TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 7, 2007

Mr. Richard Masling
Mann Development, Ltd.
150 N. Loop 1604 East, Suite 202
San Antonio, Texas 78232

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Ladera Canyon Residential Subdivision; Located at the end of Pfeiffer Road, off of F.M. 1863; Bulverde ETJ, 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. 2714.00; Investigation No. 595936; Regulated Entity No. RN105345300

Dear Mr. Masling:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the above-referenced project submitted to the San Antonio Regional Office by Pape-Dawson Engineers, Inc. on behalf of Mann Development, Ltd. on September 21, 2007. Final review of the WPAP was completed after additional material was received on November 13, 2007 and December 4, 2007. 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 single family residential project will have an area of approximately 185.1 acres. It will include 31 single family residential lots and associated roadways for the subdivision. The impervious cover will be 15.2 acres (8.2%). According to a letter dated, September 13, 2007, signed by Robert Boyd, P.E., with Comal County, the site in the development is acceptable for the use of on-site sewage facilities.

PERMANENT POLLUTION ABATEMENT MEASURES

Since this single-family residential project will not have more than 20 percent impervious cover, an exemption from permanent BMPs to treat TSS generated by the site, is approved. The permanent natural

buffer areas for sensitive features were designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005). The individual buffer areas for sensitive features can be seen in the enclosed Attachment A, taken from the WPAP, "TCEQ Response Exhibit A". Temporary BMPs (silt fence) will be installed outside the entire buffer area for each sensitive feature. The natural buffer area will be shown on the subdivision plat and for individual lot plats as a construction free area.

GEOLOGY

According to the geologic assessment included with the application, 18 sensitive geologic features were evaluated at the project site. Four water wells were also located at the site and scored as not sensitive by the project geologist. These wells are in use and comply with 16 TAC Chapter 76. The San Antonio Regional Office site assessment conducted on November 28, 2007 revealed the site as described by the geologic assessment and site plan. The following table summarizes the sensitive features and the BMP measures for each feature.

Sensitive Feature and Water Well BMP Summary

Feature ID	Feature Type	BMP Provided	BMP Sizing
S-1	SC	Natural buffer area	50 foot radius in all directions
S-3	SC	Natural buffer area	50 foot radius in all directions
S-4	C	Natural buffer area	50 foot radius in all directions
S-5	SF	Natural buffer area	50 foot radius in all directions
S-6	SH	Natural buffer area	50 foot radius in all directions
S-7	SH	Natural buffer area	50 foot radius in all directions and 65 feet upgradient from the edge of the feature
S-8	SH	Natural buffer area	50 foot radius in all directions and 130 feet upgradient from the edge of the feature
S-14	SC	Natural buffer area	50 foot radius in all directions
S-16	SC	Natural buffer area	50 foot radius in all directions
S-17	SC	Natural buffer area	50 foot radius in all directions
S-18	SH	Natural buffer area	50 foot radius in all directions
S-20	SC	Natural buffer area	50 foot radius in all directions
S-21	SC	Natural buffer area	50 foot radius in all directions
S-23	SCZ	Natural buffer area	50 foot radius in all directions and 100 feet upgradient from the edge of the feature
S-25	SC	Natural buffer area	50 foot radius in all directions and 80 feet upgradient from the edge of the feature
S-26	SCZ	Natural buffer area	50 foot radius in all directions and 80 feet upgradient from the edge of the feature
S-37	SC	Natural buffer area	50 foot radius in all directions
S-42	SCZ	Natural buffer area	50 foot radius in all directions
S-44	MB (water well)	OSSF separation distance	150 foot radius in all directions
S-45	MB (water well)	OSSF separation distance	150 foot radius in all directions
S-46	MB (water well)	OSSF separation distance	150 foot radius in all directions
S-47	MB (water well)	OSSF separation distance	150 foot radius in all directions

SC: Solution cavity C: Cave SF: Solution fractures SH: Sink hole SCZ: Solution cavity zone
MB: Manmade feature in bedrock

SPECIAL CONDITIONS

I. The holder of the approved Edwards Aquifer WPAP must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the application.

II. 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.

III. Since this project will not have more than 20% impervious cover, an exemption from permanent BMPs is approved. If the percent impervious cover ever increases above 20% or the land use changes, the exemption for the whole site as described in the property boundaries required by §213.4(g), may no longer apply and the property owner must notify the appropriate regional office of these changes.

IV. Update the site plan and residential lot plats to reflect the separation distances of OSSF systems from sensitive recharge features defined in 30 TAC §285.91, Table 10, and provide below:

- no sewage treatment tank or holding tank may be located within 50 feet of a sensitive recharge feature,
- no soil absorption system may be located within 150 feet of a sensitive recharge feature, and
- no surface application (edge of spray area) may be located within 150 feet of a sensitive recharge feature.

Provide 4 copies of the updated site plan detailing these separation distances to the TCEQ San Antonio Regional Office prior to the commencement of construction.

V. If a cave gate is installed on feature S-4, refer to Chapter 5, Section 5.1.3 of the TGM (2005) for information on cave gates. Provide a file update to the TCEQ, within 30 days of cave gate completion, with photographs demonstrating the installed cave gate.

VI. The natural buffer areas provided in the residential lot plats and the subdivision plat shall have the same dimensions as the buffer areas seen in the enclosed Attachment A.

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.

<u>During Construction:</u>

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. Four 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.

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.

After Completion of Construction:

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 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 Charly Fritz of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4065.

Sincerely,

Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/CEF/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Attachment A, Taken from WPAP, TCEQ Response Exhibit A

cc: Ms. Shauna Weaver, P.E., Pape-Dawson Engineers, Inc.
Ms. Sarah Stevick, City of Bulverde
Mr. Tom Hornseth, P.E., Comal County
Ms. Velma Danielson, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 28, 2010

Mr. Richard Masling
Mann Development, Ltd.
13333 Blanco Road, Suite 306
San Antonio, Texas 78216

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Ladera Canyon Residential Subdivision, located at the end of Pfeiffer Road, off of F.M. 1863, Bulverde ETJ, Texas
TYPE OF PLAN: Request for Extension of Time to Commence Regulated Activities Authorized by a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program San Antonio File No. 2714.03
Investigation No. 878314, Regulated Entity No. RN105345300

Dear Mr. Masling:

On November 5, 2010, the Texas Commission on Environmental Quality (TCEQ) received your request for an extension of time to commence regulated activities related to the above referenced approval. The request was reviewed for compliance with 30 TAC §213.4 and §213.13, which set forth the procedures for requesting an extension of time to commence regulated activities authorized by the approval, and was found to be in general agreement with these procedures. Therefore, the request for an extension to the term of approval for the referenced project is granted. A summary of the dates of approval and expiration are as follows:

Date of Original Approval:	December 7, 2007
Date of Expiration:	December 7, 2009
Date Extension Request Received	Date of Extension Expiration
November 13, 2009	June 7, 2010
May 26, 2010	December 7, 2010
November 5, 2010	June 7, 2011

The request and fee were received in compliance with 30 TAC §213.4(h) and §213.13. As indicated in the rules, an extension may not be granted if the proposed regulated activity or approved plan for the regulated activities has changed. As understood, there will be no changes

or modifications to the originally approved plan. This request for extension expires on June 7, 2011. Should construction not commence before the end of the six (6) month period, another request for extension would be required to keep the Edwards Aquifer Protection Plan validated.

If you have any questions or require additional information, please contact Alan G. Jones of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4074.

Sincerely,

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

MRV/AGJ/eg

cc: Ms. Cara Tackett, P.E., Pape-Dawson Engineers, Inc.
Mr. Karl J. Dreher, Edwards Aquifer Authority
Mr. Scott Halty, San Antonio Water System
Ms. Renee Green, P.E., Bexar County Public Works
TCEQ Central Records, Building F, MC 212

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 14, 2010

Mr. Richard Masling
Mann Development, Ltd.
13333 Blanco Road, Suite 306
San Antonio, Texas 78216

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Ladera Canyon Residential Subdivision, located at the end of Pfeiffer Road, off of F.M. 1863, Bulverde ETJ, Texas
TYPE OF PLAN: Request for Extension of Time to Commence Regulated Activities Authorized by a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program File No. 2714.02, Investigation No. 826090
Regulated Entity No. RN105345300

Dear Mr. Masling:

On May 26, 2010, the Texas Commission on Environmental Quality (TCEQ) received your request for an extension of time to commence regulated activities related to the above referenced approval. The request was reviewed for compliance with 30 TAC §213.4 and §213.13, which set forth the procedures for requesting an extension of time to commence regulated activities authorized by the approval, and was found to be in general agreement with these procedures. Therefore, the request for an extension to the term of approval for the referenced project is granted. A summary of the dates of approval and expiration are as follows:

Date of Original Approval:	December 7, 2007
Date of Expiration:	December 7, 2009
Date Extension Request Received	Date of Extension Expiration
November 13, 2009	June 7, 2010
May 26, 2010	December 7, 2010

The request and fee were received in compliance with 30 TAC §213.4(h) and §213.13. As indicated in the rules, an extension may not be granted if the proposed regulated activity or

approved plan for the regulated activities has changed. As understood, there will be no changes or modifications to the originally approved plan. This request for extension expires on December 7, 2010. Should construction not commence before the end of the six (6) month period, another request for extension would be required to keep the Edwards Aquifer Protection Plan validated.

If you have any questions or require additional information, please contact Alan G. Jones of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4074.

Sincerely,

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

MRV/AGJ/eg

cc: Ms. Cara Tackett, P.E., Pape-Dawson Engineers, Inc.
Mr. Tom Hornseth, Comal County
Mr. Karl J. Dreher, Edwards Aquifer Authority
The Honorable Bill Krawietz, City of Bulverde
TCEQ Central Records, Building F, MC 212

PAPE-DAWSON ENGINEERS

LAND DEVELOPMENT ENVIRONMENTAL TRANSPORTATION WATER RESOURCES SURVEYING

November 12, 2007

RECEIVED
DEC 1 8 2007
COUNTY ENGINEER

2007 NOV 13 AM 9:20

"RECEIVED TCEQ SAN ANTONIO REGION"

Ms. Lynn M. Bumguardner
c/o Ms. Charly Fritz
Texas Commission on Environmental Quality - Region 13
14250 Judson Road
San Antonio, Texas 78233-4480

Re: Ladera Canyon (WPAP) EAPP ID No. 2714.00
Response to Deficiency Fax (NOD #1) Dated October 31, 2007 (Attached)

Dear Ms. Fritz:

The following are responses to the comments from your office regarding technical review of the above referenced project. Please call our office if you have additional questions.

1. Existing topography shown is ten-foot contour data transposed from the USGS map. The final contour elevations for the streets are based on field survey data obtained in the right of way of the streets.

2. A detail for the placement of temporary BMPs during house construction for individual lots has been added to Exhibit 4.

3. The Sequence of Major Activities (Item 5 of TCEQ-0602) has been revised in the Temporary Stormwater section of the report (attached). Silt fence will be installed around sensitive features by the homebuilder prior to and during construction of residential homes.

4a. Based on field visits and observations by professional geoscientists drainage areas for the sensitive features do not extend outside the 50' buffer.

4b. Buffer boundaries for sensitive features have been revised and are now measured from the edge of the feature. See revised Exhibit 2 and Exhibit 3.

4c. Buffer boundaries for sensitive features will be included on the subdivision plat.

We believe this addresses the issues in your letter of October 31, 2007. If you have questions regarding our responses, we ask that you call our office. We believe we can resolve any remaining questions by phone.

Very truly yours,
Pape-Dawson Engineers, Inc.

Shauna L. Weaver

Shauna Weaver, P.E.
Vice President, Land Development

STATE OF TEXAS
SHAUNA L. WEAVER
89512
LICENSED
PROFESSIONAL ENGINEER
11-12-07

Attachments

P:\672303\Word\LETTERS\071102al NOD Response.doc

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 31, 2007

Ms. Shauna Weaver
Pape-Dawson Engineers, Inc.
555 East Ramsey
San Antonio, Texas 78216

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: La Dera Canyon Residential; Located north of FM 1863 and east of Beck Road and Pfeiffer Road; Bulverde, Texas
TYPE OF PLAN: Request for the Approval of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer;
Edwards Aquifer Protection Program ID No. 2714.00; Investigation No. 595936; Regulated Entity No. RN105345300

Dear Ms. Weaver:

We are in the process of technically reviewing the WPAP application you submitted on the above-referenced project. Before we can proceed with our review, the following comments relating to the application must be addressed.

1. Confirm the final contour elevations for the streets. In certain areas, the final contour elevation is ten to fifteen feet greater than the existing contour elevation.

2. Provide a detail for the placement of temporary BMPs during house construction for individual lots.

3. Revise the Sequence of Major Activities (Item 5 of TCEQ-0602) to include the timing of the removal of temporary BMPs for sensitive features. Will the silt fence be in place only for road and utility work? For house construction? Or for both?

4. Refer to Chapter 5, Section 5.1.2, Sensitive Features, of the Edwards Aquifer Technical Guidance Manual (RG-348, 2005).

   > "The natural buffer around a feature should extend a minimum of 50 feet in all directions. Where the boundary of the drainage area to the feature lies more than 50 feet from the feature, the buffer should extend to the boundary of the drainage area or 200 feet, whichever is less."

   a. Only the 50 foot buffer around sensitive features is shown on the plan sheets. Extend the limits of the buffer area to the boundary of the drainage area for that feature or 200 feet, whichever is less. Revise the site layout as necessary and provide updated plan sheet(s).
   b. The 50 foot and 200 foot buffer boundary area should be measured from the edge of the feature and not the center of the feature. Provide revised plan sheet(s) as necessary.

c. Provide a detailed explanation of the steps to be taken to make homeowners aware of sensitive geologic features at the site and of the potential for buffer setbacks for geologic features on individual lots.

We ask that you submit one original and three copies of the amended materials to supplement the WPAP application to this office by no later than **14 days from the date of this letter** to avoid denial of the plan. If the response to this notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, a second notice will be sent to you requiring a response within 7 days from the notice date. If the response to the second notice is not recieved, is incomplete or inadequate, or provides new information that is incomplete or inadaquate, the application will be denied unless you provide written notification that the application is being withdrawn. Please note that the application fee will be forfeited if the plan is not withdrawn.

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

Sincerely,

Lynn M. Bumguardner
Water Section Work Leader
TCEQ San Antonio Regional Office

LMB/CEF/eg

fc: Mr. Richard Masling, Mann Development, Ltd. 210-491-0540
Ms. Shauna Weaver, P.E., Pape-Dawson Engineers, Inc. 210-375-9030

Temporary Stormwater Section
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

REGULATED ENTITY NAME: Ladera Canyon Residential Subdivision-185.1 Acres

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:

   √ Aboveground storage tanks with a cumulative storage capacity of less that 250 gallons ~~will~~ ***may*** 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-site.

   Temporary aboveground storage tank(s) may be located within the construction staging area in compliance with 30 TAC §213.

2. √ **ATTACHMENT A - Spill Response Actions**. A description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is provided at the end of this form. See attachment.

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 other activities or processes which may be a potential source of contamination.
__ There are no other potential sources of contamination.

Other potential sources of contamination during construction include:

Potential Source	*Preventative Measure*
Asphalt products used on this project.	***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.***
Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.	***Vehicle maintenance when possible will be performed within the construction staging area.***
Miscellaneous trash and litter from construction workers and material wrappings.	***Trash containers will be placed throughout the site to encourage proper trash disposal.***
Construction debris.	***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.***

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 provided ~~at the end of this form~~ ***below***. For each activity described, an estimate of the total area of the site to be disturbed by each activity is given.

The sequence of major activities which disturb soil during construction on this site will be divided into two stages. The first is site preparation that will include clearing and grubbing of vegetation where applicable. This will disturb approximately 8.06 acres. The second is construction that will include construction of homes, construction of new pavement area, landscaping and site cleanup. This will disturb approximately 7.12 acres. Prior to and during construction of residential homes, silt fence will be installed around sensitive features by the homebuilder.

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: Cibolo Creek and West Fork

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.** A description of the TBMPs and measures that will be used during and after construction are provided ~~at the end of this form~~ ***below***. For each activity listed in the sequence of construction, include appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

√ 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 has been provided ~~in the attachment at the end of this form~~ ***below***.

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.

Upgradient water flowing towards lots 4-10 and water flowing across lots 4-10 will be intercepted through earthen bar-ditch channels adjacent to street right-of-way and discharged to natural lows.

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

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

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

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended

solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter surface streams and/or sensitive features.

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

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

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.

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

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.

NA **ATTACHMENT E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is provided at the end of this form. 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.** Describe 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. Placement of structural practices in floodplains has been avoided.

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 and rock berms with silt fence for secondary protection, as located on Exhibit 2 and illustrated in Exhibit 4.***
- ***Installation of stabilized construction entrance/exit(s) and construction staging area(s), as located on Exhibit 1, 2 and illustrated on Exhibit 3, 4.***

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 2 and illustrated on Exhibit 4.***

10. √ **ATTACHMENT G - Drainage Area Map**. A drainage area map is provided ~~at the end of this form~~ ***as Exhibit 1*** to support the following requirements.

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

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

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

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

11. N/A **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 has 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 provided at the end of this form.

There are no temporary sediment ponds for this development.

12. √ **ATTACHMENT I - Inspection and Maintenance for BMPs.** A plan for the inspection of temporary BMPs and measures and for their timely maintenance, repair, and, if necessary, retrofit is provided at the end of this form. A description of documentation procedures and recordkeeping practices is included in the plan.

13. √ All control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicates 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. N/A 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 at the end of this form~~ ***below***.

Interim on-site stabilization measures, which are continuous, will include minimizing soil disturbances by exposing the smallest practical area of land required for the shortest period of time and maximizing use of natural vegetation. As soon as practical, all disturbed soil will be stabilized as per project specifications in accordance with pages 1-35 to 1-60 of TCEQ's Technical Guidance Manual (TGM) RG-348 (2005). Mulching, netting, erosion blankets and seeding are acceptable.

Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided below, will be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, stabilization measures must be initiated as soon as practicable.

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.

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:

Pape-Dawson Engineers, Inc.
Shauna L. Weaver, P.E.
Print Name of ~~Customer~~/Agent

Shauna L. Weaver
Signature of ~~Customer~~/Agent

11-12-07
Date

PAPE-DAWSON ENGINEERS

TRANSMITTAL

LAND DEVELOPMENT ENVIRONMENTAL TRANSPORTATION WATER RESOURCES SURVEYING

TO: TCEQ

DATE: 12/4/07

ATTN: Lynn Baumguardner

PROJECT NO.: 6723-03

FROM: Leslie Ostrander

CC:

RE: Ladera Canyon

Quantity	Description
1	Original Response Letter
3	Copies of Response Package

If enclosures are not as noted, kindly notify us at once.

☐ For Approval ☒ For Your Use ☐ As Required ☐ For Review and Comment

COMMENTS:

2007 DEC -4 PM 5:34

RECEIVED TCEQ SAN ANTONIO REGION

SAN ANTONIO / AUSTIN
WWW.PAPE-DAWSON.COM
555 East Ramsey San Antonio, Texas 78216 P 210.375.9000 F 210.375.9010

December 4, 2007

Ms. Lynn M. Bumguardner
c/o Ms. Charly Fritz
Texas Commission on Environmental Quality - Region 13
14250 Judson Road
San Antonio, Texas 78233-4480

Re: Ladera Canyon (WPAP) EAPP ID No. 2714.00
Response to Deficiency Fax (NOD #2) Dated November 28, 2007 (Attached)

Dear Ms. Fritz:

The following are responses to the comments from your office regarding technical review of the above referenced project. Please call our office if you have additional questions.

1. Existing topography shown is ten-foot contour data transposed from the USGS maps for Comal County. In order to design the streets in Ladera Canyon, field survey data was collected within the right of way of the streets. On the attached Exhibit A, the field survey shots are shown along with the final contour elevations for the streets. As illustrated on the exhibit, the field survey data provides a much better representation of the existing topography. Proposed contours illustrate how the finished street elevation ties to field-surveyed natural ground elevations. Proposed final contours in the southwestern portion of the site were extended slightly to provide additional detail where the difference between existing and proposed ground exceeds the required 5' contour interval.

   Street construction will require excavation (cut) and embankment (fill). On-site material from excavation areas will be used to construct required fill areas.

2a. The drainage area for each sensitive feature and the proposed 50' sensitive feature buffer have been added to Exhibit 2 and Exhibit 3. In areas where the drainage area extends outside the 50' sensitive feature buffer, the sensitive feature buffer has been revised to include the drainage area. Exhibit 2 and Exhibit 3 for the Ladera Canyon WPAP have been revised with the new buffer areas. Each lot owner will be notified of the sensitive feature buffers by the subdivision plat. Sensitive Feature S-42, a solution cavity zone, is located in the side of a very step cliff. Therefore, the drainage area for this zone does not extend past the zone itself.

2b. A potential impervious cover layout for Lots 10, 11, 19, 26, and 31 is illustrated on Exhibit 3.

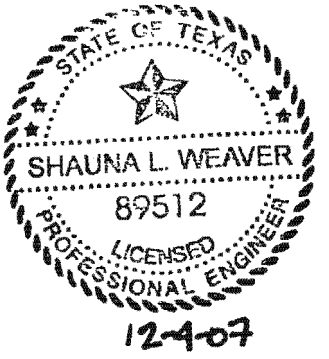
3. The buffer boundary for sensitive feature S-6 has been revised and is now measured from the edge of the feature. See revised Exhibit 2 and Exhibit 3.

4. All of the items discovered during the site assessment have been addressed with the above responses.

We believe this addresses the issues in your letter of November 28, 2007. If you have questions regarding our responses, we ask that you call our office. We believe we can resolve any remaining questions by phone.

Very truly yours,
Pape-Dawson Engineers, Inc.

Shauna Weaver, P.E.
Vice President, Land Development



Attachments

P:\67\23\03\Word\LETTERS\071102a1 NOD Response.doc

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 28, 2007

Ms. Shauna Weaver
Pape-Dawson Engineers, Inc.
555 East Ramsey
San Antonio, Texas 78216

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: La Dera Canyon Residential; Located north of FM 1863 and east of Beck Road and Pfeiffer Road; Bulverde, Texas
TYPE OF PLAN: Request for the Approval of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer;
Edwards Aquifer Protection Program ID No. 2714.00; Investigation No. 595936; Regulated Entity No. RN105345300

Dear Ms. Weaver:

We are in receipt of the additional information you have submitted on the above-referenced project for the WPAP application and are in the process of technically reviewing the additional information. Before we can proceed with our review, the following comments relating to the application must be addressed.

1. There are portions of roadway, particularly in the southwestern portion of the site, in which the proposed final contours are ten to twenty feet greater than the existing contours. Verify if fill material will be brought to the site to match existing contours to the proposed final contours for the roadways. If not, explain why there is such a difference between existing and proposed final contours or revise the final contours as necessary.

2. The response to Item 4a of the TCEQ letter dated October 31, 2007 is inadequate.

    a. The 200 foot upgradiant buffer area for a sensitive feature is required unless details are provided to show that the boundary of the feature drainage area is less than 200 feet. Revise the site plan and detail the natural buffer areas for all sensitive features. These buffer areas shall extend to the edge of the drainage area for the feature or 200 feet upgradient, whichever is less. No impervious cover is allowed to be within this buffer area.

    b. For lots 10, 11, 19, 26, and 31, provide a layout of the impervious cover (rooftop and driveway), on the site plan, that does not interfere with sensitive feature natural buffer areas.

3. Revise the buffer area for feature S-6. The natural buffer shall extend from the edge of the feature, not the center of the feature.

4. Any additional items discovered during the site assessment scheduled for November 28, 2007 must be addressed prior to plan approval.

We ask that you submit one original and three copies of the amended materials to supplement the WPAP application to this office by no later than **7 days from the date of this letter** to avoid denial of the plan. If the response to this notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application will be denied unless you provide written notification that the application is being withdrawn. Please note that the application fee will be forfeited if the plan is not withdrawn. If you have any questions or require additional information, please contact Charly Fritz of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4065.

Sincerely,

Lynn M. Bumguardner
Water Section Work Leader
TCEQ San Antonio Regional Office

LMB/CEF/eg

fc: Mr. Richard Masling, Mann Development, Ltd. 210-491-0540
Ms. Shauna Weaver, P.E., Pape-Dawson Engineers, Inc. 210-375-9030

LOT 22
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133–137
(R.D.P.C.C.)
RESIDENTIAL

LOT 21
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133–137
(R.D.P.C.C.)
RESIDENTIAL

LOT 20
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133–137
(R.D.P.C.C.)
RESIDENTIAL

LOT 19
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133–137
(R.D.P.C.C.)
RESIDENTIAL

LOT 14
BECK RANCH SUBDIVISION
UNIT 2
VOL. 7, PGS. 164–167
(R.D.P.C.C.)
RESIDENTIAL

LOT 15
BECK RANCH SUBDIVISION
UNIT 2
VOL. 7, PGS. 164–167
(R.D.P.C.C.)
RESIDENTIAL

A CALLED 28.46 ACRE TRACT
DOC. NO. 200106037405
(R.P.R.C.C.)
RESIDENTIAL

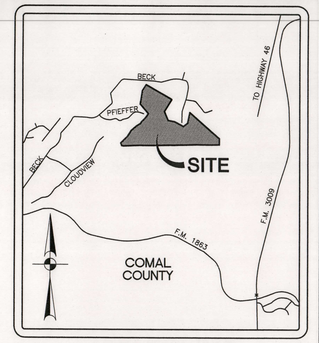
A CALLED 1279.3662 ACRE
TRACT
VOL. 494, PGS. 754–773
(R.P.R.C.C.)
UNDEVELOPED

LOT 16-B
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133–137
(R.D.P.C.C.)
RESIDENTIAL

TEST WELL

WELL LOCATION NOT WITHIN LADERA CANYON BOUNDARY

PFEIFFER ROAD



LOCATION MAP
NOT-TO-SCALE

SCALE : 1"=100'

0' 100' 200' 300'

LEGEND

- W — WATER WELL
- POSSIBLE FAULT (as located by aerial photographs)
- U / D — FAULT, LOCATED APPROXIMATELY (D, downthrown side; U, upthrown side)
- NON-KARST CLOSED DEPRESSION
- SINKHOLE
- SOLUTION CAVITY
- ZONE
- CAVE
- STRIKE OF VERTICAL JOINTS
- S-1 — POTENTIAL RECHARGE FEATURE
- 50' DIAMETER BUFFER FROM EDGE OF SENSITIVE FEATURE
- 150' DIAMETER WELL BUFFER
- Kgru — GLEN ROSE FORMATION (UPPER)
- Kek — KAINER FORMATION

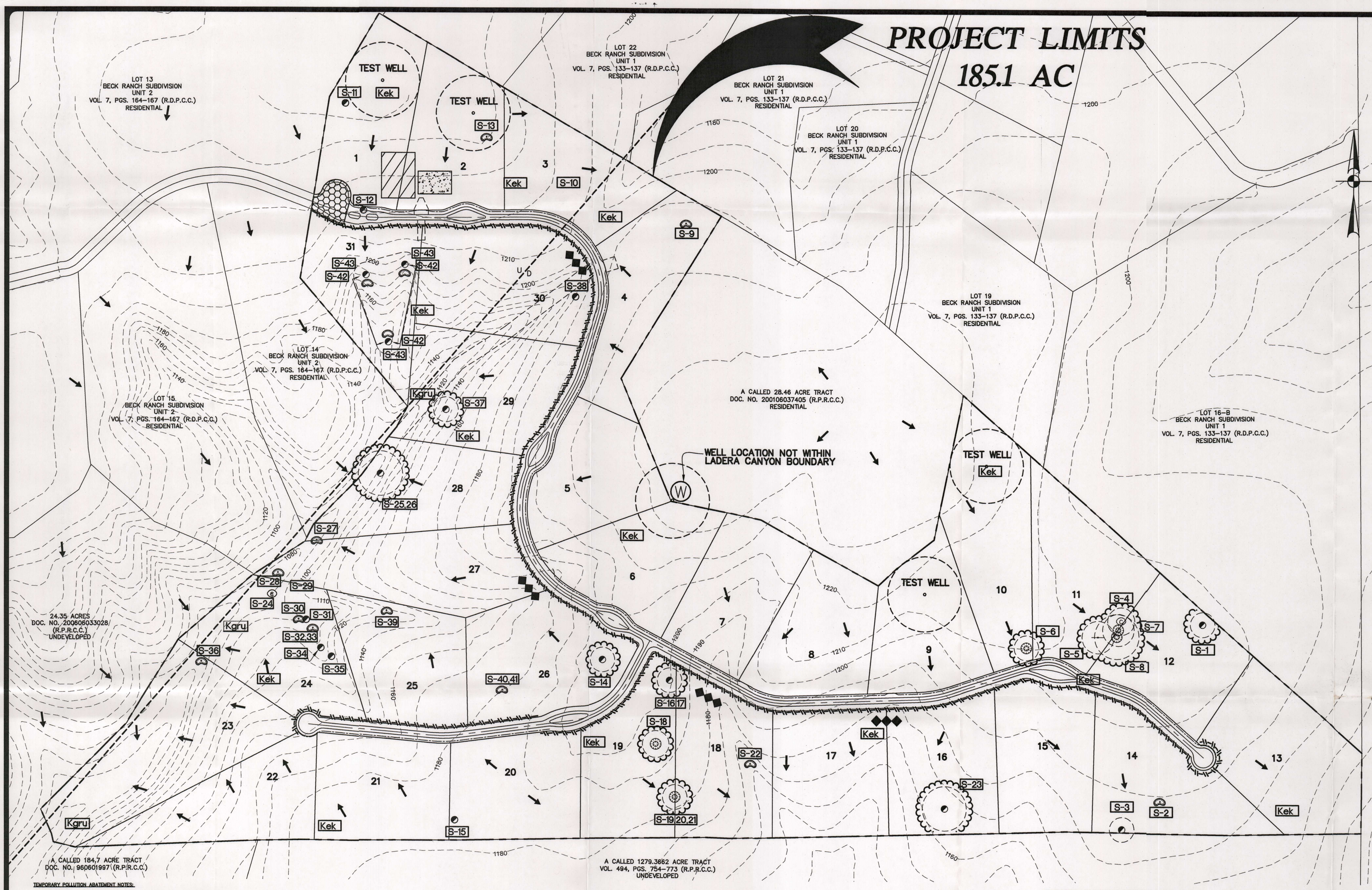
RECEIVED
TCEQ
SAN ANTONIO
REGION
2007 DEC -4 PM 5:34

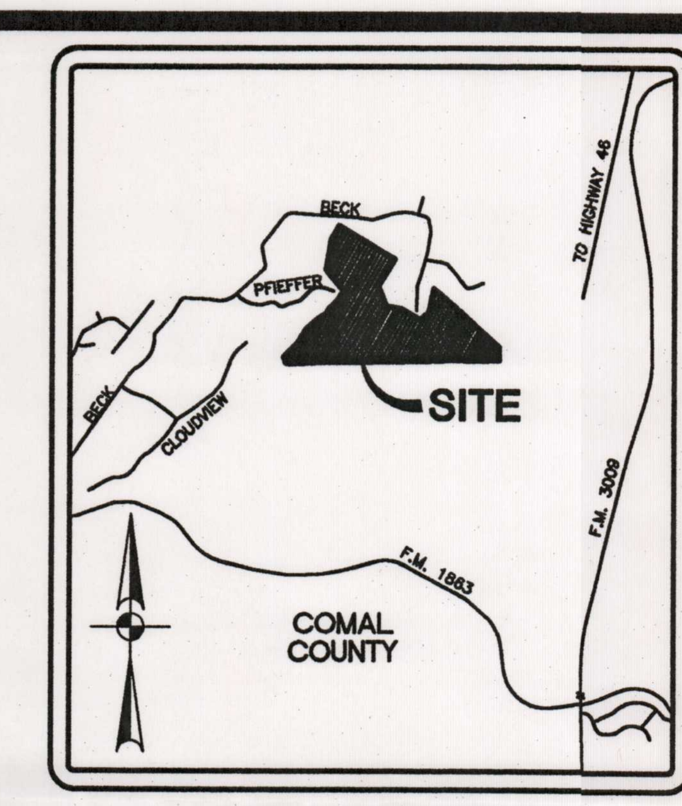
PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010

LADERA CANYON
MANN DEVELOPMENT, LTD.
TCEQ RESPONSE EXHIBIT A

JOB NO. 6723-03
DATE NOVEMBER 2007
DESIGNER RTM
CHECKED LKO DRAWN RTM
SHEET EXHIBIT "A"

Date: Dec 04, 2007, 1:38pm User ID: LHolmeier
File: P:\6723\03\DESIGN\EXHIBIT\TCEQ RESPONSE EX-2.dwg





LOCATION MAP
NOT-TO-SCALE

200 0 200 400

DRAWING SCALE: 1"= 200'

LEGEND

- 1 — LOT #
- (W) — WATER WELL
- PROJECT LIMITS
- 1160 — EXISTING CONTOURS
- ROCK BERM
- SILT FENCE*
- DURING HOME CONSTRUCTION (SILT FENCE)
- U/D — FAULT, LOCATED APPROXIMATELY (D, downthrown side; U, upthrown side)
- NON-KARST CLOSED DEPRESSION
- SINKHOLE
- SOLUTION CAVITY
- ZONE
- CAVE
- STRIKE OF VERTICAL JOINTS
- S-1 — POTENTIAL RECHARGE FEATURE
- DRAINAGE FLOW (EXISTING)
- 50' DIAMETER BUFFER FROM EDGE OF SENSITIVE FEATURE**
- 150' DIAMETER WELL BUFFER
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA.
- CONCRETE TRUCK WASHOUT PIT
- Kgru — GLEN ROSE FORMATION (UPPER)
- Kek — KAINER FORMATION

*NOTE: SILT FENCE PARALLEL TO STREET WILL NOT BE PROVIDED IF BAR DITCH CONSTRUCTION INTERCEPTS RUNOFF.

**NOTE: THE AREA WITHIN THE BUFFER FOR SENSITIVE FEATURES IS TO BE A CONSTRUCTION FREE ZONE.

TEMPORARY POLLUTION ABATEMENT NOTES:

1. CONSTRUCTION OF STREETS AND DRAINAGE STRUCTURES WILL PRECEDE HOMESITE CONSTRUCTION. WHERE VEGETATIVE FILTER STRIPS ARE INDICATED THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT SUFFICIENT VEGETATION EXISTS TO CONTROL EROSION, OTHERWISE SILT FENCE SHALL BE PLACED ALONG THE DOWN GRADIENT SIDE OF THE DISTURBED AREA PERPENDICULAR TO THE DRAINAGE FLOW.

2. CONSTRUCTION OF HOME SITES WITHIN THE DEVELOPMENT MAY NOT BE CONTINUOUS. THE HOMEBUILDER IS RESPONSIBLE FOR PLACING SILT FENCE OR MAINTAINING PROPER VEGETATION ALONG THE DOWN GRADIENT SIDE OF EACH LOT DURING HOME CONSTRUCTION OR OTHER BMP TO PREVENT EROSION AND STORMWATER POLLUTION. ALL SILT FENCE SHALL BE PLACED PERPENDICULAR TO DRAINAGE FLOW AS SHOWN.

3. ROCK BERMS SHALL BE PLACED IN AREAS WHERE DRAINAGE FLOW IS CONCENTRATED DUE TO NATURAL CONDITIONS OR CONSTRUCTION ACTIVITIES SUCH AS AT DRAINAGE STRUCTURES. THESE BERMS WILL BE MAINTAINED UNTIL 70% OF THE WATERSHED IS STABILIZED.

4. CONSTRUCTION ENTRANCE/EXITS, CONCRETE WASHOUT PITS, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARDS WILL BE PLACED WITH EACH UNIT BEFORE CONSTRUCTION IS INITIATED.

5. SILT FENCING SHOWN ALONG COLLECTORS AND ARTERIALS ASSUMES ADJACENT RESIDENTIAL UNIT AND GOLF COURSE CONSTRUCTION IS COMPLETE. IF ADJACENT CONSTRUCTION IS NOT COMPLETE, SUITABLE VEGETATIVE FILTER STRIP ALTERNATIVES MAY BE AVOIDABLE FOR TEMPORARY POLLUTION ABATEMENT.

TEMPORARY BMP MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

GENERAL NOTES:

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTON.

2. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASHOUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.

3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.

4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.

5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITION AT ALL TIMES.

6. STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.

7. AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.

8. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADIENT AREAS.

9. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATER SHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICE HAS BEEN STABILIZED.

10. ALL TEMPORARY BMP's WILL BE REMOVED ONCE WATERSHED IS STABILIZED.

11. MUD OR DIRT INADVERTENTLY TRACKED OFF-SITE AND ONTO EXISTING STREETS SHALL BE REMOVED IMMEDIATELY BY HAND OR MECHANICAL BROOM SWEEPING.

12. UPON COMPLETION OF THE PROJECT AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.

13. PRIOR TO INITIATION OF SUBSEQUENT PHASES OF CONSTRUCTION, TEMPORARY BMP's INCLUDING SILT FENCING, CONSTRUCTION ENTRANCE/EXIT, CONCRETE WASHOUT PIT, AND CONSTRUCTION STAGING AREA SHALL BE FIELD LOCATED AS APPROPRIATE FOR THE AREA OF CONSTRUTION.

14. TEMPORARY POLLUTION ABATEMENT MEASURES SHOWN ON THE PLAN ARE FOR THE OVERALL DEVELOPMENT. TEMPORARY BMP's MAY REQUIRE ADJUSTMENT BASED ON PHASING OF CONSTRUCITON OF THE DEVELOPMENT, AS SHOWN ON THIS SHEET. RECORDS OF ADJUSTMENTS AND REVISIONS SHALL BE MAINTAINED ON EXHIBIT 2 AS APPROPRIATE.

15. TEMPORARY BMP's SHOWN ON THIS SHEET ARE FOR GRAPHICAL PURPOSES AND MAY NOT BE TO SCALE. BMP'S SHALL BE LOCATED WITHIN THE PROJECT LIMITS.

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

1. WRITTEN CONSTRUCTION NOTIFICATION MUST BE GIVEN TO THE APPROPRIATE TCEQ REGIONAL OFFICE NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF THE REGULATED ACTIVITY. INFORMATION MUST INCLUDE THE DATE ON WHICH THE REGULATED ACTIVITY WILL COMMENCE, THE NAME OF THE APPROVED PLAN FOR THE REGULATED ACTIVITY, AND THE NAME OF THE PRIME CONTRACTOR AND THE NAME AND TELEPHONE NUMBER OF THE CONTACT PERSON.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN 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 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. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.

4. NO TEMPORARY ABOVEGROUND HYDROCARBON AND HAZARDOUS SUBSTANCE STORAGE TANK SYSTEM IS INSTALLED WITHIN 150 FEET OF A DOMESTIC, INDUSTRIAL, IRRIGATION, OR PUBLIC WATER SUPPLY WELL, OR OTHER SENSITIVE FEATURE.

5. PRIOR TO COMMENCEMENT OF CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND GOOD ENGINEERING PRACTICES. CONTROLS SPECIFIED IN THE TEMPORARY STORM WATER SECTION OF THE APPROVED EDWARDS AQUIFER PROTECTION PLAN ARE REQUIRED DURING CONSTRUCTION. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THE CONTROLS MUST REMAIN IN PLACE UNTIL DISTURBED AREAS ARE REVEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED.

6. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS TO WATER QUALITY (E.G., FUGITIVE SEDIMENT IN STREET BEING WASHED INTO SURFACE STREAMS OR SENSITIVE FEATURES BY THE NEXT RAIN).

7. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS NOT LATER THAN WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50%. A PERMANENT STAKE MUST BE PROVIDED THAT CAN INDICATE WHEN THE SEDIMENT OCCUPIES 50% OF THE BASIN VOLUME.

8. 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).

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. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARY OR PERMANENTLY CEASE IS PRECLUDED BY WEATHER CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 21 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF SITE. IN AREAS EXPERIENCING DROUGHTS WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED IS PRECLUDED BY SEASONAL ARID CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.

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 EDWARDS AQUIFER PROTECTION PLAN MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:

   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 RD.
SAN ANTONIO, TEXAS 78233-4480
PHONE: (210) 490-3096
FAX: (210) 545-4329

NOTE: THE GEOLOGIC ASSESSMENT WAS PREPARED BY PAPE-DAWSON ENGINEERS, INC. THE FEATURES SHOWN ON THIS EXHIBIT ARE FOR GRAPHICAL PURPOSES ONLY. REFER TO GEOLOGIC ASSESSMENT FOR DETAILS.

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

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EXHIBIT 2

REVISIONS:

STATE OF TEXAS
SHAUNA L. WEAVER
89512
LICENSED PROFESSIONAL ENGINEER
11-12-07

PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.9010

LADERA CANYON
MANN DEVELOPMENT, LTD.
TEMPORARY POLLUTION ABATEMENT PLAN

PLAT NO. ______

JOB NO. 6723-03
DATE FEBRUARY 2007
DESIGNER LKO
CHECKED SLW DRAWN RTM

LOT 30
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133-137 (R.D.P.C.C.)
RESIDENTIAL

LOT 29
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133-137 (R.D.P.C.C.)
RESIDENTIAL

LOT 22
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133-137 (R.D.P.C.C.)
RESIDENTIAL

LOT 21
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133-137 (R.D.P.C.C.)
RESIDENTIAL

LOT 20
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133-137 (R.D.P.C.C.)
RESIDENTIAL

LOT 13
BECK RANCH SUBDIVISION
UNIT 2
VOL. 7, PGS. 164-167 (R.D.P.C.C.)
RESIDENTIAL

LOT 14
BECK RANCH SUBDIVISION
UNIT 2
VOL. 7, PGS. 164-167 (R.D.P.C.C.)
RESIDENTIAL

LOT 15
BECK RANCH SUBDIVISION
UNIT 2
VOL. 7, PGS. 164-167 (R.D.P.C.C.)
RESIDENTIAL

LOT 19
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133-137 (R.D.P.C.C.)
RESIDENTIAL

LOT 16-B
BECK RANCH SUBDIVISION
UNIT 1
VOL. 7, PGS. 133-137 (R.D.P.C.C.)
RESIDENTIAL

A CALLED 28.46 ACRE TRACT
DOC. NO. 200106037405 (R.P.R.C.C.)
RESIDENTIAL

24.35 ACRES
DOC. NO. 200606033028
(R.P.R.C.C.)
UNDEVELOPED

A CALLED 184.7 ACRE TRACT
DOC. NO. 9606019971 (R.P.R.C.C.)

A CALLED 1279.3662 ACRE TRACT
VOL. 49, PGS. 754-773 (R.P.R.C.C.)
UNDEVELOPED

PROJECT LIMITS
185.1 AC

TEST WELL S-11 Kek

TEST WELL S-13

TEST WELL Kek

TEST WELL Kek

TEST WELL

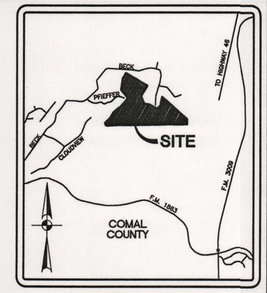
WELL LOCATION NOT WITHIN LADERA CANYON BOUNDARY

S-1 S-2 S-3 S-4 S-5 S-6 S-7 S-8 S-9 S-10 S-12 S-14 S-15 S-16,17 S-18 S-19,20,21 S-22 S-23 S-24 S-25,26 S-27 S-28 S-29 S-30 S-31 S-32,33 S-34 S-35 S-36 S-37 S-38 S-39 S-40,41 S-42 S-43

Kek Karu

1.3%

25%



LOCATION MAP
NOT-TO-SCALE

200 0 200 400

DRAWING SCALE: 1"= 200'

NOTE: THE GEOLOGIC ASSESSMENT WAS PREPARED BY PAPE-DAWSON ENGINEERS, INC. THE FEATURES SHOWN ON THIS EXHIBIT ARE FOR GRAPHICAL PURPOSES ONLY. REFER TO GEOLOGIC ASSESSMENT FOR DETAIL.

LEGEND

- W — WATER WELL
- PROJECT LIMITS
- 1160 — EXISTING CONTOURS
- 1200 — PROPOSED CONTOURS
- POSSIBLE FAULT (as located by aerial photographs)
- U / D — FAULT, LOCATED APPROXIMATELY (D, downthrown side; U, upthrown side)
- NON-KARST CLOSED DEPRESSION
- SINKHOLE
- SOLUTION CAVITY
- ZONE
- CAVE
- STRIKE OF VERTICAL JOINTS
- S-1 — POTENTIAL RECHARGE FEATURE
- DRAINAGE FLOW (EXISTING)
- SENSITIVE FEATURE BUFFER*
- 150' DIAMETER WELL BUFFER
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA.
- CONCRETE TRUCK WASHOUT PIT
- Kgru — GLEN ROSE FORMATION (UPPER)
- Kek — KAINER FORMATION

*NOTE: THE AREA WITHIN THE BUFFER FOR SENSITIVE FEATURES IS TO BE A CONSTRUCTION FREE ZONE.
**NOTE: POTENTIAL IMPERVIOUS COVER LAYOUT.

SUMMARY OF PERMANENT POLLUTION 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 MIX 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 (2000). 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.) NO OTHER PERMANENT BMP'S ARE REQUIRED, AS THE TOTAL IMPERVIOUS COVER FOR THIS SITE IS LESS THAN 20%

5.) NOTE: TYPICAL SLOPES ON THIS SITE WILL RANGE FROM 1.3% TO 25%

6.) PER SECTION 5.1.2: "SENSITIVE FEATURES" OF THE TCEQ TGM RG-348 (2005)
"IT IS RECOMMENDED THAT THE BUFFERS AROUND A POINT RECHARGE FEATURE OR CLUSTER OF CONTIGUOUS POINT RECHARGE FEATURES BE MAINTAINED IN A NATURAL STATE TO THE MAXIMUM PRACTICAL EXTENT. THIS IMPLIES A CONSTRUCTION-FREE ZONE. ACTIVITIES AND STRUCTURES ALLOWED WITHIN BUFFER ZONES ARE LIMITED. HIKING TRAILS MAY BE LOCATED IN BUFFER ZONES AS LONG AS THEY ARE AT LEAST 50 FEET FROM THE FEATURE. WHEN ALL OR A PORTION OF THE BUFFER FOR A SENSITIVE FEATURE IS LOCATED WITHIN THE YARD OF A RESIDENTIAL TRACT, IT SHOULD BE SEPARATED BY A BARRIER, SUCH AS A FENCE, FROM CONVENTIONAL LANDSCAPING AND MAINTAINED IN THE NATURAL STATE. THE "NATURAL STATE" OF A BUFFER WILL TYPICALLY BE A COMBINATION OF DENSE NATIVE GRASSES AND FORBS IN A MOSAIC OF SHRUBS AND TREES.

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EXHIBIT 3

REVISIONS:

STATE OF TEXAS
SHAUNA L. WEAVER
89512
LICENSED
PROFESSIONAL ENGINEER
5-14-07

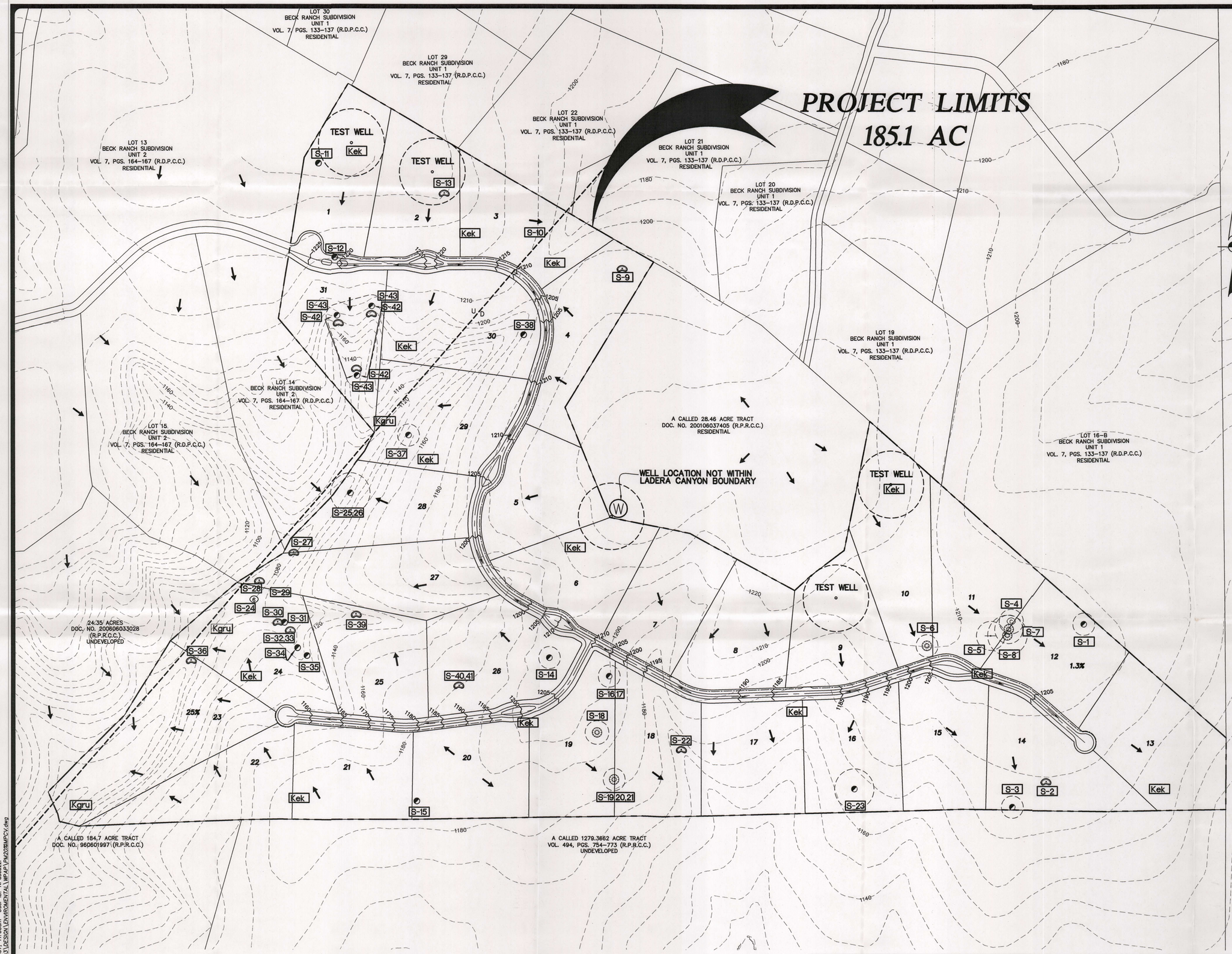
PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO TEXAS 78216 | PHONE: 210.375.9000 FAX: 210.375.8010

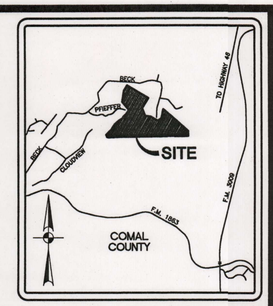
LADERA CANYON
MANN DEVELOPMENT, LTD.
PERMANENT POLLUTION ABATEMENT PLAN

PLAT NO. _____

JOB NO. 6723-03
DATE FEBRUARY 2007
DESIGNER LKO
CHECKED SLW DRAWN RTM

Date: Dec 04, 2007, 1:33pm User ID: LOstrander
File: P:\67\23\CAD\DESIGN\ENVIROMENTAL\WPAP\Vm2208MPCV.dwg





LOCATION MAP
NOT-TO-SCALE

200 0 200 400

DRAWING SCALE: 1" = 200'

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LEGEND

- (W) WATER WELL
- PROJECT LIMITS
- 1160 EXISTING CONTOURS
- 1200 PROPOSED CONTOURS
- POSSIBLE FAULT (as located by aerial photographs)
- U / D FAULT, LOCATED APPROXIMATELY (D, downthrown side; U, upthrown side)
- NON-KARST CLOSED DEPRESSION
- SINKHOLE
- SOLUTION CAVITY
- ZONE
- CAVE
- STRIKE OF VERTICAL JOINTS
- S-1 POTENTIAL RECHARGE FEATURE
- DRAINAGE FLOW (EXISTING)
- 50' DIAMETER BUFFER FROM EDGE OF SENSITIVE FEATURE*
- 150' DIAMETER WELL BUFFER
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA.
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EXHIBIT 3

REVISIONS:

STATE OF TEXAS — SHAUNA L. WEAVER — 89512 — LICENSED PROFESSIONAL ENGINEER — 11-12-07

PAPE-DAWSON ENGINEERS
PHONE: 210.375.9000
FAX: 210.375.9010
SAN ANTONIO TEXAS 78216
555 EAST RAMSEY

LADERA CANYON
MANN DEVELOPMENT, LTD.
PERMANENT POLLUTION ABATEMENT PLAN

PLAT NO. _____

JOB NO. 6723-03
DATE FEBRUARY 2007
DESIGNER LKO
CHECKED SLW DRAWN RTM

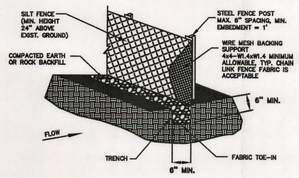
Date: Nov 02, 2007, 11:00am User ID: MPasquini
File: P:\6723\03\DESIGN\ENVIRONMENTAL\PAPLVH2038MPCV.dwg

SILT FENCE

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.



ISOMETRIC PLAN VIEW

N.T.S.

Schematic of a Silt Fence Installation (NCTCOG, 1993b)

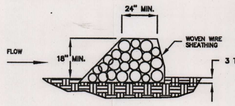
MATERIALS:
(1) Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in2, ultraviolet stability exceeding 70%, and minimum apparent opening size of u.s. sieve no. 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 nominal weight 1.25 lb/ft2, 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).

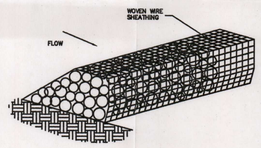
INSPECTION AND MAINTENANCE GUIDELINES.
(1) Inspect all fencing weekly, and after rainfall.
(2) Remove sediment when buildup reaches 6 inches.
(3) Replace torn fabric or install a second line of fencing parallel to the torn section.
(4) Replace or repair sections crushed or collapsed in the course of 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



CROSS SECTION

N.T.S.



ISOMETRIC PLAN VIEW

N.T.S.

Schematic Diagram of a Rock Berm (NCTCOG, 1993)

ROCK BERMS
The purpose of a rock berm is to serve as a check dam in areas of concentrated flow, to intercept sediment-laden runoff, detain the sediment and release the water in sheet flow. The rock berm should be used when the contributing drainage area is less than 5 acres. Rock berms are used in areas where the volume of runoff is too great for a silt fence to contain. They are less effective for sediment removal than silt fences, particularly for fine particles, but are able to withstand higher flows than a silt fence. As such, rock berms are often used in areas of channel flows (ditches, gullies, etc.). Rock berms are most effective at reducing bed load in channels and should not be substituted for other erosion and sediment control measures farther up the watershed.

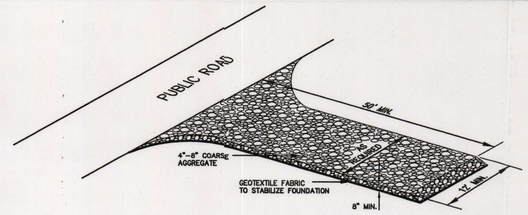
MATERIALS:
(1) The berm structure should be secured with a woven wire sheathing having maximum opening of 1 inch and a minimum wire diameter of 20 gauge galvanized and should be secured with shoat rings.
(2) Clean, open graded 3- to 5-inch diameter rock should be used, except in areas where high velocities or large volumes of flow are expected, where 5- to 8-inch diameter rocks may be used.

INSTALLATION:
(1) Lay out the woven wire sheathing perpendicular to the flow line. The sheathing should be 20 gauge woven wire mesh with 1 inch openings.
(2) Berm should have a top width of 2 feet minimum with side slopes being 2:1 (H:V) or flatter.
(3) Place the rock along the sheathing as shown in the diagram to a height not less than 18".
(4) Wrap the wire sheathing around the rock and secure with tie wire so that the ends of the sheathing overlap at least 2 inches, and the berm retains its shape when walked upon.
(5) Berm should be built along the contour at zero percent grade or as near as possible.
(6) The ends of the berm should be tied into existing upslope grade and the berm should be buried in a trench approximately 3 to 4 inches deep to prevent failure of the control.

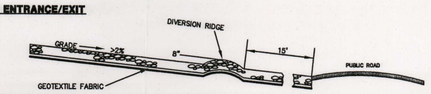
COMMON TROUBLE POINTS:
(1) Insufficient berm height or length (runoff quickly escapes over the top or around the sides of berm).
(2) Berm not installed perpendicular to flow line (runoff escaping around one side).

INSPECTION AND MAINTENANCE GUIDELINES.
(1) Inspection should be made weekly and after each rainfall by the responsible party. For installations in streambeds, additional daily inspections should be made. (2) Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.
(3) Repair any loose wire sheathing.
(4) The berm should be reshaped as needed during inspection.
(5) The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc. (6) The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.

ROCK BERM



SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT



MATERIALS:
(1) The aggregate should consist of 4 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.

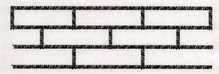
INSTALLATION:
(1) Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.
(2) The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.
(3) The construction entrance should be at least 50 feet long.
(4) If the slope toward the road exceeds 2%, construct a ridge, 6 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.

CROSS-SECTION OF A CONSTRUCTION ENTRANCE/EXIT

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.

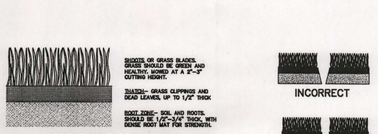
INSPECTION AND MAINTENANCE GUIDELINES:
(1) The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used 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

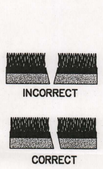


LAY SOD IN A STAGGERED PATTERN. BUTT THE STRIPS TIGHTLY AGAINST EACH OTHER. DO NOT LEAVE SPACES AND DO NOT OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE ENDS AND TRIMMING PIECES.

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

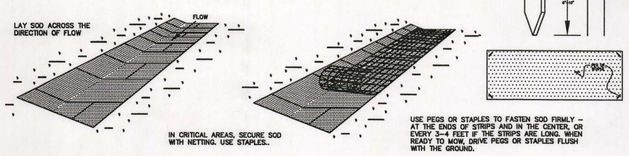


APPEARANCE OF GOOD SOD



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

SOD INSTALLATION



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.

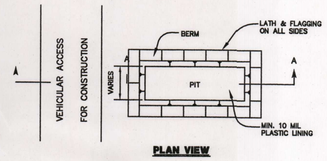
Site Preparation:
(1) Prior to soil preparation, areas to be sodded should be brought to final grade in accordance with the approved plan.
(2) The surface should be cleared of all trash, debris and of all roots, brush, wire, grade stakes and other objects that would interfere with planting, fertilizing 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 IVA 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 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.

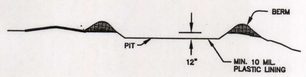
Inspection and Maintenance Guidelines:
(1) Sod should be inspected weekly and after each rain event to locate and repair any damage.
(2) Damage from storms or normal construction activities such as tire rute or disturbance of swale stabilization should be repaired as soon as practical.

CHANNEL LINING



PLAN VIEW

GENERAL NOTES:
- Detail above illustrates minimum dimensions. Pit can be increased in size depending on expected frequency of use.
- Washout pit shall be located in an area easily accessible to construction traffic.
- Washout pit shall not be located in areas subject to inundation from storm water runoff.
- Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies.
- Temporary concrete washout facility should be constructed with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.

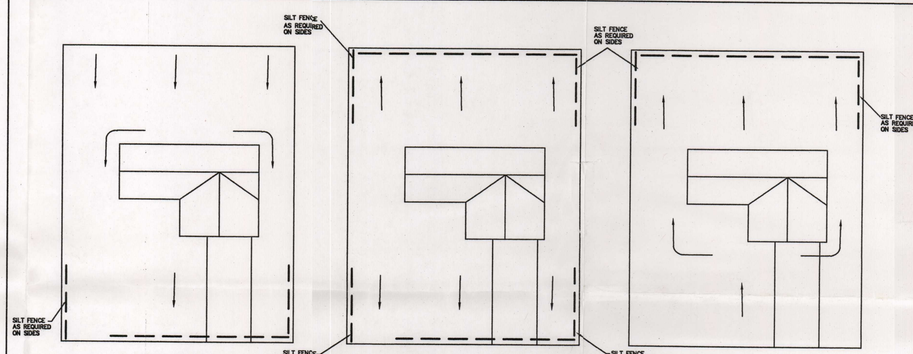


SECTION A-A

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.
- When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of.
- Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of.
- Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

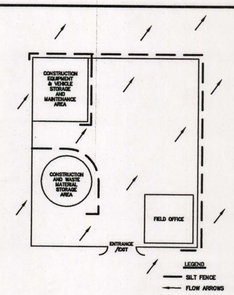
CONCRETE TRUCK WASHOUT PIT



LOT TYPE-A **LOT TYPE-B** **LOT TYPE-C**

TYP. HOUSE LOTS

TYPICAL PROCEDURE FOR TEMPORARY POLLUTION ABATEMENT MEASURES FOR RESIDENTIAL AREAS



TYP. CONSTRUCTION STAGING AREA

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET FOR THE CONSTRUCTION STAGING AREA ONLY. ALL OTHER INFORMATION IS FROM TCEQ'S TECHNICAL GUIDANCE MANUAL.

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

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

EXHIBIT 4

REVISIONS:

PAPE-DAWSON ENGINEERS
555 EAST RAMSEY | SAN ANTONIO, TEXAS 78216 | PHONE: 210.375.9000 | FAX: 210.375.9010

STATE OF TEXAS — SHAUNA L. WEAVER — 89512 — LICENSED PROFESSIONAL ENGINEER — 11-2-07

LADERA CANYON
MANN DEVELOPMENT, LTD.
TEMPORARY POLLUTION ABATEMENT DETAILS

PLAT NO. ____

JOB NO. 6723-03
DATE FEBRUARY 2007
DESIGNER LKO
CHECKED SLW DRAWN RTM

Date: Nov 02, 2007, 10:59am User ID: NPasquiz
File: P:\6723\CAD\DESIGN\ENVIRONMENTAL\WPAP\SD672303.dwg

RECEIVED
NOV 18 2009
COUNTY ENGINEER

PAPE-DAWSON ENGINEERS

LAND DEVELOPMENT ENVIRONMENTAL TRANSPORTATION WATER RESOURCES SURVEYING

November 9, 2009

RECEIVED TCEQ
SAN ANTONIO
REGION
2009 NOV 13 PM 12:02

Ms. Lynn Bumguardner
TCEQ Region 13
14250 Judson Road
San Antonio, Texas 78233-4480

Re: Ladera Canyon (TCEQ File No. 2714.00)
Water Pollution Abatement Plan Extension – 1st Extension Request

Dear Ms. Bumguardner:

On behalf of our client, Mann Development, Ltd., Pape-Dawson Engineers, Inc. prepared and submitted a Water Pollution Abatement Plan (WPAP) for the development of the above referenced project. The original WPAP was approved by the Texas Commission on Environmental Quality (TCEQ) on December 7, 2007. No activity has commenced on the project and the approval is currently set to expire on December 7, 2009.

Mann Development, Ltd. continues to plan for construction of this development, but they are not prepared to begin construction at this time. Consequently, as provided for in the TCEQ regulations 30 TAC 213.4(h), we request approval of a six-month extension to the term of approval for the Ladera Canyon Water Pollution Abatement Plan. There are no changes or modifications proposed to the originally approved plan at this time. Attached you will find:

- TCEQ Extension Request Form
- Copy of the Approval Letter
- Agent Authorization Form
- Fee Form
- Core Data Form
- Check in the amount of $100

Updated customer contact information has been provided on the Core Data Form.

RECEIVED
NOV 18 2009
COUNTY ENGINEER

Should you have any questions regarding this request, please contact our office.

Sincerely,
Pape-Dawson Engineers, Inc.
Texas Board of Professional Engineers, Firm Registration #470

Charles P. "Frosty" Forster, P.E., P.G.
Vice President, Environmental

11/13/09

Attachments

P:\67\23\03\Word\WPAP\Extension\091106a1.doc

RECEIVED
NOV 18 2009
COUNTY ENGINEER

Extension Request for an
Edwards Aquifer Protection Plan
Relating to 30 TAC §213.4(g)
Effective June 1, 1999

1. Regulated Entity information. If requested by an agent, attach the agent authorization form.

Regulated Entity Name: ***Ladera Canyon***

Customer (Applicant):	***Mann Development, Ltd.***		
Contact Person:	***Richard Masling***		
Entity:	***Mann Development, Ltd.***		
Mailing Address:	***13333 Blanco Road, Suite 306***		
City, State:	***San Antonio, Texas***	Zip:	***78216***
Telephone:	***(210) 491-0420***	FAX:	***(210)491-0540***

Agent:	***Pape-Dawson Engineers, Inc.***		
Contact Person:	***Charles P. "Frosty" Forster, P.E., P.G.***		
Mailing Address:	***555 East Ramsey***		
City, State:	***San Antonio, Texas***	Zip:	***78216***
Telephone:	***(210) 375-9000***	FAX:	***(210) 375-9040***

2. ✓ **ATTACHMENT A - Approval Letter or Extension Approval.** Attach a copy of the last approval letter or the last approved extension.
   Date of letter: ***12/7/07***
   Expiration date: ***12/7/09***

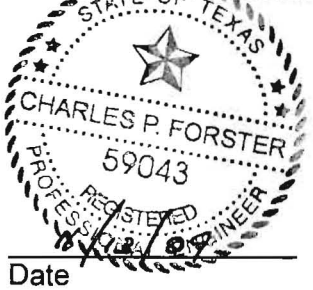
3. ✓ This extension request is submitted not earlier than sixty (60) days prior to the expiration date of an approved Edwards Aquifer protection plan or a previously approved extension.

4. ✓ A completed fee form is attached. The fee for a six-month extension of time is $150.

Texas Board of Professional Engineers, Firm Registration #470

Charles P. "Frosty" Forster, P.E., P.G.
Print Name of Customer/Agent

Signature of Customer/Agent



Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 7, 2007

Mr. Richard Masling
Mann Development, Ltd.
150 N. Loop 1604 East, Suite 202
San Antonio, Texas 78232

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Ladera Canyon Residential Subdivision; Located at the end of Pfeiffer Road, off of F.M. 1863; Bulverde ETJ, 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. 2714.00; Investigation No. 595936; Regulated Entity No. RN105345300

Dear Mr. Masling:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the above-referenced project submitted to the San Antonio Regional Office by Pape-Dawson Engineers, Inc. on behalf of Mann Development, Ltd. on September 21, 2007. Final review of the WPAP was completed after additional material was received on November 13, 2007 and December 4, 2007. 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 single family residential project will have an area of approximately 185.1 acres. It will include 31 single family residential lots and associated roadways for the subdivision. The impervious cover will be 15.2 acres (8.2%). According to a letter dated, September 13, 2007, signed by Robert Boyd, P.E., with Comal County, the site in the development is acceptable for the use of on-site sewage facilities.

PERMANENT POLLUTION ABATEMENT MEASURES

Since this single-family residential project will not have more than 20 percent impervious cover, an exemption from permanent BMPs to treat TSS generated by the site, is approved. The permanent natural

buffer areas for sensitive features were designed using the TCEQ technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (2005). The individual buffer areas for sensitive features can be seen in the enclosed Attachment A, taken from the WPAP, "TCEQ Response Exhibit A". Temporary BMPs (silt fence) will be installed outside the entire buffer area for each sensitive feature. The natural buffer area will be shown on the subdivision plat and for individual lot plats as a construction free area.

GEOLOGY

According to the geologic assessment included with the application, 18 sensitive geologic features were evaluated at the project site. Four water wells were also located at the site and scored as not sensitive by the project geologist. These wells are in use and comply with 16 TAC Chapter 76. The San Antonio Regional Office site assessment conducted on November 28, 2007 revealed the site as described by the geologic assessment and site plan. The following table summarizes the sensitive features and the BMP measures for each feature.

Sensitive Feature and Water Well BMP Summary

Feature ID	Feature Type	BMP Provided	BMP Sizing
S-1	SC	Natural buffer area	50 foot radius in all directions
S-3	SC	Natural buffer area	50 foot radius in all directions
S-4	C	Natural buffer area	50 foot radius in all directions
S-5	SF	Natural buffer area	50 foot radius in all directions
S-6	SH	Natural buffer area	50 foot radius in all directions
S-7	SH	Natural buffer area	50 foot radius in all directions and 65 feet upgradient from the edge of the feature
S-8	SH	Natural buffer area	50 foot radius in all directions and 130 feet upgradient from the edge of the feature
S-14	SC	Natural buffer area	50 foot radius in all directions
S-16	SC	Natural buffer area	50 foot radius in all directions
S-17	SC	Natural buffer area	50 foot radius in all directions
S-18	SH	Natural buffer area	50 foot radius in all directions
S-20	SC	Natural buffer area	50 foot radius in all directions
S-21	SC	Natural buffer area	50 foot radius in all directions
S-23	SCZ	Natural buffer area	50 foot radius in all directions and 100 feet upgradient from the edge of the feature
S-25	SC	Natural buffer area	50 foot radius in all directions and 80 feet upgradient from the edge of the feature
S-26	SCZ	Natural buffer area	50 foot radius in all directions and 80 feet upgradient from the edge of the feature
S-37	SC	Natural buffer area	50 foot radius in all directions
S-42	SCZ	Natural buffer area	50 foot radius in all directions
S-44	MB (water well)	OSSF separation distance	150 foot radius in all directions
S-45	MB (water well)	OSSF separation distance	150 foot radius in all directions
S-46	MB (water well)	OSSF separation distance	150 foot radius in all directions
S-47	MB (water well)	OSSF separation distance	150 foot radius in all directions

SC: Solution cavity C: Cave SF: Solution fractures SH: Sink hole SCZ: Solution cavity zone
MB: Manmade feature in bedrock

SPECIAL CONDITIONS

I. The holder of the approved Edwards Aquifer WPAP must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the application.

II. 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.

III. Since this project will not have more than 20% impervious cover, an exemption from permanent BMPs is approved. If the percent impervious cover ever increases above 20% or the land use changes, the exemption for the whole site as described in the property boundaries required by §213.4(g), may no longer apply and the property owner must notify the appropriate regional office of these changes.

IV. Update the site plan and residential lot plats to reflect the separation distances of OSSF systems from sensitive recharge features defined in 30 TAC §285.91, Table 10, and provide below:

- no sewage treatment tank or holding tank may be located within 50 feet of a sensitive recharge feature,
- no soil absorption system may be located within 150 feet of a sensitive recharge feature, and
- no surface application (edge of spray area) may be located within 150 feet of a sensitive recharge feature.

Provide 4 copies of the updated site plan detailing these separation distances to the TCEQ San Antonio Regional Office prior to the commencement of construction.

V. If a cave gate is installed on feature S-4, refer to Chapter 5, Section 5.1.3 of the TGM (2005) for information on cave gates. Provide a file update to the TCEQ, within 30 days of cave gate completion, with photographs demonstrating the installed cave gate.

VI. The natural buffer areas provided in the residential lot plats and the subdivision plat shall have the same dimensions as the buffer areas seen in the enclosed Attachment A.

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.

<u>During Construction:</u>

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. Four 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.

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 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 Charly Fritz of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4065.

Sincerely,

Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/CEF/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Attachment A, Taken from WPAP, TCEQ Response Exhibit A

cc: Ms. Shauna Weaver, P.E., Pape-Dawson Engineers, Inc.
Ms. Sarah Stevick, City of Bulverde
Mr. Tom Hornseth, P.E., Comal County
Ms. Velma Danielson, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

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

I ***Richard Masling***,
Print Name

President
Title - Owner/President/Other

of ***Mann Development, Ltd.***
Corporation/Partnership/Entity Name

have authorized ***Pape-Dawson Engineers, Inc.***
Print Name of Agent/Engineer

of ***Pape-Dawson Engineers, Inc.***
Print Name of Firm

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

I also understand that:

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

2. For applicants 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.

Applicant's Signature

11/10/09
Date

THE STATE OF Texas §

County of Bexar §

BEFORE ME, the undersigned authority, on this day personally appeared Richard Masling 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 10th day of November, 2009.

TRACEY STEPHENS
NOTARY PUBLIC STATE OF TEXAS
COMMISSION EXPIRES:
07-09-2012

Tracey Stephens
NOTARY PUBLIC

Tracey Stephens
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 7/9/2012

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Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Application Fee Form

NAME OF PROPOSED REGULATED ENTITY: ***Ladera Canyon***
REGULATED ENTITY LOCATION: ***North of FM 1863 and east of the intersection of Beck Rd and Pfeiffer Rd***
NAME OF CUSTOMER: ***Mann Development, Ltd.***
CONTACT PERSON: ***Richard Masling*** PHONE: ***(210) 491-0420***
(Please Print)

Customer Reference Number (if issued): CN ***601420094*** (nine digits)

Regulated Entity Reference Number (if issued): RN ***105345300*** (nine digits)

Austin Regional Office (3373) ☐ Hays ☐ Travis ☐ Williamson

San Antonio Regional Office (3362) ☒ Bexar ☐ Comal ☐ Medina ☐ Kinney ☐ Uvalde

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 (Check One):

☐ **Austin Regional Office**

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

☒ **San Antonio Regional Office**

☐ **Overnight Delivery to TCEQ**:
TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
512/239-0347

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	Acres	$
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	***1*** Each	$ ***150.00***

Signature

11/13/09
Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.
Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Application Fee Schedule
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

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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. Attachments **Describe Any Attachments:** *(ex. Title V Application, Waste Transporter Application, etc.)*

☒Yes ☐No — WPAP - 1st Extension Request

3. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	4. Regulated Entity Reference Number *(if issued)*
CN 601420094		RN 105345300

SECTION II: Customer Information

5. Effective Date for Customer Information Updates (mm/dd/yyyy) 11/6/2009

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

☒Owner ☐Operator ☐Owner & Operator
☐Occupational Licensee ☐Responsible Party ☐Voluntary Cleanup Applicant ☐Other: _____

7. General Customer Information

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State) ☐ No Change**

If "No Change" and Section I is complete, skip to Section III – Regulated Entity Information.

8. Type of Customer:			
☐ City Government	☐ County Government	☐ Federal Government	☐ State Government
☐ Other Government	☐ General Partnership	☒ Limited Partnership	☐ Other:

9. Customer Legal Name *(If an individual, print last name first: ex: Doe, John)*	*If new Customer, enter previous Customer below*	*End Date:*
Mann Development, Ltd.		

10. Mailing Address:

13333 Blanco Road							
Suite 306							
City	San Antonio	**State**	TX	**ZIP**	78216	**ZIP + 4**	7756

11. Country Mailing Information *(if outside USA)*	12. E-Mail Address *(if applicable)*

13. Telephone Number	14. Extension or Code	15. Fax Number *(if applicable)*
(210) 491-0420		(210) 491-0540

16. Federal Tax ID *(9 digits)*	17. TX State Franchise Tax ID *(11 digits)*	18. DUNS Number *(if applicable)*	19. TX SOS Filing Number *(if applicable)*
742973540	32036140872		0013699710

20. Number of Employees

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

21. Independently Owned and Operated?

☒ Yes ☐ No

SECTION III: Regulated Entity Information

22. 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 ☒ No Change** *(See below)*

****If "NO CHANGE" is checked and Section I is complete, skip to Section IV, Preparer Information.**

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

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24. Street Address of the Regulated Entity: *(No P.O. Boxes)*								
	City		State		ZIP		ZIP + 4	
25. Mailing Address:								
	City		State		ZIP		ZIP + 4	

26. E-Mail Address:		
27. Telephone Number	28. Extension or Code	29. Fax Number *(if applicable)*
( ) -		( ) -

30. Primary SIC Code (4 digits)	31. Secondary SIC Code (4 digits)	32. Primary NAICS Code (5 or 6 digits)	33. Secondary NAICS Code (5 or 6 digits)

34. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*

Questions 34 – 37 address geographic location. Please refer to the instructions for applicability.

35. Description to Physical Location:			
36. Nearest City	County	State	Nearest ZIP Code

37. Latitude (N) In Decimal:			38. Longitude (W) In Decimal:		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

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 or the updates may not be made. If your Program is not listed, check other and write it in. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Industrial Hazardous Waste	☐ Municipal Solid Waste
☐ New Source Review – Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS	☐ Sludge
☐ Stormwater	☐ Title V – Air	☐ Tires	☐ Used Oil	☐ Utilities
☐ Voluntary Cleanup	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Miranda Briones, E.I.T., LEED® AP	41. Title:	Engineer III

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 375-9000		(210) 375-9010	mbriones@pape-dawson.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 9 and/or as required for the updates to the ID numbers identified in field 39.

(See the Core Data Form instructions for more information on who should sign this form.)

Company:	Pape-Dawson Engineers, Inc.	Job Title:	Vice President, Environmental
Name *(In Print)*:	Charles P. "Frosty" Forster, P.E., P.G.	Phone:	(210) 375-9000
Signature:	Charles P. Forster	Date:	11/13/09

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MANN DEVELOPMENT, LTD.
13333 BLANCO ROAD, SUITE 306
SAN ANTONIO, TX 78216
PH. (210) 491-0420

WESTERN NATIONAL BANK
SAN ANTONIO, TX 78216

1425

88-737/1163

DATE
Nov 10, 2009

AMOUNT
$ 150.00

One Hundred Fifty and 00/100 Dollars

PAY TO THE ORDER OF:
TX Commission on Environmental Quality
PO Box 13089
Austin, TX 78711-3089

Dan Mann MP
AUTHORIZED SIGNATURE

Details on Back.
Security Features Included

⑈001425⑈ ⑆111630737⑆ 8220144 7⑈