Permit Hearing - Item #16 Sanctuary of Salado

NOTICE OF PERMIT HEARING OF THE CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT

Notice is hereby given that the Board of Directors for the Clearwater Underground Water Conservation District will conduct a hearing on one Application for Permit as described below at 1:30 p.m. on Wednesday, January 11, 2023, in the Clearwater UWCD Board Room located at 700 Kennedy Court, Belton, Texas, in compliance with the Texas Open Meetings Act.

Applicant's File Number/Name	Permit Applicant/Holder and	Inducted on the following applicat Location of Well/Wells	Proposed Annual Groundwater				
inum Der/Iname	Landowner		Withdrawal Amount & Purpose of Use				
Operating Permit Hearing related to: N3-22-001P Existing Well	Hanks-Cabiness Christian Trust & RREAF Holdings, LLC c/o Stephen Chad Stewart RREAF Holdings, LLC 1909 Woodall Rodgers Fwy Ste 300 Dallas, TX 75201 (254) 624-2364	The proposed permitted well is located at: Latitude 30.93497° Longitude -97.53675 The proposed annual quantity is not to exceed 19.2 acre-feet or 6,256,339 gallons per year total for landscape irrigation only. The existing well is completed in the Edwards BFZ Aquifer. The existing well is located in the CUWCD Edwards BFZ Management Zone. The well is to be equipped with a maximum 2-inch column pipe with a submersible pump rate not to exceed 50 gallons per minute on the 14.387-acre tract located on the N.E. corner of IH35 and FM 2268 in Salado TX.	Request for an Operating Permit on an existing well, N3-22-001P for an operating permit authorized for commercial landscape irrigation not to exceed 19.2 ac-feet/yr or 6,256,339 gallons per year. NBZ DEC 29 SHELLEY COSTON CLK BELLOSTON TX				

The hearing will be conducted on the following and it will

The Applications for Permit and Permit Amendments, if granted, would authorize the permit holders to operate wells within the Clearwater Underground Water Conservation District according to the terms and conditions set forth in the permit. A person wishing to submit a Contested Case Hearing Request under District Rule 6.10.15(d) who is unable to appear at the hearing on the date and time set forth above must also file a motion for continuance with CUWCD demonstrating good cause for the inability to not appear.

For additional information about this application or the permitting process, or to request information on the legal requirements on what MUST be included for a Contested Case Hearing Request to be valid, please contact CUWCD at 700 Kennedy Court (PO Box 1989) Belton, Texas, 76513, 254-933-0120.

ISSUED this 29th day of December 2022 in Belton, Texas, on the recommendation of the General Manager.

I, the undersigned authority, do hereby certify that the above NOTICE OF PERMIT HEARING of the Board of Directors of the Clearwater Underground Water Conservation District is a true and correct copy of said Notice. I have posted a true and correct copy of said Notice at the District office located in Belton, Texas, and said Notice was posted on December 29, 2022, and remained posted continuously for at least 10 (ten) days immediately preceding the day of said hearing; a true and correct copy of said Notice was furnished to the Bell County Clerk, in which the above-named political subdivision is located.

Dated 12/29/2022

Clearwater Underground Water Conservation District

By: Dirk han_ Dirk Aaron, General Manager

Hanks-Cabiness Christian Trust c/o RREAF Holdings, LLC Application, November 1, 2022



Stephen Chad Stewart, PE Partner RREAF Holdings, LLC

11/1/2022

Dirk Aaron General Manager Clearwater Underground Water Conservation District 700 Kennedy Court Belton, Texas 76513

RE: Salado Sanctuary Well Operating Permit

Dear Mr. Aaron,

RREAF Holdings, LLC (REAFF) is developing an approximately 14.387 acre property in Salado, TX at the N.E. corner of I-35 and FM2268 more clearly shown on the attached Plat-Landscape Overlay. RREAF intends to gain an Operating Permit and utilize one existing water well (CUWCD Well number N2-21-009P) on the property for potential irrigation use for the proposed development. Below is a summary of the annual needs that will be required upon receiving approval of the Board.

The proposed development will utilize an amount, not to exceed 19.2 acre-ft/year total, for the use of maintaining improved landscaped areas along street right of ways, and a trail system that will be accessible for the beneficial use of the public. The landscape scope will utilize plant selections that are drought resistant species such as native Texas Bermuda grass, and drought tolerant trees and shrubs. The landscaped areas, plant types and quantities are delineated on the attached landscape drawings. The irrigation system is designed for maximum efficiency to encourage water conservation per TCEQ requirements. Please refer to the attached irrigation drawings to validate the water conservation efforts.

RREAF agrees to maintain compliance with the District's Management Plan and has certified this requirement as part of their application. RREAF understands the importance of water conservation measures and declares that groundwater will not be used in a manner inconsistent with the rules and standard conservation practices of the Clearwater Underground Water Conservation District (CUWCD).

It is our understanding that CUWCD can limit periodic use of water during drought conditions, and conditions that are necessary to maintain spring-flow at the downtown Salado Spring Complex.

If for any reason, any of the wells being operated deteriorate in a manner necessitating replacement, RREAF will plug the well in accordance with CUWCD Rule 12.5.

Sincerely,

Steptin Chal Stummet

Stephen Chad Stewart, PE Partner RREAF Holdings, LLC

> RREAF Holdings LLC 1909 Woodall Rodgers Fwy, STE 300 Dallas, TX 75201 (214) 522 3300



Ŋ,

「三部の御御御を

٤,

A STATES

92 1. 2.

Hanks-Cabiness Christian Trust 1101 South Bryant Blvd., San Angelo, Texas 76903

September 19, 2022

Clearwater Underground Water Conservation District 700 Kennedy Court Belton, Texas 76513

RE: Well Permit

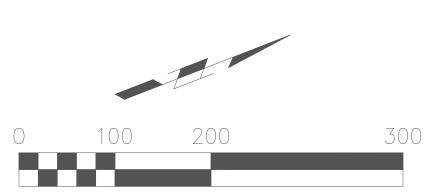
Dear Sir:

The Hanks-Cabiness Christian Trust, the well owner, grants authority to RREAF Holdings to apply for a well permit on its behalf.

Billie Hanks, Jr., Trustee

	PLANT SCHED	ULE					
	TREES	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	NOTES	<u>QTY</u>
~~~		PLATANUS MEXICANA	MEXICAN SYCAMORE	CONT.	4"CAL	14`-16` H X 8`-10` W	5
د - کرر	+	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	CONT.	4"CAL	12`-14` H X 5`-6` W	19
	ORNAMENTAL	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	NOTES	<u>QTY</u>
	$\bigcirc$	CERCIS CANADENSIS MEXICANA	MEXICAN REDBUD	CONT.	2"CAL	8`-9`H X 3`-4`W	8
		SOPHORA SECUNDIFLORA	TEXAS MOUNTAIN LAUREL	CONT.	2" CAL, MULTI-TRUNK	6` H X 4` W	9
	SHRUBS	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	NOTES	QTY
	$\odot$	ABELIA X GRANDIFLORA	GLOSSY ABELIA	CONT.	30" HT.		9
	and the second	ASPARAGUS MEYERI	FOXTAIL FERN	CONT.	12" HT.		34
	+	ASPIDISTRA ELATIOR	CAST IRON PLANT	CONT.	24" HT.		42
		LANTANA MONTEVIDENSIS	TRAILING LANTANA	CONT.	9" HT		50
	$\bigcirc$	LANTANA X 'NEW GOLD'	NEW GOLD LANTANA	CONT.	24" HT.		80
	+	LEUCOPHYLLUM FRUTESCENS	TEXAS SAGE	CONT.	24" HT.		14
	$\bigcirc$	LEUCOPHYLLUM FRUTESCENS 'GREEN CLOUD' TM	GREEN CLOUD TEXAS RANGER	CONT.			8
	$\odot$	MALVAVISCUS ARBOREUS	GIANT TURK'S CAP	CONT.	24" HT.		43
	$\langle \cdot \rangle$	OPUNTIA ELLISIANA	SPINELESS PRICKLY PEAR	CONT.			72
	$\langle \cdot \rangle$	RUSSELIA EQUISETIFORMIS	FIRECRACKER PLANT	CONT.	36" HT.		36
	+	SALVIA GREGGII	CHERRY SAGE	CONT.	15` HT.		42
	$\odot$	SALVIA LEUCANTHA	MEXICAN BUSH SAGE	CONT.	18" HT.		11
	GRASSES	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	NOTES	QTY
	SAN ON CHARTER	MISCANTHUS SINENSIS 'GRACILLIMUS'	MAIDEN GRASS	CONT.	24" HT.		8
	MAN ANA ANA ANA ANA ANA ANA ANA ANA ANA	MUHLENBERGIA CAPILLARIS `GULF COAST`	GULF COAST MUHLY	CONT.	18" HT.		112
	State of the state	NASSELLA TENUISSIMA	MEXICAN FEATHER GRASS	CONT.	12" HT.		12
	SUCCULENTS	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	NOTES	QTY
	NA ANA	HESPERALOE PARVIFLORA	RED YUCCA	CONT.	24" HT.		96
	GROUND COVERS	BOTANICAL NAME	COMMON NAME	<u>SIZE</u>	SPACING	NOTES	QTY
		SCUTELLARIA SUFFRUTESCENS	PINK SKULLCAP	-	@ 12" O.C.		117
		SEASONAL SEASONAL	SEASONAL COLOR	-	@ 12" O.C.		132
	SOD/SEED	BOTANICAL NAME	COMMON NAME	<u>SIZE</u>	SPACING	NOTES	<u>QTY</u>
	* * * * * * * * *	CYNODON DACTYLON	TEXAS NATIVE BERMUDA	SEED/SC	D		229,895





SCALE IN FEET



## Irrigation Usage Calculations

Project Name: Sanctuary at Salado 8/29/2022

Lawn Area (Spray)	347,407	sf	7.98	ac
Native Seed (Spray)	0	sf	0.00	ac
Shrub Area (Drip)	16,319	sf	0.37	ac
Trees (Quantity)	24	ea	0.07	ac

City	Salado, TX			
ET Rate	57.51	in/yr		
Rainfall	33.16	in/yr		
Irrigation needed	24.35	in/yr	2.03	3 ft
Application rate (spray)	0.80	in/wk	····	
Application rate (drip)	0.75	in/wk		
Peak Month	786,026	Gallons per m	nonth	
Domestic Cost	\$0.00	per/1000		
Graywater Cost	\$0.00	per/1000		

Month	ET %	Irrigation	Gallons	Cost for Domesti	Contraction of the second second
Jan	33%	259,388		\$0.00	\$0.00
Feb March	39% 60%	306,550 417,616	Gallons	\$0.00 \$0.00	\$0.00 \$0.00
April May	75% 88%	589,520 691,703		\$0.00 \$0.00	\$0.00 \$0.00
June July	95% 100%	746,725 786,026		\$0.00 \$0.00	\$0.00 \$0.00
Aug Sept	97% 79%	762,445		\$0.00 \$0.00	\$0.00 \$0.00
Oct Nov	65% 39%	510,917 306,550		\$0.00 \$0.00	\$0.00 \$0.00
Dec	32%	251,528		\$0.00	\$0.00
TOTAL		6,249,929	Gallons	\$0.00	\$0.00

## **Irrigation Usage Calculations**

Project Name: Sanctuary at Salado 8/29/2022

JAN 04 2023 Br. Duit Cu stled Biblic W.S. Cost Gmmy

2:2

Lawn Area (Spray)	347,407	sf	7.98	ac
Native Seed (Spray)	0	sf	0.00	ac
Shrub Area (Drip)	16,319	sf	0.37	ac
Trees (Quantity)	24	ea	0.07	ac

City	Salado, TX				
ET Rate	57.51	in/yr			
Rainfall	33.16	in/yr			
Irrigation needed	24.35	in/yr		2.03 ft	
Application rate (spray)	0.80	in/wk			
Application rate (drip)	0.75	in/wk			
Peak Month	786,026	Gallons per n	nonth		
Domestic Cost	See Below	per/1000			
Graywater Cost	\$0.00	per/1000			

				cost for	cost for
Month	ET %	Irrigation	Gallons	Domestic	graywater
Jan	33%	259,388	Gallons	\$1,566.02	\$0.00
Feb	39%	306,550	Gallons	\$1,872.58	\$0.00
March	60%	417,616	Gallons	\$2,594.50	\$0.00
April	75%	589,520	Gallons	\$3,711.88	\$0.00
May	88%	691,703	Gallons	\$4,376.07	\$0.00
June	95%	746,725	Gallons	\$4,733.71	\$0.00
July	100%	786,026	Gallons	\$4,989.17	\$0.00
Aug	97%	762,445	Gallons	\$4,835.89	\$0.00
Sept	79%	620,961	Gallons	\$3,916.25	\$0.00
Oct	65%	510,917	Gallons	\$3,200.96	\$0.00
Nov	39%	306,550	Gallons	\$1,872.58	\$0.00
Dec	32%	251,528	Gallons	\$1,514.93	\$0.00
TOTAL		6,249,929	Gallons	\$39,184.54	\$0.00

#### SWSC Water Cost: 0 - 20,000: \$3.50

20,001 - 50,000: \$4.50 50,001 & up: \$6.50

#### Permit Fee Schedule



45

3 2022

Title	Annual Withdrawal (ac-ft)	Withdrawal Limit Condition	Pe	Drilling ermit Base Fee	Drilling Permit ogressive Fee	Progressive Fee Unit	1	Operating ermit Base Fee		Operating Permit Progressive Fee	Progressive Fee Unit
Level 1	0	Up to and including 1 ac-ft	\$	150.00	\$	P- Arthouse	\$	24.55-72	\$		
Level II ⁺	1	Up to but not including 5 ac-ft	\$	150.00	\$ 210.00	per ac-ft	\$	198 - 1	\$		-
Level III	5	Up to but not including 130 ac-ft	\$	400.00	\$ 15.00	per ac-ft	\$	600.00	\$	20,00	per ac-ft
Level IV	130	Equal to or Greater than 130 ac-ft	\$	2,200.00	\$ 7.50	per ac-ft	Ś	3,300.00	Ś	40.00	per ac-ft

* Level I and Level II use a Combination Permit, the Combination Permit fees are listed under Drilling Fees

Enter Your Proposed Withdrawal in ac-ft:

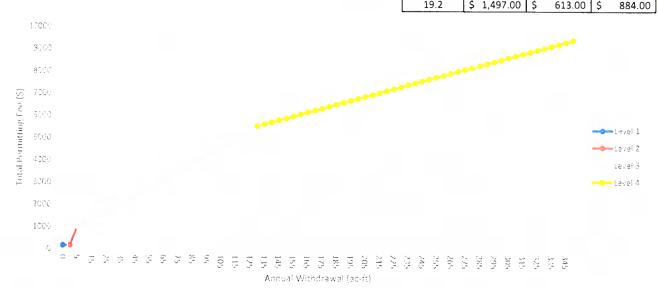
19.2

The above amount requires a Two-Step Permit **

*A Combination Permit covers both drilling and operating a well

**A Two-Step Permit requires 1 drilling permit and 1 operating permit

N3-22-0011	Combined Permit Cost:	n/a				Table	of Fees		
9.1				ac-ft	C	ombined Fee	Drilling Fee	C	perating Fee
Land 1	Two-Step Permit Cost:		Maximum	0.5	\$	150.00	-	-	
mell y	Drilling Permit Cos	t: \$ 613.00	\$ 7,500.00	1	\$	150.00	-	-	
and t	Operating Permit Cos	t: \$ 884.00	\$ 10,000.00	2	\$	360.00		-	
Cong m	Total Cost to Permi	t: \$ 1,497.00	\$ 17,500.00	3	\$	570.00	-	-	
	0			4	\$	780.00	-	-	
How do I use this	How do I use this tool?				\$	1,000.00	\$ 400.00	\$	600.00
1. Enter y	your proposed withdrawal amount (in ac	-ft) in the		30	\$	1,875.00	\$ 750.00	\$	1,125.00
blue re	ectangle cell above			55	\$	2,750.00	\$ 1,100.00	\$	1,650.00
2. The to	ol will tell you whether your withdrawal	amount		80	\$	3,625.00	\$ 1,450.00	\$	2,175.00
require	es a Combination Permit or a Two-Step I	Permit		105	\$	4,500.00	\$ 1,800.00	\$	2,700.00
3. The ce	II(s) highlighted in green show how much	h a permit for yo	bur	130	\$	5,500.00	\$ 2,200.00	\$	3,300.00
propos	sed withdrawal amount will cost <b>BEFORE</b>	the cost maxin	num	155	\$	5,937.50	\$ 2,375.00	\$	3,562.50
is appli	ied.			180	\$	6,375.00	\$ 2,550.00	\$	3,825.00
4. The ce	lls in the "Your Fee" section, under the T	able of Fees, sh	ows the	205	\$	6,812.50	\$ 2,725.00	\$	4,087.50
same p	permit cost <u>AFTER</u> the cost maximum is a	applied		230	\$	7,250.00	\$ 2,900.00	\$	4,350.00
5. Below	is a graphic representation of Clearwate	r's schedule of f	ees			You	r Fee		ale North
				19.2	\$	1,497.00	\$ 613.00	Ś	884.00



**Clearwater Underground Water Conservation** 

PO Box 1989 Belton, TX 76513 Invoice

Invoice #: 181 invoice Date: 11/9/2022 Due Date: 11/25/2022 Project: P.O. Number:

**Bill To:** RREAF Holdings LLC 1909 Woodall ROdgers Fwy Suite 300 Dallas, TX 75201

Date		Description		Amount
	Permit Application Fee Operating Permit - Sanctuary o	Salado		884.00
an ann a saobhadh a' c <u>alainn an an Saobhadh</u>		Texas State Bank of	San Angelo	33
	BILLIE HANKS, JR. SPECIAL ACCOUNT 1101 S. BRYANT BLVD. SAN ANGELO, TX 76903	San Angelo, Texa 88-2390/1		11/29/2022
PAY TO THE ORDER OF CLEAR	WATER UNDERGROUND WATER	CONSERVATION		<b>\$</b> **884.00
MEMO	TEXAS 76513 81, OPERATING PERMIT SANCTU	IÊI MÊ Z	Catel AUTHORI	zed SIGNATURE
	Billie Hanks 1101 S. Bryant Blvd. • Sar	Enterprises Angelo, Texas 76903		£1100000000000000000000000000000000000
	" ^c Billie Hanks	Angelo, Texas 76903		
	"C Billie Hanks 1101 S. Bryant Blvd. • Sar Rita W Office Ma	Angelo, Texas 76903 Thitt inager Mobile: (325) 450-0259	tal	\$884.00
	"C Billie Hanks 1101 S. Bryant Blvd. • Sar Rita W Office Ma	Mobile: (325) 450-0259	tal yments/Credits	\$884.00

Notification Requirements Temple Daily Telegram December 28, 2022

#### NOTICE OF APPLICATION FOR AN OPERATING PERMIT FROM CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT

RREAF Holdings, LLC, and the Hanks-Cabiness Christian Trust have submitted an application to the Clearwater Underground Water Conservation District (CUWCD) on November 1, 2022, for an operating permit on an existing well (N3-22-001P) for 19.2 acrefeet or 6.256.339 gallons per year.

This permit, if approved, may authorize the withdrawal from the existing well (N3-22-001P) in the Edwards BFZ Management Zone described in District Rule 7.1. The well is completed in the Edwards BFZ Aquifer and will be limited to a maximum 2-inch column pipe on a 14.387-acre tract in accordance with District Rule 9.5 and located at the N.E. corner of I-35 and FM 2268, Salado, Texas, Latitude 30.93497°/Longitude -97.53675. The proposed annual quantity is not to exceed 19.2 acre-feet or 6,256,339 gallons per year total for landscape irrigation only.

This application will be set for hearing before the CUWCD Board upon notice posted at the Bell County Clerk's Office, the CUWCD Office and on the CUWCD website <u>https://cuwcd.org/</u>. If you would like to support, protest, or provide comments on this application, you must appear at the hearing and comply with District Rule 6.10. For additional information about this application or the permitting process, please contact CUWCD at 700 Kennedy Court, Belton, Texas 76513, 254-933-0120. The applicant may be contacted at 1909 Woodall Rodgers Fwy, STE 300, Dallas, TX 75201, or by phone at 254-624-2364





## **Publisher's Affidavit**

#### State of Texas County of Bell

Before Me, The Undersigned Authority, this day personally appeared <u>Jane Moon</u> after being by me duly sworn, says that she is the <u>Classified Manager Inside Sales</u> of the Temple Daily Telegram, a newspaper published in Bell County, Texas and that the stated advertisement was published in said newspaper on the following date(s):

December 28, 2022

For: Chad Stewart Ad #: 16681411 Ad Cost: \$141.20 Times Published: 1

Tune Moor

Jane Moon Classified Manager Inside Sales

Subscribed and sworn to before me, this day: December 28, 2022

Jen Lamos

Notary Public in and for Bell County, Texas

(Seal) TERI ZAMORA Notary Public, State of Texas Comm Expires 11-05-2023 Notary ID 10837339

#### NOTICE OF APPLICATION FOR AN OPERATING PERMIT FROM CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT

RREAF Holdings, LLC, and the Hanks-Cobiness Christian Trust have submitted an application to the Clearwater Underground Water Conservation District (CUWCD) on November 1, 2022, for an operating permit on an existing well (N3-22-001P) for 19.2 ocre-feet or 6.256,339 gollons per year.

This permit, if approved, may authorize the withdrawal from the existing well (N3-22-001P) in the Edwards BFZ Management Zone described in District Rule 7.1. The well is completed in the Edwards BFZ Aquifer and will be limited to a maximum 2-inch column pipe on a 14.387-acre tract in accordance with District Rule 9.5 and located at the N.E. corner of 1-35 and FM 2266, Salado, Texas, Latitude 30.934979/Longtide -9.7.35675. The proposed annual quantity is not to exceed 19.2 acre-feet or 6,256,339 galions per year total for landscape irrigation only.

tons per year total for landscape irrigation only. This application will be set for hearing before the CUWCD board uson notice posted at the Bell County Clerk's Office, the CUWCD Office and on the CUWCD website hits://cuwcdorg/. If you would like to suppart, protest, or provide comments on this application, you must appear at the hearing and comply with District Rule 610. For additional information about this application or the permitting pracess, please contact CUWCD a 700 Kennedy Court, Belton, Texas 75313, 254-933-0120. The applicant may be contacted at 1909 Woodail Rodgers Fwy, STE 300, Dallas, TX 75201, or by phone at 254-624-2364.

#### **6B / TEMPLE DAILY TELEGRAM**

#### DEC 28 2022 Pille Pille Mo subcontractors Internet. 180-196 Merchandise NOTICE OF (if applicable) 5 Gorage Sales..... Pet & Livestock.. 200-208 Lea 9 8 Notices **PUBLIC HEARING** .230-232 Ranch House Inn 290-299 Manage project process Automotive. 773-0114 The City Council of the initial scheduling from City of Belton, Texas will ERRORS through to completion conduct a public hearing Apartments Unfurnished 5 2 on January 10, 2023, at 5:30 projec 3 Review all new Please read your ad the first day it runs to be sure pm at 401 N. Alexander NOTICE OF APPLICATION contracts for accuracy. work Street regarding a pro- Create project is correct. The Temple FOR AN OPERATING PERMIT it 1 room efficiency all bills paid, Rogers, TX. Contact orders for field crews and posed Short Term Rental Ordinance. The draft ordi-FROM CLEARWATER UNDERGROUND Daily Telegram will not be order necessary materials 3 responsible for more than 8 6 9 Jim at 254-743-9155. WATER CONSERVATION DISTRICT Schedule and coordinate nance can be viewed at (1) incorrect insertion of www.beitontexas.gov/planning any specific project equipany Classified ad and does Duplexes For information ment needed more not assume responsibility Holdings, LLC, and the Hanks-Cabiness contact the Belton Plann-RREAF roof •Ensure each repai Unfurnished beyond the cost of the ad. Christian Trust have submitted an application to the or installation meets stand 3 Department 5 7 at 2 ina Errors must be reported immediately to the Classi-Clearwater Underground Water Conservation District 254-933-5812 or via email at ards work, safety, effi-**TEMPLE- Affordable 1BR** (CUWCD) on November 1, 2022, for an operating perbvantil@beltontexas.gov ciency, and according to fied Department so that and 2BR units starting at mit on an existing well (N3-22-001P) for 19.2 acre-feet manufacturer's specifica or special accommodathey can be corrected and \$625.00. Clean. Available or 6,256,339 gallons per year. tions. tions, please contact Amy proper credit given. City Clerk, Consistent and clear com 8 4 now! Agent Casev. 254-933-5817. This permit, if approved, may authorize the withmunication with customers **OFFICE HOURS** 254-721-1784 drawal from the existing well (N3-22-001P) in the Edthroughout project process words BFZ Management Zone described in District •Ensure compliance with Mon-Fri 8am-5pm Houses Rule 7.1. The well is completed in the Edwards BFZ all company rules, policies, DEADLINE **Application** has 6 Aquifer and will be limited to a maximum 2-inch coland procedures 4 Unfurnished umn pipe on a 14.387-acre tract in accordance with 2pm Mon thru Fri for line been made With Resolve complaints and District Rule 9.5 and located at the N.E. corner of 1-35 ods for the next day. project issues in a timely . . . . . . . . . . . . The Texas Alcoand FM 2268, Salado, Texas, Latitude 30.93497º/Longitude -97.53675. The proposed annual (254) 778-4444 manner Looking for a rental home? Call LVR Management today! Review field timesheets 2 5 1 holic Beverage www.tdtnews.com quantity is not to exceed 19.2 acre-feet or 6,256,339 galand completed work orders lons per year total for landscape irrigation only. Commission for for completion and accu-254-771-2228 racy A Wine and Malt This application will be set for hearing before the Real •Review and approve all www.lvrmgt.com 12/28 Difficulty Level ** CUWCD Board upon notice posted at the Bell County invoices related to projects **Beverage Retailer's** Clerk's Office, the CUWCD Office and on the CUWCD . . . . . . . . . . . . . and production website https://cuwcd.org/. If you would like to sup-Estate Permit and Food Review completed project port, protest, or provide comments on this application, files and turn in for final How to Play: 6 1 8 9 2 4 7 5 3 Sport Leases, Lake Property And Beverage Ceryou must appear at the hearing and comply with Dishilling 7 4 2 8 3 5 6 1 9 trict Rule 6.10. For additional information about this Perform project close-out tificate by Suhaan application or the permitting process, please contact 593167428 process CUWCD at 700 Kennedy Court, Belton, Texas 76513, 254-933-0120. The applicant may be contacted at 1909 Hunt with your dag or Additional tasks as as Trading Inc Dba Houses for Sale 2 5 9 4 1 6 3 8 7 guided. Quail/Chukar hunt signed Using the numbers provided, complete Woodail Rodgers Fwy, STE 300, Dallas, TX 75201, or RiteStop to be 834759261 40 miles northeast of Ausby phone at 254-624-2364. tin. Training area. Quail for sale. centexshoot.com 512-856-2200 Email resume to Multi-Level Lake House located at 710 W. the grid so that every row, column, and 1 7 6 3 8 2 5 9 4 Lfuller@Jroof.com To Be Moved Mesquite Avenue, 200 FM 1237, Troy @ 1-35 985243176 3x3 square contains the numbers 1-9 254-780-1090 254-760-8152 3 2 7 6 9 1 8 4 5 Rogers, Bell Co., Employment Make your ad stand out without duplications. Find solutions, 461578932 Texas. Officer of from the rest! WE tips, and computer program at ASK FOR said Corporation Yesterday's Solution BOLDING www.sudoku.com is Afsheen Lalani -**Call Classified** CAUGHT Looking for extra income? 778-4444 Pres/Sec AXYDLBAAXR YOUR **Rentals** is LONGFELLOW Supplement your present income with a newspaper One letter stands for another. In this sample, A is used EYE delivery route. For just a few hours a night you could for the three L's, X for the two O's, etc. Single letters, keep your regular job and earn extra cash. **Commercial Property** apostrophes, the length and formation of the words are all hints. Each day the code letters are different. You can catch **Routes available now! For Lease** the eve 12-28 **CRYPTOQUOTE Bi-Weekly Gross Income (est.)** Area **CONVENIENTLY LOCATED** of those \$900.00 East Temple IN DOWNTOWN TEMPLE YIDJ AKIN'D XMNOD LKYMBC prospective \$475.00 South Temple • 7,700 total sq. ft. available including buyers Applicants must have reliable transportation, valid driver's YIDJ AKIN'D YIBCTICK. LI M office space license and auto liability insurance in their name. bγ Suitable for light industrial usage advertising I B O BKUJ AKIN'D XMNOD \$100 SIGN ON BONUS after 4 weeks, \$100 bonus Rear Loading Dock with overhead doors after 8 weeks, and \$300 bonus after 26 weeks. in the front/back PMGRK. IXIGJ IBMJEKN High visibility on corner lot with access Classifieds Contact the Circulation Department at from Central Ave and 7th St. 254-778-4444 with a J.D. KYGMJ Convenient off-street customer parking

display ad.

AECEIVE

Yesterday's Cryptoquote: TO ME EVERY HOUR

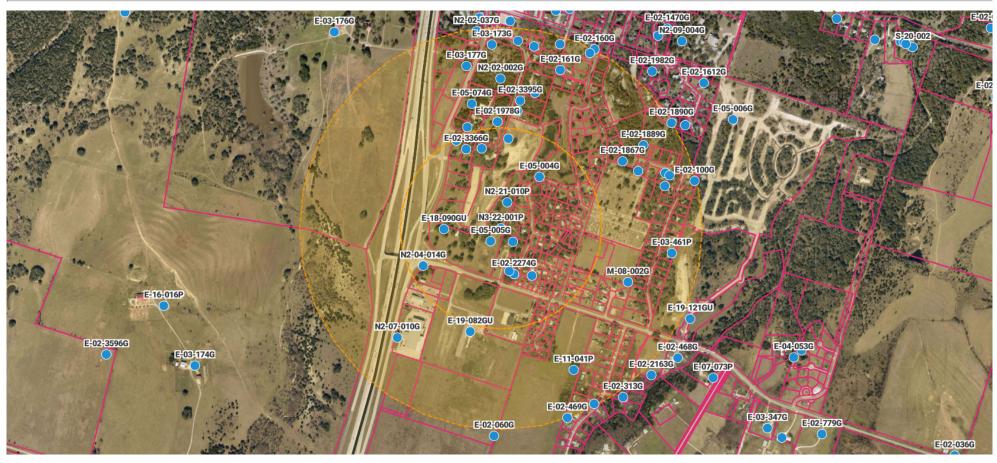
WEDNESDAY, December 28, 2022

or stop by the office at 10 South Third St., Temple

Notification Requirements Adjacent Properties Well Owners within 1/2 mile December 28, 2022



CUWCD Map N3-22-001P Radius Map Created: December 1st 2022, 10:47am



1000 ft

#### N3-22-001P Contact List

Wells in Defined Radius	Capped or Active								T	
Prop ID	Name	Address	City	State	Zip	Well #	<u>Status</u>	Depth	Aquifer	Use
231897	Charles & Suzanne Allen	PO Box 39	Salado	тх	76571	E-03-407P	Active	200	Edwards BFZ	Domestic
231898	Johnny M & Jill W Shipman Family Revocable Trust	711 College Hill Dr	Salado	ТХ	76571	E-02-3366G	Active	190	Edwards BFZ	Domestic
96160	Lyle & Nancy Radebaugh	675 College Hill Dr	Salado	ТХ	76571	E-18-089GU	Active	210	Edwards BFZ	Domestic
40429	Murray & Patsy Lane	404 FM 2268	Salado	ТХ	76571	E-17-067G	Active	unknown	Edwards BFZ	Domestic
472122	James & Lyndal Haney Living Trust	501 Santa Rosa Rd	Salado	TX	76571	E-02-2275G	Active	150	Edwards BFZ	Domestic
472122	James & Lyndal Haney Living Trust	501 Santa Rosa Rd	Salado	ТХ	76571	E-02-2274G	Active	170	Edwards BFZ	Domestic
109654	Judy King	PO Box 1028	Salado	тх	76571	E-02-3036G	Active	150	Edwards BFZ	Domestic
93164	Thomas Nessler, III	700 College Hill Dr	Salado	ТХ	76571	E-02-1978G	Active	160	Edwards BFZ	Domestic
5227	Super X LLC - Series 3	375 College Hill Dr	Salado	ТХ	76571	E-04-086G	Active	180	Edwards BFZ	Domestic
131302	Super X LLC - Series 3	375 College Hill Dr	Salado	ТХ	76571	E-02-3395G	Active	unknown	Edwards BFZ	Domestic
113476	Elwood Sutton	375 College Hill Dr	Salado	тх	76571	E-02-863G	Active	100	Edwards BFZ	Domestic
71891	HAYLEEDELILAH LLC	2003 Worth Lane	Belton	ТХ	76513	E-02-3365G	Active	190	Edwards BFZ	Domestic
45693	Billie Hanks, Jr	1101 S Bryant Blvd	San Angelo	ТХ	76903	E-05-074G	Active	180	Edwards BFZ	Domestic
419020	Jacob & Alissa McClure	308 Baines Cove	Salado	TX	76571	E-02-161G	Active	70	Edwards BFZ	Domestic
34122	Sammy Evans & Emil Bethke III	4613 Valleybrook Circle	College Station	ТХ	77845	E-02-708G	Active	unknown	Edwards BFZ	Domestic
209823	Ronald & Deborah Harrison	PO Box 620	Salado	TX	76571	E-02-2110G	Active	unknown	Edwards BFZ	Domestic
102221	Salado Water Supply Coorporation	PO Box 1 28	Salado	тх	76571	N2-02-003G	Active	105	Edwards BFZ	Public Supply
99716	Salado Museum & College Park Inc	PO Box 36	Salado	TX	76571	E-03-173G	Active	unknown	Edwards BFZ	Domestic
99716	Salado Museum & College Park Inc	PO Box 36	Salado	тх	76571	N2-02-002G	Active	180	Edwards BFZ	Public Supply
109869	Stagecoach 1943 LP	PO Box 1757	Georgetown	тх	78627	N2-02-037G	Inactive	57	Edwards BFZ	Ag/Irrigation
433052	Property Not Found					E-03-177G	Active	unknown	Edwards BFZ	Domestic
118464	James & Sue Ann Tuck	PO Box 314	Salado	ТХ	76571	E-02-1890G	Active	155	Edwards BFZ	Domestic
45706	Billie Hanks, Jr	1101 S Bryant Blvd	San Angelo	тх	76903	E-02-1867G	Active	160	Edwards BFZ	Domestic
147846	Gary Blair	800 Salado Oaks Dr	Salado	тх	76571	E-18-070GU	Active	170	Edwards BFZ	Domestic
147844	Ronald & Dianna Johnson	816 Salado Oaks Dr	Salado	TX	76571	E-02-1602G	Active	185	Edwards BFZ	Domestic
147843	Don & Margie Kohring Revocable Trust	900 Salado Oaks Dr	Salado	TX	76571	E-18-092GU	Active	197	Edwards BFZ	Domestic
147860	Maurice & Rosemary Striegler	901 Salado Oaks Dr	Salado	ТХ	76571	E-02-100G	Active	197	Edwards BFZ	Domestic
147842	Patsy Sanford Wilson & Paul Thomas Sanford Residuary Trust	PO Box 63	Salado	тх	76571	E-02-215G	Active	190	Edwards BFZ	Domestic
147852	Vickie Dean & Christopher Kyle	1109 Salado Oaks Dr	Salado	ТХ	76571	E-03-461P	Active	180	Edwards BFZ	Domestic
108238	Salado Cemetery Association Inc	PO Box 21	Salado	тх	76571	-	Capped	129	Edwards BFZ	Monitoring
32677	JT Carothers Holdings LLC	50 S Wheat Rd	Belton	тх	76513	E-11-041P	Capped	160	Edwards BFZ	Livestock/Poultry
111767	Warren & Eiko Stevens	1614 Guess Dr	Salado	ТХ	76571	E-05-069P	Active	155	Edwards BFZ	Domestic
195754	Sanctuary Salado Investment II LLC	1101 S Bryant Blvd	San Angelo	тх	76903	E-19-082GU	Inactive	195	Edwards BFZ	Domestic
451967	Cowboy Code LTD c/o Randy Bloomer	PO Box 1191	Salado	тх	76571	N2-07-010G	Active	190	Edwards BFZ	Industrial

# N3-22-001P Contact List

Adjacent Properties					
231897	Charles & Suzanne Allen	PO Box 39	Salado	тх	76571
231898	Johnny M & Jill W Shipman Family Revocable Trust	711 College Hill Dr	Salado	ТХ	76571
96160	Lyle & Nancy Radebaugh	675 College Hill Dr	Salado	ТХ	76571
93164	Thomas Nessler, III	700 College Hill Dr	Salado	ТХ	76571
6227	Super X LLC - Series 3	375 College Hill Dr	Salado	ТХ	76571
131302	Super X LLC - Series 3	375 College Hill Dr	Salado	ТХ	76571
113476	Elwood Sutton	375 College Hill Dr	Salado	ТХ	76571
419019	Property Not Found				
419018	Property Not Found				-+
419017	Property Not Found			1	
45721	Sanctuary Salado LLC	1909 Woodall Rodgers FWY FL3	Dallas	ТХ	75201
45718	Boost Investments LLC	7420 Cordoba Drive	Austin	тх	78724
45719	Jeffrey Marshall & Sandra Odell	15102 Knob Hill Rd	Rogers	тх	76569
45720	Marian Casta & Richardo Banchs	1509 Blue Willow Ct	Pflugerville	Тх	78660
31308	Billie Hanks, Jr	1101 S Bryant Blvd	San Angelo	тх	76903
95230	James Poulos	9 Mansfield St	Bethel	ст	06801
50398	Jack & Kimberly Winters	909 Santa Maria Rd	Salado	Тх	76571
147220	Joseph & Sandra Torres	3904 Walden Creek Crossing	Harker Heights	тх	76548
100584	Robert & Cynthia Parmenter	1008 Wildberry Circle	Salado	ТХ	76571
69524	Karen Kinnison	507 San Jose Rd	Salado	Тх	76571
107366	Victor & Guillermina Lara	PO Box 402	Salado	тх	76571
107365	Victor & Guillermina Lara	PO Box 402	Salado	тх	76571
108237	Dezri Smith c/o Kathy Rutherford	PO Box 236	Salado	Тх	76571
116338	Richard & Linda Thomas	PO Box 608	Salado	тх	76571
116337	Richard & Linda Thomas	PO Box 608	Salado	ТХ	76571
116336	Richard & Linda Thomas	PO Box 608	Salado	Тх	76571
192697	Sanctuary Salado Investment II LLC	1101 S Bryant Blvd	San Angelo	ТХ	76903
192698	Sanctuary Salado Investment II LLC	1101 S Bryant Blvd	San Angelo	ТХ	76903
158652	Sanctuary Salado Investment II LLC	1101 S Bryant Blvd	San Angelo	ТХ	76903
195754	Sanctuary Salado Investment II LLC	1101 S Bryant Blvd	San Angelo	ТХ	76903
10429	Murray & Patsy Lane	404 FM 2268	Salado	ТХ	76571
73507	Robert & Sylvia Michalewicz	405 San Juan Circle	Salado	ТХ	76571

#### December 5, 2022

#### **NOTICE OF APPLICATION FOR OPERATING PERMIT**

Name Address City, TX Zip

#### VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED

#### RE: Application for an Operating Permit

To Whom It May Concern:

I, Chad Stewart, on behalf of both RREAF Holdings, LLC, and the Hanks-Cabiness Christian Trust have submitted an application to the Clearwater Underground Water Conservation District (CUWCD) on November 1, 2022, for an operating permit on an existing well (N3-22-001P) for 19.2 acre-feet or 6.256,339 gallons per year.

This permit, if approved, may authorize the withdrawal from the existing well (N3-22-001P) in the Edwards BFZ Management Zone described in District Rule 7.1. The well is completed in the Edwards BFZ Aquifer and will be limited to a maximum 2-inch column pipe on a 14.387-acre tract in accordance with District Rule 9.5 and located at the N.E. corner of I-35 and FM 2268, Salado, Texas. Latitude 30.93497°/Longitude -97.53675. The proposed annual quantity is not to exceed 19.2 acre-feet or 6,256.339 gallons per year total for landscape irrigation only.

This application will be set for hearing before the CUWCD Board upon notice posted at the Bell County Clerk's Office, the CUWCD Office and on the CUWCD website <u>https://cuwcd.org/</u>. If you would like to support, protest, or provide comments on this application, you must appear at the hearing and comply with District Rule 6.10. For additional information about this application or the permitting process, please contact CUWCD at 700 Kennedy Court, Belton, Texas 76513, 254-933-0120. The applicant may be contacted at 1909 Woodall Rodgers Fwy, STE 300, Dallas, TX 75201, or by phone at 254-624-2364

Sincerely,

Chad Stewart Partner RREAF Holdings, LLC





лů

AS ADDOD

**1111** 

\$11 UU

<u>\$0,00</u>

tox

11

00

022

See Reverse for Instructions

SALA Chosimark

A 2/28/1

ets veg

Hei

m

5

nu

0740

гu

'n

Certified Mail Fee \$4. [1]

Return Receipt (hardcopy)

Return Receipt (electronic)

Certified Mail Restricted De

Adult Signature Restricted Deil

Total Postage and Fees

\$0.60

o., or PO Box No

0, April 2015 PSN 7530-02-000-9047

Siale, ZIP+4

10, ZIP+4" 76571

Adult Signature Required

ostage

Sent To

101

Street and An

Extra Services & Fees (check box, add



-001P

т С

U.S. Postal Service[™]

Sal rdp , X 76571

Domestic Mail Only

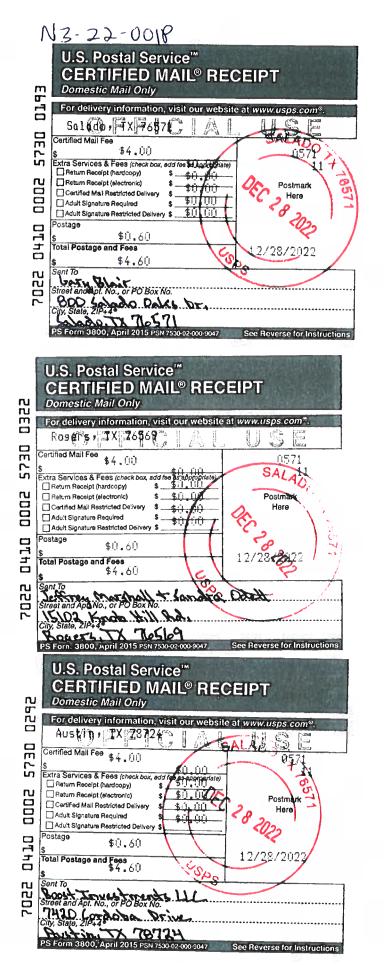
**CERTIFIED MAIL® RECEIPT** 

For delivery information, visit our website at www.usps.com

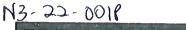
A:20













## N3-27-001P



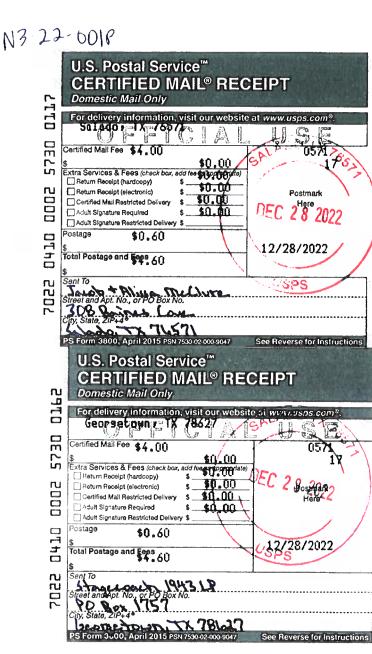




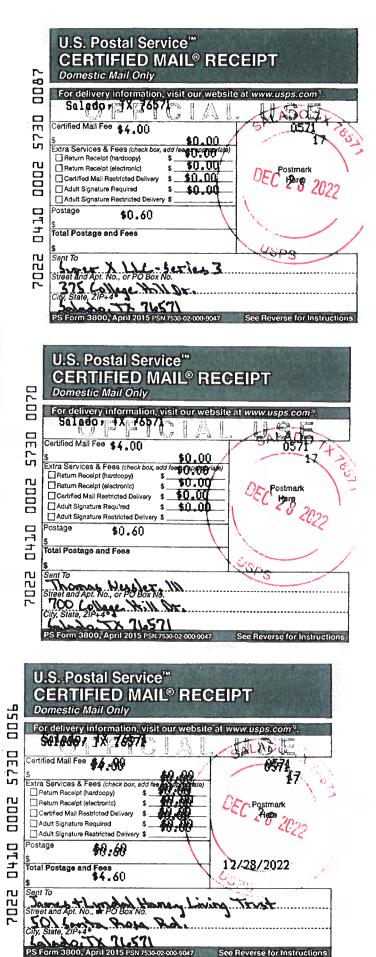


## N3-22-001P



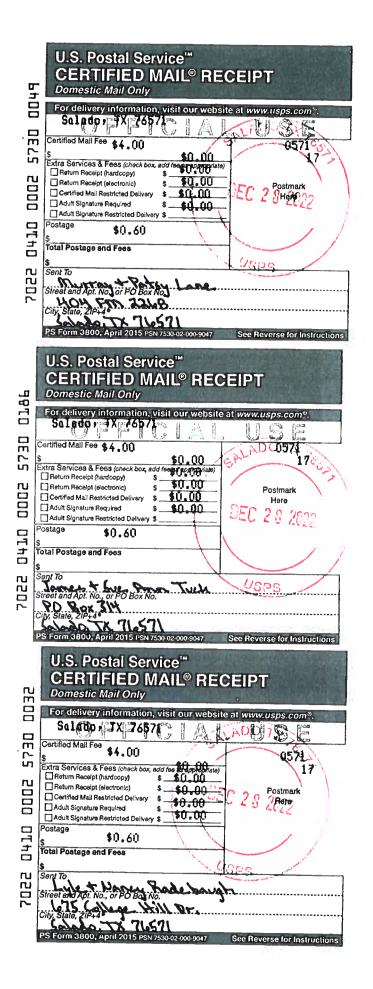






See Reverse for Instructions

N3-22-001P



CUWCD Executive Summary Dirk Aaron January 11, 2023

ł	Staff Report Application for <i>Opere</i> N3-22-001	<i>nting</i> Permit	
	Clearwater	rop counts!	
The c/o S 1909	tuary of Salado Hanks-Cabiness Christian Tr Tephen Chad Stewart, PE , R Woodall Rodgers Fwy, STE . vs, TX 75201	ust REAF Holdings LI	LC
Location of Well:	-,		
Proposed Annual Elements	Proposed Use	Aquifer:	Nearest Existing Wells:
Initial Rate: 50 gpm	Commercial Landscape use only	Edwards BFZ	Total 35 wells within 1/2 mile of the existing
Column Pipe Size: 2-inch Withdrawal:			well.
Proposed annual quantity not to exceed <u>19.2</u> acre- feet/year or <u>6,256,339</u> gallons/year			Note: All wells within ¹ / ₂ mile appeared to be completed in the Edwards BFZ Aquifer

#### **General Information**

Mr. Chad Stewart, with RREAF Holdings, LLC (REAFF) submitted an administratively complete application on November 1, 2022. The application states that they are developing an approximately 14.387-acre tract in Salado, TX at the N.E. corner of I-35 and FM2 268. His documents clearly state the specific area in the proposed (attached) Plat-Landscape Overlay. RREAF, on-behalf of the Hanks-Cabiness Christian Trust, is requesting an Operating Permit for an existing water well (CUWCD Well number N3-22-001P) on the property for commercial landscape irrigation use only for a proposed development known as "Sanctuary of Salado".

The proposed development wishes to utilize groundwater for landscape irrigation only, not to exceed 19.2 acre-ft/year total. The beneficial use is to maintain improved landscaped areas along the street right of ways, and a trail system that will be accessible for the beneficial use of the public. The applications states that the landscape scope will utilize plant selections that are drought-resistant species such as native Texas Bermuda grass, and drought-tolerant trees and shrubs. The landscaped

areas, plant types and quantities are delineated on the attached landscape drawings. The irrigation system is designed for maximum efficiency to encourage water conservation per TCEQ requirements. The applicant's support documents are attached which include the monthly needs assessment and irrigation drawings to solidify their desire for water conservation efforts. The applicant in their needs assessment for 19.2 ac-ft/year references the option of public water (purchased) and gray water (purchased) but those analytics are not afforded the District in the aforementioned application but should provided in testimony for the board's deliberations.

This permit, *if approved*, may authorize a future withdrawal from an existing well (N3-22-001P) in the Edwards BFZ Management Zone described in District Rule 7.1. The existing well is completed in the Edwards BFZ Aquifer and will be limited to a maximum 2-inch column pipe on a 14.387-acre tract in accordance with District Rule 9.5 and located at the N.E. corner of I-35 and FM 2268, Salado, Texas, Latitude 30.93497°/Longitude -97.53675°. The proposed annual quantity is not to exceed 19.2 acre-feet or 6,256,339 gallons per year total for landscape irrigation only.

#### Per Rules 6.9 and 6.10

In deciding whether or not to issue the permit, the Board must consider the following questions and elements of an operating permit application:

1. Does the application contain all the information requested and is the application accurate? Does it meet spacing and production limitations identified by District Rules, and does it conform to all application requirements, including public notification and the prescribed fees? (Rule 6.10.24(a)(b), TWC 36.116(a)(1), TWC 36.113(d)(1) and Rule 6.9.1(b)(1)(2)

The application is complete and all requested information has been provided. The application conforms to said rules with all required application fees. In addition, the applicant has met all notification requirements in a proper manner per District Rules.

# 2) Is the proposed use of water dedicated to beneficial use? (TWC 36.113(d)(3) and District Rule 6.10.24 (d).

The groundwater produced from this well is for a legally defined beneficial use.

Keep in mind that today's hearing for the prescribed need by the applicant must still address additional elements that are necessary per District Rules that prescribe the 'well completion report' for an existing well by a licensed geoscientist or professional engineer.

# 3) Has the applicant agreed to avoid waste and achieve water conservation? (TWC 36.113(d)(6) and Rule 6.10.24(f)

The applicant has agreed to testify that he understands per this District Rule that by signing the application form, the applicant agrees to comply with the District's Management Plan and Drought Contingency Plan.

In addition, the Applicant should testify that the water conservation measures are placed in the plat dedications & notes illustrating that water conservation is paramount in protecting the very limited groundwater resource and vital to the sustainability of the aquifer.

Applicant should testify that under no circumstances will the groundwater resource be used to augment any surface containment features such as the large ponds and/or any future vanity pond or fountains, thus being subject to District fees and/or other legal remedies.

The District requires that the applicant state in testimony they do not intend to utilize the groundwater for extensive landscape purposes beyond what is described in the application and preliminary plat. These assurances should lay out guidance for conservation on the plat illustrating the proposed restrictions.

The applicant should testify that during drought that adherence to the district's drought restrictions is necessary in protecting Springflow which is down gradient of the spring complex in downtown Salado. Currently our geoscientist Mike Keester states that is appears that 80% of the groundwater to be produces from the well would normally exit the Salado Spring Complex in Downtown Salado.

Example of current drought restrictions as related to those restrictions imposed since June 2022 thru December would be reflected as follow on a month-by-month basis under the potential permit of 19.2 ac-ft:

Month	ET %	Irrigation	Gallons
Jan	33%	259,388	Gallons
Feb	39%	306,550	Gallons
March	60%	417,616	Gallons
April	75%	589,520	Gallons
May	88%	691,703	Gallons
June	95%	746,725	Gallons
July	100%	786,026	Gallons
Aug	97%	762,445	Gallons
Sept	79%	620,961	Gallons
Oct	65%	510,917	Gallons
Nov	39%	306,550	Gallons
Dec	32%	251,528	Gallons
_			
TOTAL		6,249,929	Gallons

Above table is from the applicant's needs assessment documented month-by-month

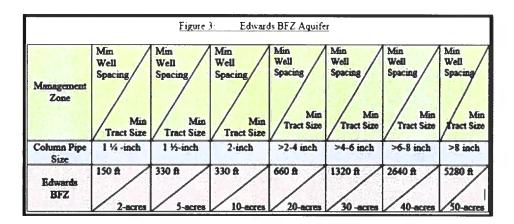
Proposed Needs by month	Proposed use in gallons	2022 CUWCD Drought curtailment
June	746,725	522,701
July	786,026	550,218
August	762,445	533,712
September	620,961	434,673
October	510,917	357,642
November	306,550	214,585
December	251,528	176,070
Total	3,985,152	2,042,876

Table below illustrates what current then Stage 3 (30%) 6-month Curtailment Reflects and will continue into 2023 per the State Climatologist.

4) Has the applicant agreed that reasonable diligence will be used to protect groundwater quality and that the applicant will follow well plugging guidelines at the time of well closure? (TWC 36.113(d)(7) and Rule 6.10.24(g))

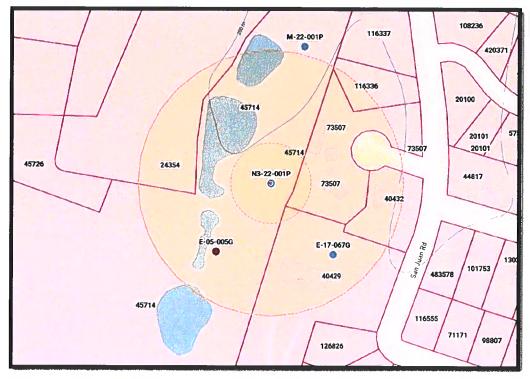
The applicant by virtue of signing the application form and in today's testimony should confirm that if the well deteriorates over time or becomes damaged in such a way that the well is inoperable that per state law and district rules require such a well to be plugged before a replacement well can be drilled.

5) Has the applicant confirmed that the proposed water well complies with District spacing and production limitations identified in our rules for existing wells? (TWC 36.116(a)(1) and District Rule 6.10.24(b)) and District Rule 9.5.2 page 62

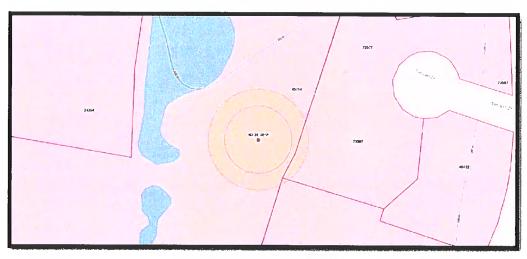


The well will be limited, per the application, to a column pipe size not to exceed 2inchs in diameter. District Rule 9.5.2 is illustrated below.

- November 1, 2022, amended rules require enhanced spacing for <u>all new wells</u>, based on this proposed column pipe size, a minimum size tract of 10-acres is required, and a setback spacing of 330-foot spacing requirement from other producing wells.
- *Grandfathered spacing for existing wells drilling from other wells drilled and completed prior to November 1, 2022, is 100-feet. (see below map)*



The above map illustrates the 100-foot setback vs the 330-foot setback from other wells.



The above map illustrates that the new rule for new wells would be 75-foot setback requirement from adjacent property lines. But because this is an existing well drilled and completed prior to November 1, 2022, amended rules the grandfathered 50-foot setback is attained.

6) Will the proposed use of water unreasonably affect existing groundwater and surface water resources or existing permit holders? (District Rule 9.9.2(e) and 6.9.2(f) for existing wells requiring a non-exempt operating permit.)

The District rules do not impose production limitations other than those determined applicable in the review of the today's permit request for a well that necessitates further studies be conducted under District Rule 9.9.2(e) and 6.9.2(f) for the purpose of completing the prescribed elements of the Well Completion Report which includes the necessary minimum 24-hour pumping test while monitoring one or more wells.

The applicant and their representative should understand the proposed permit for production must not cause any unacceptable level of decline in water quality of the aquifer, or as may be necessary to prevent waste and achieve water conservation. The production must minimize as far as practicable the drawdown of the water table or the reduction of artesian pressure, lessen interference between wells, or control and prevent subsidence. In determining thus monitoring wells should include M-22-001P and the Exempt Well E-17-067G owned by Murray and Patsy Lane located at 404 FM 2268 Salado, TX 76571.

These issues are considered in Items 6 & 7 below and with staff recommendations to address potential concerns of adjacent property owners, and potential impact to the springs including the Salado Salamander.

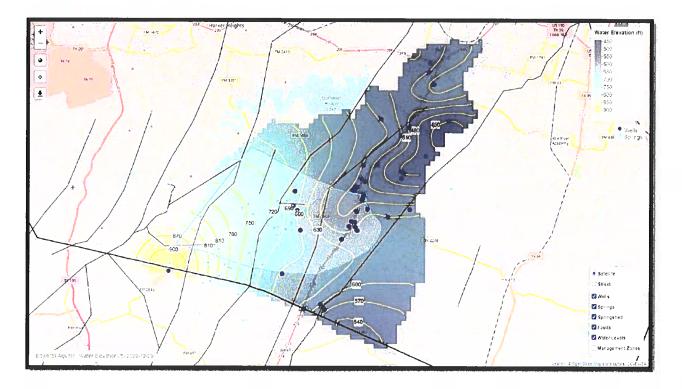
Based upon available information, there are the following number of wells as defined for domestic use and public water supply also completed, and active from the Edwards BFZ Aquifer. <u>35 active wells within 1/2 mile and 4 of those active wells are</u> permitted for public and/or commercial purposes.

*Mike Keester, RW Harden & Associates, has reviewed the application and has determined the anticipated drawdown and has provided the <u>attached MK report</u>.* 

His conclusions and recommendations state that the proposed permitted amount of 19.2 acre-feet/year of use <u>needs further understanding thus require that the well</u> completion report (4-8) of Rule 6.9.2(f) be required thus return to the board for final approval at a later date.

The District should also keep in mind that the impact on Springflow at the Salado springs complex and potential impact to the Salado Salamander, per the <u>MK Report on page 6</u>, states "**Results from modeling of the proposed production suggests that** more than 80 percent of the proposed pumping will be captured groundwater that would otherwise discharge to Salado Creek or the Salado Springs complex. The modeling results are consistent with our understanding of the Edwards BFZ Aquifer flow system. We anticipate most of the produced groundwater under this operating permit will be flow that would otherwise discharge to the surface water features. During periods of high aquifer flow the effect of production may be negligible; however, during District declared drought periods pumping curtailments should be enforced to limit the impact on flow from the Salado Springs complex."

The following map is the current water elevations (12/29/22) in the Edwards BFZ illustrating the flow path of the groundwater from the southwestern Bell County and the curves to the springs of Salado along IH35.



Additionally, the District, to the extent possible, must issue permits up to the point the total volume of exempt and permitted groundwater production will achieve the applicable Desired Future Condition (DFC) per TWC 36.1132(a)(b) and Rule 6.10.25(a)(b)(c)(d)(e).

7) Is the proposed use of water consistent with the District's Groundwater Water Management Plan related to the approved DFC and the defined available groundwater for permitting?

The District's Management Plan reflects a groundwater availability figure in the Edwards BFZ Aquifer of <u>6469 ac-ft/year Modeled Available Groundwater</u> (then reserved 825 ac-ft/year for exempt well use) thus <u>5,644 ac-ft/year is the Managed</u> <u>Available Groundwater for permitting.</u>

The Board, per the District Management Plan, has evaluated groundwater available for permitting the Edwards BFZ Aquifer and most recently evaluated the available groundwater for permitting (consistent with the management plan as stated on pages 9-10).

The requested permit amount relative to the modeled available groundwater MAG determined by the Texas Water Development Board (TWDB) based on the desired future conditions (DFCs) established by the District for the Edwards BFZ Aquifer was set by CUWCD based on maintaining spring flow. This was reviewed and again approved by the board in January 2019. To achieve this DFC, the TWDB used a model that indicated the MAG was equal to 6469 acre-feet per year from the Edwards BFZ.

A summary of YTD 2022 permit production, HEUP & OP Permit Analysis, pending applications and *Exempt Well Reservations for the Edwards BFZ, per District Report

illustrates current Edwards BFZ permits total <u>2458,93</u> ac-ft/year. Currently the District has two other pending permits of <u>502.72</u> ac-ft/year, thus available for permitting is 3,507.35 ac-ft/year. (see attached Edwards BFZ Aquifer Status Report, <u>December 2022</u>).

# 8) What are the Modeled Available Groundwater calculations determined by the Executive Administrator of the Texas Water Development Board?

*Refer to #7 above. The modeled available groundwater will not be exceeded by granting this permit. (see attached Edwards BFZ Aquifer Status Report, December 2022).* 

# 9) What has the Executive Administrator of the Texas Water Development Board's estimate of the current and projected amount of groundwater produced under the exemptions in District Rule 8.3?

Refer to #7 above. Reservation of Modeled available groundwater for <u>exempt well</u> use will not be exceeded by granting this permit. 825 ac-ft/year vs 357 ac-ft estimated to be used annually in the Edwards BFZ. *(see 2021 district exempt use report)* 

# 10) What is the amount of groundwater authorized under permits previously issued by the District?

Refer to #7 above. Existing permits do not exceed the managed available groundwater (modeled available groundwater – exempt well use = Managed available groundwater) for the Edwards BFZ Aquifer which is <u>5,644</u> ac-ft/year.

# 11) What is the reasonable estimate of the amount of groundwater that is produced annually under existing non-exempt permits issued by the District?

The total permitted amounts for non-exempt wells in the Edwards Aquifer in 2021 was **2525.99 acre-feet** and the actual production in 2021 was **1751.57 acre-feet (69.62%)** of the permitted amount. (Figures are based upon monthly production reports submitted to Clearwater by the permit holders in 2021).

#### 12) Yearly precipitation and production patterns.

Clearwater is currently we are in drought management stage 2 based on the PDI system (average running total annual rainfall) over the Aquifer in the District, is currently at **21.453** inches of rain received in the last 365 days (12-20-2022) thus 65.01% of annual expected rainfall of 33 inches. The Edwards BFZ permit holders in all of 2021 have used only 69.62% of total permitted amounts in the Aquifer. Permit holders did not exceed their total permitted amounts in 2020 or 2021.

The gravity of the current drought is reminiscent of epic drought of 2011-2013, significant drought in 2018 and again in summer of 2020. The current drought does necessitate that the proposed permit will have encountered the need for all permit holder's reduction of 30% from June thru September and an additional amount of 20% from October to present.

These extreme reductions in 2022 would have been significant to the applicant's investment of landscape thus is encouraged to reevaluate the option of a new well completed to the Hensell Layer of the Trinity Aquifer for the prescribed amount of groundwater. Being in the Eastern Management Zone the restrictions would not be as rigid as the Edwards BFZ Drought restrictions.

#### **Conclusions and Recommendations:**

- 1) District GM recommends that the Board take testimony from all parties to the case.
- 2) District GM encourages all parties who respond to the notification letters attend the hearing and establish standing (if contesting the permit) and participate in the portion of the hearing for all parties.
- *3)* District GM concurs with Keester that the following conditions under <u>Rule 6.9.2(f)</u> first be submitted to inform the Board before its final decision, since the operating permit is for an existing well, we recommend the Board only require the following for the well completion report:
  - (4) well completion diagram
  - (5) pump curve
  - (6) pumping test (two prescribed monitor/observation wells)
  - (7) water quality
  - (8) predicted impacts of the proposed production from the well on existing wells completed within the same aquifer that are within  $\frac{1}{2}$  mile of the production well.

#### 3) District GM also askes that the applicant revisits their other options by:

- Utilizing public water supply from Salado Water Supply or
- Pursuing an alternative groundwater source (Hensell Layer of the Trinity Aquifer) should the pumping test inform all parties that the amount of groundwater requested has a negative impact on existing well owners and/or potential impact on springs which are all down gradient of the existing well.

#### Attachments are as follows:

Keester PG Technical Memorandum	12/09/2022
CUWCD Edwards BFZ Aquifer Status Report	12/14/2022
CUWCD 2021 Exempt Well Estimate of Use Report	12/31/2021
CUWCD Site Map	See Attached
Applications, fees and Notification Affidavit	See Attached

Edwards BFZ Aquifer Status Report MAG Calulations by TWDB December 2022

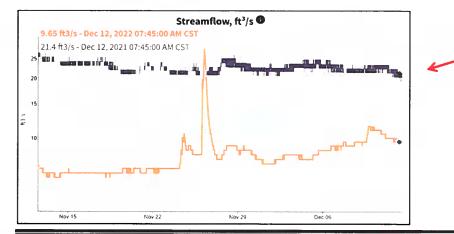
Edwards (BFZ) Aquifer Status Report - December 2022

	<u>DFC Analysis Over Time</u> (2000-Present) Modeled Available Groundwater			<u>HEUP and OP Permit Analysis</u> Relative to the Modeled Available Groundwater			<u>2022 YTD Prod.</u> Jan - Nov 1887.22 Ac-ft 76.75%	Pending Applications		Exempt Well Reservations		
	DFC Adopted * Minimum Spring Flow	Status of DFC ** Current / Low	MAG *** Ac-ft	HEUP _{Ac-ft}	OP Ac-ft	Total Permitted _{Ac-ft}	2021 Actual Production	Available for Permitting Ac-ft	Pending Applications Ac-ft	Exempt Well Reservation Ac-ft	Exempt Well Use Estimation Ac-ft	Available Exempt Use Ac-ft
Edwards (BFZ) Aquifer	100 Ac-ft per month or 1.68 cfs	626.46 Ac-ft 12/12/2022 vs 220 Ac-ft 08/20/2014	6469	2139.20	319.73	2458.93	1751.57 Ac-ft 69.62%	3185.07	521.92	825	357	468

*Desired Future Conditions (DFC) established by Clearwater UWCD and approved by GMA8 and TWBD, is the description of how the aquifer should look in the future (50 years based on maintaining the Salado Spring Complex discharge during a repeat of drought conditions similar to the drought of record in the 1950's, under drought of record, a five-day average of discharge amounting to 200 ac-ft-month is preferred and 100 ac-ft-/month is the minimum acceptable spring flow. Spring flow is measured and estimated by the USGS Gage in Salado Creek located below the Salado Creek Spring Complex.

**Status of the DFC is the estimated spring flow over a five-day average from the springs releasing artesian pressure from the Edwards BFZ Aquifer expressed as acre feet per month of spring flow into Salado Creek. ***The Modeled Available Groundwater (MAG) is the estimated amount of water available for permitting assigned to Clearwater UWCD by the Executive Administratar of TWDB, based on the desired future conditions.

7KX Investments N2-19-005P (500 ac-ft/yr) Aria Prairie N2-22-001P + 7 wells (2.72 ac-ft/yr) Salado Sanctuary N3-22-001P (19.2 ac-ft/yr)



CFS is measured continuously at the downstream gage with USGS developing the rating curve according to industry standards and maintaining the information for public access on the USGS website.

5 - day average for December 8th – December 12th was 10.528 CFS = 626.46 ac-ft/month

5 - day average for November 4th – November 8th was 7.826 CFS = 465.68 ac-ft/month

Clearwater UWCD Status Report - December 14, 2022

# CUWCD Exempt Well Use Assessment



Aquifer	Total Active Registered Exempt Wells ³	Registered Domestic Wells	Estimated Domestic Use Gallons/Day ^{1,2}	Estimated Domestic Use Ac- ft/Year ^{1,2}	Registered Stock Wells	Estimated Stock Use Gallons/Day ⁴	Estimated Stock Use Ac-ft/Year ⁴	Total Estimated Use Gallons/Day ⁷	Total Estimated Exempt Well Use Ac-ft/Year ⁷	MAG Reserved Exmpt
Glen Rose (Upper Trinity)	501	412	120,535	135	89	<b>6,896</b>	86	197,431	221	Well Use
Hensell (Middle Trinity)	944	886	410,132	459	58	50,112	56	460,244	516	well use
Hosston (Lower Trinity)	149	138	40,373	45	HILLING MARKING 11	9,504		49,877	56	
Trinity (Total)6	1,594	1,436	571,040	640	158	136,512	153	707,552	793	1,419
Edwards BFZ	833	704	205,962	231	129	111,456	125	317,418	356	
Edwards Equivalent	489	390	114,098	128	99	85,536	96	199,634	224	
Buda	28	15	4,388	5	stational states 13	11,232	13	15,620	17	Second Second
Lake Waco	8	3	878	1	5	4,320	·	5,198	6	
Austin Chalk	225	141	41,251	46	84	72,576	1000 Billion Billion Billion 81	113,827	128	
Ozan	162	114	33,352	37	48	41,472	46	74,824	84	
Pecan Gap	67	44	12,873	14	23	19,872	22	32,745	37	E. Ca
Kemp	15	11	3,218	4	A CANARA CONTRACTOR A	3,456	ne toes of all factors at 4	6,674	7	
Alluvium	592	379	110,880	124	213	184,032	206	294,912	330	
Other ⁵	1,586	1,097	320,938	359	489	422,496	473	743,434	833	
CUWCD Total Active	4,013	3,237	1,097,941	1,230	776	670,464	751	1,768,405	1,981	

1. Domestic use estimate assumes 106 gallons/person per day (USGS estimate of domestic use outside of a municipal water system) and 2.76 persons/household (U.S. Census Bureau, Population Estimates Program (PEP) July 1, 2019)

2. Benjamin G. Wherley, Ph.D. Associate Professor- Turfgrass Science & Ecology Dept. of Soil and Crop Sciences Texas A&M University estimate of 2,000ft² warm season turfgrass requires 38,855gal/yr/lawn or 106gal/day/lawn; "Ranchette" Avg. lawn size is 13,042ft², 6.5X larger; 6.5 X 106gal/day/lawn= 689gal/day/lawn; ~217 "Ranchette" Middle Trinity Wells; 689 X 217=an additional 150,924gal/day/lawn; **490ac-ft/yr or an 89% increase in Middle Trinity exempt well use from the 2018 estimate of 258ac-ft/yr.** 

3. Exempt well use estimate factors out all plugged, capped, monitor and inactive wells in the database.

4. Source of stock water estimates is Texas Agrilife Extension @ 18 gallons water per day per cow. Livestock water use estimates are based on the 2017 Census of Agriculture, USDA National Agricultural Statistics Service. 36,868 cows / 771 stock wells= 48 cows/stock well; 48* 18gpd= 846 gal/day/stock well, 747ac-ft/yr or a 34% increase in annual stock use from the 2018 estimate of 556ac-ft/yr.

5. The "Other" designation is the total of minor aquifer and alluvium source designation of the exempt wells.

6. Trinity Aquifer wells registered with unknown depth are assigned to the Middle Trinity per Board decision.

7. All estimates of groundwater use by exempt well owners is based on assumptions and scientific data, but by no means are they to be interpreted as recommended practices by CUWCD.

Mike Keester RW Harden & Associates Geoscience Evaluation



9009 Mountain Ridge Dr • Suite 100 • Austin Texas 78759 • ph (512) 345-2379 • fax (512) 338-9372

#### TECHNICAL MEMORANDUM

To:Dirk Aaron, General Manager – Clearwater Underground Water Conservation DistrictFrom:Michael R. Keester, PG – R. W. Harden & Associates, Inc.Date:December 9, 2022Subject:Hydrogeologic Evaluation of the Hanks-Cabiness Christian Trust Well (N3-22-001P)<br/>Operating Permit Application

Proposed Well ID: N3-22-001P	Well Owner Name: Hanks-Cabiness Christian Trust
Tract Size: 14.387 Acres	Column Pipe Size: 2 Inches

Aquifer: Edwards BFZ

Proposed Annual Production: 19.2 Acre-Feet per Year

Proposed Instantaneous Pumping Rate: 50 Gallons per Minute

The applicant indicated they will use an existing well on the property for their proposed use. They intend to equip the well with a pump and maximum 2-inch column pipe for a pumping rate of 50 gallons per minute. The requested annual production from the well is 19.2 acre-feet per year for landscape irrigation.

The identified source for the proposed use is the Edwards Balcones Fault Zone (BFZ) Aquifer. According to the District's geologic database, the top of the Edwards BFZ is about 80 feet below ground level and about 265 feet thick at the well location. Available records for the existing well indicate it is open to the aquifer from 130 to 195 feet below ground level.

#### Projected Groundwater Demand

The applicant provided irrigation estimates for the development prepared by a State of Texas licensed irrigator. The irrigation usage estimates indicated the development would have 7.98 acres of lawn area watered with spray irrigation, 0.37 acres of shrub area with drip irrigation, and 24 trees covering 0.07 acres presumably also being watered with drip irrigation. The calculations provided by the applicant considered the annual amount of local evapotranspiration and rainfall to estimate the irrigation demand. Based on these local climatic conditions, anticipated landscape, and irrigation methods the applicant provided an estimated annual irrigation water use of 6,256,339 gallons or 19.2 acre-feet.

To verify the irrigation use estimate, we input the landscape type and acreage into a spreadsheet model developed by North Texas Groundwater Conservation District and AgriLife to evaluate potential irrigation requirements. We updated the model using local climate data from the sources identified in the model files.

As shown in Table 1, this spreadsheet model provided results that were similar to the estimates provided by the applicant.

Month	Crop Water Requirement (inches)	Expected Rainfall (inches)	Crop Deficit (inches)	Crop Deficit (gallons)	Irrigation Water Requirement (gallons)	Irrigation Water Requirement (acre-feet)
1	1.75	1.62	0.13	27,836	37,114	0.11
2	2.16	1.93	0.22	48,058	64,078	0.20
3	3.47	2.10	1.44	298,176	397,382	1.22
4	4.51	2.56	2.21	425,806	567,048	1.74
5	5.44	3.63	1.81	393,136	524,182	1.61
6	6.19	2.76	4.54	757,000	1,006,383	3.09
7	6.49	1.51	7.52	1,108,736	1,471,561	4.52
8	6.36	1.77	6.80	1,021,039	1,355,526	4.16
9	4.81	2.66	2.50	470,597	626,539	1.92
10	3.67	2.77	0.91	196,518	262,024	0.80
11	2.27	2.07	0.20	43,799	58,399	0.18
12	1.84	1.83	0.01	1,964	2,618	0.01
Total	48.96	27.20	28.30	4,792,665	6,372,854	19.56

 Table 1.
 Applicants estimated irrigation demands using the spreadsheet model.

In addition, we obtained climate data recorded at a weather station in the City of Temple. From the data we calculated the daily reference evapotranspiration using the Penman-Monteith equation (Allen and others, 1998). Using the daily precipitation, reference evapotranspiration, crop coefficient, and estimated runoff we then calculated the daily water deficit for the landscape. From these results we calculated the estimated annual irrigation demand from 2003 through 2021. Figure 1 illustrates how the irrigation demand may change from year to year based on climatic conditions with demand varying from 10.6 to 19.5 acre-feet per year. Like the spreadsheet model, these results are similar to the estimate provided by the applicant.

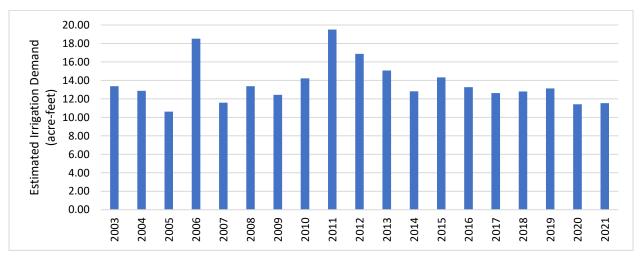


Figure 1. Applicant's estimated annual irrigation demand based on climate data from 2003 through 2021.



While it is uncertain which specific climate conditions may require reductions associated with drought curtailment, during years with the least amount of rainfall and corresponding irrigation demand it is likely the applicant would need curtail pumping under District drought declarations. As such, it is also unclear if the applicant will be able to fully utilize the permitted production when the irrigation demand is greatest. As defined in the Texas Water Code, the use of groundwater for irrigation is a beneficial use of groundwater and the annual volume requested by the applicant is consistent with crop type and historical climatic conditions.

### Projected Effect on Existing Wells

Jones (2003) indicates the Edwards BFZ Aquifer transmissivity is about 42,000 gallons per day per foot (gpd/ft) with a storage coefficient of 0.00114 (unitless). For our analysis of potential drawdown due to the proposed production, we used the transmissivity and storativity values from the groundwater availability model (Jones, 2003) to assess the potential drawdown at existing wells completed in the Edwards BFZ Aquifer located up to one mile from the well (Figure 2). We calculated the potential effects of the proposed production on local water levels in the aquifer using the Theis equation (Theis, 1935), which relates water level decline (that is, drawdown) to the pumping rate of a well and properties of the aquifer. While the equation does not account for aquifer conditions which may affect the calculation of long-term water level declines (for example: aquifer recharge, faulting, or changes in aquifer structure), it does provide a good, reliable, and straightforward method for estimating relatively short-term drawdown in and near a well due to pumping. As the duration of pumping and distance from the well increase, the uncertainty in the calculated drawdown also increases.



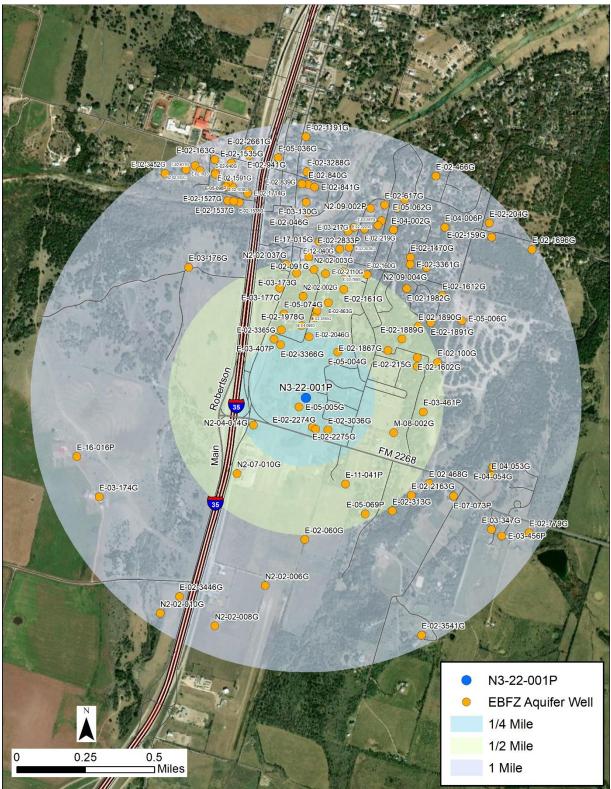


Figure 2. Well N3-22-001P and other existing Edwards BFZ Aquifer wells within one mile of N3-22-001P. Detailed information for each well shown is available through the District's website (https://cuwcd.org/).



Table 2 presents the calculated drawdown based on the proposed annual production rate of 19.2 acre-feet per year from the proposed well. For *1-Day Drawdown*, we applied the proposed instantaneous pumping rate of 50 gallons per minute for a period of 24 hours. For *30-Day Drawdown*, we assumed peak pumping during the summer of about 15 percent more than the average monthly amount (that is, the proposed annual production rate divided by 12 then multiplied by 1.15). For *1-Year Drawdown*, we used the proposed annual production amount.

CUWCD Well ID	Distance from Proposed Well (feet)	1-Day Drawdown (feet)	30-Day Drawdown (feet)	1-Year Drawdown (feet)
	•		. ,	, ,
N3-22-001P		30.2	10	9.7
E-05-005G	217	1.7	2	2.8
E-17-067G	235	1.5	2	2.8
M-22-001P	350	Negligible	1.6	2.4
E-02-2275G	572	Negligible	1.1	2
E-02-2274G	624	Negligible	1	1.9
E-02-3036G	741	Negligible	Negligible	1.8
E-18-090GU	749	Negligible	Negligible	1.8
E-05-004G	841	Negligible	Negligible	1.7
E-18-089GU	1,076	Negligible	Negligible	1.5
N2-04-014G	1,132	Negligible	Negligible	1.4
E-02-3366G	1,133	Negligible	Negligible	1.4
E-02-2046G	1,179	Negligible	Negligible	1.4
E-03-407P	1,289	Negligible	Negligible	1.3
E-02-1978G	1,395	Negligible	Negligible	1.3
E-02-3365G	1,396	Negligible	Negligible	1.3
E-19-082GU	1,413	Negligible	Negligible	1.2
E-04-086G	1,553	Negligible	Negligible	1.2
E-05-074G	1,676	Negligible	Negligible	1.1
E-02-3395G	1,692	Negligible	Negligible	1.1
M-08-002G	1,807	Negligible	Negligible	1
E-02-1867G	1,819	Negligible	Negligible	1
E-02-863G	1,831	Negligible	Negligible	1

Table 2.Calculated drawdown at N3-22-001P and other nearby wells completed in the Edwards BFZ<br/>Aquifer based on an annual production rate of 19.2 acre-feet from the proposed and simulated<br/>wells and instantaneous production of 50 gallons per minute.

The predicted drawdown amounts are based on our current understanding of the aquifer hydraulic properties and the estimated production from the well. The predicted drawdown values presented do not include the effects from other wells pumping near the well. Predicted drawdown of less than one foot is considered negligible for analysis purposes due to inherent uncertainty in the aquifer hydraulic characteristics.

The projected drawdown values using the transmissivity and storativity from the groundwater availability model result in a 1-day drawdown of 30 feet at the proposed well, 1 to 2 feet of drawdown at the two closest wells, and a negligible amount on wells further away. Estimated long-term drawdown is about 10 feet at the wellsite and 1 to 3 feet in wells within about one-third of a mile. However, CUWCD has collected water-level measurements in nearby Edwards BFZ wells (M-08-002G and M-08-001G) since 2009. Neither of these wells indicate an overall trend (rise or decline) since 2009. Rather, the water-level data from these Edwards BFZ monitoring wells suggests fluctuations in water level related to wet and dry seasonal trends along with changes in pumping associated with the variable climate conditions.



## Projected Effect on Groundwater Discharge to Salado Creek and Salado Springs

To assess the potential impact of the proposed pumping on Salado Springs we conducted a capture analysis using the Groundwater Availability Model (GAM) for the Northern Segment of the Edwards BFZ Aquifer (Jones, 2003). The Edwards BFZ GAM uses drain cells to simulate groundwater discharge to Salado Creek and the Salado Springs complex, where each drain cell includes a base discharge elevation. The higher the water level is above a base elevation, the more groundwater discharge the model simulates. For the capture analysis, we simulated two scenarios with the GAM; one scenario included the proposed pumping and one did not. The difference in discharge between the two scenarios is considered the impact of the proposed pumping.

The simulated decrease in discharge to the creek and springs over a simulated 10-year period of average climatic cycle conditions (periods of high and low precipitation) was an average of 0.023 cubic feet per second (cfs). The proposed annual pumping of 19.2 acre-feet equates to 0.0265 cfs. The estimated discharge captured by the proposed pumping is:

Capture % = 
$$\frac{0.023 cfs}{0.0265 cfs} \times 100 = 87\%$$

That is, on average about 87 percent of the proposed pumping would otherwise discharge to Salado Creek. While there is uncertainty associated with any mathematical model, the results suggest most of the proposed production would be captured groundwater that would otherwise discharge to the surface water features. With the well being less than one mile south of Salado Creek and the general northerly direction of groundwater flow in the area of the well, the results of the modeling are reasonable and consistent with our understanding of the Edwards BFZ Aquifer flow system.

### **Conclusions and Recommendations**

The requested operating permit annual volume is consistent with the projected irrigation demand. Using two different approaches, we corroborated the irrigation water use estimate provided by the applicant. However, it is possible the applicant would need to curtail pumping when irrigation demand is highest making it unclear if the full amount will be utilized.

Existing Edwards BFZ wells within one-half mile may experience less than one foot (that is, negligible) drawdown due to the annual production. However, water levels in the Edwards BFZ Aquifer fluctuate regularly with climatic conditions. We do not expect the proposed production to have a noticeable affect on the water levels in existing wells in comparison to the seasonal water level fluctuations. Nonetheless, continued water-level monitoring will aid in assessing the long-term effects of cumulative groundwater production in the area.

Results from modeling of the proposed production suggests that more than 80 percent of the proposed pumping will be captured groundwater that would otherwise discharge to Salado Creek or the Salado Springs complex. The modeling results are consistent with our understanding of the Edwards BFZ Aquifer flow system. We anticipate most of the produced groundwater under this operating permit will be flow that would otherwise discharge to the surface water features. During periods of high aquifer flow the effect of production may be negligible; however, during District declared drought periods pumping curtailments should be enforced to limit the impact on flow from the Salado Springs complex.



If the Board approves, or considers approval of, the applicant's operating permit, we recommend the applicant prepare a well completion report as described in District Rule 6.9.2(f) to inform its decision. Since the operating permit is for an existing well, we recommend the Board only require the following for the well completion report:

- (4) well completion diagram
- (5) pump curve
- (6) pumping test
- (7) water quality
- (8) predicted impacts of the proposed production from the well on existing wells completed within the same aquifer that are within ½ mile of the production well.

Upon setting the pump in the well, we also recommend the applicant install a measuring tube to assess actual changes in water levels due to pumping from the well and regional water level declines.

### References

- Allen, R.G., Pereira, L.S., Raes, D., and Smith, M., 1998, Crop Evapotranspiration (Guidelines for Computing Crop Water Requirements): FAO Irrigation and Drainage Paper No. 56, 300 p.
- Jones, I.C., 2003, Groundwater Availability Modeling: Northern Segment of the Edwards Aquifer, Texas: Texas Water Development Board 358, 75 p.
- Theis, C.V., 1935, The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Ground-Water Storage: American Geophysical Union Transactions, v. 16, p. 519-524.

## **Geoscientist Seal**

The signature and seal appearing on this document was authorized by Michael R. Keester, P.G. on December 9, 2022. R.W. Harden & Associates Texas Board of Professional Geoscientist Firm Registration Number 50033.

