ____

Performance Test: Date _____ Length of Test _____ Production _____ GPM

Static Level ____ ft. Pumping Level ____ ft. Drawdown ____ ft. Sp.Cap. ____ GPM/ft.

Quality (Remarks _____

Water Use: Primary UNUSED U Secondary _____ Tertiary _____

Other Data Available: Water Level H Water Quality N Logs _____ Other Data _____

| | Date | Meas. | |
|---|---|---|---|
| | 01 08 1934 | 93.1 | TAPE-USGS |
| Water Levels | 01 16 1952 | 213.9 | |
| | 03 19 1952 | 219.5 | |

Casing or Blank Pipe (C)
Well Screen or Slotted Zone (S)
Open Hole (O)
Cemented from ___ to ___

| | Diam. (in.) | Setting (feet) From | To |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |

Recorded By _____ Date Record Collected or Updated 1952 (20 max) Reporting Agency 02

Remarks: WELL 0-7-17 IN B-5601

Aquifer 218GLRS

Well No. 68-26-403

93-0384
2/9/93

# STATE OF TEXAS WELL REPORT for Tracking #77807

| | | | |
|---|---|---|---|
| Owner: | **Henry Zumwalt** | Owner Well #: | **C102-158 (#2)** |
| Address: | **12354 FM 1560N<br>Helotes, TX 78023** | Grid #: | **68-26-4** |
| | | Latitude: | **29° 32' 43" N** |
| Well Location: | **1866 FM 1283<br>Mico, TX 78056** | Longitude: | **098° 52' 06" W** |
| Well County: | **Medina** | Elevation: | **1152 ft. above sea level** |
| Type of Work: | **New Well** | Proposed Use: | **Domestic** |

Drilling Start Date: **2/15/2006** Drilling End Date: **2/20/2006**

Borehole:

| *Diameter (in.)* | *Top Depth (ft.)* | *Bottom Depth (ft.)* |
|---|---|---|
| **9** | **0** | **160** |
| **8** | **160** | **700** |

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

| *Top Depth (ft.)* | *Bottom Depth (ft.)* | *Filter Material* | *Size* |
|---|---|---|---|
| **570** | **700** | **Gravel** | **3/8 in** |

Annular Seal Data:

| *Top Depth (ft.)* | *Bottom Depth (ft.)* | *Description (number of sacks & material)* |
|---|---|---|
| **0** | **6** | **3 Portland** |
| **6** | **570** | **38 Bentonite** |

Seal Method: **Bentonite pumped through trimmie**

Sealed By: **Driller**

Distance to Property Line (ft.): **1000+**

Distance to Septic Field or other concentrated contamination (ft.): **100+**

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

Method of Verification: **owner**

Surface Completion: **Alternative Procedure Used**

Water Level: **255 ft.** below land surface on **2006-02-20** Measurement Method: **Unknown**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **Estimated** **Yield: 50+ GPM**

Water Quality:

| Strata Depth (ft.) | Water Type |
|---|---|
| **640** | **fresh** |

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **Yes**

| Natural Injurious Constituents | Unnatural Injurious Constituents |
|---|---|
| | **naturally-occurring gyp layers** |

**The driller did certify that while drilling, deepening or otherwise altering the above described well, injurious water or constituents was encountered and the landowner or person having the well drilled was informed that such well must be completed or plugged in such a manner as to avoid injury or pollution.**

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: **Pipe Creek Water Well, Inc.**

**PO Box 63333**
**Pipe Creek, TX 78063**

Driller Name: **Randy Roberts** License Number: **2450**

Comments: **well #2, at house**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

| Top (ft.) | Bottom (ft.) | Description |
|---|---|---|
| **0** | **80** | **white/pink limestone** |
| **80** | **165** | **gray shale** |
| **165** | **280** | **spotted gray limestone** |
| **280** | **305** | **gyp** |
| **305** | **350** | **gray limestone** |
| **350** | **380** | **dark gray spotted limestone** |
| **380** | **440** | **gray limestone** |
| **440** | **500** | **gray/tan limestone** |
| **500** | **510** | **spotted gray limestone** |
| **510** | **525** | **gyp** |
| **525** | **640** | **gray limestone** |
| **640** | **680** | **glenrose reef** |
| **680** | **700** | **gray limestone** |

Casing:
BLANK PIPE & WELL SCREEN DATA

| Dia. (in.) | New/Used | Type | Setting From/To (ft.) |
|---|---|---|---|
| **4.5** | **new** | **pvc** | **0-700** |
| **perf.** | | | **640-700** |

**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**

# Article I. Modification of a Previously Approved Plan

**Texas Commission on Environmental Quality**

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), 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.***

## *Section 1.01 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 request for a **Modification of a Previously Approved Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Nicolas E. Mercado, PE

TX License No. 144228 | TX Firm No. 4524

Date: 11/29/2023

Signature of Customer/Agent:


## *Section 1.02 Project Information*

1. Current Regulated Entity Name: FM 1283 Ranch Quarry
   Original Regulated Entity Name: FM 1283 Ranch Quarry
   Regulated Entity Number(s) (RN): 105835375
   Edwards Aquifer Protection Program ID Number(s): 13-09110601A
   ☐ The applicant has not changed and the Customer Number (CN) is: NEW
   ☒ The applicant or Regulated Entity has changed. A new Core Data Form has been provided.

2. ☒ **Attachment A: Original Approval Letter and Approved Modification Letters**. A copy of the original approval letter and copies of any modification approval letters are attached.

3. A modification of a previously approved plan is requested for (check all that apply):
   - ☒ Physical or operational modification of any water pollution abatement structure(s) including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;
   - ☐ 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;
   - ☒ Development of land previously identified as undeveloped in the original water pollution abatement plan;
   - ☐ Physical modification of the approved organized sewage collection system;
   - ☐ Physical modification of the approved underground storage tank system;
   - ☐ Physical modification of the approved aboveground storage tank system.

4. ☒ Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

| ***WPAP Modification Summary*** | ***Approved Project*** | ***Proposed Modification*** |
|---|---|---|
| Acres | 113.53-Acres | 561-Acres |
| Type of Development | Quarry | Quarry |
| Number of Residential Lots | N/A | N/A |
| Impervious Cover (acres) | 0.27 | 0.54 |
| Impervious Cover (%) | 0.24% | 0.1% |
| Permanent BMPs | Earthen Berms | Earthen Berms, Vegetative buffers |
| Other | _____ | |

| ***SCS Modification Summary*** | ***Approved Project*** | ***Proposed Modification*** |
|---|---|---|
| Linear Feet | N/A | N/A |
| Pipe Diameter | _____ | _____ |
| Other | _____ | _____ |

| ***AST Modification Summary*** | ***Approved Project*** | ***Proposed Modification*** |
|---|---|---|
| Number of ASTs | N/A | N/A |
| Volume of ASTs | _____ | _____ |
| Other | _____ | _____ |

| ***UST Modification Summary*** | ***Approved Project*** | ***Proposed Modification*** |
|---|---|---|
| Number of USTs | N/A | N/A |
| Volume of USTs | _____ | _____ |
| Other | _____ | _____ |

5. ☒ **Attachment B: Narrative of Proposed Modification**. A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved, including any previous modifications, and how this proposed modification will change the approved plan.

6. ☒ **Attachment C: Current Site Plan of the Approved Project**. A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
   - ☐ The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
   - ☐ The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
   - ☐ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
   - ☒ The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.

7. ☒ The acreage of the approved plan has increased. A Geologic Assessment has been provided for the new acreage.
   ☐ Acreage has not been added to or removed from the approved plan.

8. ☒ 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.

10022-37 MB ✓



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

October 5, 2010

Mr. Henry Zumwalt
H.L. Zumwalt Construction, Inc.
12354 FM 1560 N
Helotes, TX 78023

Re: Edwards Aquifer, Medina County
NAME OF PROJECT: FM 1283 Ranch Quarry; Located on the north side of FM 1283 approximately 5 miles west of the FM 471 and SH 211 intersection; San Antonio ETJ, Texas
TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
San Antonio File No. 2897.01; Investigation No. 829257; Regulated Entity No. RN105835375

Dear Mr. Zumwalt:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the above-referenced project submitted to the San Antonio Regional Office by Westward Environmental, Inc. on behalf of H.L. Zumwalt Construction, Inc. on June 10, 2010. Final review of the WPAP was completed after additional material was received on August 4, 2010. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.

## PROJECT DESCRIPTION

The proposed commercial project is a limestone quarry that will have a project area of approximately 30 acres within a 113 acre property. During quarrying activities, approximately 0.27 acres of impervious cover is proposed but will be removed upon completion of activities at the site. This impervious cover includes the base fueling pad, scales, and scale house. Quarrying activities will occur to an elevation no deeper than 1,115 feet above mean sea level (a.m.s.l.). Other activities proposed at the site include a rock crusher, stockpile areas, screens and

conveyors, a scale house and scales. Project wastewater will be collected in a portable toilet and disposed of by a TCEQ registered waste disposal service.

## PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of storm water runoff originating on-site or upgradient of the site and potentially flowing across and off the site, the various best management practices (BMPs) and measures described below will be utilized while quarry activities are occurring at the site.

- An earthen berm composed of compacted soil will surround the initial plant area and expand as the quarry pit expands. The berm will be constructed to a height of four to six feet and will retain storm water onsite while directing upgrading flows around the quarry pit and plant area. The earthen berm will be inspected weekly. Any erosion, slumping or scour of the earthen berm should be noted in the inspection report and repaired as soon as possible but within seven days from the date of the inspection.

- Rock berms will be installed, during the initial stages of construction, on the downgradient side of the earthen berm to prevent discharges. "Speed bumps" type ramps will be installed on the paved roads adjacent to the earthen berms, to prevent discharges of captured flows or inflow from upgradient areas.

- A base fueling pad will be used for vehicle fueling and maintenance and will be located outside the quarry pit at all times. The base pad will measure 100 ft. by 100 ft. with a one foot high berm. The 300 gallon fuel tank and generator will be permanently stored on the base fueling pad. Minor maintenance of vehicles will occur on the base pad. If the base fueling pad has to be relocated, a new base pad will be constructed, outside of the quarry pit, before activities are moved off the old base pad. All spills or leaks will be cleaned up by removing and properly disposing of the base material.

- A mobile fueling truck, which will be stored offsite, will be used for refueling equipment. Refueling of equipment will occur on the base fueling pad.

- A Texas licensed professional geologist, familiar with standard karst, hydrology, and Edwards recharge zone literature, will inspect the quarry and the quarry floor at least once a year for sensitive features discovered during the mining process. If a sensitive feature is identified, the process outlined in Standard Condition #12 will be followed.

- Quarry operators will undergo annual feature recognition training. The information in the training material will be prepared by a Texas licensed professional geologist, familiar with standard karst, hydrology and Edwards recharge zone literature. Records of the operators attending the training will be kept.

- Upon completion of quarry activities, a Texas licensed professional geologist, familiar with standard karst, hydrology, and Edwards recharge zone literature, will conduct a final inspection of the quarry and quarry floor. If a sensitive feature is identified, the process outlined in Standard Condition #12 will be followed.

- Native grasses will stabilize soils outside the quarry pit. After the final geologic inspection, the quarry pit will be returned to agricultural use as a stock pond.

A request was made for an exception to the requirement of implementing permanent BMPs designed in accordance with the Edwards technical guidance manual for the site upon the completion of construction.

## GEOLOGY

According to the geologic assessment included with the application, the Kainer member of the Edwards Group and the Upper Glen Rose Limestone formations were observed at the site. According to the project geologist, seven geologic and one manmade feature were observed at the site. No feature was scored as sensitive. The San Antonio Regional Office site assessment conducted on August 6, 2010 revealed the site as described by the geologic assessment.

## SPECIAL CONDITIONS

I. The BMPs proposed in the application and/or described in this approval letter must be operational prior to any soil disturbing activities within the BMP's drainage area.

II. If a specific section of earthen berm continually has erosion, scour, slumping or other structural problems noted in the inspection report, then additional BMPs may be necessary. Provide updated site plans to the TCEQ San Antonio Regional Office as major updates are made. Removing or changing the layout of the earthen berm or changing the earthen berm to a different type of BMP may require prior approval of a WPAP modification.

III. The exception request from standard permanent BMPs specified in the Edwards Aquifer Technical Guidance Manual, *Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices* (RG-348, 2005) is approved based upon the BMPs and measures discussed in Permanent Pollution Abatement Measures section of this letter and that impervious cover will be removed upon the completion of activities at the site.

IV. Discharges of sediment laden water from regulated activities are not allowed. Discharges with sediment shall pass through sediment filtering devices described in the Edwards Aquifer Technical Guidance Manual (RG-348, 2005) under the Dewatering Operations section.

V. If dewatering operations occur, the discharge shall be directed to well vegetated and stabilized areas to minimize erosion. Appropriate measures (rock rubble, rip rap, level spreaders, etc.) shall be implemented to prevent erosion.

VI. Submit the final geologic inspection to the San Antonio Regional Office within 30 days of site or activity completion.

VII. Stabilization measures shall be implemented, at the time of site completion, in accordance with the Edwards Aquifer Technical Guidance Manual (RG-348, 2005), if the quarry pit is not turned into a stock pond. Any regulated activities in or around the quarry pit, after site completion, may require prior approval of a WPAP modification.

VIII. Pursuant to 30 TAC §213.4(h)(3) and as stated in the Edwards Aquifer protection plan, this protection plan approval or extension will expire and no extension will be granted if

more than 50% of the total construction has not been completed within 10 years from the initial approval of the plan. A new Edwards Aquifer protection plan must be submitted to the TCEQ with the appropriate fees for review and approval by the executive director prior to commencing or continuing any construction or regulated activities beyond 10 years. The Applicant must submit a status report for the project containing information regarding the percentage of the total project construction completed within 180 days prior to the expiration date of this plan approval. If at that time, the total project construction cannot be demonstrated to be at least 50% complete, the Applicant must submit a new Edwards Aquifer protection plan to the TCEQ for review and approval before continuing any construction or regulated activities beyond 10 years from the date of initial approval of the plan.

If a new Edwards Aquifer protection plan is submitted to the TCEQ under 30 TAC § 213.4(h)(3), the approved plan will continue in effect until the executive director makes a determination on the new plan.

IX. This approval letter is being issued for regulated activities (as defined in Chapter 213) and for best management practices presented in the application. This approval does not constitute a water right permit or authorization from the TCEQ Dam Safety Program. Failure to obtain all necessary authorizations could result in enforcement actions. For more information on Water Rights Permits, please refer to:
http://www.tceq.state.tx.us/permitting/water_supply/water_rights/wr_amiregulated.html

For more information on the Dam Safety program, please refer to:
http://www.tceq.state.tx.us/compliance/field_ops/dam_safety/damsafetyprog.html

## STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

2. The holder of the approved Edwards Aquifer Protection Plan must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the approved plan. Additional and separate approvals, permits and/or authorizations from other TCEQ Programs (i.e., Storm Water, Water Rights, UIC) can be required depending on the specifics of the plan.

3. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

Prior to Commencement of Construction:

4. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A

suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.

5. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.

6. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

7. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.

8. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor storm water discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

9. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

<u>During Construction:</u>

10. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.

11. This approval does not authorize the installation of temporary aboveground storage tanks on this project. If the contractor desires to install a temporary aboveground storage tank for use during construction, an application to modify this approval must be submitted and approved prior to installation. The application must include information

related to tank location and spill containment. Refer to Standard Condition No. 6, above.

12. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

13. No wells are located within the 30 acre project area. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.

14. If sediment escapes the construction site, the 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). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming storm water discharge pollutants.

15. Intentional discharges of sediment laden water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.

16. The following records shall be maintained and made available to the executive director 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.

17. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

<u>After Completion of Construction:</u>

18. 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 San Antonio Regional Office within 30 days of site completion.

19. The applicant shall be 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. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

20. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

21. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

22. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

If you have any questions or require additional information, please contact Charly Fritz of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4065.

Sincerely,

Mark R. Vickery, P.G.
Executive Director
Texas Commission on Environmental Quality

MRV/CEF/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625

cc: Mr. Gary Nicholls, P.E., Westward Environmental, Inc.
Mr. Scott Halty, San Antonio Water System
Ms. Luanna Buckner, Medina Country UWD
The Honorable James Barden, Medina County Judge
Mr. Karl Dreher, Edwards Aquifer Authority
TCEQ Central Records, Building F MC212

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

**Modification of a Previously Approved Plan (TCEQ-0590)**
**Attachment B**

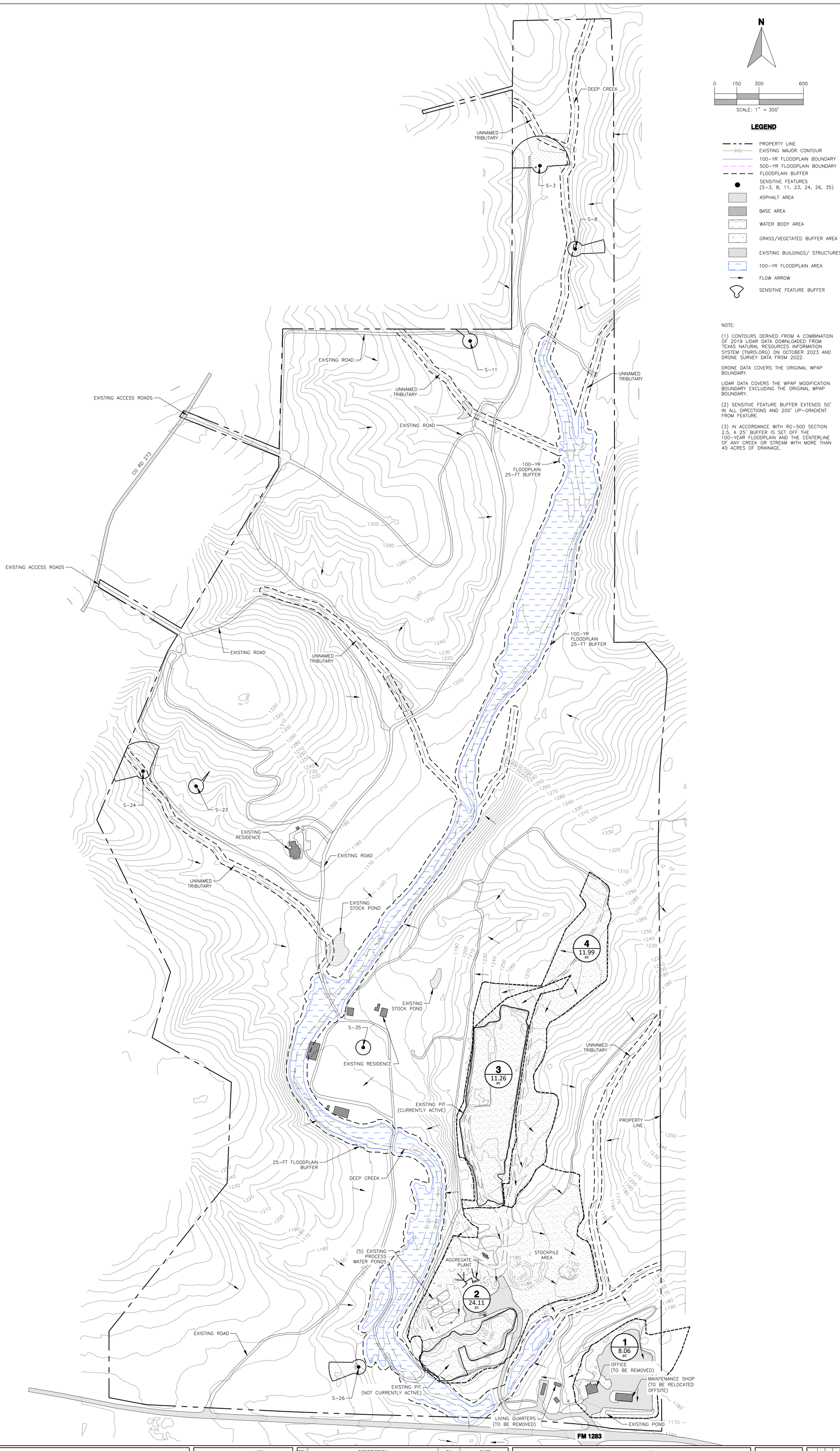
## Narrative of Proposed Modification

The primary intention of this modification is to add an additional ~448-acres to the North and West of the current ~113-acre site. The final overall site will be an approximate 561-acre property that is to be developed for a limestone quarry operation. The additional 448-acres of the Site have been largely undeveloped, with the exception of two residences, unpaved ranch roads, and various agricultural buildings. Until mining progresses further, the undeveloped land will be utilized for ongoing ranching and agricultural activities. Existing ranch roads (as shown on the Existing Conditions Site Map) will continue to be used for access around the site. The Site may be entered at either of two paved entrances from FM 1283 on the South side of the property. As a result of this modification, earthen berms will be established around all currently disturbed areas in order to contain all on-site stormwater and divert run-on from upgradient areas. Runoff from all impervious cover will be fully contained within the earthen berms and/or quarry pits, with the exception of the portion of the main entry/exit drive which extends outside of the bermed area. This portion of the driveway will be treated by natural vegetative filter strips on either side. See the attached Existing Conditions and Interim Conditions plan sheets. As quarry operations expand, areas of more than 10-acres of common drainage may be disturbed at a time, however these areas will be contained within temporary earthen berms, which will expand with the operation up to the Final Earthen Berm (as shown on the Proposed Conditions Map), and all run-off from these areas will remain contained on-site, ultimately draining to the pit. Mining equipment, including but not limited to the crushing plant, may be relocated within the quarry pit to meet operational needs throughout the life of the operation.

Natural existing vegetation will be maintained in a 25-foot buffer along each side of the centerline or the FEMA 100-year floodplain (as applicable) of Deep Creek. A 25-foot buffer will be maintained on either side of the centerline of the unnamed tributaries of Deep Creek and the FEMA 100-year floodplain areas (including streams or creeks with drainage areas of over 40-acres) until/unless appropriate permits can be obtained from FEMA and/or USACE to allow mining in these areas. The unnamed tributaries of Deep Creek may be diverted around proposed pit areas to maintain flow. The existing ranch roads make one raised crossing and several on-grade crossings through Deep Creek & associated tributaries (as shown on the Existing and Interim Conditions site plans). These existing crossings will continue to be utilized for both quarry and agricultural activities. One new crossing is proposed near the southeast corner of the site (as shown on the Interim Conditions site plan). This proposed crossing will be installed with culverts sized to pass the 2-year, 24-hour storm.

Features S-11 and S-24 are to be left in place with an appropriate naturally-vegetated buffer in accordance with RG-500. All other sensitive features are proposed to be temporarily sealed before being removed through mining. Based on the published geologic data of the area, as well as field

reconnaissance during the GA, it was determined that the Edwards Aquifer is not present at the site, therefore the requirement for separation from groundwater prescribed in RG-500 is not applicable. It is not expected that groundwater will be encountered in the quarry excavation. This modification proposes to remove the limitation on quarry depth. A copy of the geologic assessment is included with this application.




NOTE:

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DRONE DATA COVERS THE ORIGINAL WPAP BOUNDARY.

LIDAR DATA COVERS THE WPAP MODIFICATION BOUNDARY EXCLUDING THE ORIGINAL WPAP BOUNDARY.

(2) SENSITIVE FEATURE BUFFER EXTENDS 50' IN ALL DIRECTIONS AND 200' UP-GRADIENT FROM FEATURE.

(3) IN ACCORDANCE WITH RG-500 SECTION 2.5, A 25' BUFFER IS SET OFF THE 100-YEAR FLOODPLAIN AND THE CENTERLINE OF ANY CREEK OR STREAM WITH MORE THAN 40 ACRES OF DRAINAGE.

# EXISTING CONDITIONS MAP

WPAP MODIFICATION

H.L. ZUMWALT QUARRY OPERATIONS, LLC

17511 FM 1283, MICO, TEXAS 78056

11/14/2023

STATE OF TEXAS
NICOLAS E. MERCADO
144228
LICENSED PROFESSIONAL ENGINEER

Nicolas E. Mercado, P.E.
License No. 144228

| REV. | DESCRIPTION | BY | DATE |
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TBPG REG. NO.: 50112


SHEET NO.: C2 OF C5

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| CHECKED BY: | NEM |
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| JOB NO.: | 10022-080 |

# Article I. 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.***

## *Section 1.01 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: Nicolas E. Mercado, PE

TX License No. 144228 | Firm No. 4524

Date: 11/14/2023

Signature of Customer/Agent:


**Regulated Entity Name:** FM 1283 Ranch Quarry

## *Section 1.02 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):561 acres

3. Estimated projected population: 20

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

**Article II. Table 1 - Impervious Cover Table**

| Impervious Cover of Proposed Project | Sq. Ft. | Sq. Ft./Acre | Acres |
|---|---|---|---|
| Structures/Rooftops | | ÷ 43,560 = | |
| Parking | | ÷ 43,560 = | |
| Other paved surfaces | 23,522.4 | ÷ 43,560 = | 0.54 |
| Total Impervious Cover | 23,522.4 | ÷ 43,560 = | 0.54 |

**Total Impervious Cover** 0.54 **÷ Total Acreage** 561 **X 100 =** 0.1**% 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.

## *Section 2.01 For Road Projects Only*

**(a) 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 x W = _____ $Ft^2$ ÷ 43,560 $Ft^2$/Acre = _____ acres.

10. Length of pavement area: _____ feet.

Width of pavement area: _____ feet.
L x W = _____ $Ft^2$ ÷ 43,560 $Ft^2$/Acre = _____ acres.
Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = _____% impervious cover.

11. ☐ A rest stop will be included in this project.

☐ A rest stop will not be included in this project.

12. ☐ Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

## *Section 2.02 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.

## *Section 2.03 Wastewater to be generated by the Proposed Project*

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

| | |
|---|---|
| 100% Domestic | 115 Gallons/day |
| _____% Industrial | _____Gallons/day |
| _____% Commingled | _____Gallons/day |

TOTAL gallons/day 115 Gallons/day

15. Wastewater will be disposed of by:

☒ On-Site Sewage Facility (OSSF/Septic Tank): **OSSF is Existing**

☐ **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.

## *Section 2.04 Site Plan Requirements*

***(a) 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" = 300'.

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): FEMA FIRM PANEL 48325C0250D eff. 5/15/2020

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 8 (#) 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.

## *Section 2.05 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.

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

**WPAP Form (TCEQ-0584)**
**Attachment A**

## Factors Affecting Water Quality

The major factor that could potentially affect water quality is sediment in stormwater runoff after the clearing of vegetation. Other factors include fuels and lubricants from vehicles and equipment and trash/debris items.

Compacted earthen berms located downgradient of the disturbed area(s) are proposed to capture sediment and control the flow of stormwater. Upgradient berms prevent run-on to disturbed areas of the site. Any spills or leaks will be cleaned up immediately and will be disposed of properly. A trash receptacle will be placed on-site for use by employees and visitors.

**WPAP Form (TCEQ-0584)**
**Attachment B**

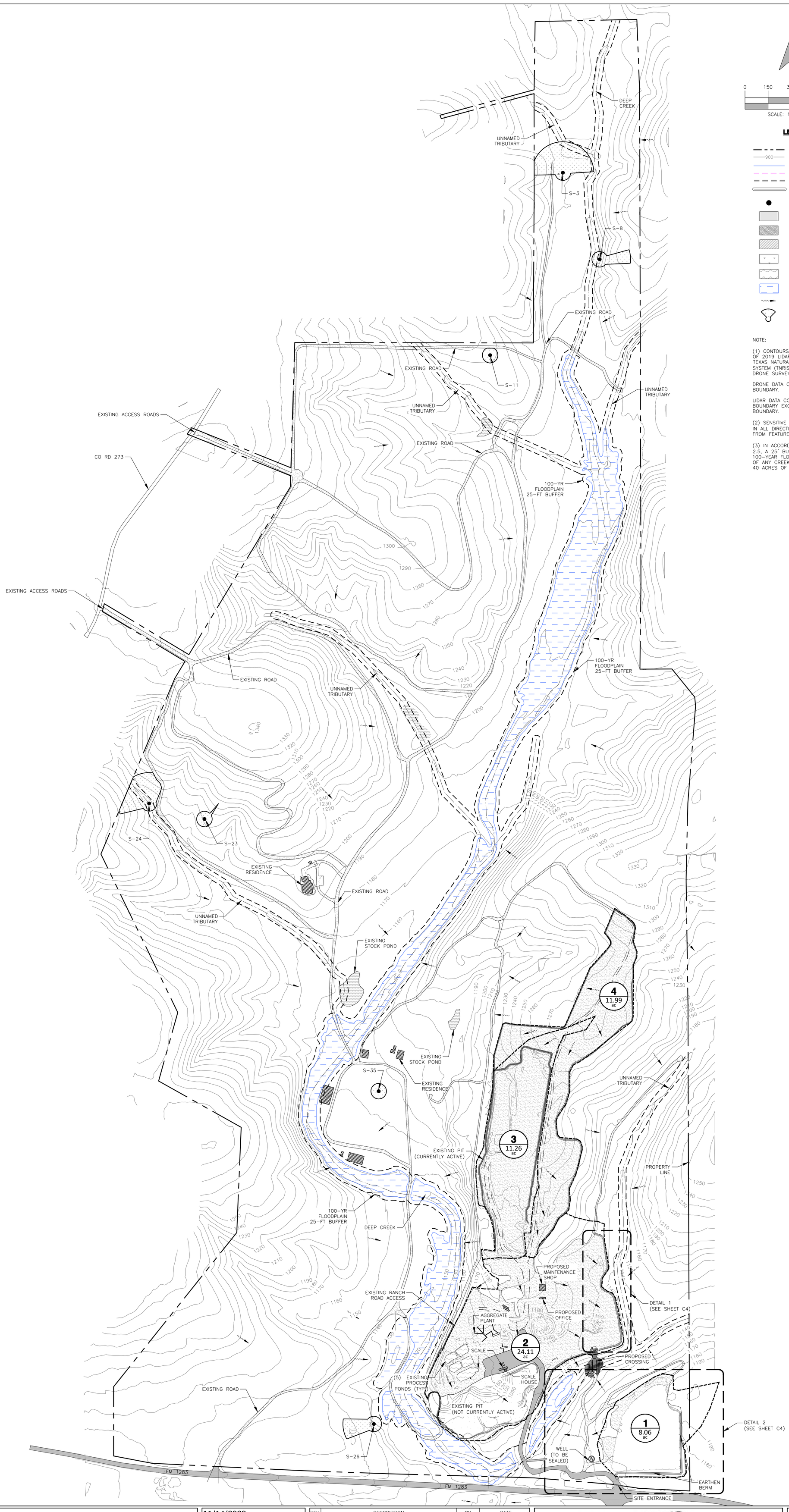
## Volume and Character of Stormwater

The area of the site, as shown on the Proposed Conditions WPAP Site Plan, is approximately 561-acres.

The stormwater from this disturbed area will carry an increased level of total suspended solids (TSS); however, stormwater from this area will be retained in the pit.

Temporary BMPs (rock/earthen berms, vegetative filter strips, silt fence, etc.) will be used to control stormwater until Final Earthen Berms are complete.

Due to the use of Temporary BMPs during construction, the character of stormwater runoff which is expected to occur from the proposed project will be essentially the same as prior to the site. As quarrying activities continue, the volume of stormwater runoff from the site will be reduced because the quarry pit will ultimately retain the anticipated on-site and upgradient stormwater runoff. The runoff coefficient for the impervious areas is 0.9 and the runoff coefficient for predevelopment is 0.03 per TCEQ guidance.




## LEGEND

- PROPERTY LINE
- 900 EXISTING MAJOR CONTOUR
- 100-YR FLOODPLAIN BOUNDARY
- 500-YR FLOODPLAIN BOUNDARY
- FLOODPLAIN BUFFER
- EARTHEN BERM (TOP & TOE OF SLOPE)
- SENSITIVE FEATURES (S-3, 8, 11, 23, 24, 26, 35)
- ASPHALT AREA
- BASE AREA
- EXISTING BUILDINGS/ STRUCTURES
- GRASS/VEGETATED BUFFER AREA
- WATER BODY AREA
- 100-YR FLOODPLAIN AREA
- FLOW ARROW
- SENSITIVE FEATURE BUFFER

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# INTERIM CONDITIONS MAP

WPAP MODIFICATION

H.L. ZUMWALT CONSTRUCTION, INC.

17511 FM 1283, MICO, TEXAS 78056

11/14/2023

STATE OF TEXAS
NICOLAS E. MERCADO
144228
LICENSED
PROFESSIONAL ENGINEER

Nicolas E. Mercado, P.E.
License No. 144228

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TBPE REG. NO.: F-4524
TBPG REG. NO.: 50112


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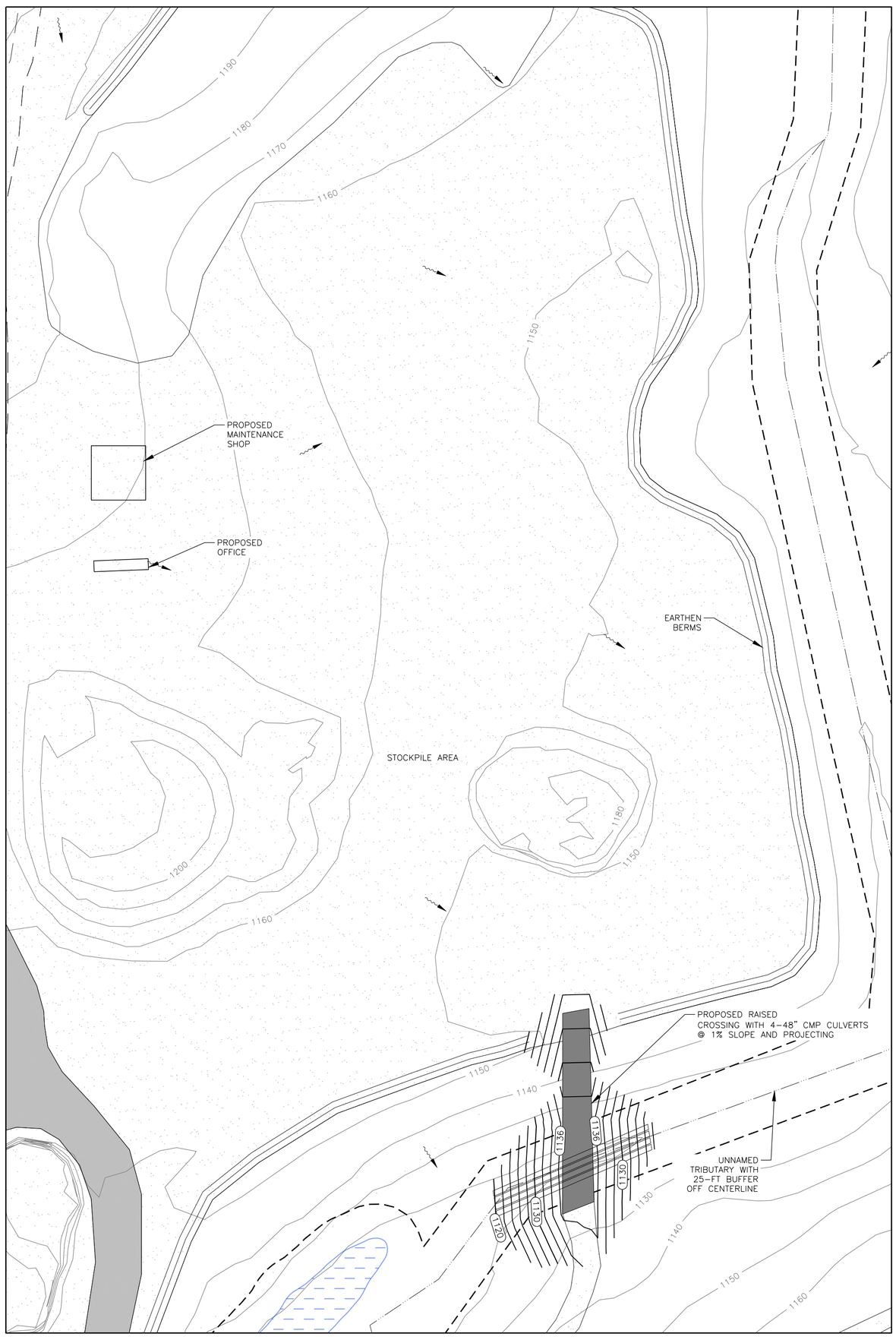
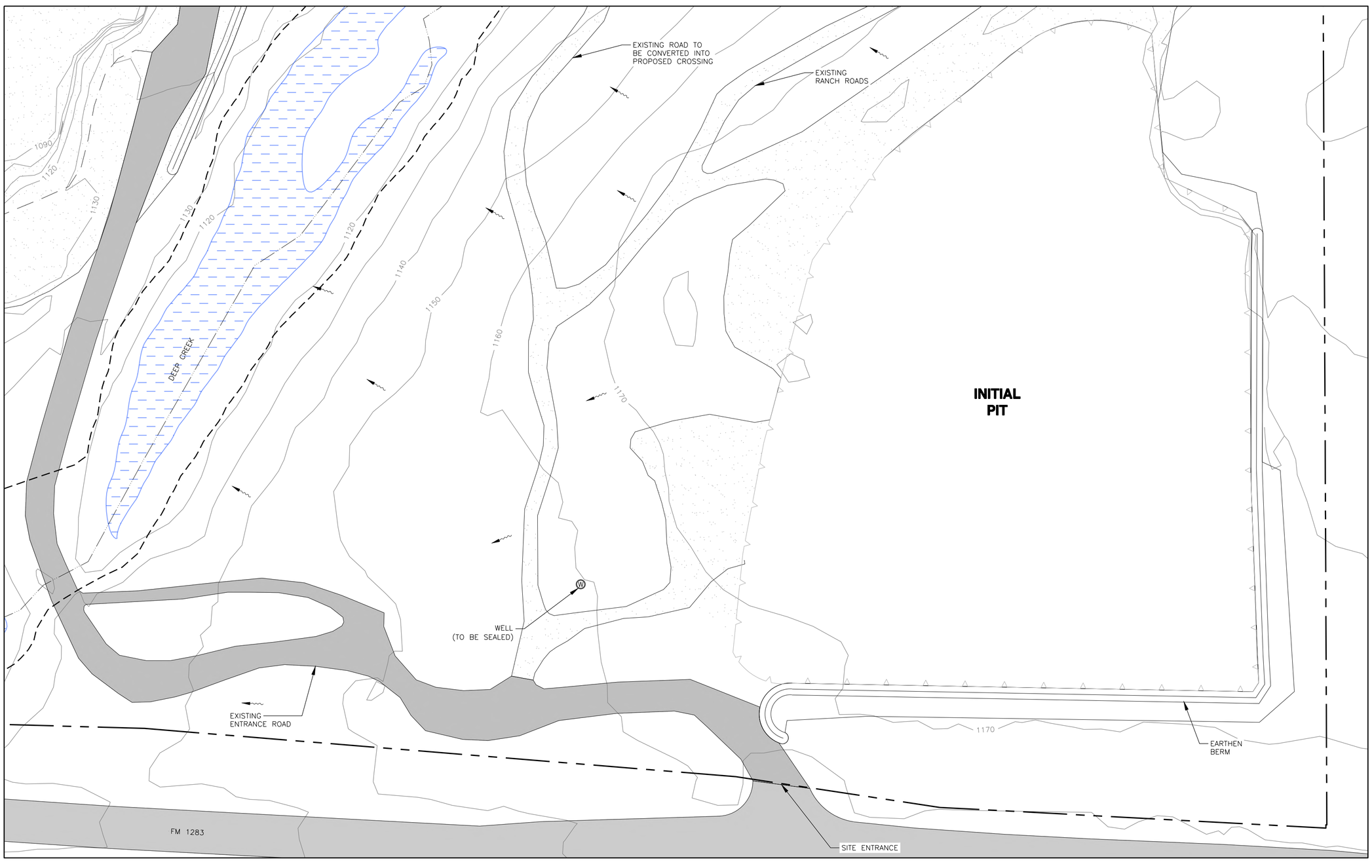



**DETAIL 1 - RAISED EARTHEN BERMS**
SCALE : 1"=60'




**DETAIL 2 - INITIAL PIT**
SCALE : 1"=60'

N

0 30 60 120

SCALE: 1" = 60'

**LEGEND**

- PROPERTY LINE
- 900 EXISTING MAJOR CONTOUR
- 100-YR FLOODPLAIN BOUNDARY
- 500-YR FLOODPLAIN BOUNDARY
- FLOODPLAIN BUFFER
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# INTERIM CONDITIONS DETAILS

WPAP MODIFICATION

H.L. ZUMWALT CONSTRUCTION, INC.

17511 FM 1283, MICO, TEXAS 78056

11/14/2023

STATE OF TEXAS
NICOLAS E. MERCADO
144228
LICENSED PROFESSIONAL ENGINEER

Nicolas E. Mercado, P.E.
License No. 144228

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TBPE REG. NO.: F-4524
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SHEET NO.: C4 OF C5

IMAGE: N/A
ISSUE DATE: 11/14/2023
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CHECKED BY: NEM
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JOB NO.: 10022-080

# Article I. 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.***

## *Section 1.01 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: Nicolas E. Mercado

Texas License No. 144228 | Firm No. 4524

Date: 11/14/2023

Signature of Customer/Agent:


**Regulated Entity Name:** FM 1283 Ranch Quarry

## *Section 1.02 Project Information*

## *Section 1.03 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: On & Off-Road Diesel

   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.

## *Section 1.04 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: Deep Creek

## *Section 1.05 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).

## *Section 1.06 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.

## *Section 1.07 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.

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

**Temporary Stormwater Section (TCEQ-0602)**
**Attachment A**

## Spill Response Actions

### Education

(1) Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ.

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

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

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

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

### General Measures

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

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

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

(4) Train employees in spill prevention and cleanup.

(5) Designate responsible individuals to oversee and enforce control measures.

(6) Spills should be covered and protected from stormwater run on during rainfall to the extent that it doesn't compromise cleanup activities.

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

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

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

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

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

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

**Cleanup**

(1) Clean up leaks and spills immediately.

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

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

**Minor Spills**

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

(2) Use absorbent materials on small spills rather than hosing down or burying the spill.

(3) Absorbent materials should be promptly removed and disposed of properly.

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

(5) Contain the spread of the spill.

(6) Recover spilled materials.

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

**Semi-Significant Spills**

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

Spills should be cleaned up immediately:

(1) Contain spread of the spill.

(2) Notify the project foreman as soon as possible.

(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, as soon as possible contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.

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

**Significant/Hazardous Spills**

For significant or hazardous spills that are in reportable quantities:

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

(2) For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.

(3) Notification should first be made by telephone and followed up with a written report.

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

(5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

In the event of a reportable spill, the following Emergency Response Agencies can be contacted for assistance. Always inform your supervisor of a reportable spill as soon as possible. Follow company policy when responding to an emergency.

| | |
|---|---|
| State Emergency Response Commission | (512) 463-7727 |
| National Response Center | (800) 424-8802 |
| US EPA Region 6, Dallas, 24-hr Number | (866) 372-7745 |
| National Weather Service | (281) 337-5074 |
| TCEQ 24-hr | (800) 832-8224 |
| TCEQ Region 13 | (210) 490-3096 |

**Vehicle and Equipment Maintenance**

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

(2) Regularly inspect on-site vehicles and equipment for leaks and repair in a timely manner.

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

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

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

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

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

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

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

## Vehicle and Equipment Fueling

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

(4) Equipment fueling will take place on a compacted base pad. Any base material that becomes contaminated with hydrocarbons will be removed from the site and disposed of properly. Fuel will be brought to the equipment by a fueling truck filling up on an aboveground storage tank concrete containment located in the southern portion of the property.

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

## DETAILED TELEPHONE SPILL REPORT FORM

Date of Incident: _____

Location of Incident: _____

Description of material spilled: _____

Quantity of material spilled: _____

Cause of spill: _____

_____

Authorities notified: _____

Remediation/clean-up action: _____

_____

_____

_____

_____

Corrective measures taken for prevention of reoccurrence: _____

_____

_____

_____

_____

Signature: _____

Notes: _____

_____

_____

_____

Emergency Number for the National Response Center 1-800-424-8802

## Portable Toilet BMPs:

Portable toilets and/or sewage pump-out tanks will be used on-site and will be handled in accordance with the following guidelines:

- A licensed waste collector should service all the toilets/tanks. **The following tasks will be performed by the portable toilet supplier:**
  - Empty portable toilets/tanks before transporting them.
  - Securely fasten the toilets/tanks to the transport truck.
  - Use hand trucks, dollies, and power tailgates whenever possible.
  - Suppliers should carry bleach for disinfection in the event of a spill or leak.
  - Inspect the toilets frequently for leaks and have the units serviced and sanitized at time intervals that will maintain sanitary conditions of each toilet.
  - Pump-out tanks should be checked periodically for leaks. (Methods may include, but are not limited to: visual inspection, water level monitoring, pump-out volume comparisons, etc.)
- Locate portable toilets at least 20 feet from the nearest storm-drain inlet or sensitive-feature buffer area
- A berm will be constructed around all portable toilet facilities.
- Prepare a level ground surface with clear access to the toilets.
- Secure all portable toilets to prevent tipping by accident, weather, or vandalism.

Sewage pump-out tanks may be associated with modular or trailer-style buildings (i.e. – plant office, scale house, etc.). These tanks operate with the same nature and character as the portable toilets: they temporarily hold sewage from modular building restrooms and will be serviced by the same contractor, in the same way, as portable toilets. These tanks may be partially or fully buried but are still considered temporary/portable as they are intended to be repositioned on site over time to meet operational needs, and therefore do not constitute an OSSF or holding tank as defined by 30 TAC 285, nor any other type of organized sewage collection system.

**Temporary Stormwater Section (TCEQ-0602)**
**Attachment B**

## Potential Sources of Contamination

Potential sources of contamination in the project area are the soil, fuels and lubricants from vehicles and equipment, and trash/debris items.

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

**Temporary Stormwater Section (TCEQ-0602)**
**Attachment C**

## Sequence of Major Activities

Perimeter earthen berms will be established as shown on the Interim Conditions site plan. The existing maintenance shop will be demolished, and a new shop will be constructed (see Interim Conditions site plan). The proposed crossing will be constructed near the southeast corner of the site. Clearing will continue for the quarry progression in approximately 10-acres increments. The cleared topsoil will be used to construct earthen berms surrounding the cleared area. Berms will be 2-4 feet high. The earthen berms surrounding the quarry will expand as the quarry expands to the Final Earthen Berm.

**Temporary Stormwater Section (TCEQ-0602)**
**Attachment D**

## Temporary Best Management Practices (TBMPs)

7.a. TBMPs and measures will prevent pollution of surface water, groundwater and stormwater that originates upgradient from the site and flows across the site.

As the incremental quarry area is cleared and topsoil is removed, earthen berms will be constructed. Silt fence may be installed until temporary berms are established. Upgradient berms will direct stormwater runoff around disturbed areas of the site.

As the size of the quarry expands, the earthen berms will expand throughout the life of the project, up to the buffer zones to provide additional controls as mining nears the sensitive features. Natural existing vegetation will be maintained in a 25-foot buffer along each side of the centerline or the FEMA 100-year floodplain (as applicable) of Deep Creek. A 25-foot buffer will be maintained on either side of the centerline of the unnamed tributaries of Deep Creek and the FEMA 100-year floodplain areas (including streams or creeks with drainage areas of over 40-acres) until/unless appropriate permits can be obtained from FEMA and/or USACE to allow mining in these areas. In addition, a natural vegetated buffer with a minimum width of 50 feet will be maintained between the Final Earthen Berm and the property line. This natural vegetated buffer will serve as a final buffer for stormwater runoff leaving the active portion of the site.

7.b. TBMPs and measures will prevent pollution of surface water, groundwater and stormwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

As the incremental quarry area is cleared and topsoil is removed, earthen berms will be constructed. Silt fence may be installed until temporary berms are established. Upgradient berms will direct stormwater runoff around disturbed areas of the site.

Natural existing vegetation will be maintained in a 25-foot buffer along each side of the centerline or the FEMA 100-year floodplain (as applicable) of Deep Creek. A 25-foot buffer will be maintained on either side of the centerline of the unnamed tributaries of Deep Creek and the FEMA 100-year floodplain areas (including streams or creeks with drainage areas of over 40-acres) until/unless appropriate permits can be obtained from FEMA and/or USACE to allow mining in these areas. In addition, a natural vegetated buffer with a minimum width of 50 feet will be maintained between the Final Earthen Berm and the property line. This natural vegetated buffer will serve as a final buffer for stormwater runoff leaving the active portion of the site.

7.c. TBMPs and measures will prevent pollution of surface streams, sensitive features, and the aquifer.

As the size of the quarry expands, the earthen berms will expand throughout the life of the project. Earthen berms and vegetated areas will be constructed/maintained as shown on the attached Interim & Proposed Conditions plan sheets to prevent pollutants from entering surface streams, sensitive features and the aquifer.

Natural existing vegetation will be maintained in a 25-foot buffer along each side of the centerline or the FEMA 100-year floodplain (as applicable) of Deep Creek. A 25-foot buffer will be maintained on either side of the centerline of the unnamed tributaries of Deep Creek and the FEMA 100-year floodplain areas (including streams or creeks with drainage areas of over 40-acres) until/unless appropriate permits can be obtained from FEMA and/or USACE to allow mining in these areas. In addition, a natural vegetated buffer with a minimum width of 50 feet will be maintained between the Final Earthen Berm and the property line. This natural vegetated buffer will serve as a final buffer for stormwater runoff leaving the active portion of the site. Buffers will be located around sensitive features until they are temporarily sealed and ultimately removed through mining.

7.d. To the maximum extent practicable TBMPs and measures will maintain flow to naturally occurring sensitive features identified in the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

A geologic assessment has been completed for the proposed 561-acre site and is included with this application. Seven karst features were identified as sensitive (S-3, S-8, S-11, S-23, S-24, S-26,

and S-35). Of these, five features (S-3, S-8, S-23, S-26, and S-35) are proposed to be temporarily sealed and eventually removed through mining. Features S-11 and S-24 will be left in place, with an appropriate vegetative buffer. As clearing progresses to within approximately 500' of a sensitive feature, rock berms and/or silt fences will be established around the feature. These BMPs will slow the flow of water, allowing for sedimentation. Flow will be maintained to each of these features until such time as quarrying or construction of berms progresses into the buffer. Prior to this, each will be sealed with flowable fill/concrete until they are removed through mining. Earthen berms, vegetative buffer, and the quarry, which store flows, will be used as pollution prevention measures to mitigate runoff from larger disturbed areas. These larger disturbed areas (the pit) have a greater potential to contain sediment, therefore these BMPs will be used to provide a higher level of protection to the aquifer.

Zumwalt will provide initial feature recognition training to mining staff within 90 days of approval of this WPAP application. Initial feature recognition training will also be provided to applicable new employees (site supervisors and quarry operators) within 90 days of hire. Refresher training will be provided to quarry operators as needed. All training will be conducted by the Site Supervisor or his designee using a training program prepared by a PG.

The site supervisor or his designee will maintain records of when features are identified by mining staff. These records will include the date the feature was identified, the general location of the feature, a general description of the feature, and what action was taken regarding the potential feature. These records will be maintained for five years and will be made available to the TCEQ upon request.

Any possibly sensitive geologic feature discovered by mining staff will be handled in the following manner: Sediment that can be easily removed from the area adjacent to the feature without disturbing the feature will be removed. Then a rock berm will be placed around the feature to control and filter any potential flow into the feature. After placement of the rock berm, the active work area of the quarry will be moved to another portion of the pit where the feature cannot be impacted by the continuing quarry operations. A Professional Geologist will be called to the site to assess and rate the feature. If the feature is determined to be sensitive in accordance with TAC 213 rules, the TCEQ will be notified and an appropriate method for addressing the feature will be formulated and submitted for TCEQ approval. Work will not resume in the area of the feature until the TCEQ approved method for addressing the feature has been carried out.

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

**Temporary Stormwater Section Attachment E**

## Request to Temporarily Seal a Feature

Zumwalt requests to temporarily seal the following features before they are ultimately removed through mining: S-3, S-8, S-23, S-26, and S-35.

In order to protect the aquifer from possible contamination from sediment in stormwater as quarrying nears the features, Zumwalt will temporarily seal the naturally occurring sensitive features listed above using flowable fill/concrete. Each of the features listed above that are located within the proposed quarrying footprint will eventually be removed through mining, as allowed in RG-500.

The alternative to sealing these features would be to not seal them, which would pose a greater threat to the aquifer, due to the potential for sediment to enter in runoff from adjacent disturbed areas. It is not reasonable or practical to avoid mining near or upgradient of sensitive features due to their spacing on-site. Mining around the sensitive features would create a safety hazard within the quarry because the features would be left atop pinnacles that would be very tall and slender. These pinnacles would be prone to collapse and would create unsafe working conditions within much of the quarry area.

**Temporary Stormwater Section (TCEQ-0602)**
**Attachment F**

## Structural Practices

Structural practices such as compacted earthen berms, silt fence, rock berms and natural vegetation areas will be utilized as necessary to control stormwater from disturbed areas of the site during mine related activities. The compacted earthen berms will be used to contain and limit runoff discharge of pollutants from exposed areas of the Site as well as to divert flows away from exposed (disturbed) soils.

**Temporary Stormwater Section (TCEQ-0602)**
**Attachment G**

## Drainage Area Map

Please see Existing Conditions Plan Sheet

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

**Temporary Stormwater Section (TCEQ-0602)**
**Attachment I**

## Inspection and Maintenance for BMPs

The compacted earthen berms should be inspected quarterly. All rock berms and silt fences should be inspected weekly. Written documentation of these inspections should be kept during construction at the project site (see following example Inspection Form). Any erosion of earthen berms or rock berms should be backfilled and compacted as soon as possible. If a berm is no longer able to properly filter the sediment from the stormwater due to contamination from silt, it should be replaced. Any trash in the vegetated buffers should be removed and eroded areas should be reseeded. Silt fencing should be repaired or replaced when damaged and sediment should be removed when buildup reaches 6 inches.

The site will be authorized to discharge stormwater under the TPDES General Permit No. TXR050000 for industrial activities. Requirements of the general permit include maintaining a SWP3 which includes inspections of stormwater best management practices and sampling of stormwater that is discharged from the site. Trash and construction debris should not become a potential pollutant source for stormwater discharge and should be removed daily. Should any vegetative areas be eroded, they must be reseeded.

It is not anticipated that dewatering of the pit will be required. However, if necessary, mine dewatering will be accomplished according to the TCEQ stormwater regulations noted in the TPDES General Permit No. TXR050000 under Sector J for Mineral Mining and Processing Facilities.

| | | Quarterly | | | Weekly and After Rainfall | | |
|---|---|---|---|---|---|---|---|
| | | Vegetated Buffers | | Earthen Berms | Silt Fence | | |
| Date | Inspector Signature | Trash | Vegetative Cover/Erosion | Erosion of Earthen Berm | Damage | Sediment Build-up | Additional Comments |
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If the answer to any of the above questions is "yes", perform maintenance/repair/replacement as described below or in accordance with TCEQ Technical Guidance on BMPs.

Earthen Berm

* Erosion of earthen berm - fill eroded areas and compact

Natural Vegetated Buffers

* Remove trash if present
* Reseeed eroded areas to reestablish vegetation

Silt Fence

* Repair any torn fabric, crushed/collapsed sections, etc.
* Remove sediment when buildup reaches 6 inches

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

**Temporary Stormwater Section (TCEQ-0602)**
**Attachment J**

## Schedule of Soil Stabilization Practices

### Areas Outside the Pit:

Cleared areas and interim earthen berms may be disturbed for more than 14 days without stabilization because it is not practical to be continually stabilizing small areas prior to their excavation and stabilizing the earthen berms that are frequently relocated. The purpose of soil stabilization is to control erosion and prevent pollutants from entering surface waters, streams, and the aquifer through sensitive recharge features. Areas outside of the pit that are disturbed for quarrying are often drilled and blasted within 90 days. It is not feasible or appropriate to try to stabilize these areas with vegetation because 1) the topsoil has been removed and vegetation will not readily grow; 2) these areas will soon be excavated and; 3) other structural BMPs will be used to protect stormwater runoff quality from these areas in a manner consistent with customary and acceptable mining practices.

Because the soils and overburden in these cleared areas have been removed and placed in an earthen berm adjacent to the cleared areas, erosion of these areas is mitigated. The earthen berms upgradient of the cleared areas divert upgradient stormwater away from cleared areas and earthen berms and/or sediment basins downgradient of cleared areas will treat and/or retain stormwater runoff from the cleared area. The proposed BMPs provide adequate protection for the area outside of the pit.

Material stockpiles will be located within the quarry pit and earthen berms. For the case when the quarry operations have been completed (permanently ceased) all stormwater will be retained in the pit. The Final Earthen Berm outside the pit will be stabilized with native grasses. The undisturbed vegetated buffers shown on the Final Conditions plan sheet will remain undisturbed so no additional stabilization practices will be needed.

### Areas Inside the Pit:

Areas inside the pit do not need to be stabilized; the requirement for soil stabilization exists in order to control erosion and prevent pollutants from entering surface waters, streams and the aquifer through sensitive recharge features. The disturbed soils in or upgradient of the quarry pit will be retained in the pit thereby eliminating the need for soil stabilization in the pit to prevent pollutants from entering surface waters or streams. The BMP discussed in the WPAP Temporary Stormwater Section Attachment D (7.d.) will mitigate infiltration of stormwater into the quarry floor. In addition it is not practical to stabilize areas of the pit with vegetation because often times areas of the pit will not be active for some period of time, then be reactivated. Therefore, since the disturbed areas will be located in the pit no soil stabilization is expected to be necessary at the completion of the project.

# 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)(Ii), (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: Nicolas E. Mercado

Texas License No. 144228 | Firm No. 4524

Date: 11/14/2023

Signature of Customer/Agent


**Regulated Entity Name**: FM 1283 Ranch Quarry

## *Permanent Best Management Practices (BMPs)*

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

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

   ☐ N/A

2. ☒ These practices and measures have been designed, and will be constructed, operated, and maintained to ensure 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 ensure 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

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

**Permanent Stormwater Section (TCEQ-0600)**
**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:

The temporary earthen berms that are constructed as clearing occurs will expand as the size of the quarry expands. The earthen berms will expand throughout the life of the project to the Final Earthen Berm shown on the Proposed Conditions Map. The Final Earthen Berm will be vegetated with native grasses to stabilize soils.

Permanent stormwater controls are those that are to remain in place after construction has been completed. At the time construction is completed at the subject site, the vegetated Final Earth Berm and the 50-foot vegetated buffer that surround most of the site, along portions the property boundary adjacent to non-mining uses. See attached Final Conditions site plan.

**Permanent Stormwater Section (TCEQ-0600)**
**Attachment C**

## BMPs for On-site Stormwater

A description of the BMPs and measures that will be used to prevent pollution of surface water, sensitive features or the aquifer or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site:

Pollution of surface water, groundwater or stormwater that originates on-site or flows off-site during the life of the quarry will be mitigated by the use of temporary earthen berms vegetated areas, and the pit which will be constructed as shown on the Proposed Conditions Map.

Permanent stormwater controls are those that are to remain in place after construction has been completed. At the time construction is completed at the subject site, the vegetated Final Earth Berm and the 50-foot vegetated buffer that surround most of the site, along portions the property boundary adjacent to non-mining uses. See attached Final Conditions site plan.

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

**Permanent Stormwater Section (TCEQ-0600)**
**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:

During the life of the quarry, earthen berms will be constructed to prevent pollutants from entering surface streams and the aquifer (five of the seven sensitive features on-site will be sealed & removed through mining). The earthen berms that surround future disturbed areas will expand to protect Deep Creek as mining activities approach. Natural existing vegetation will be maintained in a 25-foot buffer along each side of the centerline or the FEMA 100-year floodplain (as applicable) of Deep Creek. A 25-foot buffer will be maintained on either side of the centerline of the unnamed tributaries of Deep Creek and the FEMA 100-year floodplain areas (including streams or creeks with drainage areas of over 40-acres) until/unless appropriate permits can be obtained from FEMA and/or USACE to allow mining in these areas. In addition, a natural vegetated buffer with a minimum width of 50 feet will be maintained between the Final Earthen Berm and the property line. This natural vegetated buffer will serve as a final buffer for stormwater runoff leaving the active portion of the site.

Permanent stormwater controls are those that are to remain in place after construction has been completed. At the time construction is completed at the subject site, the vegetated Final Earth Berm and the 50-foot vegetated buffer that surround most of the site, along portions the property boundary adjacent to non-mining uses. See attached Final Conditions site plan.

Any additional possible sensitive geologic feature discovered by construction staff will need to be evaluated by a Professional Geoscientist and if determined to be sensitive, will be reported to TCEQ. An appropriate method for addressing the feature will be formulated by a Professional Geoscientist or a Professional Engineer and upon approval by TCEQ, the method to protect or seal the feature will be implemented. Work will not resume in the area of the feature until the TCEQ approved method for addressing the feature has been carried out.

**Permanent Stormwater Section (TCEQ-0600)**
**Attachment F**

## Construction Plans

See Interim and Proposed Conditions Site Plans Sheets

## Inspection, Maintenance, Repair and Retrofit Plan

Final Earthen Berms should be inspected quarterly until stabilized with vegetation. Written documentation of these inspections should be kept during the course of construction at the project site. Significant erosion of berms should be backfilled and compacted as soon as possible.

Vegetated buffers should be inspected at least twice annually, until the Final Earthen Berm has been vegetated, for erosion or damage to vegetation. Written documentation of these inspections should be kept during the course of construction at the project site. Bare spots and areas of erosion identified during inspections must be replanted. Trash and debris items should be removed.

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

## Inspection, Maintenance, Repair and Retrofit Plan

I, Bonnie Zumwalt, have read and understand the Inspection, Maintenance, Repair and Retrofit (IMRR) Plan contained in this Water Pollution Abatement Plan (WPAP).

I understand the specific Permanent Best Management Practices (PBMPs) and associated inspection and maintenance schedule which are outlined in this IMRR Plan. H.L. Zumwalt Quarry Operations, LLC will implement these inspections and perform maintenance as required to meet the intent of the IMRR Plan.

**Name and signature of responsible party for maintenance of permanent BMPs**

Print Name: Bonnie Zumwalt
H.L. Zumwalt Quarry Operations, LLC.

Signature Bonnie Zumwalt Date: 11-3-'23

**Name and signature of Engineer**

Print Name: Nicolas E. Mercado
Westward Environmental, Inc.

Signature Nicolas E. Mercado Date: 11/14/2023

STATE OF TEXAS
NICOLAS E. MERCADO
144228
LICENSED PROFESSIONAL ENGINEER

**H.L. Zumwalt Quarry Operations, LLC**
**FM 1283 Ranch Quarry**

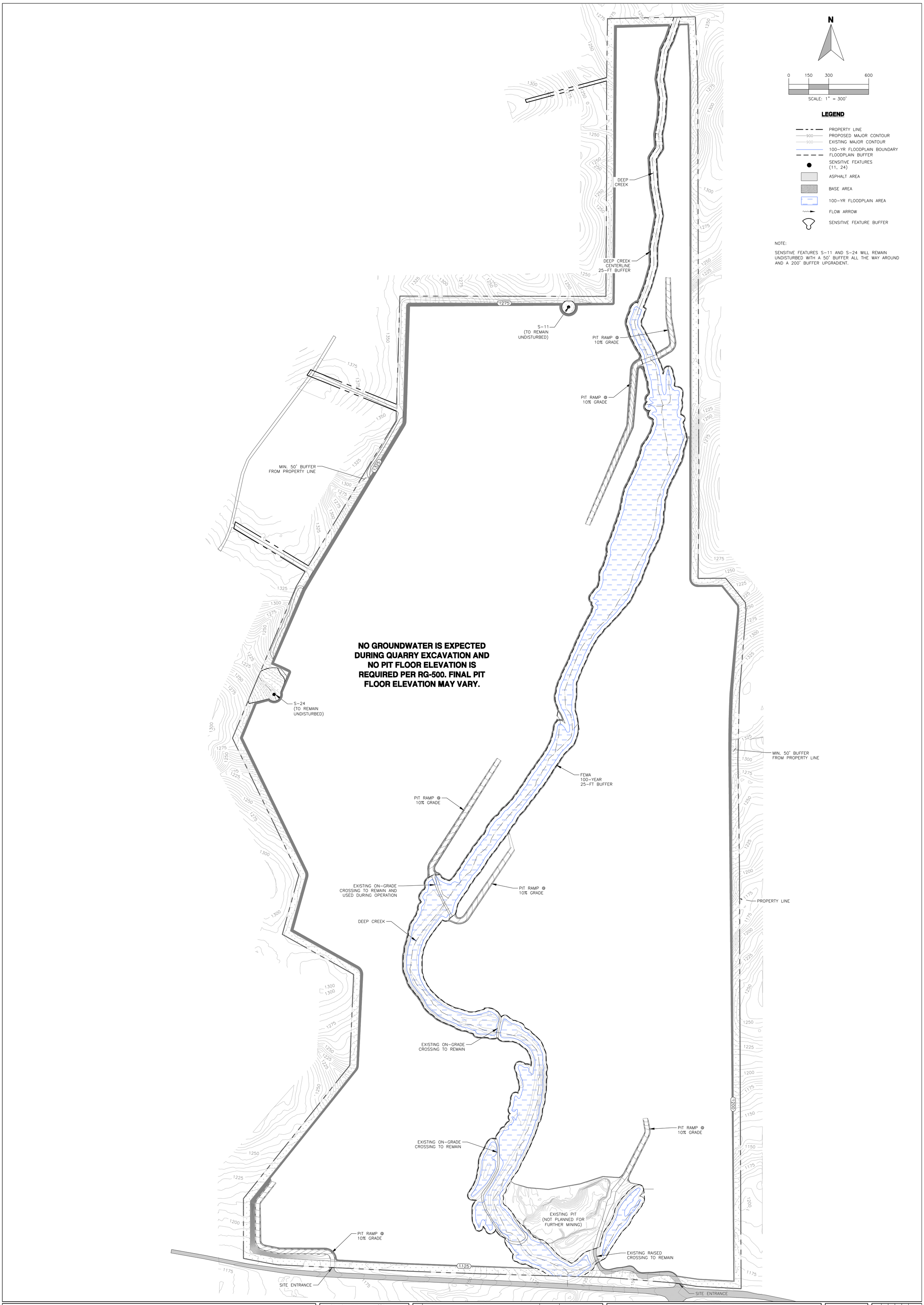
**Permanent Stormwater Section (TCEQ-0600)**
**Attachment H**

The Permanent Stormwater Attachment H is not applicable for this project.

**Permanent Stormwater Section (TCEQ-0600)**
**Attachment I**

**Measures for Minimizing Surface Stream Contamination**

To avoid surface stream contamination, Natural existing vegetation will be maintained in a 25-foot buffer along each side of the centerline or the FEMA 100-year floodplain (as applicable) of Deep Creek. A 25-foot buffer will be maintained on either side of the centerline of the unnamed tributaries of Deep Creek and the FEMA 100-year floodplain areas (including streams or creeks with drainage areas of over 40-acres) until/unless appropriate permits can be obtained from FEMA and/or USACE to allow mining in these areas. Any disturbance to the buffer will be reestablished to its vegetated state within 14 days of completed construction.




# FINAL CONDITIONS MAP

WPAP MODIFICATION

H.L. ZUMWALT QUARRY OPERATIONS, LLC

17511 FM 1283, MICO, TEXAS 78056

11/14/2023

STATE OF TEXAS
NICOLAS E. MERCADO
144228
LICENSED PROFESSIONAL ENGINEER

Nicolas E. Mercado, P.E.
License No. 144228

| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| | | | |


WESTWARD
Environmental. Engineering. Natural Resources.
P.O. Box 2205 Boerne, Texas 78006
(830) 249-8284 Fax: (830) 249-0221
TBPE REG. NO.: F-4524
TBPG REG. NO.: 50112


SHEET NO.: C5 OF C5

| | |
|---|---|
| JOB NO.: | 10022-080 |
| SCALE: 1" = | 300' |
| CHECKED BY: | CGC |
| DRAWN BY: | NEM |
| ISSUE DATE: | 11/10/2023 |
| IMAGE: | N/A |

# Owner Authorization Form

**Texas Commission on Environmental Quality**
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

## *Land Owner Authorization*

I, Bonnie Zumwalt — Zumwalt Quarry, LLC

Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at

A1169 H. E. & W. T. RR. Survey 397;

Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize H.L. Zumwalt Quarry Operations, LLC

Applicant Name (Legal Entity or Individual)

to conduct an application for Water Pollution Abatement Plan Modification

Description of the proposed regulated activities

at 17511 FM 1283 Mico, Medina County, TX .

Precise location of the authorized regulated activities

## *Land Owner Acknowledgement*

I understand that H.L. Zumwalt Quarry Operations, LLC

Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

## *Land Owner Signature*

Bonnie Zumwalt — 1-13-23

Land Owner Signature — Date

THE STATE OF § Texas

County of § Nueces

BEFORE ME, the undersigned authority, on this day personally appeared Bonnie Zumwalt 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 13TH day of November, 2023,

Marcia Ann Foster

NOTARY PUBLIC

MARCIA ANN FOSTER
Notary ID #174322
My Commission Expires
June 26, 2024

MARCIA ANN FOSTER

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: June 26, 2024

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

## *Applicant Acknowledgement*

I, Bernie Zumwalt, Zumwalt Quarry, LLC
Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that Zumwalt Quarry, LLC
Land Owner Name (Legal Entity or Individual)

has provided H.L. Zumwalt Quarry Operations, LLC
Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that H.L. Zumwalt Quarry Operations, LLC
Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

## *Applicant Signature*

Bernie Zumwalt — Applicant Signature
11-13-23 — Date

THE STATE OF § Texas
County of § Medina

BEFORE ME, the undersigned authority, on this day personally appeared Bernie Zumwalt 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 13th day of November, 2023

MARCIA ANN FOSTER
Notary ID #174322
My Commission Expires
June 26, 2024

NOTARY PUBLIC

MARCIA ANN FOSTER
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: June 26, 2024

# Owner Authorization Form

**Texas Commission on Environmental Quality**
for Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

## *Land Owner Authorization*

I, Bonnie Zumwalt — Bonnie Zumwalt

Land Owner Signatory Name — Land Owner Name (Legal Entity or Individual)

am the owner of the property located at

A1391 G. C. & S. F. RR. Survey 399; A1169 H. E. & W. T. RR. Survey 397;

Legal description of the property referenced in the application

and am duly authorized in accordance with §213.4(c)(2) and §213.4(d)(1) or §213.23(c)(2) and §213.23(d) relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize H.L. Zumwalt Quarry Operations, LLC

Applicant Name (Legal Entity or Individual)

to conduct an application for Water Pollution Abatement Plan Modification

Description of the proposed regulated activities

at 17511 FM 1283 Mico, Medina County, TX .

Precise location of the authorized regulated activities

## *Land Owner Acknowledgement*

I understand that H.L. Zumwalt Quarry Operations, LLC

Land Owner Name (Legal Entity or Individual)

Is ultimately responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

## *Land Owner Signature*

Bonnie Zumwalt
Land Owner Signature

11-3-23
Date

THE STATE OF § TEXAS

County of § MEDINA

BEFORE ME, the undersigned authority, on this day personally appeared BONNIE ZUMWALT 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 3RD day of NOVEMBER, 2023

Marcia Ann Foster
NOTARY PUBLIC

MARCIA ANN FOSTER
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: JUNE 26, 2024

MARCIA ANN FOSTER
Notary ID #174322
My Commission Expires
June 26, 2024

Attached: (Mark all that apply)

- ☐ Lease Agreement
- ☐ Signed Contract
- ☐ Deed Recorded Easement
- ☐ Other legally binding document

## Applicant Acknowledgement

I, Bonnie Zumwalt — Bonnie Zumwalt

Applicant Signatory Name — Applicant Name (Legal Entity or Individual)

acknowledge that Bonnie Zumwalt

Land Owner Name (Legal Entity or Individual)

has provided H.L. Zumwalt Quarry Operations, LLC

Applicant Name (Legal Entity or Individual)

with the right to possess and control the property referenced in the Edwards Aquifer protection plan.

I understand that H.L. Zumwalt Quarry Operations, LLC

Applicant Name (Legal Entity or Individual)

is contractually responsible for compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation. I further understand that failure to comply with any condition of the executive director's approval is a violation is subject to administrative rule or orders and penalties as provided under §213.10 (relating to Enforcement). Such violation may also be subject to civil penalties and injunction.

## Applicant Signature

Bonnie Zumwalt — 11-3-'23

Applicant Signature — Date

THE STATE OF § TEXAS

County of § MEDINA

BEFORE ME, the undersigned authority, on this day personally appeared BONNIE ZUMWALT 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 3RD day of NOVEMBER, 2024

Marcia Ann Foster

NOTARY PUBLIC

MARCIA ANN FOSTER

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: JUNE 26, 2024

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

**1. Reason for Submission** (*If other is checked please describe in space provided.*)

☐ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal (*Core Data Form should be submitted with the renewal form*) ☒ Other Modification

| 2. Customer Reference Number *(if issued)* | Follow this link to search for CN or RN numbers in Central Registry** | 3. Regulated Entity Reference Number *(if issued)* |
|---|---|---|
| **CN** NEW | | **RN** 105835375 |

## SECTION II: Customer Information

| 4. General Customer Information | 5. Effective Date for Customer Information Updates (mm/dd/yyyy) | 01/06/2023 |
|---|---|---|

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership

☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

***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).***

| 6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* | *If new Customer, enter previous Customer below:* |
|---|---|
| H.L. Zumwalt Quarry Operations, LLC | |

| 7. TX SOS/CPA Filing Number | 8. TX State Tax ID (11 digits) | 9. Federal Tax ID (9 digits) | 10. DUNS Number *(if applicable)* |
|---|---|---|---|
| 0804995160 | 32089156932 | | |

| 11. Type of Customer: | ☒ Corporation | ☐ Individual | Partnership: ☐ General ☐ Limited |
|---|---|---|---|
| Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other | | ☐ Sole Proprietorship | ☐ Other: |

| 12. Number of Employees | 13. Independently Owned and Operated? |
|---|---|
| ☐ 0-20 ☒ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher | ☒ Yes ☐ No |

**14. Customer Role** (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☒ Operator ☐ Owner & Operator

☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

| 15. Mailing Address: | 17511 FM 1283 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | City | Mico | State | TX | ZIP | 78056 | ZIP + 4 | 9203 |

| 16. Country Mailing Information *(if outside USA)* | 17. E-Mail Address *(if applicable)* |
|---|---|
| | |

| 18. Telephone Number | 19. Extension or Code | 20. Fax Number *(if applicable)* |
|---|---|---|
| 830-751-2587 | | |

## SECTION III: Regulated Entity Information

**21. General Regulated Entity Information** (*If 'New Regulated Entity" is selected below this form should be accompanied by a permit application*)

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

***The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).***

**22. Regulated Entity Name** (*Enter name of the site where the regulated action is taking place.*)

FM 1283 Ranch Quarry

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **23. Street Address of the Regulated Entity:** *(No PO Boxes)* | 17511 FM 1283 | | | | | | | |
| | **City** | Mico | **State** | TX | **ZIP** | 78056 | **ZIP + 4** | 9203 |
| **24. County** | Medina | | | | | | | |

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

| | | | | | |
|---|---|---|---|---|---|
| **25. Description to Physical Location:** | 5 MI W OF FM 471 & SH 211 ON N SIDE of FM 1283 | | | | |
| **26. Nearest City** | | | **State** | **Nearest ZIP Code** | |
| Mico | | | TX | 78056 | |
| **27. Latitude (N) In Decimal:** | 29.53778 | | **28. Longitude (W) In Decimal:** | -98.86333 | |
| Degrees | Minutes | Seconds | Degrees | Minutes | Seconds |
| 29 | 32 | 16 | -98 | 51 | 48 |

| | | | |
|---|---|---|---|
| **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) |
| 2951 | | 324121 | |

**33. What is the Primary Business of this entity?** *(Do not repeat the SIC or NAICS description.)*

Construction Materials Manufacturing

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **34. Mailing Address:** | 17511 FM 1283 | | | | | | | |
| | **City** | Mico | **State** | TX | **ZIP** | 78056 | **ZIP + 4** | 9203 |
| **35. E-Mail Address:** | | | | | | | | |

| | | |
|---|---|---|
| **36. Telephone Number** | **37. Extension or Code** | **38. Fax Number** *(if applicable)* |
| 830-751-2587 | | |

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

| | | | | |
|---|---|---|---|---|
| ☐ Dam Safety | ☐ Districts | ☒ Edwards Aquifer | ☐ Emissions Inventory Air | ☐ Industrial Hazardous Waste |
| | | 13-09110601A | | |
| ☐ Municipal Solid Waste | ☐ New Source Review Air | ☐ OSSF | ☐ Petroleum Storage Tank | ☐ PWS |
| | | | | |
| ☐ Sludge | ☐ Storm Water | ☐ Title V Air | ☐ Tires | ☐ Used Oil |
| | | | | |
| ☐ Voluntary Cleanup | ☐ Waste Water | ☐ Wastewater Agriculture | ☐ Water Rights | ☐ Other: |
| | | | | |

## SECTION IV: Preparer Information

| | | | |
|---|---|---|---|
| **40. Name:** | Bobbi Bondarenko | **41. Title:** | Staff Geologist |

| | | | |
|---|---|---|---|
| **42. Telephone Number** | **43. Ext./Code** | **44. Fax Number** | **45. E-Mail Address** |
| ( 830 ) 249-8284 | | ( 830 ) 249-0221 | bbondarenko@westwardenv.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:** | H.L. Zumwalt Quarry Operations, LLC. | **Job Title:** | President/Owner |
| **Name** *(In Print):* | Bonnie Zumwalt | **Phone:** | 830-751-2587 |
| **Signature:** | Bonnie Zumwalt | **Date:** | 11-3-'23 |

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

I Bonnie Zumwalt,
Print Name

President/Owner,
Title - Owner/President/Other

of H.L Zumwalt Quarry Operations, Inc.,
Corporation/Partnership/Entity Name

have authorized Curt G. Campbell, PE; Doug PE; Millsaps PE; Vance Houy PE; Gary D. Nicholls, PE; Andrea Kidd, PE; and Nicolas Mercado, PE
Print Name of Agent/Engineer

of Westward Environmental, Inc.
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:

Bonnie Zumwalt

Applicant's Signature

11-3-'23

Date

THE STATE OF TEXAS §

County of MEDINA §

BEFORE ME, the undersigned authority, on this day personally appeared Bonnie Zumwalt 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 3rd day of November, 2023

Marcia Ann Foster

NOTARY PUBLIC

MARCIA ANN FOSTER
Notary ID #174322
My Commission Expires
June 26, 2024

MARCIA ANN FOSTER

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: June 26, 2024

# Application Fee Form

**Texas Commission on Environmental Quality**
Name of Proposed Regulated Entity: FM 1283 Ranch Quarry
Regulated Entity Location: Medina County, Texas
Name of Customer: H.L. Zumwalt Quarry Operations, LLC
Contact Person: Bonnie Zumwalt Phone: 830-751-2587
Customer Reference Number (if issued):CN NEW
Regulated Entity Reference Number (if issued):RN 105835375

**Austin Regional Office (3373)**

☐ Hays ☐ Travis ☐ Williamson

**San Antonio Regional Office (3362)**

☐ Bexar ☒ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

☐ Austin Regional Office
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

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

| ***Type of Plan*** | ***Size*** | ***Fee Due*** |
|---|---|---|
| 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 | 561 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: Nicholas E Mendoza Date: 11/29/2023

# 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***

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

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

| *Project* | *Cost per Linear Foot* | *Minimum Fee-Maximum Fee* |
|---|---|---|
| Sewage Collection Systems | $0.50 | $650 - $6,500 |

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

| *Project* | *Cost per Tank or Piping System* | *Minimum Fee-Maximum Fee* |
|---|---|---|
| Underground and Aboveground Storage Tank Facility | $650 | $650 - $6,500 |

***Exception Requests***

| *Project* | *Fee* |
|---|---|
| Exception Request | $500 |

***Extension of Time Requests***

| *Project* | *Fee* |
|---|---|
| Extension of Time Request | $150 |