Robert J. Huston, *Chairman* R. B. "Ralph" Marquez, *Commissioner* John M. Baker, *Commissioner* Jeffrey A. Saitas, *Executive Director*



TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

July 23, 2001

Mr. Mark Kensing, P.E. Kensing Iron Works, Inc. 3950 Highway 46 West New Braunfels, TX 78132

Re: Edwards Aquifer, Comal County

NAME OF PROJECT: Kensing Iron Works, Inc.; Located at 3950 Highway 46 West; Comal County, 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 File No. 1616 00

Edwards Aquifer Protection Program File No. 1616.00

Dear Mr. Kensing:

The Texas Natural Resource Conservation Commission (TNRCC) has completed its review of the WPAP application for the referenced project submitted to the San Antonio Regional Office by Stephen Forbes, P.E. of Forbes Environmental Engineering, Inc. on behalf of Kensing Iron Works, Inc. on December 20, 2000. Final review of the WPAP submittal was completed after additional material was received on July 2, 2001. As presented to the TNRCC, the 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'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 must be filed no later than 20 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 industrial project will have an area of approximately 4.9 acres. This plan addresses the two existing buildings located on site plus the construction of two additional buildings. The existing buildings are 3,305 square feet (open ended) and 13,851 square feet (two-story). The proposed buildings will be approximately 14,080 square feet and 18,750 square feet. There will be a total of 0.5 acres of parking and paved surfaces. The impervious cover will be 1.36 acres (28.3 percent). A license to operate a private sewage facility was issued by the Comal County Engineer, Thomas Hornseth, P.E., on July 22, 1998.

PERMANENT POLLUTION ABATEMENT MEASURES

A vegetated filter strip designed using the TNRCC technical guidance document, Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices (June 1999) will be constructed

REPLY TO: REGION 13 • 14250 JUDSON RD. • SAN ANTONIO, TEXAS 78233-4480 • 210/490-3096 • FAX 210/545-4329

Mr. Mark Kensing, P.E. Page 2 July 23, 2001

to treat storm water runoff. The vegetated filter strip of 0.66 acres is designed to provide treatment for 1.36 acres of impervious cover. The approved measures have been presented to meet the required 80 percent removal of the increased load in total suspended solids caused by the project.

GEOLOGY

According to the geologic assessment included with the application, no geologic or man-made features were identified on site. The San Antonio Regional Office did not conduct a site assessment investigation for this project.

STANDARD CONDITIONS

1. Pursuant to §26.136 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, TNRCC-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 file 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. The TNRCC 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

Mr. Mark Kensing, P.E. Page 3 July 23, 2001

cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

- 8. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
- 9. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.
- 10. 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 the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TNRCC-10263) is enclosed.

Mr. Mark Kensing, P.E. Page 4 July 23, 2001

- 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 Lynn M. Bumguardner of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4023.

Sincere · PUN

Jeffrey A. Saitas, P.E. Executive Director Texas Natural Resource Conservation Commission

JAS/LMB/eg

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

 cc: Mr. Stephen Forbes, P.E., Forbes Environmental Engineering, Inc. Mr. Mike Shands, City of New Braunfels Mr. John Bohuslav, TXDOT San Antonio District Mr. Thomas Hornseth, P.E. Comal County Mr. Greg Ellis, Edwards Aquifer Authority Mr. Malcolm Ferris, San Antonio Regional Office TNRCC Field Operations

TNRRG LOFRES.

RECEIVED

COUNTY ENGINEER

SECTION 1.0, ATTACHMENT C - PROJECT DESCRIPTION 2001 JUL -2 AM 8: 57 JUL 1 3 2001

(Response to Question 9)

INTRODUCTION

The following is a description of the partially completed and the additional proposed construction conducted at Kensing Iron Works, Inc., located at 3950 Highway 46 West, near the State Route 2722 intersection, Comal County, New Braunfels, Texas. This application is submitted in order to satisfy the conditions of the Aareed Order Docket Number 1999-1163-EAQ-E set forth by the Texas Natural Resource Conservation Commission against Kensing Iron Works, Inc.

This application includes a description of the Geologic Assessment(Section 2.0 of the application), the Water Pollution Abatement Plan(Section 3.0 of the application), construction or temporary storm water management plan(Section 4.0 of the application) and the permanent stormwater management plan(Section 5.0 of this application). All figures are located in the appropriate sections.

The "project site" (Site) is defined as an industrial 30 acre lot occupied by Kensing Iron Works, Inc. Kensing has previously installed and operated a steel and iron welding facility on the project Site. For the purpose of this application only 4.9 acres are being requested for permitting. None of the other 25.1 acres will be developed. There are two buildings located on the property. One building is a 13,851 square foot two story building. The top floor of this building is used as office space and the bottom floor is used for steel and iron welding. The other building is a 3,305 square foot open ended building used for spray painting.

Additional construction consists of the completion of two additional proposed buildings, which will also be used for metal fabrication purposes. One building will be approximately 14,080 square feet and the other is approximately 18,750 square feet. The Site figures identify the project site area and show physical features including the geologic formation and drainage pathways within the general vicinity of the Site. There are no existing water wells on-site and there are no plans for construction of a new water well.

GEOLOGIC ASSESSMENT

Since the project site is located on the EARZ a Geologic Assessment is required in accordance with 30 TAC §313.4. The assessment was conducted by a qualified geologist on January 2, 2000. The following summarizes the findings of the assessment as presented in Section 2.0 of the Application.

This site is located entirely within the Edwards Aguifer Transition Zone (EATZ). No downgradient assessment of geology was performed, since the 100 year flood zone is not located in the downgradient area. Stratigraphically the site appears to be located within the undivided Edwards Limestone Groups.

Kensing Iron Works Section 1.0 – Attachment C Page 2

TEMPORARY WPAP

The temporary Stormwater management plan is included in Section 4.0 of this application. The following summarizes the construction storm water management practices to be implemented during construction.

Site access and egress will be over a stabilized construction entrance/exit. Run on will be prevented from entering the construction area. Silt fencing will be placed downgradient of the entire construction area to treat stormwater runoff that may be impacted by construction activities. Silt fencing will not be placed to intercept runoff that is not affected by construction activity.

PERMANENT WPAP

The project Site permanent storm water management plan(SMP) is based on design criteria for the vegetated filter strips taken from the "Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices" RG-348 dated June 1999. The project site does not receive a significant amount of run-on from the upgradient areas due to diversion of run-on by bar ditches along Highway 46. The calculations and Figures are located in Section 5.0.



GEOLOGIC ASSESSMENT FOR REGULATED ACTIVITIES ON THE EDWARDS AQUIFER RECHARGE/TRANSITION ZONES AND RELATING TO 30 TAC §213.5(b)(3), EFFECTIVE JUNE 1, 1999

PROJECT NAME:	Kensing Iron Work	<u>ks, Inc.</u>	
TYPE OF PROJECT:	_X_WPAPAST _	_SCS _UST	
LOCATION OF PROJE	CT: X Recharge Zone	Transition Zone	_ Contributing Zone within the Transition Zone

PROJECT INFORMATION

- 1. <u>X</u> Geologic or manmade features are described and evaluated using the attached **GEOLOGIC ASSESSMENT TABLE**.
- 2. Soil cover on the project site is 10 15 feet thick. In general, the soil present appears to have the ability to:

_____transmit fluid flow to the subsurface. _X__impede fluid flow to the subsurface.

- 3. <u>X</u> SOILS ATTACHMENT. A narrative description of soil units and a soil profile, including thickness and hydrologic characteristics are attached at the end of this form.
- 4. <u>X</u> A **STRATIGRAPHIC COLUMN** is attached at the end of this form that shows formations, members, and thicknesses. The outcropping unit should be at the top of the stratigraphic column.
- 5. <u>X</u> A NARRATIVE DESCRIPTION OF SITE SPECIFIC GEOLOGY is attached at the end of this form. The description must include a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure, and karst characteristics of the site.
- 6. <u>X</u> Appropriate SITE GEOLOGIC MAP(S) are attached:

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

Applicant's Site Plan Scale	1" = _	250	'
Site Geologic Map Scale	1" = _	250	

- Method of collecting positional data:
 <u>NA</u> Global Positioning System (GPS) technology.
 <u>NA</u> Other method(s).
- 8. <u>X</u> The project site is shown and labeled on the Site Geologic Map.
- 9. X Surface geologic units are shown and labeled on the Site Geologic Map.



WATER POLLUTION ABATEMENT PLAN APPLICATION

FOR REGULATED ACTIVITIES ON THE EDWARDS AQUIFER RECHARGE ZONE AND RELATING TO 30 TAC §213.5(b), EFFECTIVE JUNE 1, 1999

PROJECT NAME: Kensing Iron Works, Inc.

PROJECT INFORMATION

- 1. The type of project is:
 - Residential: # of Lots:
 - Residential: # of Living Unit Equivalents:
 - Commercial
 - X Industrial
 - Other:
- 2. Total site acreage (size of property): <u>4.8 acres</u>
- 3. Projected population: <u>10 people</u>
- 4. The amount and type of impervious cover expected after construction are shown below:

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	45,224 sq. ft.	÷ 43,560 =	1.03 acres
Parking	15,981 sq. ft.	÷ 43,560 =	0.37 acres
Other paved surfaces ·	5,702 sq. ft.	÷ 43,560 =	0.13 acres
Total Impervious Cover	59,452 sq. ft.	÷ 43,560 =	1.36 acres
Total Impervious Cover ÷ Total Acreage x 100 =			28.3 %

- 5. <u>X</u> ATTACHMENT A Factors Affecting Water Quality. A description of any factors that could affect surface water and groundwater quality is provided at the end of this form.
- 6. X Only inert materials as defined by 30 TAC 330.2 will be used as fill material.

FOR ROAD PROJECTS ONLY (NOT APPLICABLE) Complete questions 7-12 if this application is exclusively for a road project.

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

- Type of pavement or road surface to be used: 8.
 - Concrete
 - Asphaltic concrete pavement
 - Other:
- 9 Length of Right of Way (R.O.W.): feet. Width of R.O.W.: feet. L x W = ____ Ft² ÷ 43,560 Ft²/Acre = acres. _____feet. Length of pavement area: 10. feet. Width of pavement area: L x W = _____ Ft² ÷ 43,560 Ft²/Acre = acres. Pavement area _____ acres ÷ R.O.W. area ____ acres x 100 = ___% impervious cover.
- 11. A rest stop will be included in this project. A rest stop will **not** be included in this project.
- 12. Maintenance and repair of existing roadways that do not require approval from the TNRCC Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TNRCC.

STORMWATER TO BE GENERATED BY THE PROPOSED PROJECT

ATTACHMENT B - Volume and Character of Stormwater. A description of the volume and 13. character (quality) of the stormwater runoff which is expected to occur from the proposed project is provided at the end of this form. The estimates of stormwater runoff quality and quantity should be based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

WASTEWATER TO BE GENERATED BY THE PROPOSED PROJECT

- The character and volume of wastewater is shown below: 14
 - <u>100</u> % Domestic <u>400</u> gallons/day
 - ___% Industrial _____gallons/day __% Commingled _____gallons/day
 - _____gallons/day
 - 400 gallons/day TOTAL
- Wastewater will be disposed of by: 15.
 - X On-Site Sewage Facility (OSSF/Septic Tank):

ATTACHMENT C - Suitability Letter from Authorized Agent. An on-site sewage facility will be used to treat and dispose of the wastewater. The appropriate licensing authority's (authorized agent) written approval is provided at the end of this form. It states that the land is suitable for the use of an on-site sewage facility or identifies areas that are not suitable.

Each lot in this project/development is at least one (1) acre (43,560 square feet) in X size. The system will be designed by a licensed professional engineer or

registered sanitarian and installed by a licensed installer in compliance with 30 TAC §285.

- Sewage Collection System (Sewer Lines):
 - Private service laterals from the wastewater generating facilities will be connected to an existing SCS.
 - Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.
 - ____ The SCS was previously submitted on _____
 - ____ The SCS was submitted with this application.
 - ____ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to executive director approval.

The sewage collection system will convey the wastewater to the _____ (name) Treatment Plant. The treatment facility is :

- ____ existing.
- ____ proposed.
- 16. <u>X</u> All private service laterals will be inspected as required in 30 TAC 213.5.

SITE PLAN REQUIREMENTS

Items 17 through 27 must be included on the Site Plan.

- 17. The Site Plan must have a minimum scale of 1'' = 400'. Site Plan Scale: 1'' = 250 '.
- 18. 100-year floodplain boundaries
 - Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
 - X No part of the project site is located within the 100-year floodplain.

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s):

FEMA 'C' Comal County, Panel No. 485493-0006C, June 17, 1986

- 19. ____ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Show lots, recreation centers, buildings, roads, etc.
 - X The layout of the development is shown with existing contours. Finished topographic contours will not differ from the existing topographic configuration and are not shown.
- 20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):
 - ____ There are __(#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)
 - The wells are not in use and have been properly abandoned.
 - The wells are not in use and will be properly abandoned.
 - The wells are in use and comply with 30 TAC §238.
 - X There are no wells or test holes of any kind known to exist on the project site.

DATE

07/22/98

830 629 2611;

PERMIT# 79106



Comal County

OFFICE OF COMAL COUNTY ENGINEER

LICENSE TO OPERATE A PRIVATE SEWAGE FACILITY

OWNER(L)	FIRST	DEVELOPMENT	STREET
Forney	J.P. & Sally A.		3950 Highway 46 West
UNIT	BLOCK	LOT	ACRES/TRACT 30.182 Acres

This license is authorization for the owner to operate and maintain a private facility at the location described in accordance to the rules and regulations for on-site sewerage facilities of Comal County, Texas, and the Texas Natural Resource Conservation Commission.

The license grants permission to operate the facility. It does not guarantee successful operation. It is the responsibility of the owner to maintain and operate the facility in a satisfactory manner.

Inspection and licensing of a facility indicates only that the facility meets certain minimum requirements. It does not impede any governmental entity in taking the proper steps to prevent or control pollution, to abate nuisance, or to protect the public health.

This license to operate is valid for an indefinate period. It may be transferred by the holder to a succeeding owner, provided the facility has not been remodeled and is functioning properly.

INSPECTOR P.Knip	COM		M	
SPECIAL CONDITIONS				
GALLON TANK 750	SQUARE FEET	ABSORPTION AREA	SWITCHING VALVE?YES/N	
SYSTEM TYPE Standard	TYPE SYSTEM DESCRIPTION rd Septic Tank & ET Drainfield		ined	
TH	E FACILITY CON	SISTS OF		
WINSTITUTION		TYPE OF BUSINESS/INSTITUTION Office & Welding Shop		
	SINGLE FAMILY RESIDENCE			
THE	FACILITY IS LICE	NSED FOR		
		the state of the s	the second s	

195 David Jonas Drive • New Braunfels, Texas 78132-3760 • (830) 608-2090 FAX (830) 608-2009







TOTAL SUSPENDED SOLIDS AND BEST MANAGEMENT PRACTICES SIZING CALCULATIONS Kensing Iron Works, Inc. Comal County, Texas

GENERAL CRITERIA

The general design goal is to produce uniform, shallow overland flow across the entire filter strip.

The filter strip extends along the entire length of the contributing area and the slope does not exceed 15%. The minimum length of the filter strip (parallel to the direction of flow) is sufficient to produce an annual hydraulic loading rate of less than 4.6 ft^3/ft^2 . The impervious area is 227 feet feet at its longest point that drains into the filter strip. The average annual rainfall is 33 inches and the runoff coefficient is 0.15. Then the total annual runoff volume per linear foot is:

Volume = 227×1 ft x 33 x 0.15 x 1 ft/12 inches = 94 ft³

Therefore the required minimum length of the filter strip is:

 $L(ft) = 94 ft^{3}/(4.6ft^{3}/ft^{2} \times 1 ft wide) = 20 feet$

No portion of the vegetated strip is lesser than the required minimum strip. The shortest length of the strip is approximately 145 feet, which is greater than the required minimum length.

The area to be used for the strip is free of gullies or rills that can concentrate overland flow (Schueler, 1987).

The top edge of the filter strip along the pavement is designed to avoid the situation where runoff would travel along the top of the filter strip, rather than through it.

Top edge of the filter strip is level, so runoff will not form a channel in the low spot.

SITE DESIGN AND DETAIL CALCULATIONS

INTRODUCTION

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The following calculations showing the existing vegetated area surround Kensing Iron Works, Inc. facility complies with Edwards rule requiring at minimum 80% reduction in the increase in total suspended solids(TSS) stormwater loading. The calculation are based on the following conditions:

- The Site is currently developed(28% impervious cover).
- The Site area is 4.8 acres.
- The Site is located in Comal County
- No runoff enters the Site from upgradient(or is directed around the Site and does not enter the proposed BMPs)

BACKGROUND LOAD CALCULATION

The background load for the developed Site is calculated from:

 $L = P(Au \times 0.54 + Ad \times Rv \times 38.4)$

For the following conditions:

 $L = 33(4.8 \times 0.54 + 0.00 \times 0.15 \times 38.4) = 85.5 \text{ lbs/yr}$

Where:

33 = Annual precipitation for Comal County(Table 3.3)
4.8 = Original undeveloped area of the Site in acres
0.00 = Original developed area of the Site in acres
Rv = Runoff coefficient for the fraction of impervious cover(Equation 3.2)

POST DEVELOPMENT LOAD

The load of current development is calculated by:

L = A x P x Rv x 38.4

For the following conditions:

 $L = 4.8 \times 33 \times 0.15 \times 38.4 = 912 \text{ lbs/yr}$

Where:

4.8 = Site area in acres
33 = Annual precipitation for Comal County
0.15 = runoff coefficient for 28% impervious cover(Equation 3.2)

REQUIRED REMOVAL

Removal of 80% of the TSS loading is calculated by:

Required Reduction = 0.8 x (post development load – background load)

For the following conditions:

Required reduction = $0.8 \times (912 - 85.5) = 661 \text{ lbs/yr}$

TREATED AREA

The area that must be treated is calculated by:

Lr = Li x Fraction of site treated x (TSS removal efficiency)

661 lbs/yr = 912 lbs/yr x Fraction of Site treated x 0.85

The minimum fraction of impervious area that must be treated is 0.85 of the total 1.3 acres of impervious cover or 1.1 acres. The required treatment area can then be determined from the maximum hydraulic loading rate of 4.6 ft^3/ft^2 .

4.6 $ft^3/ft^2 = 33$ in x 1 ft/12 in x 1.1 acres/treatment area

The treatment area is about 0.66 acres. This is 61% of the entire pervious portion of the tract. The treatment area does not exceed 65% impervious cover and therefore the Site TSS load can be treated by the vegetated control alone with no other BMPs.



TEXAS NATURAL RESOURCE CONSERVATION COMMISSION EDWARDS AQUIFER PROTECTION PLAN APPLICATION FEE FORM

NAME OF PROPOSED PROJECT: <u>Kensing Iron Works, Inc.</u> PROJECT LOCATION: <u>3950 Highway 46 West</u> NAME OF APPLICANT: <u>Mr. Mark Kensing, P.E.</u> APPLICANT'S ADDRESS: <u>3950 Highway 46 West</u> CONTACT PERSON: <u>Mr. Mark Kensing</u> Please Print

_ PHONE: <u>(830)625-2815</u>

Uvalde

AUSTIN REGIONAL OFFICE (3373)

SAN ANTONIO REGIONAL OFFICE (3362)

Hays

Travis

Williamson

APPLICATION FEES MUST BE PAID BY CHECK, CERTIFIED CHECK, OR MONEY ORDER, PAYABLE TO THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION. 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):

⊠ Comal

□ Kinney

 SAN ANTONIO REGIONAL OFFICE
 Mailed to TNRCC: TNRCC - Cashier Revenues Section

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

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

Type of Plan	Size	Fee Due
Water Pollution Abatement, One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement, Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement, Non-residential	4.8 Acres	\$ 3,000. ⁰⁰
Sewage Collection System	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$



<u>March 1, 2000</u> Date