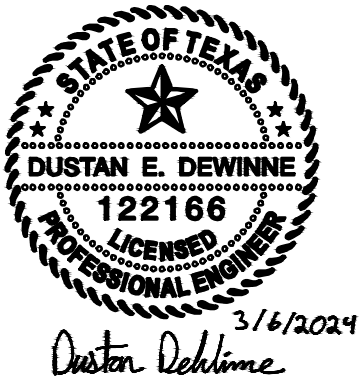
MUCK & FUSS SAN ANTONIO

Water Pollution Abatement Plan Modification



March 2024

DEWINNE
ENGINEERING, LLC
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TBPELS FIRM REGISTRATION #F-24128

EDWARDS AQUIFER APPLICATION COVER PAGE (FORM TCEQ-20705)

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: Muck & Fuss San Antonio						**2. Regulated Entity No.:**			
3. Customer Name: M&F#2, LLC						**4. Customer No.:**			
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):**		2.01	
9. Application Fee:	$4,000		**10. Permanent BMP(s):**			Partial Sedimentation and Sand Filter Basin			
11. SCS (Linear Ft.):			**12. AST/UST (No. Tanks):**						
13. County:	Bexar		**14. Watershed:**			Salado Creek			

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 ___Barton Springs/ Edwards Aquifer ___Hays Trinity ___Plum Creek	___Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	___Austin ___Buda ___Dripping Springs ___Kyle ___Mountain City ___San Marcos ___Wimberley ___Woodcreek	___Austin ___Bee Cave ___Pflugerville ___Rollingwood ___Round Rock ___Sunset Valley ___West Lake Hills	___Austin ___Cedar Park ___Florence ___Georgetown ___Jerrell ___Leander ___Liberty Hill ___Pflugerville ___Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	✓	___	___	___	___
Region (1 req.)	✓	___	___	___	___
County(ies)	✓	___	___	___	___
Groundwater Conservation District(s)	✓ Edwards Aquifer Authority ✓ Trinity-Glen Rose	___Edwards Aquifer Authority	___Kinney	___EAA ___Medina	___EAA ___Uvalde
City(ies) Jurisdiction	___Castle Hills ___Fair Oaks Ranch ___Helotes ___Hill Country Village ___Hollywood Park ✓ San Antonio (SAWS) ___Shavano Park	___Bulverde ___Fair Oaks Ranch ___Garden Ridge ___New Braunfels ___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. Dustan DeWinne, P.E.
Print Name of Customer/Authorized Agent Dustan DeWinne 3/6/2024 Signature of Customer/Authorized Agent Date

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

GENERAL INFORMATION FORM (TCEQ-0587)

General Information Form

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Dustan DeWinne, P.E.

Date: 3/4/2024

Signature of Customer/Agent:

Dustan DeWinne

Project Information

1. Regulated Entity Name: Muck & Fuss San Antonio
2. County: Bexar
3. Stream Basin: Salado Creek
4. Groundwater Conservation District (If applicable): Edwards & Trinity Glen Rose
5. Edwards Aquifer Zone:

   ☒ Recharge Zone
   ☐ Transition Zone

6. Plan Type:

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

7. Customer (Applicant):

   Contact Person: Terry Muckenfuss
   Entity: M&F#2, LLC
   Mailing Address: 201 Lowman Lane
   City, State: New Braunfels, Texas Zip: 78132
   Telephone: (336) 456-0602 FAX: _____
   Email Address: terrymuckenfuss@icloud.com

8. Agent/Representative (If any):

   Contact Person: Dustan DeWinne, P.E.
   Entity: DeWinne Engineering, LLC
   Mailing Address: P.O. Box 137
   City, State: Boerne, Texas Zip: 78006
   Telephone: (210) 383-3453 FAX: _____
   Email Address: dustan@dewinne-eng.com

9. Project Location:

   ☒ The project site is located inside the city limits of San Antonio.
   ☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
   ☐ The project site is not located within any city's limits or ETJ.

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

    From TCEQ regional office proceed approximately 2.5 miles north on Judson Road to N Loop 1604 W and turn left to travel west. Proceed approximately 9.0 miles west and exit Bitters Road. Proceed south along Bitters Road and turn left onto the N Loop 1604 W frontage road. Proceed east for approximatly 0.15 miles and the site is located on the south site of Loop 1604.

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

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

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

13. ☒ **The TCEQ must be able to inspect the project site or the application will be returned**. Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate

the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

☒ Survey staking will be completed by this date: when advised by TCEQ of site visit

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

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

15. Existing project site conditions are noted below:

☐ Existing commercial site
☐ Existing industrial site
☐ Existing residential site
☒ Existing paved and/or unpaved roads
☐ Undeveloped (Cleared)
☒ Undeveloped (Undisturbed/Uncleared)
☐ Other: _____

Prohibited Activities

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

(1) Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);

(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;

(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;

(4) The use of sewage holding tanks as parts of organized collection systems; and

(5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

(6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.

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

(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);

(2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and

(3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

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

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

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

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

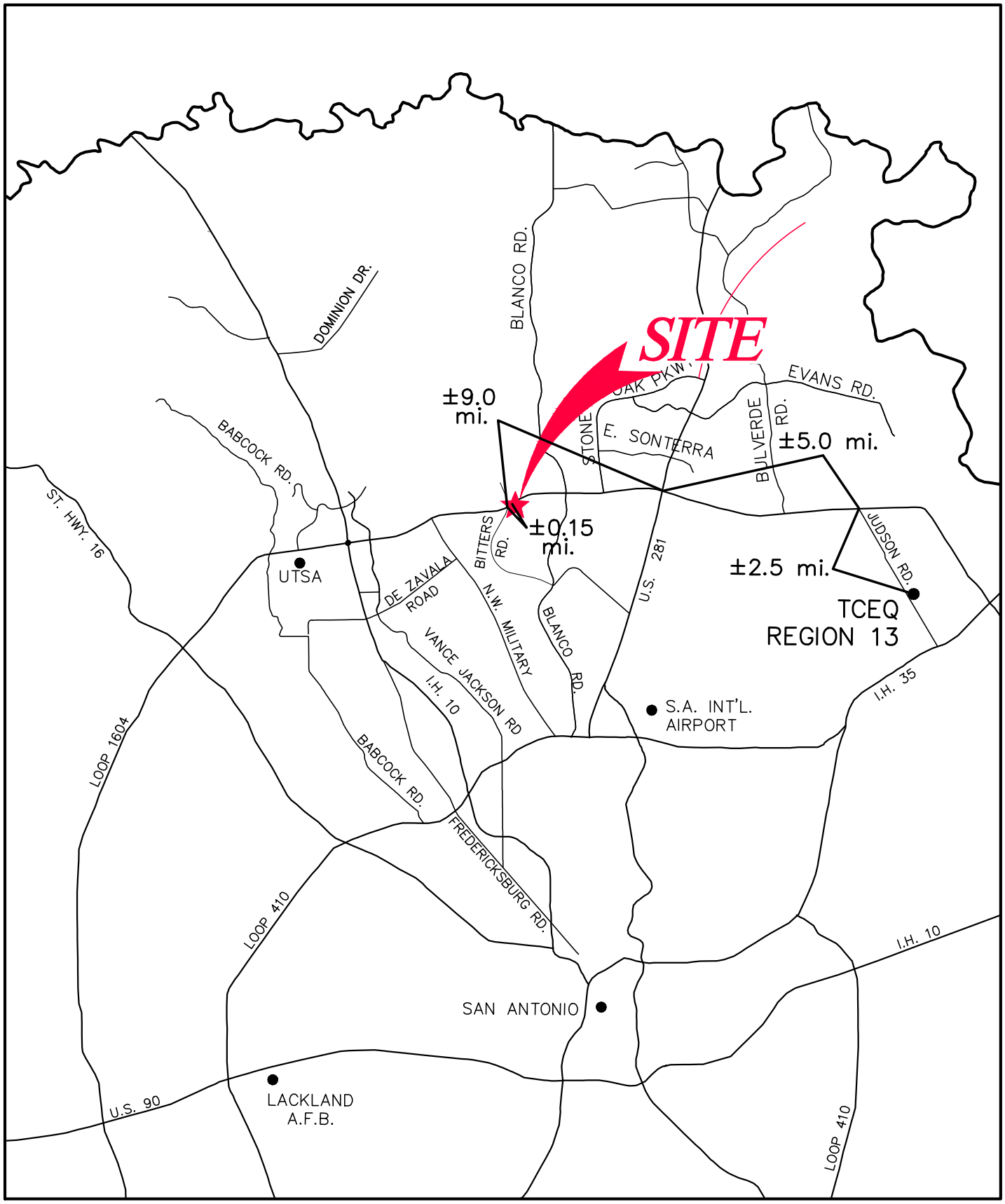
20. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies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

21. ☒ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.

ATTACHMENT A
ROAD MAP

MUCK & FUSS SAN ANTONIO
Water Pollution Abatement Plan Modification

N
NOT TO SCALE



ATTACHMENT A
Road Map

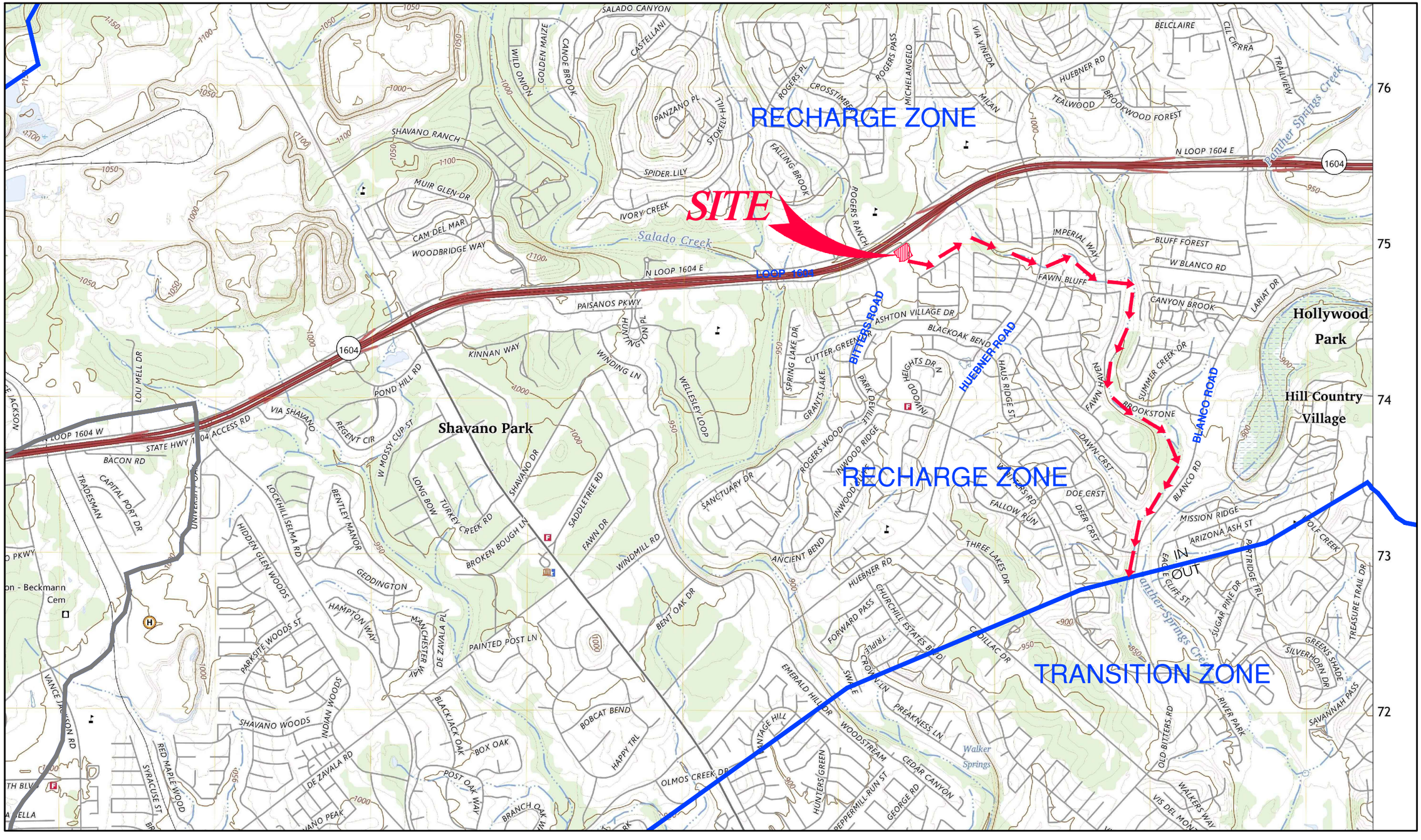
ATTACHMENT B

USGS/EDWARDS RECHARGE ZONE MAP

MUCK & FUSS SAN ANTONIO
Water Pollution Abatement Plan Modification

N

SCALE: 1" = 2000'



GENERAL LOCATION MAP - CASTLE HILLS, TX QUAD
DRAINAGE FLOW → →

USGS/EDWARDS RECHARGE ZONE MAP
ATTACHMENT B

ATTACHMENT C
PROJECT DESCRIPTION

Attachment C – Project Narrative

The Muck & Fuss San Antonio WPAP Modification (WPAP MOD V) is a modification to the approved Heritage Oaks Office Park at Inwood WPAP Modification IV (MOD IV). The Muck & Fuss San Antonio WPAP MOD V proposes the construction of a restaurant type development with associated parking, driveways, and sidewalks. The Muck & Fuss at Inwood site is within the city limits of San Antonio and located entirely over the Edwards Aquifer Recharge Zone.

The Inwood Commercial WPAP was originally approved on February 21, 2006 (EAPP File No. 2430.00) and permitted the construction of 17.08 acres of impervious cover. The 24.4-acre site permitted the construction of retail/office type development with associated parking, drive aisles, utilities and drainage improvements, and one (1) water quality pond. One (1) partial sedimentation and sand filter basin were approved as PBMPs for this site.

The Inwood Commercial WPAP Modification I (MOD 1) was approved by The Texas Commission on Environmental Quality (TCEQ) on January 23, 2009 (EAPP File No. 2430.05) and permitted the construction of 17.88 acres of impervious cover. The 27.57-acre site consisted of retail, general office, and restaurant type of development, parking, and drive lanes. One (1) partial sedimentation and sand filter basin and 1 fifteen-foot (15') wide Engineered Vegetative Filter Strip were approved as PBMPs for this site.

The Heritage Oaks Office Park at Inwood WPAP Modification II (MOD II) was approved by The Texas Commission on Environmental Quality (TCEQ) on March 19, 2015 (EAPP File No. 13-14122303) and permitted the construction a parking lot expansion of an overall 42.84-acre area inclusive of 20.08-acres (46.87 percent) of impervious cover. One (1) existing partial sedimentation/filtration basin and three (3) Engineered Vegetated Filter Strips were approved as PBMPs for this site.

The Heritage Oaks Office Park at Inwood WPAP Modification III (MOD III) was approved by TCEQ on April 21, 2016 for a commercial project with an area of approximately 14.597 acres with 8.376 acres (67.71 percent) of impervious cover. The project included the expansion and construction of commercial office buildings and associated parking lot. Permanent treatment was provided by one existing partial sedimentation/filtration basin and two newly constructed StormFilter Systems. VFS #2 and #3 were removed with the areas previously approved to be treated by VFS are now treated by the two StormFilter Systems.

The Heritage Oaks Office Park at Inwood WPAP Modification IV (MOD IV) was approved by TCEQ on December 5, 2016 for a commercial project with an area on approximately 0.027 acres with 0.026-acres (96.3 percent) of impervious cover. The modification included a parking lot expansion for seven additional parking spaces, demolition of existing curb edge, clearing and grading.

This Muck and Fuss San Antonio WPAP Modification (MOD V) proposes the construction of proposed improvements within the Inwood Commercial Site. The proposed improvements include a restaurant type development with associated parking, driveways, and sidewalks, mass clearing and grading. The total impervious cover proposed with this WPAP MOD III is 2.01 acres. The total proposed impervious cover within the project limits of this modification is 1.40 acres or 69.5% of the 2.01 acre project site. The existing partial sedimentation and sand filter basin will remain as the permanent BMP and will provide treatment for the 1.40 acres of impervious cover for the parking expansion in accordance with the approved WPAP.

The impervious cover for the proposed 2.01 project site is less than the original assumed impervious cover from the previously approved WPAP, refer to Exhibit 3, WPAP Impervious Cover Comparison Exhibit for verification.

Potable water service is to be provided by the San Antonio Water System (SAWS). The proposed development will generate approximately 4,000 gallons per day (average flow) of domestic wastewater based on the assumption of 20 EDUs (20 EDUs x 200 gpd/EDU) = 4000 gpd).

Wastewater will be disposed of by conveyance to the existing Dos Rios Water Recycling Center operated by SAWS.

GEOLOGIC ASSESSMENT FORM (TCEQ-0587)

Geologic Assessment for an Approximate 2.01-Acre Tract at 2450 North Loop 1604 West, Bexar County, Texas

FEBRUARY 2024

PREPARED FOR

DeWinne Engineering, LLC

PREPARED BY

SWCA Environmental Consultants

Texas Board of Professional Geoscientists, Firm Registration No. 50159

GEOLOGIC ASSESSMENT
FOR AN APPROXIMATE 2.01-ACRE TRACT AT 2450 NORTH LOOP 1604 WEST, BEXAR COUNTY, TEXAS

Prepared for

Dustan DeWinne, P.E.
DeWinne Engineering, LLC.
P.O. Box 137
San Antonio, Texas 78006

Prepared by

Philip Pearce, P.G., and Kenadi Sutton

SWCA Environmental Consultants
Texas Board of Professional Geoscientists, Firm Registration No. 50159
4949 North Loop 1604 West, Suite 235
San Antonio, Texas, 78249
www.swca.com

SWCA Project No. 87009

February 2024

CONTENTS

Appendices

Figures

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1 INTRODUCTION

SWCA has prepared this Geologic Assessment to accompany the Texas Commission on Environmental Quality (TCEQ) Geologic Assessment form TCEQ-0585 completed for the approximate 2.01-acre tract of land and associated approximately 0.58-acre sedimentation and filtration basin located 2450 North Loop 1604 West in Northern San Antonio, Bexar County (Project). The Project, located south adjacent to the North Loop 1604 West access road, includes a vacant lot and a sedimentation and filtration basin surrounded by parking lots. The vacant lot will be developed for retail use (Figure 1; Project Site).

2 METHODOLOGY

SWCA scientists studied information sources pertaining to all reported caves from the Project Site to gather information related to documented caves in the vicinity prior to conducting field work. These information sources include:

- Internal, SWCA data;
- ESRI® ArcGIS® Online Basemap Map Services;
- U.S. Geological Survey (2023) 7.5-minute topographic digital raster graphics; and
- Geologic maps and mapped fault lines (Clark 2016)

SWCA scientist Kenadi Sutton conducted a field survey for a Geologic Assessment on February 13, 2024. The pedestrian survey was completed by traversing parallel transects spaced approximately 30 to 50 feet apart as directed by the TCEQ (2004) in the *Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones* (Rev. 10-01-04). The Project Site is a vacant lot and associated sedimentation and filtration basin surrounded by existing paved road and parking lot. The Project Site includes both disturbed and undisturbed ground.

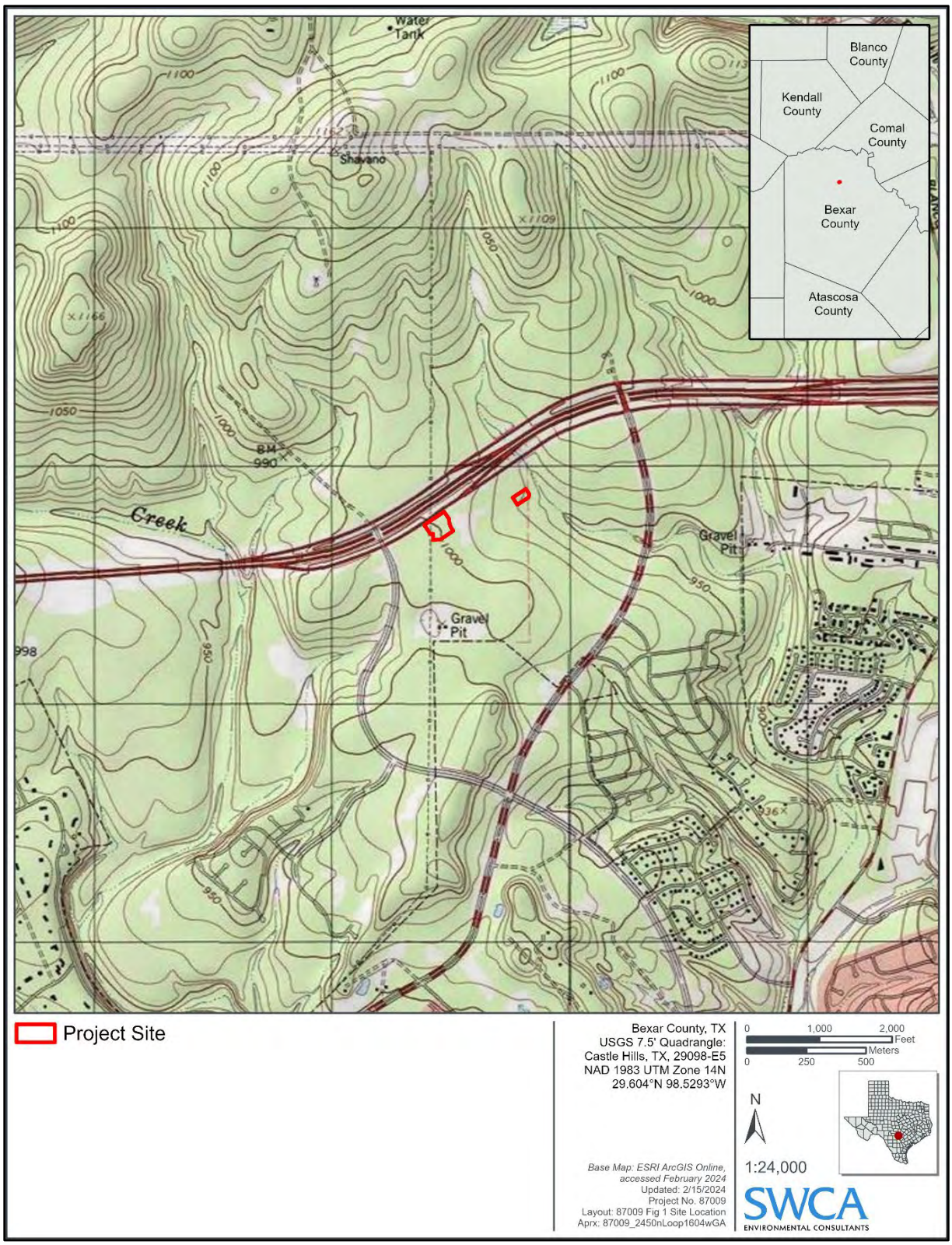

Figure 1. Project Site location map.

3 RESULTS

3.1 Project Site Overview

The Project Site lies within the Recharge Zones of the Edwards Aquifer (TCEQ 2024). Topography within and surrounding the Project Site lacks significant elevation changes. Project Site topography ranges from approximately 1,003 feet above mean sea level (amsl) at the west side of Project Site, to 998 feet amsl near the eastern extent of the Project Site, with a gentle undulation of elevation from the western to eastern Project Site extent. Topography of the sedimentation and filtration pond east of the main Project Site ranges from approximately 970 feet amsl at the west side of the basin, to 965 feet amsl at the east side of the basin. The Project Site includes a vacant lot and a sedimentation and filtration basin surrounded by existing roadway and parking lots.

3.2 Geology

The Cretaceous-aged Person Formation (Kp) covers the Project Site (Figure 2). The Project Site is located approximately 0.35 mile north of an inferred normal fault, and approximately 0.30 mile south of a normal fault. The general trend of each fault is approximately N58ºE and N35ºE, respectively. Project Site geology has been mapped most recently at a useful scale by Clark, Golab, and Morris (2016) and SWCA finds their interpretation of the geology to be generally accurate. The Stratigraphic Column is included as Attachment B within Appendix A.

The Project Site occurs along the Balcones Fault Zone (BFZ) within the Edwards Aquifer Recharge Zone (TCEQ 2024). Structural down-warping occurred with the Gulf of Mexico's ancestral formation during the middle Tertiary. The earth's crust was stretched in response and the BFZ formed along a zone of weakness, which currently marks the boundary between the Edwards Plateau and the Gulf Coastal Plain in central Texas. The BFZ is characterized by a series of northeast-trending, predominantly normal, nearly vertical, en echelon faults.

Recharge into the Edwards Aquifer primarily occurs in areas where the Edwards Group and Georgetown Formation are exposed at the surface. Most recharge is from direct infiltration via precipitation and streamflow loss. Recharge occurs predominantly along secondary porosity features such as faults, fractures, and karst features (caves, solution cavities, sinkholes, etc.). Karst features are commonly formed along joints, fractures, and bedding plane surfaces in the Edwards Group and Georgetown Formation.

3.3 Soils

The Natural Resources Conservation Service (2023) identifies one unit within the Project Site. The Crawford, stony and Bexar soils, 0 to 5 percent slopes (Cb) is a non-hydric, well-drained, very slowly permeable soil that formed in clayey sediments that are underlain by indurated limestone bedrock. The soil is included in Hydrologic Soil Group D, which indicates the soil has a very slow infiltration rate when thoroughly wetted (NRCS 2023).

4 HYDROGEOLOGIC ASSESSMENT

The overall potential for fluid migration to the Edwards Aquifer for the Project Site appears relatively low compared to background infiltration rates, due to the presence of paved and landscaped surfaces and a lack of geologic features identified on the Project Site (Site Geologic Map; Appendix A, Attachment D).

F-01 is a manmade sedimentation and filtration basin measuring approximately 185 feet by 100 feet by 8 feet. The lined basin is designed to collect surface runoff from the surrounding retail development and treat it prior to discharge. Photographs of the basin are included in the Photographic Log in Attachment E.

The USGS 2023 Castle Hills topographic map and National Hydrography Database (NHD) identify an unnamed intermittent stream approximately 95 feet east of the portion of the Project Site occupied by F-01 (USGS 2018; 2023). The unnamed intermittent stream culminates into Panther Springs Creek approximately 2 miles southeast of the Project Site.

Upon reviewing the Texas Water Development Board (TWDB) Groundwater Data Viewer, no water wells are present on the Project Site, however one observation well was identified approximately 0.29 mi southeast of the Project Site (TWDB 2024). Observation well 68-28-315, owned by the Edwards Aquifer Authority, has a total depth of 280 feet below the surface. Depth to water was last measured at 230.52 feet below the surface in January 2020 (TWDB 2024).

4.1 Geologic Features

SWCA identified one manmade and no geologic features (including faults) within the Project Site. SWCA identified two faults within a half mile vicinity of the Project Site. TCEQ (2024) indicates the Project Site overlies the Edwards Aquifer Recharge Zone.

F-01 is a manmade, concrete sedimentation and infiltration basin measuring approximately 185 feet by 100 feet by 8 ft. The basin is designed to collect surface runoff from the Project Site and surrounding retail development and treat it prior to discharge. Water flows into the southeast corner of the basin, before eventually flowing into the west half of the basin that has sand filter media. The basin has a concrete floor and is not designed for water infiltration; therefore, the infiltration rate is low. Photographs of the basin are included in the Photographic Log in Attachment E.

Figure 2. Project Site with nearby well locations and surface waters.

5 REFERENCES

Blome, C.D., Faith, J.R., Pedraza, D.E, Ozuna, G.B, Cole, J.C., Clark, A.K., Small, T.A., and Morris, R.R. 2005. Geologic Map of the Edwards Aquifer Recharge Zone, South-Central Texas. U.S. Geological Survey SIM-2873. Scale 1:200,000.

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APPENDIX A

Texas Commission on Environmental Quality (TCEQ) Forms

Geologic Assessment

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Geologist: Philip C. Pearce, P.G.

Date: 2/19/2024

Telephone: 210.877.2847

Fax: 210.877.2848

Representing: SWCA Environmental Consultants (TBPG Firm Registration #50159) (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

Regulated Entity Name: 2.01-Acre Tract at 2450 North Loop 1604 West

Project Information

1. Date(s) Geologic Assessment was performed: 2/13/2024
2. Type of Project:
   - ☒ WPAP
   - ☒ SCS
   - ☐ AST
   - ☐ UST
3. Location of Project:
   - ☒ Recharge Zone
   - ☐ Transition Zone
   - ☐ Contributing Zone within the Transition Zone

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

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

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)

Soil Name	Group*	Thickness(feet)
Crawford, stony and Bexar soils, 0 to 5 percent slopes (Cb)	D	1.6-3.3

** 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" = 20'
   Site Geologic Map Scale: 1" = 20'
   Site Soils Map Scale (if more than 1 soil type): 1" = N/A'

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 _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)
    - ☐ The wells are not in use and have been properly abandoned.
    - ☐ The wells are not in use and will be properly abandoned.
    - ☐ The wells are in use and comply with 16 TAC Chapter 76.

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

Administrative Information

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

ATTACHMENT A

Geologic Assessment Table

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: 2450 NORTH LOOP 1604 WEST, 2.01-ACRE TRACT

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	
F-01	29.604672°	-98.527339°	MB	30	Kp	185	100	8	-	-	-	-	X	5	35	X			X	Drainage

* DATUM: NAD83

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

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

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

I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.
My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Date: 02/19/2024

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

ATTACHMENT B

Stratigraphic Column

Stratigraphic Column

Upper Cretaceous	Upper Confining Units			Navarro and Taylor Groups, undivided; 600 feet thick	
				Austin Group; 130-150 feet thick	
				Eagle Ford Group; 30-50 feet thick	
				Buda Limestone; 40-50 feet thick	
				Del Rio Clay; 40-50 feet thick	
Lower Cretaceous	I	Edwards Aquifer		Georgetown Formation	10-40 feet thick
	II		Edwards Group	Person Formation; 170-200 feet thick	Cyclic and Marine member, undivided
	III				Leached and Collapsed member, undivided
	IV				Regional Dense member
	V			Kainer Formation; 260-310 feet thick	Grainstone member
	VI				Kirschberg Evaporite member
	VII				Dolomitic member
	VIII				Basal Nodular member
	Lower Confining Units			Upper member of Glen Rose Formation; 350-500 feet thick	

Note: The shaded areas represent the lithology that outcrops in the Project Site.[1]

[1] Blome, C.D., Faith, J.R., Pedraza, D.E, Ozuna, G.B, Cole, J.C., Clark, A.K., Small, T.A., and Morris, R.R. 2005. Geologic map of the Edwards aquifer recharge zone, south-central-Texas. U.S. Geological Survey SIM-2873. Scale 1:200,000.

ATTACHMENT C

Narrative Description of Geology

Please refer to section 3.2 of this report for geologic narrative description.

ATTACHMENT D

Site Geologic Map

N Loop 1604 W

N Loop 1604 W

Kp

1000

1000

2400 N LOOP 1604 W
Site Geologic Map

1 inch = 20 feet

Philip C. Pearce
Geology
691
LICENSED
PROFESSIONAL GEOSCIENTIST

Project Site
Topographic Contour

Geologic Unit Type
Kp - Person Formation

Bexar County, TX
USGS 7.5' Quadrangle:
Castle Hills, TX, 29098-E5
NAD 1983 UTM Zone 14N
29.6035°N 98.5309°W

Base Map: ESRI ArcGIS Online
accessed 2/10/2024
Updated: 2/12/2024
Project No. 87009
Layout: 87009 Fig 3 Site Geologic 24 x 36

0 10 20 Feet
0 2.5 5 Meters

1:240

SWCA
ENVIRONMENTAL CONSULTANTS

2450 N LOOP 1604 W

Site Geologic Map

1 inch = 20 feet

Project Site

Feature

Topographic Contour

Geologic Unit Type

Kp - Person Formation

Qal - Alluvium

Bexar County, TX
USGS 7.5' Quadrangle:
Castle Hills, TX, 29098-E5
NAD 1983 UTM Zone 14N
29.6047°N 98.5273°W

Base Map: ESRI ArcGIS Online, accessed February 2024
Updated: 2/15/2024
Project No. 87009
Layout: 87009 Fig 3 Site Geologic 24 x 36

0 10 20 Feet
0 2.5 5 Meters

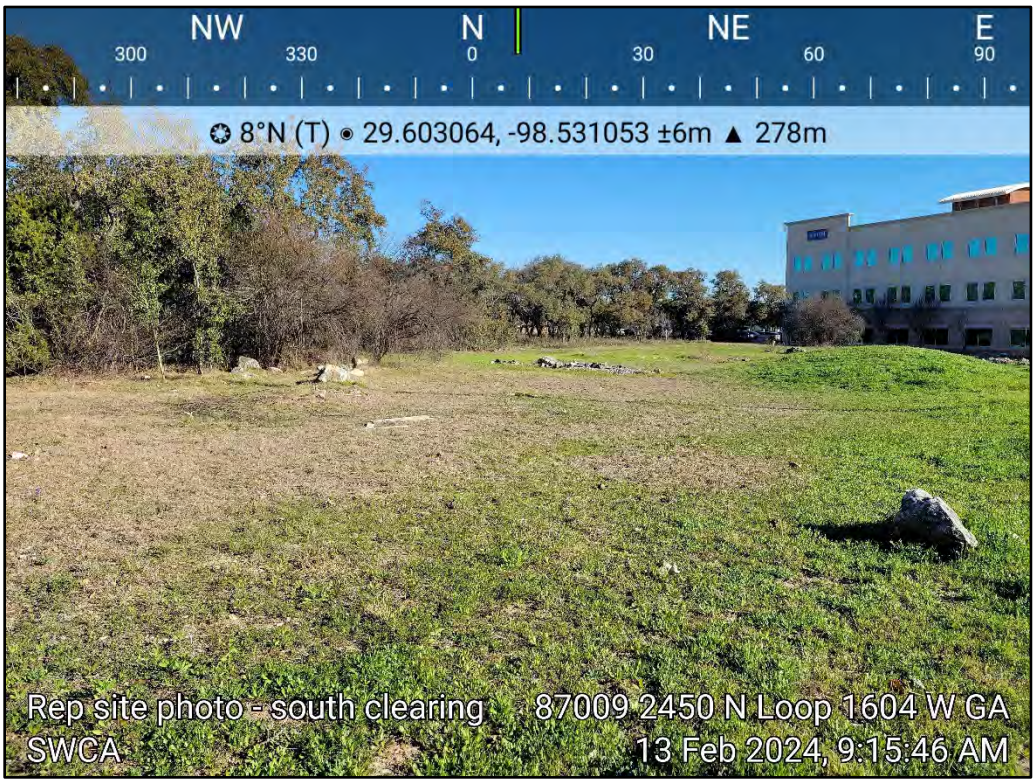
N

1:240

SWCA
ENVIRONMENTAL CONSULTANTS

ATTACHMENT E

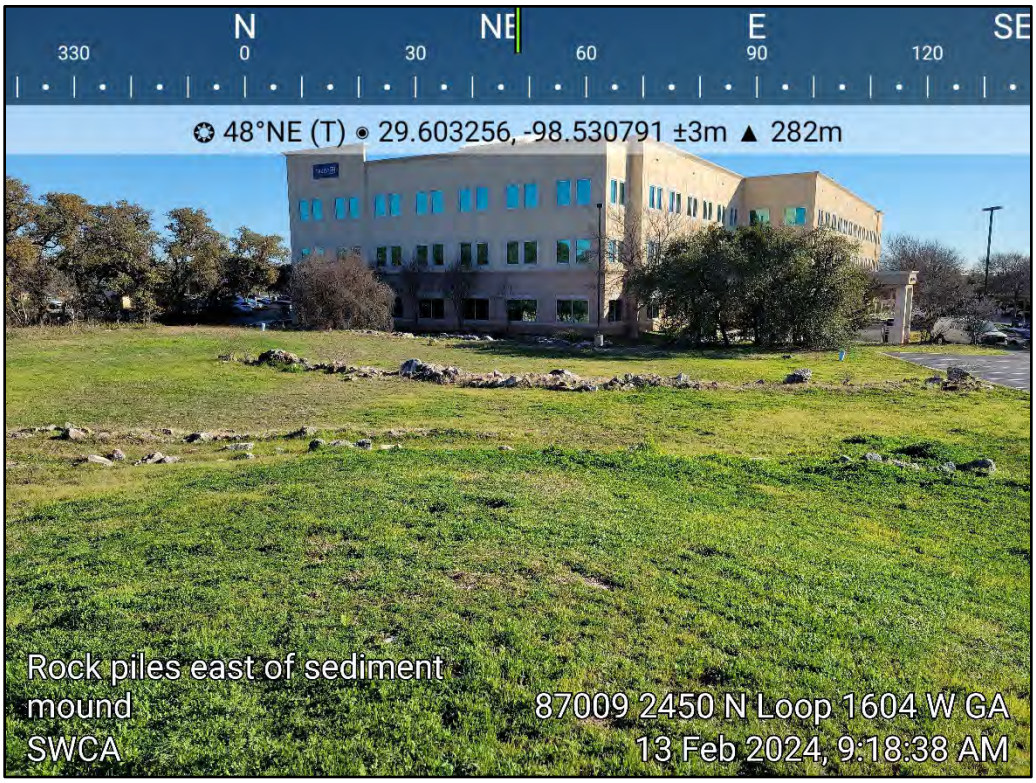
Photographic Log



Photograph 1. Representative view of grassy, clear portion of Project Site.

Photograph 2. Representative view of vegetated portion of Project Site.

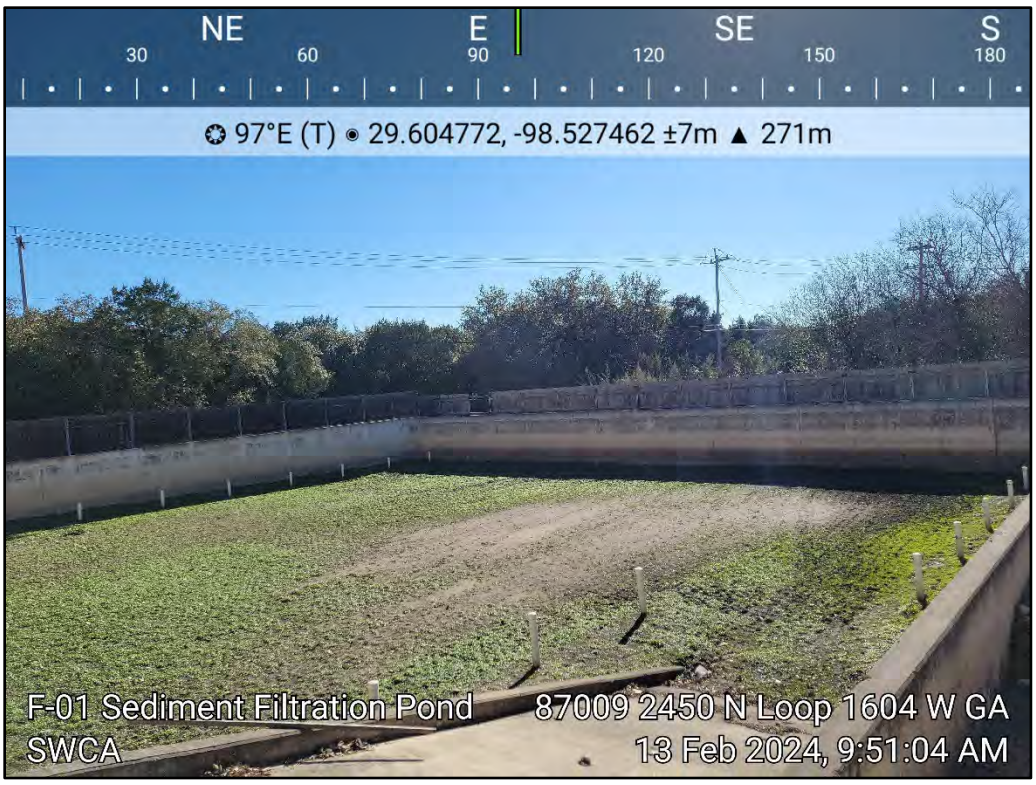
Photograph 3. Representative view of roadway in western portion of Project Site.



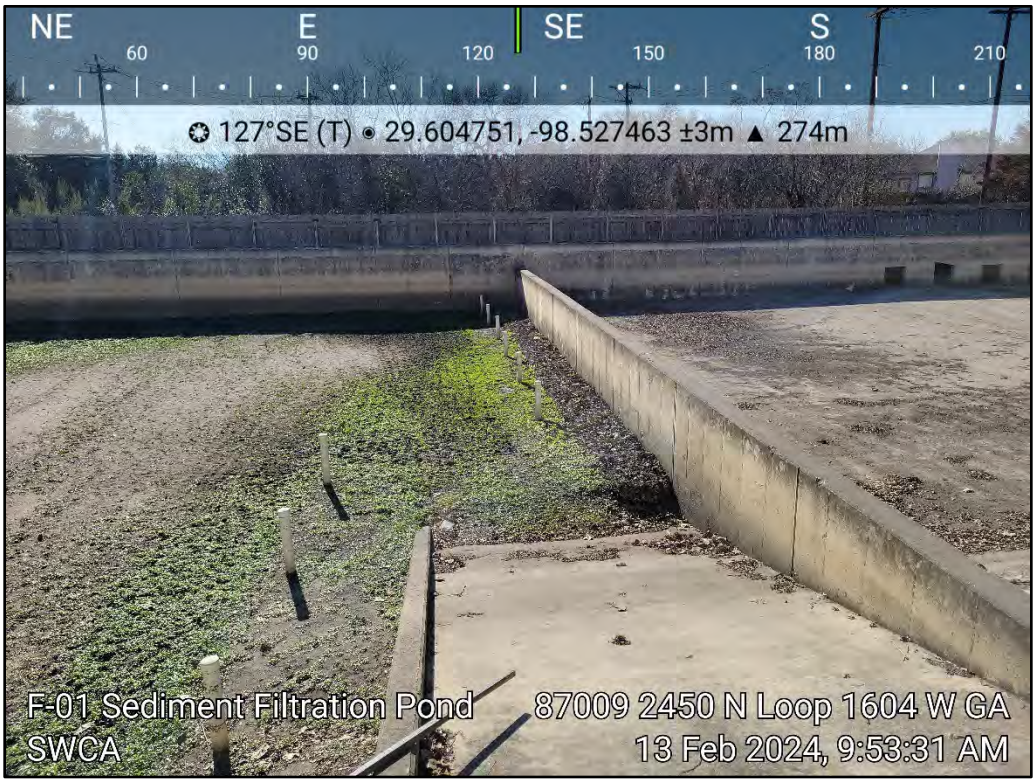
Photograph 4. Representative photograph of rock piles in grassy portion of Project Site.

Photograph 5. Representative photograph of F-01.

Photograph 6. Representative photograph of F-01 (southwest portion).



Photograph 7. Representative photograph of F-01 (northeast portion).



Photograph 8. Representative photograph of F-01 (center area).

MODIFICATION TO A PREVIOUSLY APPROVED PLAN (FORM TCEQ-0590)

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.

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: Dustan DeWinne, P.E.

Date: 3/4/2024

Signature of Customer/Agent:

Dustan DeWinne

Project Information

1. Current Regulated Entity Name: Muck & Fuss San Antonio
   Original Regulated Entity Name: Heritage Oaks Office Park at Inwood
   Regulated Entity Number(s) (RN): N/A ; 104800107
   Edwards Aquifer Protection Program ID Number(s): 13-14122303
   ☐ The applicant has not changed and the Customer Number (CN) is: _____
   ☒ 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	see attachment A	2.01
Type of Development	_____	Restaurant
Number of Residential Lots	_____	0
Impervious Cover (acres)	_____	1.40
Impervious Cover (%	_____	69.50%
Permanent BMPs	_____	Partial Sand Filter
Other	_____	_____

SCS Modification Summary	***Approved Project***	***Proposed Modification***
Linear Feet	_____	_____
Pipe Diameter	_____	_____
Other	_____	_____

AST Modification Summary	***Approved Project***	***Proposed Modification***
Number of ASTs	_____	_____
Volume of ASTs	_____	_____
Other	_____	_____

UST Modification Summary	***Approved Project***	***Proposed Modification***
Number of USTs	_____	_____
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.

WPAP Modification Summary

WPAP Modification Summary	Approved Project (2005)	Approved Modification (2008)
Acres	24.4	27.57
Type of Development	Office/Retail/Mini-Storage	Office/Retail/Mini-Storage/Restaurant
Number of Residential Lots	N/A	N/A
Impervious Cover (acres)	17.08	17.88
Impervious Cover (%)	70%	65%
Permanent BMPs	Partial Sand Filter	Partial Sand Filter
Other		

WPAP Modification Summary	Approved Modification (2014)
Acres	43.09
Type of Development	Office/Retail/Mini-Storage/Restaurant
Number of Residential Lots	N/A
Impervious Cover (acres)	20.08
Impervious Cover (%)	46.60%
Permanent BMPs	Partial Sand Filter
Other	

WPAP Modification Summary	Approved Modification (2016)
Acres	12.37
Type of Development	Office/Retail/Mini-Storage/Restaurant
Number of Residential Lots	N/A
Impervious Cover (acres)	8.38
Impervious Cover (%)	67.7%
Permanent BMPs	Two (2) Storm Filters®
Other	

ATTACHMENT A

ORIGINAL APPROVAL LETTER AND APPROVED MODIFICATION LETTERS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 21, 2006

Mr. Lloyd A. Denton, Jr.
Lee - 1604 No. One Ltd.
11 Lynn Batts Lane
San Antonio, Texas 78218

Re: Edwards Aquifer, Bexar County
NAME OF PROJECT: Inwood Commercial; Near the Intersection of Bitters on the Eastbound Loop 1604 Frontage Road; San Antonio, Texas
TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program ID No. 05111401

Dear Mr. Denton:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the referenced project submitted to the San Antonio Regional Office by Macina, Bose, Copeland and Associates, Inc. on behalf of Lee - 1604 No. One Ltd. on November 14, 2005. Final review of the WPAP submittal was completed after additional material was received on February 16, 2006. 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 will have an area of approximately 24.4 acres. It will include retail/office type development with the associated parking, drive aisles, utilities and a water quality pond. The impervious cover will be 17.08 acres (70.0 percent). Project wastewater will be disposed of by conveyance to the existing Salado Creek Wastewater Facility owned by the City of San Antonio.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent pollution of stormwater runoff originating on-site or up-gradient of the site and potentially flowing across and off the site after construction, a sedimentation/sand filter system will be constructed to treat stormwater runoff. The water quality pond provides 95,749 cubic feet of water quality volume including approximately 9,575 square feet of sand filter with a capture depth of 1.50 inches. The approved measures meet the required 80 percent removal of the increased load in total suspended solids caused by the project.

The runoff from phase 1 will be routed to the temporary basin (permanent basin without filtrate and permanent under drain) and the temporary basin will serve phase 1 until completed. Once phase 1 construction is complete the basin will be cleaned and the filtrate and the permanent under drain will be installed, which will complete the permanent basin construction. For all other phases, the storm water will be routed through the required sediment control devices and then into the permanent sedimentation filtration basin.

GEOLOGY

According to the geologic assessment included with the application, rock outcropping on the property are Cretaceous in age and consist of the Person Formation of the Edwards Group Limestone. Small amount of Quaternary alluvium are also present in the drainage on the northeastern portion of the property. The property is reported to be located on the Balcones Fault Zone, however, no faults were mapped on the property, nor observed during the karst survey.

A request to seal Feature No. I-2 was requested in the application. It was reported that Feature I-2 is a small natural solution cavity with a catchment area of less than 10 feet in radius. The feature is proposed to be filled with gravel with a minimum of 18 inches of 2,500 psi concrete on top of the gravel to seal the feature. This method of sealing the above described feature is approved.

SPECIAL CONDITIONS

I. Intentional discharges of sediment laden stormwater during construction are not allowed. If dewatering excavated areas and/or areas of accumulated stormwater becomes necessary, the discharge shall be filtered through appropriately selected temporary best management practices. These may include vegetative filter strips, sediment traps, rock berms, silt fence rings, etc

II. The geologic assessment and/or the TCEQ's site investigation revealed the existence of potentially sensitive features (e.g., faults, caves, voids, solution cavities, openings, fractured rock, and depressions) in the vicinity; therefore, geologic/sensitive features may be encountered during utility trenching operations. If features are encountered, the applicant/contractor must comply with the requirements of 30 TAC §213.5(f)(2) and Standard Condition 9 below.

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.

Prior to Commencement of Construction:

2. 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.

3. 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.

4. 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.

5. 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.

6. 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 stormwater 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.

7. 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.

During Construction:

8. 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.

9. 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.

10. No wells exist on the site. 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.

11. 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 stormwater discharge pollutants.

12. 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.

13. 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>

14. 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.

15. 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 the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

16. 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.

17. 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.

18. 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 Mr. Bobby Caldwell, of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 490-3096.

Sincerely,

Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/bem

Enclosures: Deed Recordation Affidavit, TCEQ-0625
Change in Responsibility for Maintenance on Permanent BMPs, TCEQ-10263

cc: Mr. Robert A. Liesman, Macina, Bose, Copeland and Associates, Inc., San Antonio
Ms. Rebecca Codillo, San Antonio Water System
Mr. Robert J. Potts, General Manager, Edwards Aquifer Authority, San Antonio
TCEQ Central Records

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 23, 2009

Mr. Lloyd A. Denton, Jr.
Lee 1604 No. One Ltd.
11 Lynn Batts Lane
San Antonio, TX 78218

Re: Edwards Aquifer, Bexar County
NAME OF PROJECT: Inwood Commercial; Located near the intersection of Bitters Rd. on the eastbound Loop 1604 frontage road; City of San Antonio, Texas
TYPE OF PLAN: Request for a Modification of an Approved Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program ID No. 2430.05; Investigation No. 708771; Regulated Entity No. RN104800107

Dear Mr. Denton:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP modification for the above-referenced project submitted to the San Antonio Regional Office by Macina, Bose, Copeland and Associates, Inc. on behalf of Lee 1604 No. One Ltd. on November 19, 2008. Final review of the WPAP modification was completed after additional material was received on January 13, 2009. 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.*

BACKGROUND

The original approval for the project was granted by letter dated February 21, 2006. The proposed commercial development was to have an area of approximately 24.4 acres and include retail/office type development with the associated parking, drive aisles, utilities and a water quality basin. The impervious cover proposed was to be 17.08 acres (70 percent). Project wastewater was to be disposed of by conveyance to the existing Salado Creek Water Recycling Center owned by San Antonio Water Systems.

Site development has been completed on 20.07 acres of the project area including the construction of the permanent BMP (a partial sedimentation/filtration basin). The proposed modification to the approved WPAP will include the addition of 0.59 acres of general office development, 0.91 acres of parking and drive lanes (property of the First Presbyterian Church), and 1.67 acres of floodplain area. The project also

proposes the implementation of an engineered vegetated filter strip to treat an area which will not drain to the existing water quality basin. The total site area will become 27.57 acres.

PROJECT DESCRIPTION

The proposed commercial project will have an area of approximately 27.57 acres. It will include retail, general office, and restaurant type of development. The impervious cover will be 17.88 acres (65 percent). Project wastewater will be disposed of by conveyance to the existing Salado Creek Water Recycling Center owned by the San Antonio Water System.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, a partial sedimentation/filtration basin (existing) and an engineered vegetated filter strip, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 14,591 pounds of TSS generated from the 17.88 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

The table below summarizes the BMP sizing for the project.

Table I

Area	Total Area (acres)	Imp. Cover (acres)	Runoff Depth (inches)	Capture Volume Required (ft^3)	Capture Volume Provided (ft^3)	Sand Filter Area Required	Sand Filter Area Provided	TSS Removal Required (lb/yr)	TSS Removal Provided (lb/yr)
Basin	24.07	17.66	1.50	**95,928	97,968	7,094	9,692	14,411	14,493
Veg. Filter	0.18	0.12	-	-	-	-	-	98	98
Uncaptured	3.32	0.10	-	-	-	-	-	*82	-
Open Space	0	-	-	-	-	-	-	-	-
Total	27.57	17.88	-	-	-	-	-	14,591	14,591

*treatment provided in the basin

**capture volume includes upgradient drainage from 4.86 acres (2.27 acres of impervious cover)

Engineered Vegetated Filter Strips

The filter strips will have the following design criteria:
*the filter strips will extend along the entire length of the contributing area;
*the slope will not exceed 20%;
*the minimum dimension of the filter strip (in the direction of flow) will not be less than 15 feet;
*the maximum width (in the direction of flow) of the contributing impervious area does not exceed 72 feet;
*the minimum vegetated cover will be 80%;
*the contributing area to the filter strip will be relatively flat so that the runoff is distributed evenly to the vegetated area without the use of a level spreader;
*the vegetated filter strip is free of gullies or rills that can concentrate overland flow.

GEOLOGY

According to the geologic assessment included with the original WPAP application approved by letter dated February 21, 2006, rock outcropping on the property are Cretaceous in age and consist of the

Person Formation of the Edwards Group Limestone. Small amount of Quaternary alluvium are also present in the drainage on the northeastern portion of the property. The property is reported to be located on the Balcones Fault Zone, however, no faults were mapped on the property, nor observed during the karst survey. Three features were identified at the site during the geologic assessment. Features I-1 and I-2 were assessed as sensitive. A request to seal Feature I-2 was requested in the application and approved by letter dated February 21, 2006.

An additional geologic assessment dated September 26, 2008 was completed for a 0.59 acre area not included in the original WPAP application approved by letter dated February 21, 2006. Three non-sensitive features were identified by the project geologist. San Antonio Regional Office did not conduct a site assessment.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letter dated February 21, 2006.

II. All permanent pollution abatement measures shall be operational prior to occupancy of the facility.

III. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

IV. 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

V. The applicant shall provide all contractors with a copy of pages 1-35 through 1-60 of TCEQ TGM RG-348 (2005) as a guide for soil stabilization practices and assure that any soil stabilization is performed in accordance with these practices and the approved plan.

VI. Unless an exception is requested, justified with documentation as equivalent protection, and approved, the "industry standard" for temporary BMPs to be used for activities regulated by 30 TAC 213 are described in RG-348 (2005), and shall be used.

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, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, 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 stormwater 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.

During Construction:

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 exist at the site. 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 stormwater discharge pollutants.

15. Intentional discharges of sediment laden storm 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 Agnieszka Hobson of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4075.

Sincerely,

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

MRV/AMH/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Robert A. Liesman, P.E., Macina, Bose, Copeland and Associates, Inc.
Mr. Scott Halty, San Antonio Water System
Ms. Renee Green, P.E., Bexar County
Ms. Velma Reyes Danielson, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 21, 2016

Mr. Robert Worth, Jr.
Inwood Heritage Oaks, Ltd.
7373 Broadway, Suite 201
San Antonio, Texas 78209

Re: Edwards Aquifer, Bexar County

NAME OF PROJECT: Heritage Oaks Office Park at Inwood; Located near the southeast corner of the intersection of Loop 1604 and Bitters Road; San Antonio, Texas

TYPE OF PLAN: Request for Modification of an Approved Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer

Regulated Entity No. RN 104800107; Additional ID No. 13000080

Dear Mr. Worth:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification Application for the above-referenced project submitted to the San Antonio Regional Office by Pape-Dawson Engineers, Inc. on behalf of Inwood Heritage Oaks, Ltd. on January 26, 2016. Final review of the WPAP Modification was completed after additional material was received on March 14, 2016, March 25, 2016 and April 11, 2016. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected 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.*

BACKGROUND

The Inwood Commercial WPAP was approved by letter dated February 21, 2006. This approval included construction of retail/office development with associated parking, drive aisles, utilities and drainage improvements. Permanent treatment was provided by the construction of one partial sedimentation/filtration basin. The total site area was 24.4 acres with 17.08 acres (70.0 percent) impervious cover.

The Inwood Commercial WPAP Modification I was approved by letter dated January 23, 2009 and it included the construction of a retail general office and restaurant with associated parking. Permanent treatment was provided by one existing partial sedimentation/filtration basin, and the construction of one engineered vegetated filter strip. The total site area was 27.57 acres with 17.88 acres (64.85 percent) impervious cover.

The Heritage Oaks Office Park at Inwood WPAP Modification II was approved by letter dated March 19, 2015 for a commercial project with an area of approximately 42.84 acres with 20.08 acres (46.87 percent) of impervious cover. The project included the expansion of a parking lot along with mass clearing and grading. Permanent treatment was provided by one existing partial sedimentation/filtration basin, one existing engineered vegetative filter strip and two newly constructed engineered vegetative filter strips.

PROJECT DESCRIPTION

This modification applies to a 14.597 acre tract that was originally part of the Inwood Commercial WPAP Modification I 27.57 acre tract. The project limits for this modification include 12.37 acres of the 14.597 acre site. The proposed impervious cover totals 8.376 acres (67.71 percent) within the project limits. This modification proposes parking lot expansion and construction of commercial office buildings. Project wastewater will be disposed of by conveyance to the existing Dos Rios Water Recycling Center owned by the San Antonio Water System.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, two StormFilter Systems, designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 6,834 pounds of TSS generated from the 8.376 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

StormFilter System "A" will treat 3.547 acres of impervious cover and will provide overtreatment for 0.179 acres of uncaptured impervious cover. The proposed StormFilter system will be the flow-through configuration with equalization that includes 35 cartridges that are 27 inches in height. The provided storage volume is 7,378 cubic feet (7,378 cubic feet required). The permanent BMP will remove 3,040 pounds of TSS (3,040 pounds required).

StormFilter System "B" will treat 4.65 acres of impervious cover using the flow-through configuration with equalization design that includes 102 cartridges that are 12 inches in height. The provided storage volume is 7,075 cubic feet (7,075 cubic feet required). The permanent BMP will remove 3,794 pounds (3,794 pounds required).

In addition, the existing 1.70 acres of impervious cover within the 14.597 acre property that is not within the 12.37 acre project limits, will continue to be treated by the existing water quality basin (1,386 pounds of TSS removal required and provided) as approved in the WPAP Modification II.

GEOLOGY

According to the geologic assessment included with the application, the site is located on the leached and collapsed members of the Person Formation. Six non-sensitive geologic features were noted by the project geologist. The San Antonio Regional Office site assessment conducted on February 18, 2016 revealed that the site was generally as described in the application.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letter dated February 21, 2006 and subsequent modifications dated January 23, 2009 and March 19, 2015.

II. The permanent pollution abatement measures shall be operational prior to first occupancy of the facility.

III. All sediment / media shall be disposed of properly according to 30 TAC 330 or 30 TAC 335, as applicable.

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, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, 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 stormwater 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 exist on the site. 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 stormwater 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.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Dianne Pavlicek-Mesa, P.G., of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4074.

Sincerely,

Lynn Bumguardner, Water Section Manager
San Antonio Region
Texas Commission on Environmental Quality

LB/DPM/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Dennis Rion, P.E., Pape-Dawson Engineers, Inc.
Mr. Scott Halty, San Antonio Water System
Ms. Renee Green, P.E., Bexar County Public Works
Mr. Roland Ruiz, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

Doc# 20160105011 Fees: $54.00
06/06/2016 11:09AM # Pages 8
Filed & Recorded in the Official
Public Records of BEXAR COUNTY
GERARD C. RICKHOFF COUNTY CLERK

Any provision herein which restricts the sale, or use of the described real property because of race is invalid and unenforceable under Federal law
STATE OF TEXAS, COUNTY OF BEXAR
I hereby Certify that this instrument was FILED in File Number Sequence on this date and at the time stamped hereon by me and was duly RECORDED in the Official Public Record of Real Property of Bexar County, Texas on:

JUN 0 6 2016

COUNTY CLERK BEXAR COUNTY, TEXAS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 5, 2016

Mr. Robert Worth, Jr.
Inwood Heritage Oaks, Ltd.
7373 Broadway, Suite 201
San Antonio, Texas 78209

Re: Edwards Aquifer, Bexar County

NAME OF PROJECT: Heritage Oaks Office Park at Inwood; Located near the southeast corner of the intersection of Loop 1604 and Bitters Road; San Antonio, Texas

PLAN TYPE: Request for Modification of an Approved Water Pollution Abatement Plan (WPAP) 30 Texas Administrative Code (TAC) Chapter 213; Edwards Aquifer

Regulated Entity No. RN104800107; Additional ID No. 13000255

Dear Mr. Worth:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP Modification Application for the above-referenced project submitted to the San Antonio Regional Office by Pape-Dawson Engineers, Inc. on behalf of Inwood Heritage Oaks, Ltd. on September 30, 2016. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) were selected 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.

BACKGROUND

The Inwood Commercial WPAP was approved by letter dated February 21, 2006. This approval included construction of retail/office development with associated parking, drive aisles, utilities and drainage improvements. Permanent treatment was provided by the construction of one partial sedimentation/filtration basin. The total site area was 24.4 acres with 17.08 acres (70.0 percent) impervious cover.

The Inwood Commercial WPAP Modification I was approved by letter dated January 23, 2009 and it included the construction of a retail general office and restaurant with associated parking. Permanent treatment was provided by one existing partial sedimentation/filtration basin, and the construction of one engineered VFS. The total site area was 27.57 acres with 17.88 acres (64.85 percent) impervious cover.

The Heritage Oaks Office Park at Inwood WPAP Modification II was approved by letter dated March 18, 2015 for a commercial project with an area of approximately 42.84 acres with 20.08 acres (46.87 percent) of impervious cover. The project included the expansion of a parking lot along with mass clearing and grading. Permanent treatment was provided by one existing partial sedimentation/filtration basin, one existing engineered vegetative filter strip and two newly constructed engineered vegetative filter strips.

The Heritage Oaks Office Park at Inwood WPAP Modification III was approved by letter dated April 21, 2016 for a commercial project with an area of approximately 14.597 acres with 8.376 acres (67.71 percent) of impervious cover. The project included the expansion and construction of commercial office buildings and associated parking lot. Permanent treatment was provided by one existing partial sedimentation/filtration basin and two newly constructed StormFilter Systems. VFS #2 and #3 were removed with the areas previously approved to be treated by VFS are now treated by the two StormFilter Systems.

PROJECT DESCRIPTION

The proposed commercial project will be located on a 0.027 acre tract that was originally part of the Heritage Oaks Office Park at Inwood WPAP Modification II 42.84 acre tract. The proposed impervious cover totals 0.026 acres (96.3 percent) within the project limits. The modification proposes a parking lot expansion for seven (7) additional parking spaces, demolition of existing curb edge, and clearing and grading. Project wastewater will be conveyed to the existing Dos Rios Wastewater Treatment Plant owned by the San Antonio Water System.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent the pollution of stormwater runoff originating on-site or upgradient of the site and potentially flowing across and off the site after construction, one (1) existing partial sedimentation and filtration sand filter and two (2) existing StormFilter Systems designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005), will be constructed to treat stormwater runoff. The required total suspended solids (TSS) treatment for this project is 22,959 pounds of TSS generated from the 28.14 acres of impervious cover. The approved measures meet the required 80 percent removal of the increased load in TSS caused by the project.

StormFilter System "A" will treat 3.547 acres of impervious cover and will provide overtreatment for 0.179 acres of uncaptured impervious cover. The existing StormFilter system uses the flow-through configuration with equalization that includes 35 cartridges that are 27 inches in height. The provided storage volume is 7,378 cubic feet (7,378 cubic feet required). The permanent BMP will removed 3,040 pounds of TSS (3,040 pounds required).

StormFilter System "B" will treat 4.65 acres of impervious cover using the flow-through configuration with equalization design that includes 102 cartridges that are 12 inches in height. The provided storage volume is 7,075 cubic feet (7,075 cubic feet required). The permanent BMP will remove 3,794 pounds (3,794 pounds required).

The total capture volume of the existing sedimentation/filtration basin is 115,716 cubic feet (113,569 cubic feet required). The filtration system for the basin will consist of 9,692 square feet of sand (6,309 square feet required) meeting ASTM C-33, which is 18 inches thick and an underdrain piping system covered with a minimum two inch gravel layer. The permanent BMP will remove 16,124 pounds (15,945 pounds required) of TSS annually. The existing basin will provide treatment for the 0.026 acres of impervious cover proposed for the additional seven (7) parking spaces. There will be no changes to any of the Permanent BMPs with this proposed modification.

GEOLOGY

According to the geologic assessment included with the application, this 0.027 acre site is located on the leached and collapsed members of the Person Formation. There were no geologic or manmade features noted in the assessment. The San Antonio Regional Office site assessment conducted on November 8, 2016 revealed the site was generally as described in the geologic assessment.

SPECIAL CONDITIONS

I. This modification is subject to all Special and Standard Conditions listed in the WPAP approval letter dated February 21, 2006 and subsequent modifications dated January 23, 2009, March 19, 2015 and April 21, 2016.

II. All permanent pollution abatement measures shall be inspected and be fully operational prior to use of any of the newly constructed parking spaces.

III. All sediment and/or media removed from the water quality basin during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335, as applicable.

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, registrations and/or authorizations from other TCEQ Programs (i.e., Stormwater, 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 stormwater 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 exist on site. 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 stormwater 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.

After Completion of Construction:

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.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality. If you have any questions or require additional information, please contact Andra Nava-Garcia of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210-403-4052.

Sincerely,

Lynn Bumguardner, Water Section Manager
San Antonio Region
Texas Commission on Environmental Quality

LB/ANG/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Song Tan, P.E., Pape-Dawson Engineers, Inc.
Ms. Renee Green, P.E., Bexar County Public Works
Mr. Scott Halty, San Antonio Water System
Mr. Roland Ruiz, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 21

ATTACHMENT B

NARRATIVE OF PROPOSED MODIFICATION

Attachment B – Narrative of Proposed Modifications

The Muck & Fuss San Antonio WPAP Modification (WPAP MOD V) is a modification to the approved Heritage Oaks Office Park at Inwood WPAP Modification IV (MOD IV). The Muck & Fuss San Antonio WPAP MOD V proposes the construction of a restaurant type development with associated parking, driveways, and sidewalks. The Muck & Fuss at Inwood site is within the city limits of San Antonio and located entirely over the Edwards Aquifer Recharge Zone.

The Inwood Commercial WPAP was originally approved on February 21, 2006 (EAPP File No. 2430.00) and permitted the construction of 17.08 acres of impervious cover. The 24.4-acre site permitted the construction of retail/office type development with associated parking, drive aisles, utilities and drainage improvements, and one (1) water quality pond. One (1) partial sedimentation and sand filter basin were approved as PBMPs for this site.

The Inwood Commercial WPAP Modification I (MOD 1) was approved by The Texas Commission on Environmental Quality (TCEQ) on January 23, 2009 (EAPP File No. 2430.05) and permitted the construction of 17.88 acres of impervious cover. The 27.57-acre site consisted of retail, general office, and restaurant type of development, parking, and drive lanes. One (1) partial sedimentation and sand filter basin and 1 fifteen-foot (15') wide Engineered Vegetative Filter Strip were approved as PBMPs for this site.

The Heritage Oaks Office Park at Inwood WPAP Modification II (MOD II) was approved by The Texas Commission on Environmental Quality (TCEQ) on March 19, 2015 (EAPP File No. 13-14122303) and permitted the construction a parking lot expansion of an overall 42.84-acre area inclusive of 20.08-acres (46.87 percent) of impervious cover. One (1) existing partial sedimentation/filtration basin and three (3) Engineered Vegetated Filter Strips were approved as PBMPs for this site.

The Heritage Oaks Office Park at Inwood WPAP Modification III (MOD III) was approved by TCEQ on April 21, 2016 for a commercial project with an area of approximately 14.597 acres with 8.376 acres (67.71 percent) of impervious cover. The project included the expansion and construction of commercial office buildings and associated parking lot. Permanent treatment was provided by one existing partial sedimentation/filtration basin and two newly constructed StormFilter Systems. VFS #2 and #3 were removed with the areas previously approved to be treated by VFS are now treated by the two StormFilter Systems.

The Heritage Oaks Office Park at Inwood WPAP Modification IV (MOD IV) was approved by TCEQ on December 5, 2016 for a commercial project with an area on approximately 0.027 acres with 0.026-acres (96.3 percent) of impervious cover. The modification included a parking lot expansion for seven additional parking spaces, demolition of existing curb edge, clearing and grading.

This Muck and Fuss San Antonio WPAP Modification (MOD V) proposes the construction of proposed improvements within the Inwood Commercial Site. The proposed improvements include a restaurant type development with associated parking, driveways, and sidewalks, mass clearing and grading. The total impervious cover proposed with this WPAP MOD III is 2.01 acres. The total proposed impervious cover within the project limits of this modification is 1.40 acres or 69.5% of the 2.01 acre project site. The existing partial sedimentation and sand filter basin will remain as the permanent BMP and will provide treatment for the 1.40 acres of impervious cover for the parking expansion in accordance with the approved WPAP.

The impervious cover for the proposed 2.01 project site is less than the original assumed impervious cover from the previously approved WPAP, refer to Exhibit 3, WPAP Impervious Cover Comparison Exhibit for verification.

Potable water service is to be provided by the San Antonio Water System (SAWS). The proposed development will generate approximately 4,000 gallons per day (average flow) of domestic wastewater based on the assumption of 20 EDUs (20 EDUs x 200 gpd/EDU) = 4000 gpd).

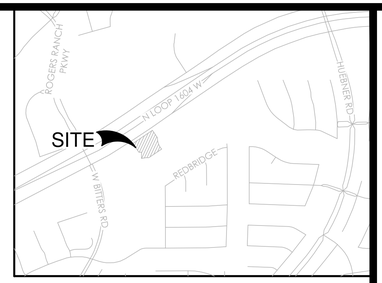
Wastewater will be disposed of by conveyance to the existing Dos Rios Water Recycling Center operated by SAWS.

ATTACHMENT C

CURRENT SITE PLAN OF APPROVED PROJECT

SCALE: 1"= 100'

0' 100' 200' 300'



LOCATION MAP
NOT-TO-SCALE

LOOP 1604

MUCK & FUSS SAN ANTONIO
MODIFICATION LIMITS
(PREVIOUSLY APPROVED SITE PLAN)

INWOOD COMMERCIAL WPAP
(EAPP FILE No. 2430.05)

EXISTING
BASIN

VEGETATED FILTER STRIP

BITTERS ROAD

VEGETATED FILTER STRIP

HERITAGE PARK AT INWOOD
WPAP MODIFICATION II LIMITS
(EAPP FILE No.13-1422303)

APPROX. LIMIT OF FEMA 100-YR. FLOOD
ZONE, AS MAPPED ON F.I.R. PANEL No.
48029C0235 G DATED 09-29-2010

ASHTON VILLAGE DR.

DEWINNE ENGINEERING, LLC
P.O. Box 137, BOERNE, TEXAS 78006
PHONE: 210-383-3453 - EMAIL:DUSTAN@DEWINNE-ENG.COM
TBPELS FIRM REGISTRATION #F-24128

PROJECT NUMBER:
23-117

MUCK & FUSS
SAN ANTONIO, TEXAS

2450 N LOOP 1604 W
SAN ANTONIO, TEXAS

DATE: 3/1/2024

REV:	DATE:	DESCRIPTION:

DESIGNER: _____
DRAWN: _____
CHECKED: _____

SHEET NAME:
PREVIOUSLY APPROVED WPAP SITE PLAN

SHEET NUMBER:
EXHIBIT 1

Date: Mar 06, 2024, 1:52pm User ID: dusta
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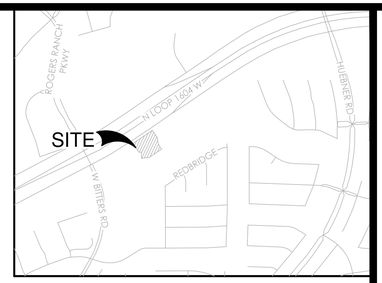
SCALE: 1"= 100'

0' 100' 200' 300'



LOCATION MAP
NOT-TO-SCALE

LOOP 1604

MUCK & FUSS SAN ANTONIO
MODIFICATION LIMITS
(PROPOSED SITE PLAN)

INWOOD COMMERCIAL WPAP
(EAPP FILE No. 2430.05)

EXISTING
BASIN

VEGETATED FILTER STRIP

BITTERS ROAD

VEGETATED FILTER STRIP

HERITAGE PARK AT INWOOD
WPAP MODIFICATION II LIMITS
(EAPP FILE No.13-1422303)

APPROX. LIMIT OF FEMA 100-YR. FLOOD
ZONE, AS MAPPED ON F.I.R. PANEL No.
48029C0235 G DATED 09-29-2010

ASHTON VILLAGE DR.

DEWINNE ENGINEERING, LLC
P.O. Box 137, BOERNE, TEXAS 78006
PHONE: 210-383-3453 - EMAIL:DUSTAN@DEWINNE-ENG.COM
TBPELS FIRM REGISTRATION #F-24128

PROJECT NUMBER:
23-117

MUCK & FUSS
SAN ANTONIO, TEXAS

2450 N LOOP 1604 W
SAN ANTONIO, TEXAS

DATE: 3/1/2024

REV:	DATE:	DESCRIPTION:

DESIGNER: _____
DRAWN: _____
CHECKED: _____

SHEET NAME:
PROPOSED
WPAP SITE PLAN

SHEET NUMBER:
EXHIBIT 2

Date: Mar 06, 2024, 3:38pm User ID: dusto
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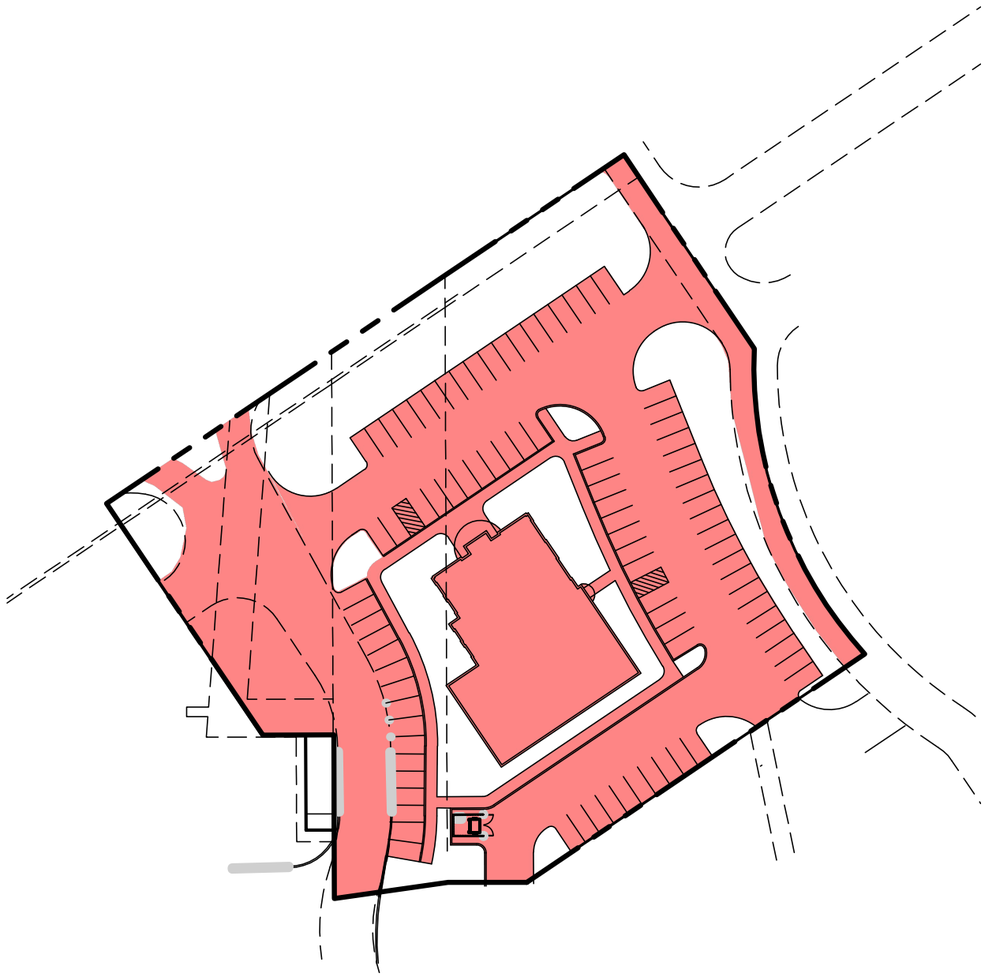


PREVIOUSLY APPROVED WPAP SITE PLAN

PROPOSED WPAP MODIFICATION SITE PLAN

SCALE: 1"= 80'

80' 0' 40' 80'

IMPERVIOUS COVER COMPARISON

Previously Approved WPAP (I.C. S.F.)	Proposed WPAP Modification (I.C. S.F.)	Difference (+/- S.F.)
60,936	60,850	-86

DEWINNE ENGINEERING, LLC
P.O. Box 137 - BOERNE, TEXAS 78006
PHONE: 210-383-3453 - EMAIL:DUSTAN@DEWINNE-ENG.COM
TBPELS FIRM REGISTRATION #: F-24128

MUCK & FUSS - SAN ANTONIO

SAN ANTONIO, TEXAS

WPAP IMPERVIOUS COVER COMPARISON EXHIBIT

DATE: 3/4/2024

EXHIBIT: 3

WATER POLLUTION ABATEMENT PLAN APPLICATION FORM (TCEQ-0584)

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Dustan DeWinne P.E.

Date: 3/4/2024

Signature of Customer/Agent:

Dustan DeWinne

Regulated Entity Name: Muck & Fuss San Antonio

Regulated Entity Information

1. The type of project is:

   ☐ Residential: Number of Lots:_____
   ☐ Residential: Number of Living Unit Equivalents:_____
   ☒ Commercial
   ☐ Industrial
   ☐ Other:_____

2. Total site acreage (size of property):2.01

3. Estimated projected population: 0, No permanent population is associated with this site

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

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	9,081	÷ 43,560 =	0.21
Parking	25,039	÷ 43,560 =	0.58
Other paved surfaces	26,730	÷ 43,560 =	0.61
Total Impervious Cover	60,850	÷ 43,560 =	1.40

Total Impervious Cover 1.40 **÷ Total Acreage** 2.01 **X 100 =** 69.7**% Impervious Cover**

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

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

For Road Projects Only

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

7. Type of project:

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

8. Type of pavement or road surface to be used:

   ☐ Concrete
   ☐ Asphaltic concrete pavement
   ☐ Other: _____

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

   Width of R.O.W.: _____ feet.
   L 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.

Stormwater to be generated by the Proposed Project

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

Wastewater to be generated by the Proposed Project

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

100% Domestic	4000Gallons/day
_____% Industrial	_____Gallons/day
_____% Commingled	_____Gallons/day

TOTAL gallons/day 4000 gpd (based on 20 EDU * 200 gpd/EDU)

15. Wastewater will be disposed of by:

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

- ☐ **Attachment C - Suitability Letter from Authorized Agent**. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.
- ☐ Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

☒ Sewage Collection System (Sewer Lines):

- ☒ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.
- ☐ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

- ☐ The SCS was previously submitted on_____.
- ☐ The SCS was submitted with this application.
- ☐ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to Executive Director approval.

☒ The sewage collection system will convey the wastewater to the Dos Rios Water Recycling (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

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

Site Plan Requirements

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

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

Site Plan Scale: 1" = 20'.

18. 100-year floodplain boundaries:

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

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

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

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

☐ There are _____ (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

☐ The wells are not in use and have been properly abandoned.
☐ The wells are not in use and will be properly abandoned.
☐ The wells are in use and comply with 16 TAC §76.

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

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

☒ All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled.
☐ No sensitive geologic or manmade features were identified in the Geologic Assessment.
☐ **Attachment D - Exception to the Required Geologic Assessment**. A request and justification for an exception to a portion of the Geologic Assessment is attached.

22. ☒ The drainage patterns and approximate slopes anticipated after major grading activities.

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

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

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

26. ☐ Surface waters (including wetlands).

    ☒ N/A

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

    ☒ There will be no discharges to surface water or sensitive features.

28. ☒ Legal boundaries of the site are shown.

Administrative Information

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

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

ATTACHMENT A
FACTORS AFFECTING SURFACE WATER QUALITY

Attachment A– Surface Water Quality

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

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

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

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

ATTACHMENT B
VOLUME AND CHARACTER OF STORMWATER

Attachment B– Volume and Character of Stormwater

Stormwater runoff will increase as a result of this development. For a 25-year storm event, the overall project will generate approximately 17.90 cfs. The runoff coefficient for the site changes from approximately 0.52 before development to 0.80 after development. Values are based on the Rational Method using runoff coefficients per the City of San Antonio Unified Development Code.

TEMPORARY STORMWATER SECTION (FORM TCEQ-0602)

Temporary Stormwater Section

Texas Commission on Environmental Quality

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

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

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

Signature

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

Print Name of Customer/Agent: Dustan DeWinne, P.E.

Date: 3/4/2024

Signature of Customer/Agent:

Dustan DeWinne

Regulated Entity Name: Muck & Fuss San Antonio

Project Information

Potential Sources of Contamination

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

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

   ☒ The following fuels and/or hazardous substances will be stored on the site: Construction Staging Area

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

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

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

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

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

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

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

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

Sequence of Construction

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

   ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

   ☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Salado Creek

Temporary Best Management Practices (TBMPs)

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

7. ☒ **Attachment D – Temporary Best Management Practices and Measures**. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

☒ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

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

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

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

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

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

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

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

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

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

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

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

☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

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

11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

☒ N/A

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

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

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

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

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

Soil Stabilization Practices

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

17. ☒ **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices**. A schedule of the interim and permanent soil stabilization practices for the site is attached.

18. ☒ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

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

Administrative Information

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

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

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

ATTACHMENT A
SPILL RESPONSE ACTIONS

Attachment A – Spill Response Actions

In the event of an accidental leak or spill:

- Immediate containment and cleanup of the spill are imperative.
- Spills should not be buried or washed with water.
- The contractor is responsible for taking action to contain the spill, utilizing on-site stockpiled sand or absorbent materials.
- In case of an uncontained discharge, the contractor should use on-site equipment to construct berms downgradient of the spill with sand or other absorbent material to contain and absorb the spilled product.
- Spill containment/absorbent materials, along with impacted media, should be collected and stored to prevent further impact on additional media (soil/water). The collected material should be placed on poly or plastic sheeting until removal from the site. It should be covered and weighted down with paving bricks or similar objects to prevent airborne dispersion in windy conditions or impact during rain events. Stockpiled materials should not be placed in areas of concentrated runoff, such as along a curb line or within a swale.
- Contaminated soils and cleanup materials must be sampled for waste characterization. Once the analysis results are known, the contaminated soils and cleanup materials will be removed from the site and disposed of in a permitted landfill, following applicable regulations.
- The contractor is obligated to notify the owner, who will then contact the TCEQ (Texas Commission on Environmental Quality) in the case of a significant hazardous/reportable quantity spill. Additional notifications required by the type and amount of spill will be conducted by the owner or the owner's representative.

In the event of an accidental significant or hazardous spill:

- The contractor is mandated to report significant or hazardous spills in reportable quantities promptly.
- Notifications should be made to TCEQ by telephone within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, the Environmental Release Hotline at 1-800-832-8224 should be contacted. Emergency phone numbers must be available at the construction site.
- For spills of federal reportable quantities, following 40 CFR parts 110,119, and 302 requirements, the contractor should notify the National Response Center at (800) 424-8802. Initial notification by telephone should be followed by a written report.
- The services of a spills contractor or Haz-Mat team should be obtained immediately. Construction personnel should refrain from attempting cleanup until appropriate and qualified staff arrive at the job site.

- Other relevant agencies, such as the City Police Department, County Sheriff Office, Fire Departments, etc., may need to be consulted.

Contaminated soils will be sampled for waste characterization, and upon obtaining analysis results, they will be removed from the site and disposed of in a permitted landfill in accordance with applicable regulations.

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

ATTACHMENT B
POTENTIAL SOURCES OF CONTAMINATION

Attachment B – Potential Sources of Contamination

Other potential sources of contamination during construction include:

Potential Source
- Asphalt products used on this project.

Preventative Measure
- After placement of asphalt, emulsion or coatings, the contractor will be responsible for immediate cleanup should an unexpected rain occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.

Potential Source
- Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.

Preventative Measure
- Vehicle maintenance when possible will be performed within the construction staging area.
- Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.

Potential Source
- Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.

Preventative Measure
- Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures.
- Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures.
- Hazardous materials and wastes shall be stored in covered containers and protected from vandalism.

	■	A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.
Potential Source	●	Miscellaneous trash and litter from construction workers and material wrappings.
Preventive Measure	■	Trash containers will be placed throughout the site to encourage proper trash disposal.
Potential Source	●	Construction debris.
Preventive Measure	■	Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.
Potential Source	●	Spills/Overflow of waste from portable toilets
Preventative Measure	■	Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets.
	■	Portable toilets will be placed on a level ground surface.
	■	Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.

ATTACHMENT C
SEQUENCE OF MAJOR ACTIVITIES

Attachment C – Sequence of Major Activities

The sequence of primary soil-disturbing activities during construction on this site will be segmented into two stages. The initial stage involves site preparation, encompassing site grading, demolition of existing hardscapes, and clearing and grubbing of vegetation where applicable. This phase is expected to disturb approximately 2.01 acres in total. The second stage involves construction, comprising the building of a commercial restaurant along with associated parking, drive aisles, and access driveways. Additionally, it includes the construction of new pavement areas, landscaping, and site cleanup, with an estimated disturbance of approximately 2.01 acres.

ATTACHMENT D
TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

Attachment D – Temporary Best Management Practices and Measures

a. 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.

Considering the present on-site topography and road network, there will be no movement of upgradient water across the site. The drainage measures in place are suitable for the respective areas they cater to.

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

The commencement of site preparation, marking the onset of project activities, will involve significant soil disturbance. Consequently, prior to the initiation of any such work, the clearing and grading contractor will be tasked with implementing on-site control measures. The strategy for preventing on-site stormwater pollution encompasses: (1) placing silt fences along the downgradient boundary of construction activities for temporary erosion and sedimentation control, (2) establishing stabilized construction entrance/exit(s) to minimize sediment dispersion from the site, and (3) setting up construction staging area(s).

Before the commencement of construction, any previously implemented control measures will undergo repairs or reinstatement to fulfill their designed or intended purpose. This final phase of project activity may also involve additional soil disturbance. The responsibility for installing all remaining on-site control measures, including the installation of concrete truck washout pit(s) as necessitated by construction phasing, lies with the construction contractor.

The purpose of temporary measures is to offer a means of slowing down the runoff from the construction site, facilitating the settling of sediment and suspended solids. By confining the sediment and solids within the site, their entry into surface streams and/or sensitive features is prevented.

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

No surface streams or naturally-occurring sensitive features were identified on or near the site.

The purpose of temporary measures is to slow down the runoff from the construction site, enabling sediment and suspended solids to settle out. By confining the sediment and solids within the site, the prevention of their entry into surface streams and/or sensitive features is ensured.

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

No surface streams or naturally-occurring sensitive features were identified on or near the site.

The BMP measures incorporated in this plan aim to enable stormwater to progress downstream once it has passed through the BMPs. This approach ensures that stormwater runoff can proceed downgradient toward streams or features that may be present downstream of the site.

ATTACHMENT F
STRUCTURAL PRACTICES

Attachment F – Structural Practices

The following structural measures will be installed prior to the initiation of site preparation activities:

- Erection of silt fences along the downgradient boundary of construction activities, as located on Exhibit 1 and illustrated in Exhibit 2.
- Installation of stabilized construction entrance/exit(s) and construction staging area(s), as located on Exhibit 1, and illustrated on Exhibit 2.

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

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

ATTACHMENT G
DRAINAGE AREA MAP

Attachment G– Drainage Area Map

No more than 10 acres will be disturbed within a common drainage area at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used. All TBMPs utilized are adequate for the drainage areas served.

ATTACHMENT I
INSPECTION AND MAINTENANCE FOR BMPs

Attachment I - Measures Minimizing Surface Stream Contamination

Locations on the site where discharge is concentrated and erosive velocities are present will be equipped with energy dissipators of suitable size. This is done to mitigate velocities and reduce them to non-erosive levels.

ATTACHMENT J
SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

Ongoing interim on-site stabilization measures will involve minimizing soil disturbances by exposing the smallest practical area of land necessary for the shortest duration and maximizing the utilization of natural vegetation. Upon the cessation of construction activities in specific areas, all disturbed soil will be stabilized promptly, following project specifications outlined in pages 1-35 to 1-60 of the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005). Acceptable stabilization methods include mulching, netting, erosion blankets, and seeding.

Stabilization measures will be initiated without delay in areas of the site where construction activities have temporarily or permanently ceased. Except for specific circumstances, these measures will be initiated no later than fourteen (14) days after the temporary or permanent cessation of construction activity in that specific area. Temporary stabilization measures may be deferred if construction activities are set to resume within twenty-one (21) days in the affected portion of the site. In regions experiencing drought conditions, where the initiation of stabilization measures within the initial 14 days is hindered by seasonably arid conditions, measures will be implemented as promptly as possible.

PERMANENT STORMWATER SECTION (FORM TCEQ-0600)

Permanent Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(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: Dustan DeWinne, P.E.

Date: 3/4/2024

Signature of Customer/Agent

Dustan DeWinne

Regulated Entity Name: Muck & Fuss San Antonio

Permanent Best Management Practices (BMPs)

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

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

   ☐ N/A

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

   ☒ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

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

☐ N/A

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

   ☐ N/A

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

   ☐ The site will be used for low density single-family residential development and has 20% or less impervious cover.
   ☐ The site will be used for low density single-family residential development but has more than 20% impervious cover.
   ☒ The site will not be used for low density single-family residential development.

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

   ☐ **Attachment A - 20% or Less Impervious Cover Waiver**. The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
   ☐ The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
   ☒ The site will not be used for multi-family residential developments, schools, or small business sites.

6. ☒ **Attachment B - BMPs for Upgradient Stormwater**.

☐ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.

☒ No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.

☐ Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

7. ☒ **Attachment C - BMPs for On-site Stormwater**.

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

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

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

☐ N/A

9. ☒ The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

☒ The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed.

☐ **Attachment E - Request to Seal Features**. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.

10. ☒ **Attachment F - Construction Plans**. All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:

☒ Design calculations (TSS removal calculations)

☒ TCEQ construction notes

☒ All geologic features

☒ All proposed structural BMP(s) plans and specifications

☐ N/A

11. ☒ **Attachment G - Inspection, Maintenance, Repair and Retrofit Plan**. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:

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

    ☐ N/A

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

    ☒ N/A

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

    ☐ N/A

Responsibility for Maintenance of Permanent BMP(s)

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

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

    ☐ N/A

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

    ☐ N/A

ATTACHMENT B
BMPs FOR UPGRADIENT STORMWATER

Attachment B – BMPs for Upgradient Stormwater

No upgradient flow will cross the project limit due to the existing topography and adjacent roads.

One (1) existing partial sedimentation and sand filter basin are proposed as the Permanent Best Management Practiced (PBMPs) for this site. All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site.

ATTACHMENT C
BMPs FOR ON-SITE STORMWATER

Attachment C – BMPs for Onsite Stormwater

One (1) existing partial sedimentation and sand filter basin are proposed as the Permanent Best Management Practiced (PBMPs) for this site. All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site.

ATTACHMENT D
BMPs FOR SURFACE STREAMS

Attachment D – BMPs for Surface Streams

No surface streams exist on or near the project limits. One (1) existing partial sedimentation and sand filter basin are proposed as the Permanent Best Management Practiced (PBMPs) for this site. All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site.

ATTACHMENT F
CONSTRUCTION PLANS

Attachment F – Construction Plans

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

ATTACHMENT G
INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

PERMANENT POLLUTION ABATEMENT MEASURES
MAINTENANCE SCHEDULE AND MAINTENANCE PROCEDURES

This document has been prepared to provide a description and schedule for the performance of maintenance on permanent pollution abatement measures. Maintenance measures to be performed will be dependent on what permanent pollution abatement measures are incorporated into the project. The project specific water pollution abatement plan should be reviewed to determine what permanent pollution abatement measures are incorporated in to a project.

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

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

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

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

Robert L. Worth, Jr.
Inwood Heritage Oaks Village, Ltd.

12/9/14
Date

INSPECTION AND MAINTENANCE SCHEDULE FOR PERMANENT POLLUTION ABATEMENT MEASURES

Recommended Frequency	Task to be Performed													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
After Rainfall	√							√	√	√	√		√	
Biannually*	√	√	√	√	√	√	√	√	√	√	√	√	√	√

**At least one biannual inspection must occur during or immediately after a rainfall event.*
√Indicates maintenance procedure that applies to this specific site.

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

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

Task No. & Description	*Included in this project*	
1. Check Depth of Vegetation	Yes	~~No~~
2. Check Depth of Silt Deposit in Basin	Yes	~~No~~
3. Removal of Debris and Trash	Yes	~~No~~
4. Cut-off Valve	Yes	~~No~~
5. Inlet Splash Pad	Yes	~~No~~
6. Underdrain System	Yes	~~No~~
7. Structural Integrity	Yes	~~No~~
8. Discharge Pipe	Yes	~~No~~
9. Drawdown Time	Yes	~~No~~
10. Vegetated Filter Strips	Yes	~~No~~
11. For Pump Stations	~~Yes~~	No
12. For Pump Stations	~~Yes~~	No
13. For Pump Stations	~~Yes~~	No
14. Visually Inspect Security Fencing for Damage or Breach	Yes	~~No~~

MAINTENANCE PROCEDURES FOR PERMANENT POLLUTION ABATEMENT MEASURES

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

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

2. Check Depth of Silt Deposit in Basin. Top of cleanouts shall be set 4-inches above sand layer. When silt has accumulated to top of cleanouts, the silt shall be removed. The top two (2) inches of the sand media shall also be removed and replaced with clean, silica-based washed sand meeting ASTM C33 specifications [0.0165 inch (#40 sieve) to 0.0469 inch (#16 sieve)]. Silt/sediment shall be cleared from the inlet structure at least every year and from the basin at least every five (5) years. Any sand discolored as a result of apparent impact by petroleum hydrocarbon or hazardous materials should also be removed and replaced. *Written record should be kept of inspection results and maintenance performed.*

3. Removal of Debris and Trash. The basin and inlet structure shall be checked for the accumulation of debris and trash such as brush, limbs, leaves, paper cups, aluminum cans, plastic bottles etc. Accumulated trash and debris shall be raked or collected from the basin and inlet structure and disposed of properly. *Written record should be kept of inspection results and maintenance performed.*

4. Cut-off Valve. The cut-off valve shall be turned to confirm full opening and full closure. Prior to operating the valve, the valve setting shall be checked to determine the position to which the valve is to be returned (which should limit drawdown time of the basin between 24-hours and 48-hours). Count should be kept of number of turns to open and close the valve

so that the valve can be reset to the starting position. Defects in the operation of the cut-off valve shall be corrected within 7 working days. *A written record should be kept of inspection results and maintenance performed.*

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

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

7. Structural Integrity. In addition to Items 1 through 6 the following are measures which should be reviewed during a check of structural integrity:
   - Observe the height of the confining berm for visible signs of erosion or potential breach. Signs of erosion should be identified and repaired immediately. Corrective measures

include but are not limited to addition of topsoil or appropriate soil material so as to restore the original berm height of the sand filter basin. Restored areas shall be protected through placement of solid block sod.

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

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

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

10. Vegetated Filter Strips. Vegetation height for native grasses shall be limited to no more than 18-inches. When vegetation exceeds that height, the filter strip shall be cut to a height of approximately 4 inches. Turf grass shall be limited to a height of 4-inches with regular maintenance that utilizes a mulching mower. Trash and debris shall be removed from filter strip prior to cutting. Check filter strip for signs of concentrated flow and erosion. Areas of filter strip showing signs of erosion shall be repaired by scarifying the eroded area, reshaping, regrading and placement of solid block sod over the affected area. *A written record of the inspection findings and corrective actions performed should be made*

11. For Pump Stations. Check wet well discharge pipe to confirm flow through the pump system. If flow is not present, allow sufficient time for pump to cycle on and off. If flow does not occur, the wet well should be checked for the level of water. The wet well should be opened and the on/off float switches should be moved up and down to activate the pump. If the pump does not start, a repair technician shall be called in to repair the malfunction within 5 working days. *A written record of the inspection findings and corrective actions performed should be made*

12. For Pump Stations. Check the wet well for accumulation for trash, debris and silt. Trash and debris shall be removed and disposed of properly. Silt depth can be checked by probing the bottom of the wet well with a stick or PVC pipe. Silt accumulations should be removed when silt collects to a depth of three (3) inches over the entire wet well bottom. Silt can be removed by vacuum pump method. If silt buildup continues, underdrain system shall be inspected. *A written record should be kept of inspection results and maintenance performed.*

13. For Pump Stations. Visually check aboveground pump wiring and connections for damage. Damaged or loose connections should be repaired within 5 working days. *A written record should be kept of inspection results and the maintenance performed.*

14. Visually Inspect Security Fencing for Damage or Breach. Check maintenance access gates for proper operation. Damage to fencing or gates shall be repaired within 5 working days. *A written record should be kept of inspection results and maintenance performed.*

ATTACHMENT I
MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

Attachment I - Measures Minimizing Surface Stream Contamination

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

AGENT AUTHORIZATION FORM (TCEQ-0599)

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

I ***Terry Muckenfuss***,
Print Name

Owner,
Title - Owner/President/Other

of ***M&F#2, LLC***,
Corporation/Partnership/Entity Name

have authorized ***Dustan DeWinne, P.E.***
Print Name of Agent/Engineer

of ***DeWinne Engineering, LLC.***
Print Name of Firm

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

I also understand that:

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

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

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

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

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

SIGNATURE PAGE:

Terry Muckenfuss — 2/23/2024

Applicant's Signature — Date

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared 2/23/24 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 23 day of February, 2024.

Lora Woollven

NOTARY PUBLIC

LORA WOOLLVEN
Notary ID #134726787
My Commission Expires
January 23, 2028

Lora Woollven

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 1/23/2028

APPLICATION FEE FORM (TCEQ-0574)

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Muck & Fuss San Antonio
Regulated Entity Location: 2450 N. Loop 1604. W., San Antonio, TX 78248
Name of Customer: M&F#2, LLC
Contact Person: Terry Muckenfuss Phone: (336) 456-0602
Customer Reference Number (if issued):CN _____
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362)

☒ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

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

☐ Austin Regional Office
☐ 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	2.01 Acres	$ 4,000
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: Terry Muckenfuss Date: 2/23/2024

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 5 < 10 10 < 40 40 < 100 100 < 500 ≥ 500	$1,500 $3,000 $4,000 $6,500 $8,000 $10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 10 < 40 40 < 100 ≥ 100	$3,000 $4,000 $5,000 $6,500 $8,000 $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

CORE DATA FORM
(TCEQ-10400)

TCEQ Use Only

TCEQ Core Data Form

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

SECTION I: General Information

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

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		RN

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☐ 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:*

M&F#2, 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)*
0805367776	32093167214	99-0818495	

11. Type of Customer: ☐ Corporation LLC ☐ Individual Partnership: ☐ General ☐ Limited

Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees ☐ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated? ☐ 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: 201 Lowman Lane

City	New Braunfels	State	TX	ZIP	78132	ZIP + 4	3587

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	terrymuckenfuss@me.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(336) 456-0602		( )

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.)*

Muck & Fuss San Antonio

23. Street Address of the Regulated Entity: *(No PO Boxes)*	2450 N. Loop 1604. W.							
	City	San Antonio	**State**	TX	**ZIP**	78248	**ZIP + 4**	
24. County	Bexar							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:					
26. Nearest City			**State**		**Nearest ZIP Code**
San Antonio			Texas		78258
27. Latitude (N) In Decimal:	29.603639		**28. Longitude (W) In Decimal:**	-98.530917	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
29	36	13.1	98	31	51.3

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)
5812		722511	

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

Restaurant that prepares and serves food and beverages to customers in a dining environment

34. Mailing Address:	201 Lowman Lane							
	City	New Braunfels	**State**	TX	**ZIP**	78132	**ZIP + 4**	3587
35. E-Mail Address:	terrymuckenfuss@me.com							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(336) 456-0602		( ) -

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
☐ 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:	Dustan DeWinne, P.E.	**41. Title:**	Principal Engineer

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(210) 383-3453		( )	dustan@dewinne-eng.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:	M&F#2	**Job Title:**	Owner
Name *(In Print)* **:**	Terry Muckenfuss	**Phone:**	(336) 456-0602
Signature:	Terry Muckenfuss	**Date:**	2/23/2024

POLLUTANT LOAD AND REMOVAL CALCULATIONS

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: **Muck & Fuss San Antonio**
Date Prepared: **3/7/2024**

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

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

where:

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

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

County =	**Bexar**	
Total project area included in plan * =	**2.01**	acres
Predevelopment impervious area within the limits of the plan * =	**0.000**	acres
Total post-development impervious area within the limits of the plan* =	**1.400**	acres
Total post-development impervious cover fraction * =	**0.70**	
P =	**30**	inches

$L_{M\ TOTAL\ PROJECT}$ = **1142** lbs.

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

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

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

Drainage Basin/Outfall Area No. =	**A**	
Total drainage basin/outfall area =	**2.01**	acres
Predevelopment impervious area within drainage basin/outfall area =	**0.00**	acres
Post-development impervious area within drainage basin/outfall area =	**1.400**	acres
Post-development impervious fraction within drainage basin/outfall area =	**0.70**	
$L_{M\ THIS\ BASIN}$ =	**1142**	lbs.

3. Indicate the proposed BMP Code for this basin.

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

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

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

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:

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

A_C =	**2.01**	acres
A_I =	**1.400**	acres
A_P =	**0.61**	acres
L_R =	**1302**	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	1142	lbs.
F =	0.88	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.50	inches
Post Development Runoff Coefficient =	0.80	
On-site Water Quality Volume =	8756	cubic feet

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

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	1751	
Total Capture Volume (required water quality volume(s) x 1.20) =	10507	cubic feet

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

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	10507	cubic feet	
Minimum filter basin area =	486	square feet	
Maximum sedimentation basin area =	4378	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	1094	square feet	For maximum water depth of 8 feet

INCLUDED IN ORIGINAL WQ VOLUME CALCULATION: 114,818 CF PROVIDED PER MOD VI

9B. Partial Sedimentation and Filtration System

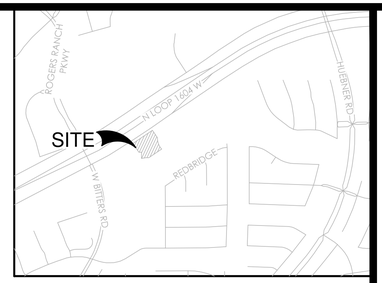
Water Quality Volume for combined basins =	10507	cubic feet	
Minimum filter basin area =	876	square feet	
Maximum sedimentation basin area =	3502	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	219	square feet	For maximum water depth of 8 feet

INCLUDED IN ORIGINAL WQ VOLUME CALCULATION: 114,818 CF PROVIDED PER MOD VI

EXHIBITS

SCALE: 1"= 100'

0' 100' 200' 300'



LOCATION MAP
NOT-TO-SCALE

LOOP 1604

MUCK & FUSS SAN ANTONIO
MODIFICATION LIMITS
(PREVIOUSLY APPROVED SITE PLAN)

INWOOD COMMERCIAL WPAP
(EAPP FILE No. 2430.05)

EXISTING
BASIN

VEGETATED FILTER STRIP

BITTERS ROAD

VEGETATED FILTER STRIP

HERITAGE PARK AT INWOOD
WPAP MODIFICATION II LIMITS
(EAPP FILE No.13-1422303)

APPROX. LIMIT OF FEMA 100-YR. FLOOD
ZONE, AS MAPPED ON F.I.R. PANEL No.
48029C0235 G DATED 09-29-2010

ASHTON VILLAGE DR.

DEWINNE ENGINEERING, LLC
P.O. Box 137, BOERNE, TEXAS 78006
PHONE: 210-383-3453 - EMAIL:DUSTAN@DEWINNE-ENG.COM
TBPELS FIRM REGISTRATION #F-24128

PROJECT NUMBER:
23-117

MUCK & FUSS
SAN ANTONIO, TEXAS

2450 N LOOP 1604 W
SAN ANTONIO, TEXAS

DATE: 3/1/2024

REV:	DATE:	DESCRIPTION:

DESIGNER: _____
DRAWN: _____
CHECKED: _____

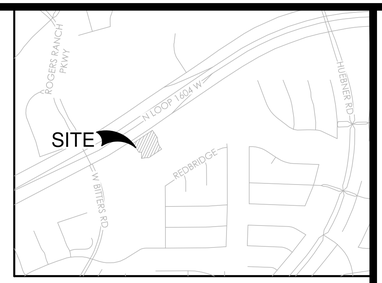
SHEET NAME:
PREVIOUSLY APPROVED WPAP SITE PLAN

SHEET NUMBER:
EXHIBIT 1

Date: Mar 06, 2024, 1:52pm User ID: dusta
File: C:\Users\dusta\OneDrive - Dewinne Engineering LLC\Desktop\Dewinne Engineering\01-Projects\23-116 Muck & Fuss - SA\03-Design\TCEQ\Drawings\OVERALL WPAP SITE PLAN - EXISTING.dwg

SCALE: 1"= 100'

0' 100' 200' 300'



LOCATION MAP
NOT-TO-SCALE

LOOP 1604

MUCK & FUSS SAN ANTONIO
MODIFICATION LIMITS
(PROPOSED SITE PLAN)

INWOOD COMMERCIAL WPAP
(EAPP FILE No. 2430.05)

EXISTING
BASIN

VEGETATED FILTER STRIP

BITTERS ROAD

VEGETATED FILTER STRIP

HERITAGE PARK AT INWOOD
WPAP MODIFICATION II LIMITS
(EAPP FILE No.13-1422303)

APPROX. LIMIT OF FEMA 100-YR. FLOOD
ZONE, AS MAPPED ON F.I.R. PANEL No.
48029C0235 G DATED 09-29-2010

ASHTON VILLAGE DR.

DEWINNE ENGINEERING, LLC
P.O. Box 137, BOERNE, TEXAS 78006
PHONE: 210-383-3453 - EMAIL:DUSTAN@DEWINNE-ENG.COM
TBPELS FIRM REGISTRATION #F-24128

PROJECT NUMBER:
23-117

MUCK & FUSS
SAN ANTONIO, TEXAS

2450 N LOOP 1604 W
SAN ANTONIO, TEXAS

DATE: 3/1/2024

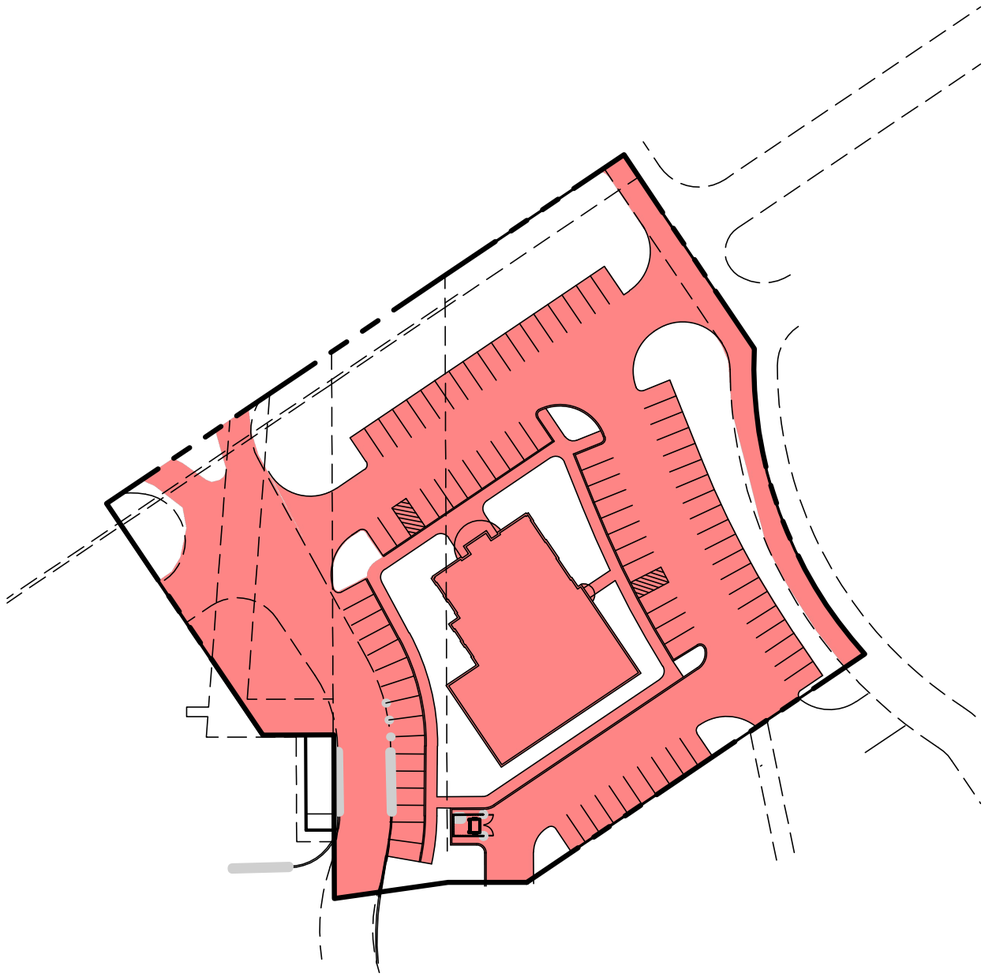
REV:	DATE:	DESCRIPTION:

DESIGNER: _____
DRAWN: _____
CHECKED: _____

SHEET NAME:
PROPOSED
WPAP SITE PLAN

SHEET NUMBER:
EXHIBIT 2

Date: Mar 06, 2024, 3:38pm User ID: dusto
File: C:\Users\dusto\OneDrive - Dewinne Engineering, LLC\Desktop\Dewinne Engineering\01-Projects\23-116 Muck & Fuss - SA\03-Design\TCEQ\Drawings\OVERALL WPAP SITE PLAN - PROPOSED.dwg



PREVIOUSLY APPROVED WPAP SITE PLAN

PROPOSED WPAP MODIFICATION SITE PLAN

SCALE: 1"= 80'

80' 0' 40' 80'

IMPERVIOUS COVER COMPARISON

Previously Approved WPAP (I.C. S.F.)	Proposed WPAP Modification (I.C. S.F.)	Difference (+/- S.F.)
60,936	60,850	-86

DEWINNE ENGINEERING, LLC
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PHONE: 210-383-3453 - EMAIL:DUSTAN@DEWINNE-ENG.COM
TBPELS FIRM REGISTRATION #: F-24128

MUCK & FUSS - SAN ANTONIO

SAN ANTONIO, TEXAS

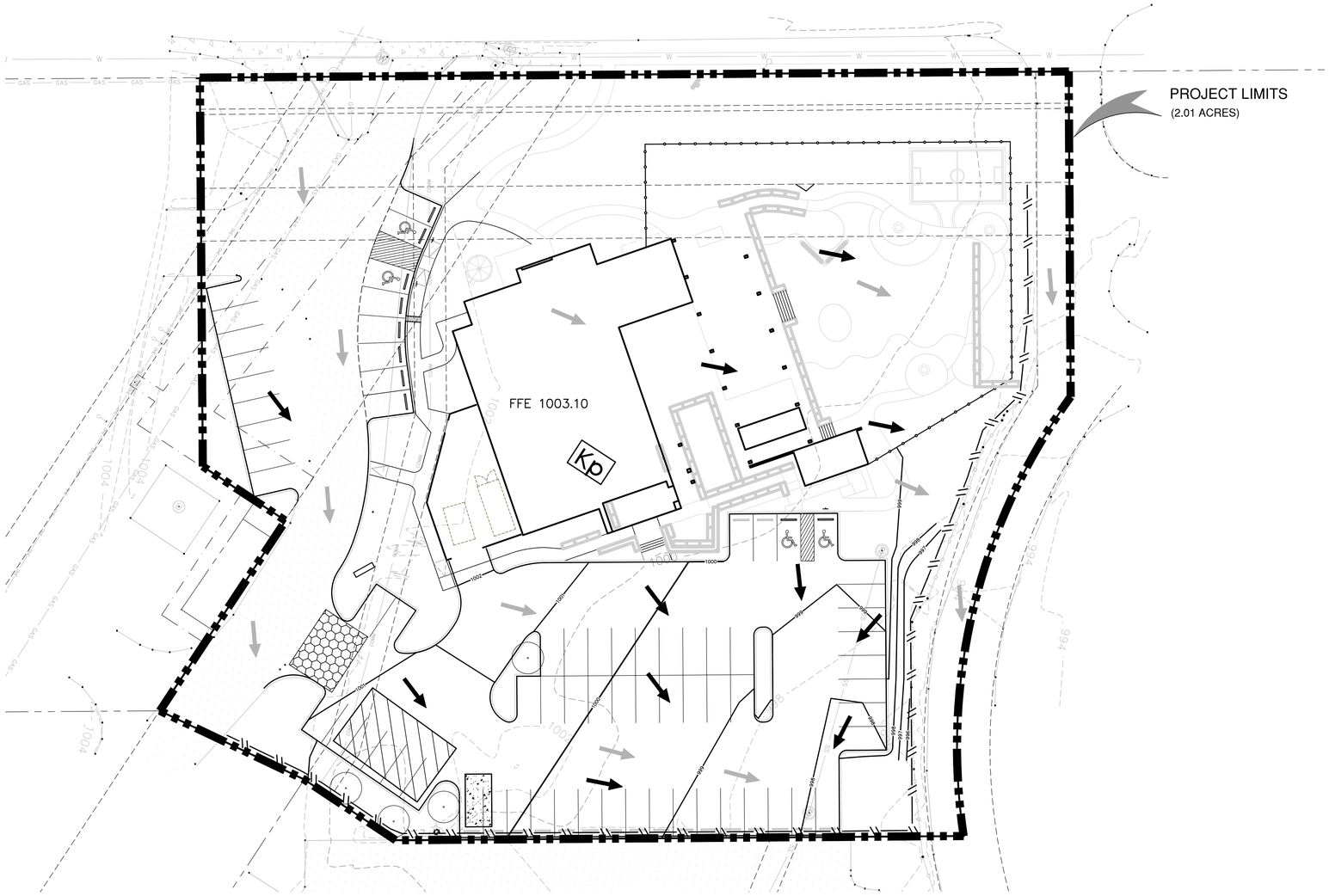
WPAP IMPERVIOUS COVER COMPARISON EXHIBIT

DATE: 3/4/2024

EXHIBIT: 3

TEMPORARY BMP MODIFICATIONS

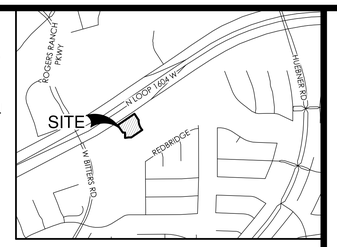
DATE	SIGNATURE	DESCRIPTION



ADDRESS
2450 N LOOP 1604 W
SAN ANTONIO, TX
78248

LEGAL DESCRIPTION
LOT 8
BLOCK 6
N.C.B. 18912

PLAT NO.
180448



LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 20'
0' 20' 40' 60'

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- LIMITS OF CONSTRUCTION
- 1220 EXISTING CONTOURS
- 1220 PROPOSED CONTOURS
- SILT FENCING
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- GRAVEL FILTER BAGS
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- CONCRETE TRUCK WASHOUT PIT (TO BE FIELD LOCATED)
- CONSTRUCTION STAGING AREA (TO BE FIELD LOCATED)
- Kp PERSON FORMATION
- MAN-MADE FEATURE

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

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
   - THE NAME OF THE APPROVED PROJECT;
   - THE ACTIVITY START DATE; AND
   - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.

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 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 THE 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 ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.

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.

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

TEMPORARY POLLUTION ABATEMENT NOTES:

1. CONSTRUCTION WITHIN THE DEVELOPMENT MAY NOT BE CONTINUOUS. THE CONTRACTOR IS RESPONSIBLE FOR PLACING SILT FENCE OR MAINTAINING PROPER VEGETATION ALONG THE DOWN GRADIENT SIDE OF EACH LOT DURING CONSTRUCTION OR OTHER BMP TO PREVENT EROSION AND STORM WATER POLLUTION. ALL SILT FENCE SHALL BE PLACED PERPENDICULAR TO DRAINAGE FLOW.

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

THE ENGINEERING SEAL ON THIS SHEET HAS BEEN APPLIED SOLELY FOR THE PURPOSE OF ILLUSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS SPECIFIED IN THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

EXHIBIT 1

DEWINNE ENGINEERING, LLC
P.O. Box 137, BOERNE, TEXAS 78006
PHONE: 210-383-3453 - EMAIL:DUSTAN@DEWINNE-ENG.COM
TBPELS FIRM REGISTRATION #F-24128

STATE OF TEXAS
DUSTAN E. DEWINNE
122166
LICENSED
PROFESSIONAL ENGINEER
3/6/2024
Dustan Dewinne

PROJECT NUMBER:
23-117

MUCK & FUSS
SAN ANTONIO, TEXAS

2450 N LOOP 1604 W
SAN ANTONIO, TEXAS

DATE: 2/21/2024

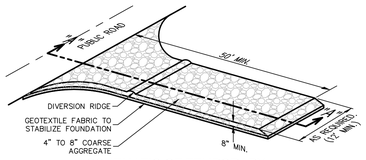
REV.	DATE:	DESCRIPTION:

DESIGNER: DD
DRAWN: DD
CHECKED:

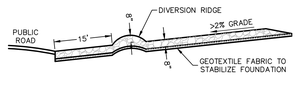
SHEET NAME:
TEMPORARY WATER POLLUTION ABATEMENT PLAN (WPAP) - SITE PLAN

SHEET NUMBER:
CE100

Date: Mar 06, 2024, 11:56am User ID: dusta
File: C:\Users\dusta\OneDrive - DeWinne Engineering LLC\Desktop\DeWinne Engineering\01-Projects\23-116 Muck & Fuss - SAVO3-Design\Civil\CE100 WPAP TEMP SITE PLAN.dwg



SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT



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

MATERIALS

1. THE AGGREGATE SHOULD CONSIST OF 4–INCH TO 8–INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.

2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8–INCHES.

3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD², A MULLEN BURST RATING OF 140 LB/IN², AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.

4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4–INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

INSTALLATION

1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.

2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.

3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.

4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6–INCHES TO 8–INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.

5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.

6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.

7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.

8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

COMMON TROUBLE POINTS

1. INADEQUATE RUNOFF CONTROL–SEDIMENT WASHES ONTO PUBLIC ROAD.

2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.

3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC–EXTEND PAD BEYOND THE MINIMUM 50–FOOT LENGTH AS NECESSARY.

4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD.

5. UNSTABLE FOUNDATION – USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES

1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.

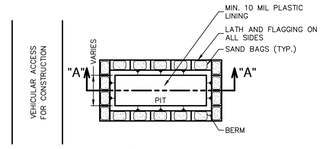
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY.

4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

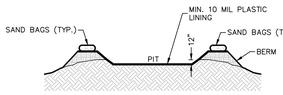
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT–TO–SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.

2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.

3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.

4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES OR WATER BODIES.

5. TEMPORARY CONCRETE WASHOUT FACILITY SHOULD BE CONSTRUCTED WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

MATERIALS

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

MAINTENANCE

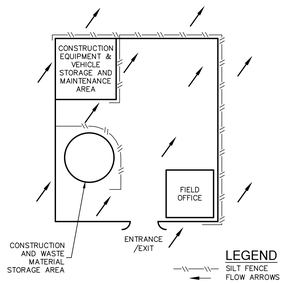
1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.

2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.

3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

CONCRETE TRUCK WASHOUT PIT DETAIL

NOT–TO–SCALE



CONSTRUCTION STAGING AREA

NOT–TO–SCALE

ISOMETRIC PLAN VIEW

SILT FENCE

A SILT FENCE IS A BARRIER CONSISTING OF GEOTEXTILE FABRIC SUPPORTED BY METAL POSTS TO PREVENT SOIL AND SEDIMENT LOSS FROM A SITE. WHEN PROPERLY USED, SILT FENCES CAN BE HIGHLY EFFECTIVE AT CONTROLLING SEDIMENT FROM DISTURBED AREAS. THEY CAUSE RUNOFF TO POND, ALLOWING HEAVIER SOLIDS TO SETTLE OUT. IF NOT PROPERLY INSTALLED, SILT FENCES ARE NOT LIKELY TO BE EFFECTIVE.

THE PURPOSE OF A SILT FENCE IS TO INTERCEPT AND DETAIN WATER–BORN SEDIMENT FROM UNPROTECTED AREAS OF A LIMITED EXTENT. SILT FENCE IS USED DURING THE PERIOD OF CONSTRUCTION NEAR THE PERIMETER OF A DISTURBED AREA TO INTERCEPT SEDIMENT WHILE ALLOWING WATER TO PERCOLATE THROUGH. THIS FENCE SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SILT FENCE SHOULD NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, CORRECTIVE ACTION MUST BE TAKEN SUCH AS PLACING A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.

SILT FENCING WITHIN THE SITE MAY BE TEMPORARILY MOVED DURING THE DAY TO ALLOW CONSTRUCTION ACTIVITY PROVIDED IT IS REPLACED AND PROPERLY ANCHORED TO THE GROUND AT THE END OF THE DAY. SILT FENCES ON THE PERIMETER OF THE SITE OR AROUND DRAINAGE WAYS SHOULD NOT BE MOVED AT ANY TIME.

MATERIALS

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.

2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y–BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 140.

3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

INSTALLATION

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1–FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.

2. LAY OUT FENCING DOWN–SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.

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 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

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.

6. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

COMMON TROUBLE POINTS

1. FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO CONCENTRATE AND FLOW OVER THE FENCE.

2. FABRIC NOT SEATED SECURELY TO GROUND (RUNOFF PASSING UNDER FENCE).

3. FENCE NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND SIDES).

4. FENCE TREATING TOO LARGE AN AREA, OR EXCESSIVE CHANNEL FLOW (RUNOFF OVERTOPS OR COLLAPSES FENCE).

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECT ALL FENCING WEEKLY, AND AFTER RAINFALL.

2. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.

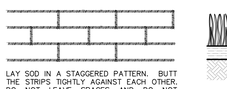
3. REPLACE TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.

4. REPLACE OR REPAIR SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.

5. WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.

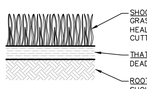
SILT FENCE DETAIL

NOT–TO–SCALE



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

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

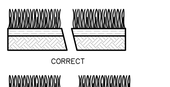


APPEARANCE OF GOOD SOD

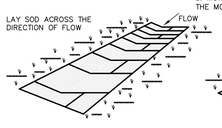
NOTES:
1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.

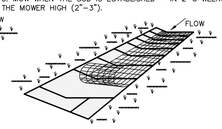
2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.

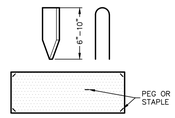
3. MOW WHEN THE SOD IS ESTABLISHED – IN 2–3 WEEKS. SET THE MOWER HIGH (2"–3").



SOD INSTALLATION







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

MATERIALS

1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.

2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.

3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.

4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

1. PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.

2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.

3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

INSTALLATION IN CHANNELS

1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).

2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

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

1. SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN.

2. DURING PERIODS OF HIGH TEMPERATURE, THE SOIL SHOULD BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD, TO COOL THE SOIL AND REDUCE ROOT BURNING AND DIEBACK.

3. THE FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE).

4. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY STAPLING OR OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PERPENDICULAR TO THE SLOPE (ON CONTOUR).

5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.

6. AFTER ROLLING, SOD SHOULD BE IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDERSIDE OF THE SOD PAD AND THE SOIL 4 INCHES BELOW THE SOD IS THOROUGHLY WET.

7. UNTIL SUCH TIME A GOOD ROOT SYSTEM BECOMES DEVELOPED, IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHOULD BE PERFORMED AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4 INCHES.

8. THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2–3 WEEKS. NOT MORE THAN ONE THIRD OF THE GRASS LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

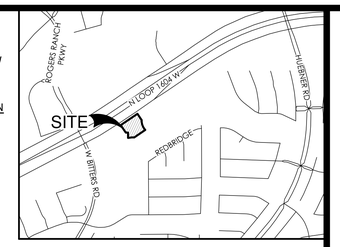
INSPECTION AND MAINTENANCE GUIDELINES

1. SOD SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT TO LOCATE AND REPAIR ANY DAMAGE.

2. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

SOD INSTALLATION DETAIL

NOT–TO–SCALE



LOCATION MAP

NOT–TO–SCALE

ADDRESS
2450 N LOOP 1604 W
SAN ANTONIO, TX
78248

LEGAL DESCRIPTION
LOT 8
BLOCK 6
N.C.B. 18912

PLAT NO.
180448

DEWINNE ENGINEERING, LLC
P.O. Box 137, BOERNE, TEXAS 78006
PHONE: 210-383-3453 - EMAIL:DUSTIN@DEWINNE-ENG.COM
TBPELS FIRM REGISTRATION #F-24128

STATE OF TEXAS
DUSTAN E. DEWINNE
122166
LICENSED
PROFESSIONAL ENGINEER
3/6/2024

PROJECT NUMBER:
23-117

MUCK & FUSS
SAN ANTONIO, TEXAS

2450 N LOOP 1604 W
SAN ANTONIO, TEXAS

DATE: 3/7/2024

REV:	DATE:	DESCRIPTION:

DESIGNER: DD
DRAWN: DD
CHECKED:

SHEET NAME:

TEMPORARY WATER POLLUTION ABATEMENT PLAN (WPAP) - DETAILS

SHEET NUMBER:

CE101

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

THE ENGINEERING SEAL ON THIS SHEET HAS BEEN APPLIED SOLELY FOR THE PURPOSE OF ILLUSTRATING COMPLIANCE WITH THE POLLUTION ABATEMENT SIZING AND TREATMENT REQUIREMENTS SPECIFIED IN THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL.

EXHIBIT 2

Date: Mar 07, 2024, 12:13pm User ID: dusta
File: C:\Users\dusta\OneDrive - DeWinne Engineering LLC\Desktop\DeWinne Engineering\01-Projects\23-116 Muck & Fuss - SA\03-Design\Civil\CE101 WPAP TEMP DETAILS.dwg

ADDRESS
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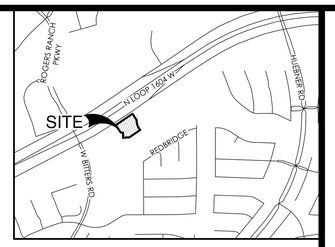
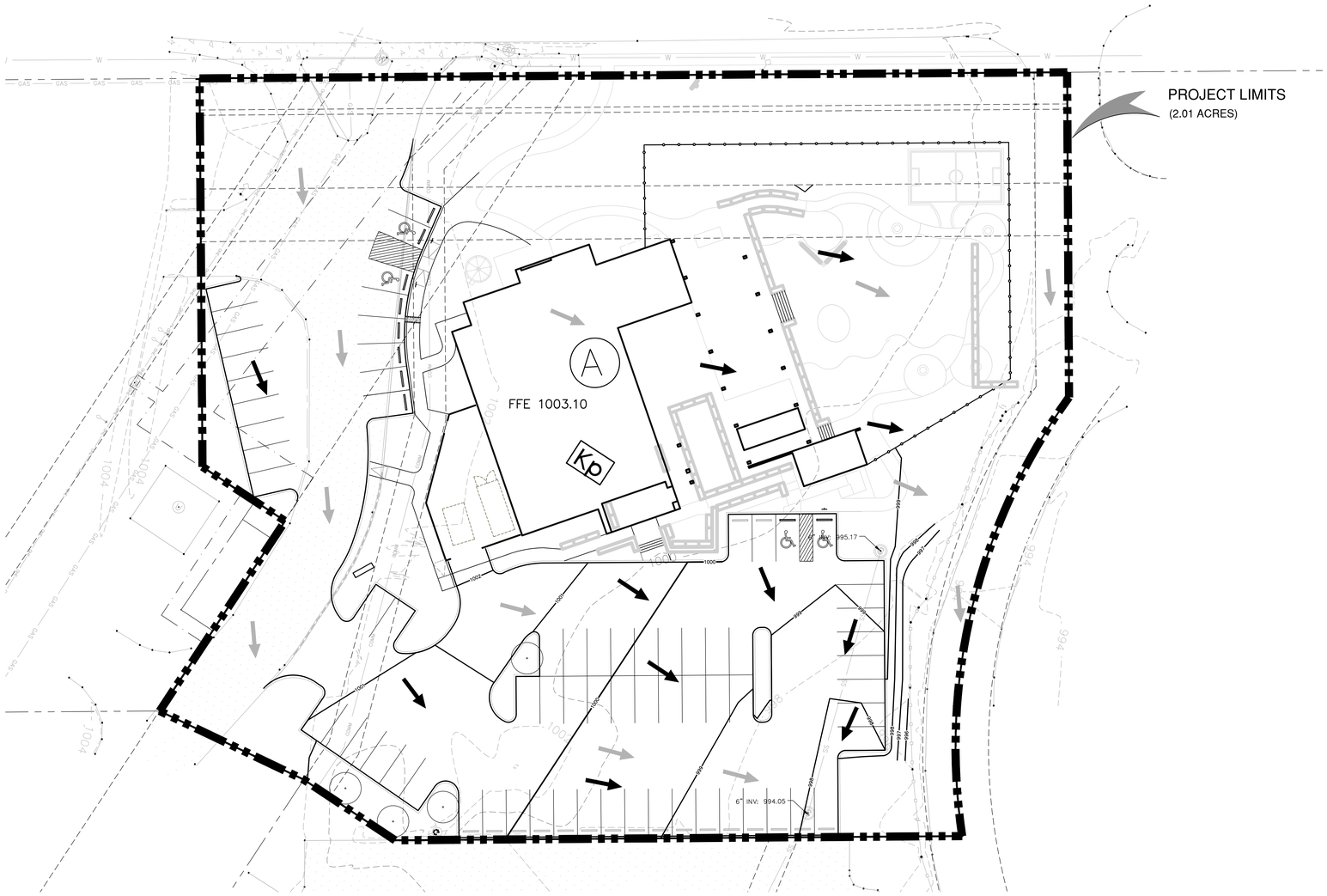
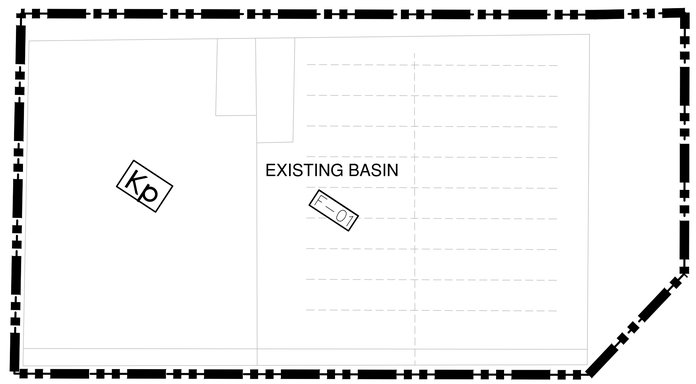


LOCATION MAP
NOT-TO-SCALE

SCALE: 1"= 20'
0' 20 40 60'

LEGEND
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- LIMITS OF CONSTRUCTION
- 1220 EXISTING CONTOURS
- 1220 PROPOSED CONTOURS
- SILT FENCING
- FLOW ARROW (EXISTING)
- FLOW ARROW (PROPOSED)
- (A) WATERSHED AREA
- WATERSHED BOUNDARY





TREATMENT SUMMARY BY WATERSHED

WATERSHED	TOTAL AREA (AC)	EXISTING IMPERVIOUS COVER (AC)	PROPOSED IMPERVIOUS COVER (AC)	PBMP TYPE	TSS GENERATED ANUALLY (LBS)	TSS REMOVED ANNUALLY (LBS)
A	2.01	0.40	1.40	EXISTING BASIN	1142	1142
TOTAL	2.01	0.40	1.40		1142.00	1142.00

SUMMARY OF PERMANENT POLLUTION ABATEMENT MEASURES:

1. TEMPORARY BMP'S WILL BE MAINTAINED UNTIL THE SITE IMPROVEMENTS ARE COMPLETED AND THE SITE HAS BEEN STABILIZED, INCLUDING SUFFICIENT VEGETATION BEING ESTABLISHED.
2. DURING CONSTRUCTION, TO THE EXTENT PRACTICAL, CONTRACTOR SHALL MINIMIZE THE AREA OF SOIL DISTURBANCE. AREAS OF DISTURBED SOIL SHALL BE REVEGETATED TO STABILIZE SOIL USING SOLID SOD IN A STAGGERED PATTERN. SEE DETAIL ON TEMPORARY POLLUTION ABATEMENT DETAIL SHEET AND REFER TO SECTION 1.3.11 IN TCEQ'S TECHNICAL GUIDANCE MANUAL RG-348 (2005). SOD SHOULD BE USED IN CHANNELS AND ON SLOPES > 15%. THE CONTRACTOR MAY SUBSTITUTE THE USE OF SOD WITH THE PLACEMENT OF TOP SOIL AND A FRIABLE SEED BED WITH A PROTECTIVE MATTING OR HYDRAULIC MULCH ALONG WITH WATERING UNTIL VEGETATION IS ESTABLISHED. APPLICATIONS AND PRODUCTS SHALL BE THOSE APPROVED BY TXDOT AS OF FEBRUARY 2001 AND IN COMPLIANCE WITH THE TGM RG-348 (2005). SEED MIXTURE AND/OR GRASS TYPE TO BE DETERMINED BY OWNER AND SHOULD BE IN COMPLIANCE WITH TGM RG-348 (2005) GUIDELINES. IRRIGATION MAY BE REQUIRED IN ORDER TO ESTABLISH SUFFICIENT VEGETATION.
3. FOR DISTURBED AREAS WHERE INSUFFICIENT SOIL EXISTS TO ESTABLISH VEGETATION, CONTRACTOR SHALL PLACE A MINIMUM OF 6" OF TOPSOIL PRIOR TO REVEGETATION.
4. PERMANENT BMP'S FOR THIS SITE INCLUDE AN EXISTING PARTIAL SEDIMENTATION AND SAND FILTER BASIN. THESE PERMANENT BMP'S HAVE BEEN DESIGNED TO REMOVE AT LEAST 80% OF THE INCREASED TOTAL SUSPENDED SOLIDS (TSS) FOR THE 2.04 ACRES IN ACCORDANCE WITH THE TCEQ'S TECHNICAL GUIDANCE MANUAL (TGM) RG-348 (2005).
5. TYPICAL SLOPES ON THIS PROJECT RANGE FROM APPROXIMATELY 1% TO 12%

PERMANENT POLLUTION ABATEMENT MEASURES:

1. SILT FENCING AND ROCK BERMS, WHERE APPROPRIATE, WILL BE MAINTAINED UNTIL THE ROADWAY, UTILITY, DRAINAGE IMPROVEMENTS, AND BUILDING CONSTRUCTION ARE COMPLETED.
2. AN EXISTING PARTIAL SEDIMENTATION AND SAND FILTER BASIN WILL SERVE AS THE PERMANENT BEST MANAGEMENT PRACTICE (BMP) FOR DRAINAGE AREA "A".

NOTES:

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

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EXHIBIT 3

DEWINNE ENGINEERING, LLC
P.O. Box 137, BOERNE, TEXAS 78006
PHONE: 210-383-3453 - EMAIL:DUSTIN@DEWINNE-ENG.COM
TBPE/LS FIRM REGISTRATION #F-24129

STATE OF TEXAS
DUSTIN E. DEWINNE
122166
LICENSED
PROFESSIONAL ENGINEER
3/6/2024

PROJECT NUMBER:
23-117

MUCK & FUSS
SAN ANTONIO, TEXAS

2450 N LOOP 1604 W
SAN ANTONIO, TEXAS

DATE: 2/21/2024

REV.	DATE:	DESCRIPTION:

DESIGNER: DD
DRAWN: DD
CHECKED:

SHEET NAME:
PERMANENT WATER POLLUTION ABATEMENT PLAN (WPAP) - SITE PLAN

SHEET NUMBER:
CE200

Date: Mar 07, 2024, 12:06am User ID: dusta
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