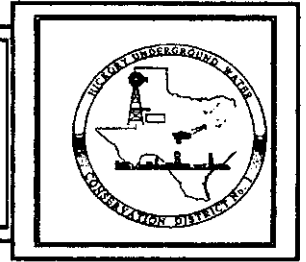


HICKORY UWCD NO. 1

P.O. Box 1214 Brady, TX 76825
(915) 597-2785 (915) 597-0133 Fax
E-mail: hickoryuwcd@yahoo.com



October 10, 2003

Rima Petrossian
Manager, Groundwater Technical Assistance
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711-3231

Ré: Management Plan

Dear Ms. Petrossian:

The Hickory UWCD has re-adopted the current District Management Plan as amended. The Board of Directors, at a regular monthly meeting on September 16, 2003, approved the District Management Plan by resolution 03-04. Enclosed you will find the re-adopted Management Plan and supporting documentation.

We now await re-certification from the Texas Water Development Board for administrative completeness.

Sincerely,

Stanley G. Reinhard
General Manager

ams

enclosures

Texas Water Development Board

Groundwater Conservation District Management Plan – Administrative Completeness Checklist

District Name: *Hickory UWCD*

Reviewing Staff: *Hickory UWCD*

Date Plan Received:

Date Plan Reviewed:

	Present in plan and administratively complete	Absent from plan and not complete	Citation of source or method	Evidence that best available data was used
1. Is an estimate of the existing total useable amount of groundwater in the District included? 31TAC §356.5 (a)(5)(A)	✓		✓	✓
2. Is an estimate of the amount of groundwater being used within the District on an annual basis, included? 31TAC §356.5 (a)(5)(B)	✓		✓	✓
3. Is an estimate of the annual amount of recharge to the groundwater resources within the District included? 31TAC §356.5 (a)(5)(C)	✓		✓	✓
4. Is an estimate of the projected water supply within the District included? 31TAC §356.5 (a)(5)(D)	✓		✓	✓
5. Is an estimate of the projected water demand within the District included? 31TAC §356.5 (a)(5)(D)	✓		✓	✓
6. Does the plan include details, of how the natural or artificial recharge of groundwater within the District could be increased? 31TAC §356.5 (a)(5)(C)	✓			
7. Does the plan include details of how the District will manage groundwater supplies in the District? 31TAC §356.5 (a)(6)	✓			
8. Are the actions, procedures, performance and avoidance necessary to effectuate the management plan, including specifications and proposed rules, all specified in as much detail as possible, included in the plan? 31TAC §356.5 (a)(4)	✓			
9. Does the District's management plan use a planning period of at least ten (10) years? 31TAC §356.5 (a)	N/A			
10. Was a certified copy of the District's resolution adopting the plan included? 31TAC §356.6 (a)(2)	✓			
11. Was evidence that the plan was adopted after notice and hearing, included? 31TAC §356.6 (a)(3)	✓			
12. Was evidence that, following notice and hearing, the District coordinated in the development of its management plan with surface water management entities, included? 31TAC §356.6 (a)(4)	✓			

Signify an affirmative response with YES
 Signify a negative response with NO
 Signify that a checklist item is not applicable with (N/A)

<p align="center">Review of the Groundwater Conservation District Management Plan for Conflict With TWDB Approved Regional Water Plan(s)</p>	<p align="center">Yes</p>	<p align="center">No</p>
<p>13(a). Did the District provide a letter by certified mail, return receipt requested to all Regional Water Planning Groups formed under authority of TWC §16.053 (c) in which any part of the District is located, asking the Regional Water Planning Group to review the groundwater management plan and specify any areas of conflict with the Texas Water Development Board approved regional water plan? 31TAC §356.6 (a)(5)</p>	<p align="center">✓</p>	
<p>13(b). Did any Regional Water Planning Group formed under authority of TWC §16.053 (c) indicate any potential conflict between the groundwater conservation district management plan and a Texas Water Development Board approved regional water plan? 31TAC §356.6 (a)(5)</p>		<p align="center">✓</p>
<p>13(c). Did the reviewer identify any potential conflicts between the management plan and a Texas Water Development Board approved regional water plan? TWC §36.1071 (e)(4), 31TAC §356.6 (a)(5) [If answering Yes, please provide a written explanation]</p>		<p align="center">✓</p>
<p>Signify an affirmative response with YES Signify a negative response with NO Signify that a checklist item is not applicable with (N/A)</p>		

Management Goals Required to be Addressed 31TAC §356.5(a)(1)	Management Goal (As Applicable) Present in Plan	Methodology for Tracking Progress 31TAC §356.5(a)(6)	Management Objective(s) 31TAC §356.5(a)(2)	Performance Standard(s) 31TAC §356.5(a)(3)
Providing the Most Efficient Use of Groundwater 31TAC §356.5(a)(1)(A)	14) <i>yes</i>	15) <i>yes</i>	16) <i>Yes</i>	17) <i>Yes</i>
Controlling and Preventing Waste of Groundwater 31TAC §356.5(a)(1)(B)	18) <i>Yes</i>	19) <i>Yes</i>	20) <i>Yes</i>	21) <i>Yes</i>
Controlling and Preventing Subsidence 31TAC §356.5(a)(1)(C)	22) <i>n/A</i>	23) 	24) 	25)
Addressing Conjunctive Surface Water Management Issues 31TAC §356.5(a)(1)(D)	26) <i>Yes</i>	27) <i>Yes</i>	28) <i>yes</i>	29) <i>yes</i>
Addressing Natural Resource Issues that Impact the use and Availability of Groundwater and Which are Impacted by the use of Groundwater 31TAC §356.5(a)(1)(E)	30) <i>n/A</i>	31) 	32) 	33)
Addressing Drought Conditions 31TAC §356.5(a)(1)(F)	34) <i>yes</i>	35) <i>yes</i>	36) <i>Yes</i>	37) <i>Yes</i>
Addressing Conservation 31TAC §356.5(a)(1)(G)	38) <i>yes</i>	39) <i>Yes</i>	40) <i>Yes</i>	41) <i>Yes</i>

Signify that the required elements are present in the Plan with YES
 Signify any required elements that are missing from the Plan with NO
 Signify any Plan elements which have been indicated as not applicable to the District with (N/A)



[Print](#) - [Close Window](#)

Date: Thu, 11 Sep 2003 13:59:28 -0500 (CDT)

From: omadmin@sos.state.tx.us

To: hickoryuwcd@yahoo.com

Subject: S.O.S. Acknowledgment of Receipt

Agency: Hickory Underground Water Conservation District Number 1
Liaison: Audra M. Wilcox

Acknowledgment of Receipt

The original TRD reference is 2003008126.

The Office of the Secretary of State has posted notice of the following meeting:

Meeting Information:

Hickory Board of Directors

09/16/2003 07:00 PM "TRD# 2003008127"

Notice posted: 09/11/03 01:59 PM

11
Notice is hereby given that the Board of Directors of the Hickory Underground Water Conservation District No. 1 will meet in Regular Session on **Tuesday, 16 September 2003 at 7:00 p.m.**, in the conference room of the Hickory Underground Water Conservation District No. 1, 111 East Main in Brady, Texas. The Board of Directors may take action on any items on this agenda it may determine would be appropriate.

**REGULAR MEETING
AGENDA**

- I. CALL TO ORDER
- II. AGENDA
- III. MINUTES
- IV. FINANCIAL REPORT
 - A. FINANCIAL REPORTS FOR AUGUST 2003
 - B. REVIEW, DISCUSS AND ADOPTION ON LINE ITEM AMENDMENT TO 2002/2003 BUDGET (ORDER 03-05)
 - C. REVIEW, DISCUSS AND ADOPT 2003/2004 TAX RATE (ORDER 03-06)
 - D. REVIEW, DISCUSS AND ADOPT 2003/2004 BUDGET (ORDER 03-07)
- V. REPORT ON DISTRICT ACTIVITIES
 - A. STAFF REPORT
 - B. REPORT ON REGIONAL PLANNING ACTIVITIES
- VI. NEW BUSINESS
- VII. OLD BUSINESS
- VIII. HEARINGS
 - PUBLIC HEARING - REVIEW, DISCUSS AND RE-ADOPT DISTRICT MANAGEMENT PLAN
- IX. OTHER MATTERS
- X. ADJOURN

I, the undersigned authority, do hereby certify that the attached notice of the Board of Directors of the Hickory Underground Water Conservation District No. 1 is a true and correct copy of said notice. I posted copies of said notice at the McCulloch County Courthouse in Brady, Texas, on the official bulletin board, and in the front entrance of the Hickory Underground Water Conservation District, in a place convenient and readily accessible to the general public, both being posted at least 72 hours preceding the time of the meeting.


STANLEY G. REINHARD, GENERAL MANAGER

MINUTES
REGULAR MEETING
16 SEPTEMBER 2003

The Board of Directors of the Hickory Underground Water Conservation District No. 1 held a Regular Meeting on Tuesday, 16 September 2003, in the District offices at 111 East Main Street, Brady, Texas. President Owen Parks called the meeting to order at 7:00 p.m. Those in attendance for the meeting or portions thereof were:

Owen Parks	San Saba
Bill Sloan	San Saba
Bert Striegler	Rochelle
Larry Lehmberg	Mason
Jim Quinn	Brady
Don Daniels	Mason
Jim Hurlbutt	Mason
Terry Norman	Brady
Stan Reinhard	Brady
Audra M. Wilcox	Brady

A motion was made by Bert and seconded by Bill to approve the agenda as the working agenda for the meeting. Motion passed.

President Parks asked for any corrections to the minutes from the August 14, 2003 meeting. A motion was made by Bill and seconded by Larry to approve the minutes. Motion passed.

Stan reviewed the financial reports for August 2003. A motion was made by Larry and seconded by Bill to approve the financial reports for August 2003. Motion passed.

The Board reviewed the amendment (Order 03-05 for line item adjustments) of the 2002/2003 budget for \$218,573.00. The total budget amount remained the same. A motion was made by Bill and seconded by Bert to approve the (Order 03-05) amendment. Motion passed.

The Board reviewed and discussed 2003/2004 Tax Rate (Order 03-06). A motion was made by Bill and seconded by Jim to approve (Order 03-06) the tax rate (\$.037). Motion passed.



The Board reviewed and discussed the 2003/2004 Budget (Order 03-07) the budget (\$252,400.00). A motion was made by Larry and seconded by Bert to approve the budget (Order 03-07) for the 2003/2004 year.

Stan presented both the written report of District Activities (see Attached Report of District Activities, 16 September 2003) and the regional planning activity update.

During the Public Hearing the Board reviewed and discussed revised Management Plan 2003-2008 for the District. A motion was made by Bert and seconded by Bill to approve resolution (03-04) to readopt the revised Management Plan. Motion passed.

A motion was made by Bert and seconded by Bill to adjourn the meeting at 8:10 p.m. The motion passed.

Meeting Adjourned.


Board President

Secretary
10/9/03
Date

RESOLUTION

03-04

THE STATE OF TEXAS
COUNTY OF MCCULLOCH

On this the 16th day of September, 2003, the Board of Directors of Hickory Underground Water Conservation District No. 1 consisting of the following directors:

W. Owen Parks, President
Bert C. Striegler, Secretary
Larry Lehmborg, Director

Bill Sloan, Vice President
Jim Quinn, Director

convened in regular session open to the public with all the directors present except the following:

None

Constituting a quorum, and among other proceedings had by said Board of Directors was the following:

WHEREAS, the Hickory Underground Water Conservation District No. 1 (Water District) was created by Acts of the 70th Legislature (1987), p. 2010, Ch. 439, S.B. 1525, in accordance with Article 16, Section 59 of the Constitution of Texas and Chapters 51 and 52 of the Texas Water Code, as amended; and

WHEREAS, S.B. 1525 was amended by Acts of the 77th Legislature (2001), H.B. 1909, in accordance with Chapters 36 and 49 of the Texas Water Code, as amended; and

WHEREAS, the District is required by Chapter 36.1071 of the Texas Water Code to review and re-adopt the plan with or without revisions at least once every five years and to submit the adopted Management Plan to the Executive Administrator of the Texas Water Development Board for review and certification; and

WHEREAS, the District's re-adopted Management Plan shall be certified by the Executive Administrator if the plan is administratively complete; and

WHEREAS, the District Board of Directors, after reviewing the existing Management Plan, had determined that this plan should be replaced with an amended Management Plan; and

WHEREAS, the District Board of Directors has determined that the Amended Management Plan addresses the requirements of Chapter 36.1071.

NOW, THEREFORE, be it resolved, that the BOARD OF DIRECTORS OF THE HICKORY UNDERGROUND WATER CONSERVATION DISTRICT NO. 1, following notice and hearing, hereby adopts this amended Management Plan; and

FURTHER, be it resolved that this amended Management Plan shall become effective immediately upon adoption.

The above order being read, it was moved and seconded that same do pass. Thereupon, the question being called for, the following members of the Board voted AYE:

Owen Parks, Bill Sloan, Bert Striegler, Jim Quinn, Larry Lehn
and the following voted NAY:

None

PASSED, APPROVED AND ADOPTED this the 16th day of September, 2003.

10

W. Owen Parks

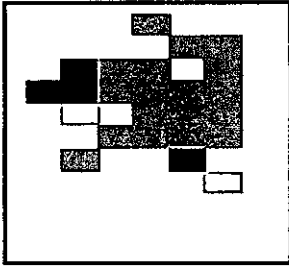
W. Owen Parks, President

Hickory Underground Water Conservation District No. 1

ATTEST:

Bert C. Striegler

Bert C. Striegler, Secretary



HICKORY UWCD NO. 1

P.O. Box 1214 Brady, TX 76825
(915) 597-2785 (915) 597-0133 Fax
E-mail: hickoryuwcd@yahoo.com



October 9, 2003

Subject: Hickory Underground Water Conservation District No. 1
Management Plan

Under §36.1071, Texas Water Code, as amended, the Hickory UWCD is required to coordinate with surface water entities in preparation of its management plan. In compliance with this chapter of the water code, the District submitted a copy of the newly amended 10 year management plan for review and comments to the following surface entities and regional planning groups on September 18, 2003:

- 1) City of Brady
- 2) City of Eden
- 3) City of Mason
- 4) City of Melvin
- 5) City of San Saba
- 6) Region F Water Planning Group
- 7) Region K Water Planning Group

Comments or suggestions were requested to be submitted to the District by October 1, 2003. As of October 9, 2003, no comments or suggestions have been received by the District.

Copies of the cover letters and certified mail receipts are enclosed.

Sincerely,

Stanley G. Reinhard
General Manager

ams

enclosures

September 23, 2003

Mr. Stanley Reinhard
Hickory UWCD No. 1
P.O. Box 1214
Brady, TX 76825

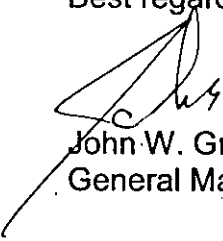
12

RE: Hickory UWCD Management Plan

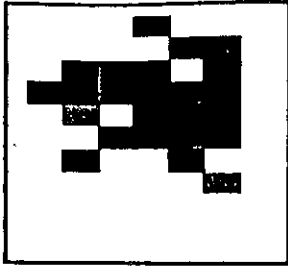
Dear Mr. Reinhard,

We have received the Hickory UWCD Management Plan and will forward a copy to the Region F Regional Water Planning Group.

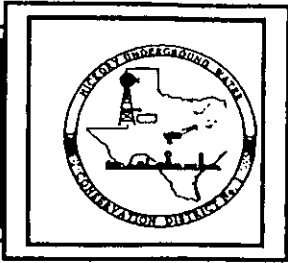
Best regards,



John W. Grant
General Manager



HICKORY UWCD NO. 1
 P.O. Box 1214 Brady, TX 76825
 (915) 597-2785 (915) 597-0133 Fax
 E-mail: hickoryuwcd@yahoo.com



September 18, 2003

13
(a)

Mr. John Grant/President
 Region F Regional Water Planning Group
 P.O. Box 869
 Big Springs, Texas 79721-0869

Subject Hickory UWCD Management Plan

Dear: Mr. Grant:

The Hickory UWCD adopted a 10 year management plan in 1998 which was certified by the Texas Water Development Board on September 17 1998. Under §36.1072, Texas Water Code, as amended, the District must review and readopt the plan with or without revisions at least once every 5 years. Since the District now includes all of Mason County and all groundwater within the District boundaries, the District has amended its 10-year plan and is submitting it to the Texas Water Development Board for re-certification.

Under §31TAC§356.6(a)(5), the District is required to submit a copy of the groundwater management plan to all Regional Water Planning Groups in which any part of the District is located. In compliance with this chapter of the TAC, the District is submitting to you a copy of the newly amended management plan for your review and comments.

Please Review this management plan and specify any areas of conflict with the Texas Water Development Board approved regional water plan. Please submit any comments to the District by October 1, 2003. If you have any questions or want additional information, as you review this plan, please contact me at (325) 597-2785. We appreciate your attention and cooperation in reviewing this management plan.

Sincerely,

Stanley G. Reinhard
 General Manager

ams

Enclosure

9500 9627 5000 0707 8002

U.S. Postal Service™		
CERTIFIED MAIL™ RECEIPT		
<i>(Domestic Mail Only; No Insurance Coverage Provided)</i>		
For delivery information visit our website at www.usps.com		
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Certified Fee	2.30	Postmark Here
Return Receipt Fee (Endorsement Required)	1.75	Clerk: KF707V
Restricted Delivery Fee (Endorsement Required)		09/18/03
Total Postage & Fees	\$ 5.11	
Sent to Region F Water Planning Group Street, Apt. No., or PO Box No. PO Box 869 City, State, ZIP+4 Big Springs, Tx 79712-0869		
PS Form 3800, June 2002		See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

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1. Article Addressed to:

Region F Water Planning Group
 John Hunt / President
 P.O. Box 869
 Big Springs, Texas 79721-0869

2. Article Number

(Transfer from service label) 7003 1010 0005 1296 0038

PS Form 3811, August 2001

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X *Harry Jones*

Agent

Addressee

B. Received by (Printed Name)

C. Date of Delivery *8-9-19*

D. Is delivery address different from item 1? Yes

If YES, enter delivery address below: No

3. Service Type

Certified Mail

Registered

Insured Mail

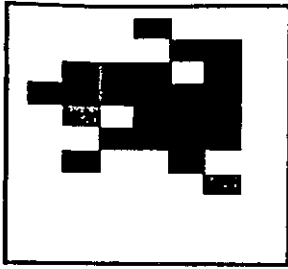
Express Mail

Return Receipt for Merchandise

C.O.D.

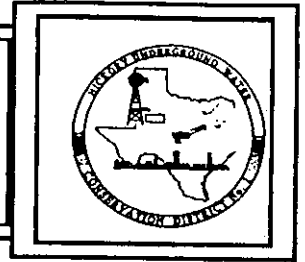
4. Restricted Delivery? (Extra Fee)

Yes



HICKORY UWCD NO. 1

P.O. Box 1214 Brady, TX 76825
(915) 597-2785 (915) 597-0133 Fax
E-mail: hickoryuwcd@yahoo.com



September 18, 2003

13
(a)

Mr. John Burke/President
Region K Regional Water Planning Group
P.O. Drawer P
Bastrop, Texas 78602

Subject Hickory UWCD Management Plan

Dear: Mr. Burke:

The Hickory UWCD adopted a 10 year management plan in 1998 which was certified by the Texas Water Development Board on September 17 1998. Under §36.1072, Texas Water Code, as amended, the District must review and readopt the plan with or without revisions at least once every 5 years. Since the District now includes all of Mason County and all groundwater within the District boundaries, the District has amended its 10-year plan and is submitting it to the Texas Water Development Board for re-certification.

Under §31TAC§356.6(a)(5), the District is required to submit a copy of the groundwater management plan to all Regional Water Planning Groups in which any part of the District is located. In compliance with this chapter of the TAC, the District is submitting to you a copy of the newly amended management plan for your review and comments.

Please Review this management plan and specify any areas of conflict with the Texas Water Development Board approved regional water plan. Please submit any comments to the District by October 1, 2003. If you have any questions or want additional information, as you review this plan, please contact me at (325) 597-2785. We appreciate your attention and cooperation in reviewing this management plan.

Sincerely,

Stanley G. Reinhard
General Manager

ams

Enclosure

5400 0045
9621 1296
5000 0101
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Return Receipt Fee (Endorsement Required)	1.75	
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$ 5.11	

Send To
Kevin K. Water Planning Group
Street/Apt. No. or PO Box No. P.O. Drawer P
City, State, ZIP+4 Bastrop, Texas 78602

PS Form 3800, June 2002 See Reverse for Instr

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Region K Regional Water
 Planning Group
 John Burkholder President
 P.O. Drawer P
 Bastrop, Texas 78602

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
 X *E. Steward* Addressee

B. Received by (Printed Name) Date of Delivery
E. Lidia Alvarez *09/22*

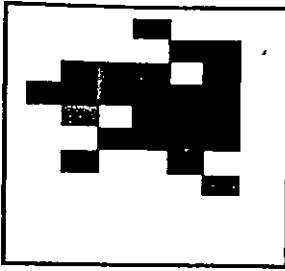
D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

2. Article Number
 (Transfer from service label) 7003 1010 0005 1296 0045

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1540



HICKORY UWCD NO. 1
 P.O. Box 1214 Brady, TX 76825
 (915) 597-2785 (915) 597-0133 Fax
 E-mail: hickoryuwcd@yahoo.com



September 18, 2003

12

City of Brady
 Merle Taylor/Mayor
 P.O. Box 351
 Brady, Texas 76825

Subject Hickory UWCD Management Plan

Dear: Merle Taylor:

The Hickory UWCD adopted a 10 year management plan in 1998 which was certified by the Texas Water Development Board on September 17 1998. Under §36.1072, Texas Water Code, as amended, the District must review and readopt the plan with or without revisions at least once every 5 years. Since the District now includes all of Mason County and all groundwater within the District boundaries, the District has amended its 10 year plan and is submitting it to the Texas Water Development Board for re-certification.

Under §36.1071, Texas Water Code, as amended, the District is required to coordinate with surface water entities in preparation of its management plan. In compliance with this chapter of the water code, the District is submitting to you a copy of the newly amended management plan for your review and comments.

Please Review this management plan and submit any comments or suggestions to the District by October 1, 2003. If you have any questions or want additional information, as you review this plan, please contact me at (325) 597-2785. We appreciate your attention and cooperation in reviewing this management plan.

Sincerely,

Stanley G. Reinhard
 General Manager

ams

Enclosure

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Certified Fee	2.30	
Return Receipt Fee (Endorsement Required)	1.75	Postmark Here
Restricted Delivery Fee (Endorsement Required)		Clerk: KF707V
Total Postage & Fees	\$ 5.11	09/18/03
Sent To: <u>City of Brady</u>		
Street, Apt. No., or PO Box No.: <u>P.O. Box 351</u>		
City, State, ZIP+4: <u>Brady, Tx 76825</u>		

4100 9621 5000 0707 8007

SENDER: COMPLETE THIS SECTION

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- Attach this card to the back of the mailpiece, or on the front, if space permits.

1. Article Addressed to:

City of Brady
 Mable Taylor / City mg
 P.O. Box 351
 Brady, Texas 76825

2. Article Number

(Transfer from service label)

7003 1010 0005 1296 0014

PS Form 3811, August 2001

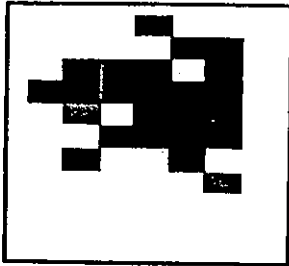
Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
Kennie Edmiston
 B. Received by (Printed Name) Addressee
Kennie Edmiston
 C. Date of Delivery
09 22 03
 D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.
 4. Restricted Delivery? (Extra Fee) Yes



HICKORY UWCD NO. 1
 P.O. Box 1214 Brady, TX 76825
 (915) 597-2785 (915) 597-0133 Fax
 E-mail: hickoryuwcd@yahoo.com



September 18, 2003

12

City of Eden
 Ed Medders/City Administrator
 P.O. Box 915
 Eden, Texas 76837

Subject Hickory UWCD Management Plan

Dear: Ed Medders:

The Hickory UWCD adopted a 10 year management plan in 1998 which was certified by the Texas Water Development Board on September 17 1998. Under §36.1072, Texas Water Code, as amended, the District must review and readopt the plan with or without revisions at least once every 5 years. Since the District now includes all of Mason County and all groundwater within the District boundaries, the District has amended its 10 year plan and is submitting it to the Texas Water Development Board for re-certification.

Under §36.1071, Texas Water Code, as amended, the District is required to coordinate with surface water entities in preparation of its management plan. In compliance with this chapter of the water code, the District is submitting to you a copy of the newly amended management plan for your review and comments.

Please Review this management plan and submit any comments or suggestions to the District by October 1, 2003. If you have any questions or want additional information, as you review this plan, please contact me at (325) 597-2785. We appreciate your attention and cooperation in reviewing this management plan.

Sincerely,

Stanley G. Reinhard
 General Manager

ams

Enclosure

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Certified Fee	2.30	
Return Receipt Fee (Endorsement Required)	1.75	
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 Ed Meadows / City Admin
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 Eden, Tx 76837

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Agent
 Addressee

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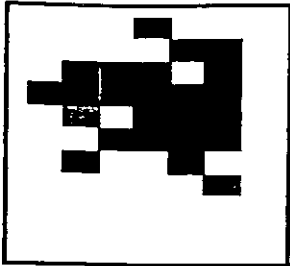
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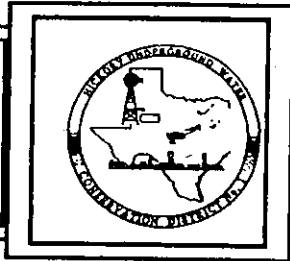
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102595-02-M-1540



HICKORY UWCD NO. 1

P.O. Box 1214 Brady, TX 76825
(915) 597-2785 (915) 597-0133 Fax
E-mail: hickoryuwcd@yahoo.com



September 18, 2003

City of Mason
Tim Dolan/City Administrator
P.O. Box 68
Mason, Texas 76856

12

Subject Hickory UWCD Management Plan

Dear: Tim Dolan:

The Hickory UWCD adopted a 10 year management plan in 1998 which was certified by the Texas Water Development Board on September 17 1998. Under §36.1072, Texas Water Code, as amended, the District must review and readopt the plan with or without revisions at least once every 5 years. Since the District now includes all of Mason County and all groundwater within the District boundaries, the District has amended its 10 year plan and is submitting it to the Texas Water Development Board for re-certification.

Under §36.1071, Texas Water Code, as amended, the District is required to coordinate with surface water entities in preparation of its management plan. In compliance with this chapter of the water code, the District is submitting to you a copy of the newly amended management plan for your review and comments.

Please Review this management plan and submit any comments or suggestions to the District by October 1, 2003. If you have any questions or want additional information, as you review this plan, please contact me at (325) 597-2785. We appreciate your attention and cooperation in reviewing this management plan.

Sincerely,

Stanley G. Reinhard
General Manager

ams

Enclosure

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Street, Apt. No., or PO Box No.: P.O. Box 68
City, State, ZIP+4: Mason, TX 76856

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City of Mason
 Tim Deaton | City Admin
 P.O. Box 68
 Mason, Texas 76856

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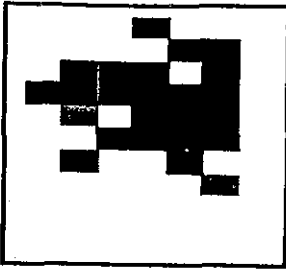
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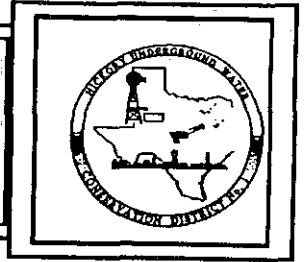
4. Restricted Delivery? (Extra Fee)

Yes



HICKORY UWCD NO. 1

P.O. Box 1214 Brady, TX 76825
(915) 597-2785 (915) 597-0133 Fax
E-mail: hickoryuwcd@yahoo.com



September 18, 2003

City of Melvin
Bill Ferris/Mayor
P.O. Box 777
Melvin, Texas 76858

Subject Hickory UWCD Management Plan

Dear: Bill Ferris:

The Hickory UWCD adopted a 10 year management plan in 1998 which was certified by the Texas Water Development Board on September 17 1998. Under §36.1072, Texas Water Code, as amended, the District must review and readopt the plan with or without revisions at least once every 5 years. Since the District now includes all of Mason County and all groundwater within the District boundaries, the District has amended its 10 year plan and is submitting it to the Texas Water Development Board for re-certification.

Under §36.1071, Texas Water Code, as amended, the District is required to coordinate with surface water entities in preparation of its management plan. In compliance with this chapter of the water code, the District is submitting to you a copy of the newly amended management plan for your review and comments.

Please Review this management plan and submit any comments or suggestions to the District by October 1, 2003. If you have any questions or want additional information, as you review this plan, please contact me at (325) 597-2785. We appreciate your attention and cooperation in reviewing this management plan.

Sincerely,

Stanley G. Reinhard
General Manager

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1. Article Addressed to:
 City of Melvin
 Bill Jones/Mayor
 P.O. Box 777
 Melvin, IA 76858

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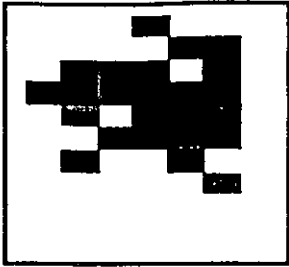
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Victor Silva Addressee
- B. Received by (Printed Name) Addressee
 Victor Silva Agent
- C. Date of Delivery
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- D. Is delivery address different from item 1? Yes
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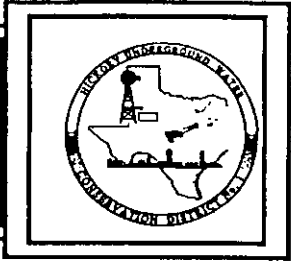
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HICKORY UWCD NO. 1
 P.O. Box 1214 Brady, TX 76825
 (915) 597-2785 (915) 597-0133 Fax
 E-mail: hickoryuwcd@yahoo.com



September 18, 2003

12

City of San Saba
 Joe Ragsdale/City Manager
 P.O. Box 788
 San Saba, Texas 76877

Subject Hickory UWCD Management Plan

Dear: Joe Ragsdale:

The Hickory UWCD adopted a 10 year management plan in 1998 which was certified by the Texas Water Development Board on September 17 1998. Under §36.1072, Texas Water Code, as amended, the District must review and readopt the plan with or without revisions at least once every 5 years. Since the District now includes all of Mason County and all groundwater within the District boundaries, the District has amended its 10 year plan and is submitting it to the Texas Water Development Board for re-certification.

Under §36.1071, Texas Water Code, as amended, the District is required to coordinate with surface water entities in preparation of its management plan. In compliance with this chapter of the water code, the District is submitting to you a copy of the newly amended management plan for your review and comments.

Please Review this management plan and submit any comments or suggestions to the District by October 1, 2003. If you have any questions or want additional information, as you review this plan, please contact me at (325) 597-2785. We appreciate your attention and cooperation in reviewing this management plan.

Sincerely,

Stanley G. Reinhard
 General Manager

ams

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Restricted Delivery Fee (Endorsement Required)		09/18/03
Total Postage & Fees	\$ 5.11	
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Street, Apt. No., or PO Box No. P.O. Box 788		
City, State, ZIP+4 San Saba TX 76877		
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1. Article Addressed to:

City of San Saba
 Joe Ragsdale | City Manager
 P.O. Box 788
 San Saba, Tx 76877

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Estelita Whitby

B. Received by (Printed Name) Addressee
 C. Date of Delivery
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2. Article Number
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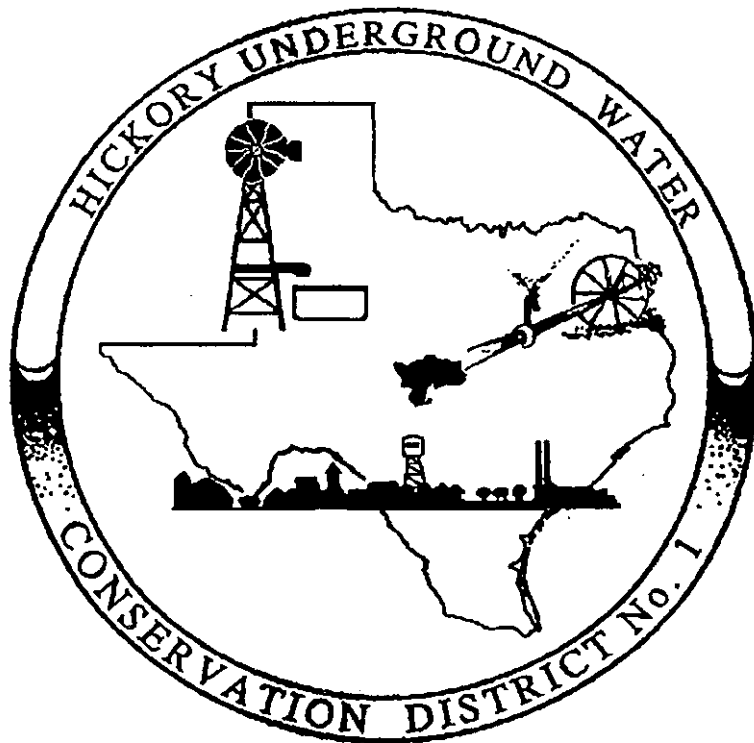
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102595-02-M-1540

HICKORY UNDERGROUND WATER CONSERVATION DISTRICT NO. 1

MANAGEMENT PLAN

2003-2008



P.O Box 1214
111 E. Main
Brady, Texas 76825

Phone: (325) 597-2785
Fax: (325) 597-0133
Email: hickoryuwcd@yahoo.com

Hickory Underground Water Conservation District No. 1

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District Mission

The Hickory Underground Water Conservation District No. 1 strives to conserve, preserve, prevent waste, protect, and recharge the underground waters of all aquifers within the legal boundaries, as far as practicable to minimize the draw-down of the water table and the reduction of artesian pressure within the District Boundaries.

Time Period

This amended plan becomes effective upon re-certification by the Board of Directors and remains in effect until an amended plan is certified or Sept. 1, 2008, whichever is later. The plan may be revised at anytime, or after five years when the plan will be reviewed, revised or amended and is certified to be administratively complete by the Texas Water Development Board.

History

The need for a local Underground Water Conservation District to properly manage water from the Hickory Aquifer in Central Texas was first identified in the early 1970's. At the request of area citizens, the Texas Water Development Board delineated a subdivision of the Hickory Underground Water Reservoir in 1975 in Concho, Kimble, Llano, Mason, McCulloch, Menard and San Saba Counties. In November 1981, a petition was submitted to the Texas Water Commission calling for

Hickory Underground Water Conservation District No. 1

the creation of the Hickory Underground Water Conservation District No. 1 (District). A hearing was scheduled for June 9, 1982, before the Texas Water Commission to consider the sufficiency of the petition and determine whether such a District should be created. At the conclusion of the hearing, a petition was granted and the District was created. This petition states:

That on the 29th day of December, 1975, pursuant to Notice and Hearing as required by law, Texas Water Rights Commission duly entered its order designating and defining a subdivision of the underground water reservoir in the Hickory formation in Kimble, Menard, Mason, San Saba, Concho, McCulloch, and Llano Counties, Texas, said subdivision being designated the "Hickory Aquifer Underground Reservoir."

According to statutory provision, a confirmation election was on August 14, 1982. The results of the election were: 1116 in favor of the confirmation of the District; 68 opposed; therefore, the District was officially established with a 94% approval of area voters.

Today the Hickory Underground Water Conservation District is responsible for the management of all ground waters within the District boundaries.

On August 12, 1999 the petition of creation was amended by the TNRCC/TCEQ to include all aquifers within the legal boundaries of the District.

On January 11, 2003, landowners of Mason County petitioned the District to annex the remainder of Mason County not currently in the District.

On May 03, 2003 a special election was held at the Mason County Courthouse. The election results were: 422 in favor of the annexation; 48 opposed; therefore the remainder of Mason County was annexed into the District by a 88% approval of the voters.

Regional Cooperation and Coordination

The District was divided by the regional planning process. San Saba County is in the Lower Colorado Regional Water Planning Group (Region K) and the remaining five counties, Concho, Kimble, Mason, McCulloch and Menard are located in Region F. Regional planning activities involve an area of 46 counties, stretching from Matagorda Bay to the Pecos River in West Texas.

The District is a member of the West Texas Regional Groundwater Alliance. The regional alliance consists of twelve (12) locally created and locally funded districts that encompass almost eight and three quarter (8.75) million acres or thirteen (13) thousand square miles of West Texas. This West Texas region is as diverse as the State of Texas. Due to the diversity of this region, each member district provides its own unique programs to best serve its constituents.

In 1988, four (4) groundwater districts; Coke County UWCD, Glasscock County UWCD, Irion County WCD, and Sterling County UWCD signed the original Cooperative

Hickory Underground Water Conservation District No. 1

Agreement. In the fall of 1996, the original Cooperative Agreement was redrafted and the West Texas Regional Groundwater Alliance was created. The current member districts are:

Coke County UWCD	Emerald UWCD	Glasscock County UWCD
Hickory UWCD	Irion County UWCD	Lipan-Kickapoo WCD
Plateau UWC&SD	Santa Rita UWCD	Sterling County UWCD
Sutton County UWCD	Menard County UWD	Lone Wolf GCD

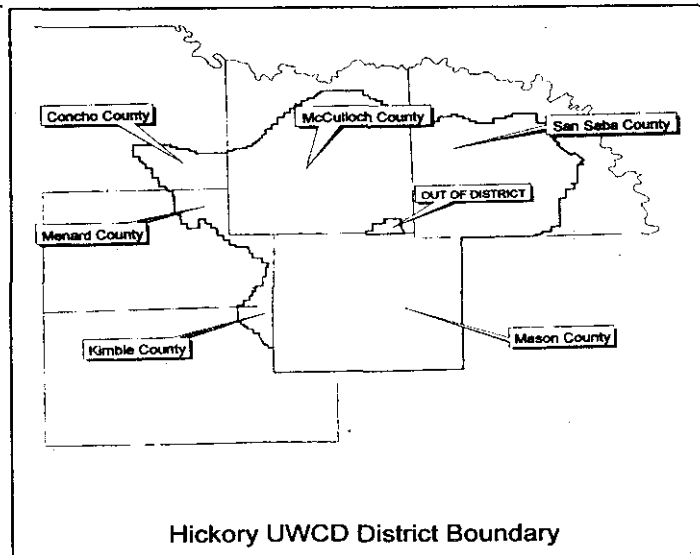
This Alliance was created because the local districts have a common objective to facilitate the conservation, preservation, and beneficial use of water and related sources. Local districts monitor the water-related activities of the farming and ranching, oil and gas, industrial entities and municipalities. The alliance provides coordination essential to the activities of these member districts as they monitor these activities in order to accomplish their objectives.

Location and Extent

The Hickory Underground Water Conservation District No. 1 is located near the geographical center of Texas. The District is comprised of approximately 1,683,080 acres, including portions of: McCulloch, Menard, Kimble, San Saba, Concho counties and the entirety of Mason county.

Hickory Underground Water Conservation District No. 1

Prior to the May 3, 2003 Mason Annexation Election; the District was comprised of 1,250,000 acres. With the annexation of Mason County, the District gained approximately 433,000 acres in that area.



The District's economy is based to a large degree on agriculture; 12% of the acreage in the District is cropland. Counties within the District have grown substantially since 1990 (see figure Population Growth and Economy). Principal municipalities in or near the district boundaries are Brady, San Saba, Mason and Eden.

Population Growth and Economy¹

County	Population	Growth since 1990	Economy
Concho	3966	+30.29%	Agribusiness
Kimble	4468	+8.39%	Livestock production, tourism, hunting, fishing
McCulloch	8205	-6.53%	Agribusiness tourism, manufacturing, silica sand
Mason	3738	+9.20%	Ranching, hunting, tourism, soft drink bottling
Menard	2360	+4.8%	Agribusiness, tourism, oil and gas production
San Saba	6186	+14.53%	Gov/Services, retail pecan industry, tourism, hunting

Statement of Guiding Principles

7 The Hickory Underground Water Conservation District No. 1 (District) is created and organized under the terms and provisions of Article XVI, Section 59, of the Constitution of Texas and Chapter 36 (formerly Chapter 52) of the Texas Water Code, Vernon's Texas Civil Statutes, and the Districts actions are authorized by, and consistent with this constitutional and statutory provision, including all amendments and additions. The District is created for the purpose of conserving, preserving, recharging, controlling subsidence, protecting and preventing waste and as far as practicable to minimize the drawdown of the water table and the reduction of artesian pressure of all Aquifers within the district boundaries. In order to carry out its constitutional and statutory purposes, the District has all the powers authorized by Article XVI, Section 59,

of the Texas Constitution, and Chapter 36 of the Texas Water Code, Vernon's Texas Civil Statutes, together with all amendments and additions.

The District's purposes and powers are implemented through promulgation and enforcement of the District's regulations. These regulations are adopted and revised under the authority of Subchapter E, Chapter 36, Texas Water Code, and are incorporated herein as a part of the District's management plan.

The District's Board of Directors is made up of five members representing the various districts. Current Directors are W. Owen Parks (President), Bill Sloan (Vice-President), Bert C. Striegler (Secretary), Jim Quinn and Larry Lehmborg.

Topography

The District is within the Colorado River basin and is bisected by the Llano and San Saba Rivers, as well as numerous other creeks. Drainage is typically from west to east.

The District contains two major geologic features. The Llano Uplift (Central Basin) is in the eastern and southern portions of the District. This feature is made up of very old rocks ranging in age from 1.0 to 1.2 billion years old and comprises granite and older metamorphic rocks. The northern and western parts of the District are in the Edwards Plateau region and are made up of Cretaceous Age limestone, dolomite, and marble.

The District elevation ranges from 1,100 to 2,300 feet above sea level.

Groundwater Resources of the Hickory Aquifer

This partition of the Hickory Aquifer is the primary source of groundwater for the area. Water from the Hickory is used for irrigation, public water supply, industrial, stock, and the domestic needs of the people and entities served.

The Hickory Aquifer occurs in parts of the counties in the Llano uplift region of Central Texas. Discontinuous outcrops of the Hickory Sandstone overlie or flank exposed Precambrian rocks that form the central core of the uplift. The down dip artesian portion of the aquifer encircles the uplift and extends to maximum depths approaching 4000 ft. Most of the water pumped from the aquifer is used for irrigation. The largest capacity wells, however, have been completed for municipal water supply and industrial purposes in the Mason, Eden and Brady area.

The Hickory Sandstone Member of the Cambrian Riley Formation is composed of some of the oldest sedimentary rocks found in Texas. In most of the northern and western portions of the aquifer, the Hickory can be differentiated into lower, middle, and upper units, which reach a maximum thickness of 480 feet in southwestern McCulloch County. In the southern and eastern extent of the aquifer, the Hickory consists of only two units. Block faulting has compartmentalized the Hickory Aquifer, thus restricting flow.

Recharge²

3 Most of the recharge to the Hickory is probably from direct infiltration of precipitation on the outcrop of the Hickory Formation. The amount is unknown, but can

be approximated by planimetry of the areal extent of the outcrop areas which provide recharge to the Hickory, compiling rainfall records of the area, and estimating infiltration rates. The outcrop areas on the map total 136 square miles, or 87,040 acres. This represents the total Hickory outcrop area potentially contributing recharge to the Hickory Aquifer within the District. The average annual rainfall for the area is 24 inches.

Infiltration rates for sand formations in Texas range from far less than one-quarter inch per year in West Texas up to approximately three inches per year in East Texas. If one inch of the average precipitation actually infiltrated the Hickory Aquifer, such recharge would total 7,250 acre-feet per year, or 6.5 million gallons per day (MGD). If as much as two inches of the average precipitation were to infiltrate, which is probably unlikely, such recharge would total 14,500 acre-feet per year, or 13 MGD.

The amount of recharge occurring via stream flow losses from creeks that cross the Hickory outcrop area is also unknown. A preliminary office review of the relationship of the outcrop areas to drainage patterns indicate few streams exist which have large drainage areas upstream from the outcrop areas. Notable exceptions include small parts of the outcrop area traversed by the San Saba River or by the Llano River and a larger part of the outcrop traversed by Tiger Creek. Recharge via stream flow losses may not be too significant. Exact conditions can only be determined by more detailed investigations including field studies.

Recharge via leakage from adjacent formations probably is not too important accepting possibly where shallow alluvial deposits overlie the Hickory outcrop. Normally, low permeability materials largely restrict leakage from adjacent formations.

However, faulting in some areas may place permeable materials adjacent to the Hickory; in such areas, leakage could be of more significance. Information on leakage will likely be difficult to obtain and will require extensive field data.

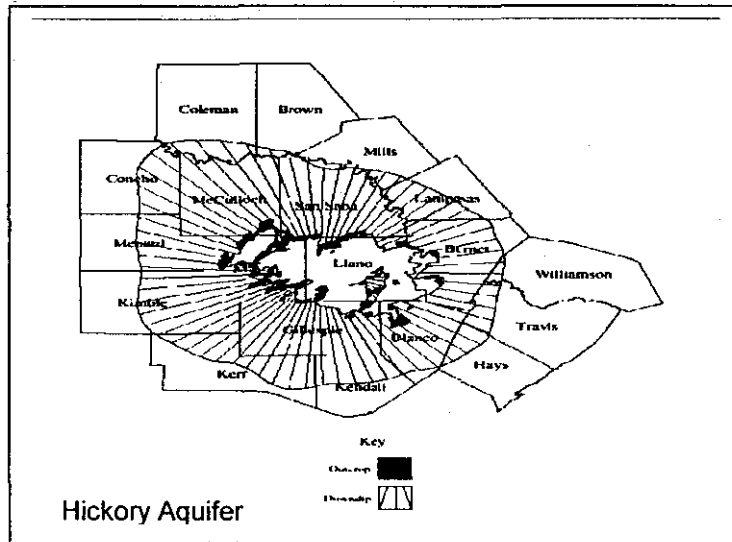
Storage

The amount of water in storage in the Hickory Aquifer can be calculated based on the thickness and extent of the aquifer and its porosity. Calculations can be made for the outcrop area and the area down-dip from the outcrop of the Hickory. Assuming a porosity of 20 percent, an outcrop area of 136 square miles, and an average saturated thickness of 150 feet, the amount of water stored beneath the outcrop area is estimated to be about 2.6 million acre feet, or 8.5×10^5 million gallons. Similarly, the amount in storage in the formation between the outcrop area and the down-dip limit of fresh water can be calculated. Assuming porosity of 20 percent, an area of 2,335 square miles and an average saturated thickness of 300 feet, the amount of fresh water stored in the aquifer down dip from its outcrop are is calculated to be 90 million acre feet, or 2.9×10^7 million gallons. Thus the total amount of water stored in the Hickory Formation is estimated to be approximately 93 million-acre feet, or 3×10^7 million gallons.

Groundwater from the aquifer is generally fresh. However, locally, the aquifer produces water with excessive alpha particles and total radium concentrations in excess of drinking water standards. The water can also contain radon gas. The upper

Hickory Underground Water Conservation District No. 1

unit of the Hickory produces groundwater, containing concentrations of iron in excess of drinking water standards.



Edwards-Trinity Aquifer⁴

The Edwards-Trinity Plateau Aquifer underlies the Edwards Plateau east of the Pecos River and the Stockton Plateau west of the Pecos River, supplying water to all or parts of 38 counties. The aquifer extends from the Hill Country of Central Texas to the Trans-Pecos region of West Texas. Within District Boundaries, the Edwards-Trinity Aquifer underlies parts of McCulloch and Mason Counties, and all District acreage in Kimble, Concho, and Menard Counties.

The aquifer consists of saturated sediments of lower Cretaceous age Trinity Group formations. Natural chemical quality of water ranges from fresh to slightly saline. The water is typically hard and may vary widely in concentrations of dissolved solids and bicarbonate. The salinity of the groundwater tends to increase toward the west.

There is little pumpage from the aquifer over most of its extent; however, in some instances water levels have declined as a result of pumpage. Historical declines have occurred in the northwestern part of the aquifer. Rapid population migration from the cities of Austin and San Antonio will add considerably to usage.

Recharge

Groundwater in the Edwards-Trinity (Plateau) Aquifer occurs under both confined and unconfined conditions. Recharge is primarily through the infiltration of precipitation on the outcrop, in particular where the limestone formations outcrop. Discharge is to wells and to the Pecos River and Rio Grande in the southwest, the Colorado River in the northeast, and to the Frio, Medina, Nueces, and Guadalupe Rivers in the Hill Country area. Groundwater flow in the Edwards-Trinity aquifer generally flows in a south-southeasterly direction, but may vary locally. The hydraulic gradient averages about 10 feet/mile. Long-term water-level declines have been observed in areas of heavy pumping.

Storage

Aquifer properties of the Trinity Group formations vary across the aquifer. Transmissivities range from 1,000 to 10,000 gpd/ft, but average about 3,000 gpd/ft. Storage coefficients for the Trinity formations are estimated to be between 1×10^{-4} to 1×10^{-5} , and specific yields are estimated to be 0.05 to 0.10. Specific capacities of wells range from less than 1 to greater than 20 gpm/ft. Reported well yields commonly range

Ellenburger-San Saba Aquifer⁶

The Ellenburger-San Saba Aquifer underlies 4,000 square miles in parts of 15 counties in the Llano Uplift area of Central Texas. Discontinuous outcrops of the aquifer generally encircle older rocks in the core of the Uplift. The remaining down-dip portion contains fresh to slightly saline water to depths of approximately 3,000 feet below land and surface.

Water produced from the aquifer has a range in dissolved solids between 200 and 3,000 mg/l, but usually less than 1,000 mg/l. The quality of water deteriorates rapidly away from the outcrop areas. Approximately, 20 miles of more down-dip from the outcrop, water is typically unsuitable for most uses.

Most of the deep municipal wells, which supply the City of Brady, produce an unknown amount of water from the Ellenburger-San Saba sequence of rocks. A large portion of the water supply for the City of San Saba is believed to be from the Ellenburger-San Saba and Marble Falls Aquifer.

Recharge

An estimated 29,400 acre-feet of water is discharged annually from the aquifer in its outcrop areas and represents the average annual effective recharge to the aquifer. This amount was determined from spring flow measurements and equates to about 2 percent of the mean annual precipitation on the outcrop. Where saturated basal sands and sandstones of the Trinity Aquifer overlie the aquifer, the Ellenburger-San Saba also receives a significant, but unknown amount of recharge.

Storage

Groundwater in the aquifer is found mostly under artesian conditions, even in much of the outcrop. The depth to groundwater varies from 30 to over 200 feet below ground surface. Transmissivity estimates range from 50,000 to 125,000 gpd/ft, storage coefficients are estimated to be 1×10^{-3} to 1×10^{-4} , and specific yields are estimated to be 0.03 to 0.05. Production from public supply and irrigation well yields range from 200 to 1,5000 gpm, although most other wells generally yield less than 100 gpm. The average well yield from all types of wells is about 65 gpm.

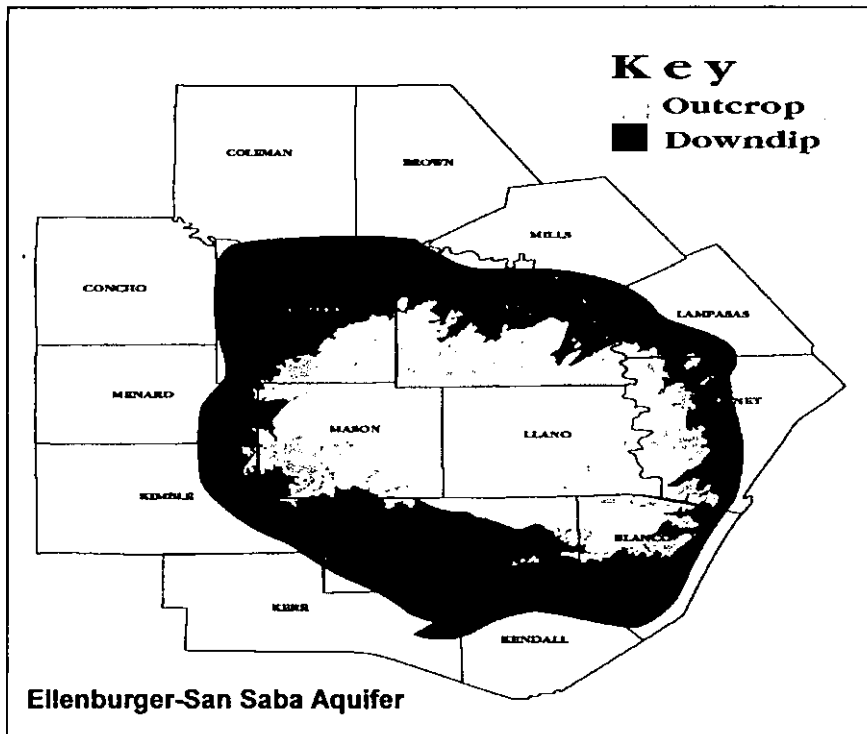
Groundwater near the outcrop of the Ellenburger-San Saba aquifer, and in some cases up to 20 miles down-dip, is generally fresh. TDS concentrations in the Ellenburger-San Saba aquifer generally increase with distance down-dip. Fresh groundwater is found mainly in areas where active recharge and flow occurs in the aquifer near the outcrop. While fresh groundwater is mostly found in areas near the outcrop, the aquifer also contains irregular occurrences of slightly saline groundwater near the outcrop area.

The Ellenburger-San Saba aquifer may be a potential source for small to moderate volumes of brackish groundwater in the Llano uplift area. However, the development of brackish groundwater from the down-dip sections will require relatively deep production well. In addition, elevated concentrations of radium and radon also occur in the Ellenburger-San Saba aquifer as it occurs in the underlying Hickory, and this would have to be addressed if this aquifer is considered as brackish water resource.

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Availability is low to moderate according to LBG Guyton Associates.

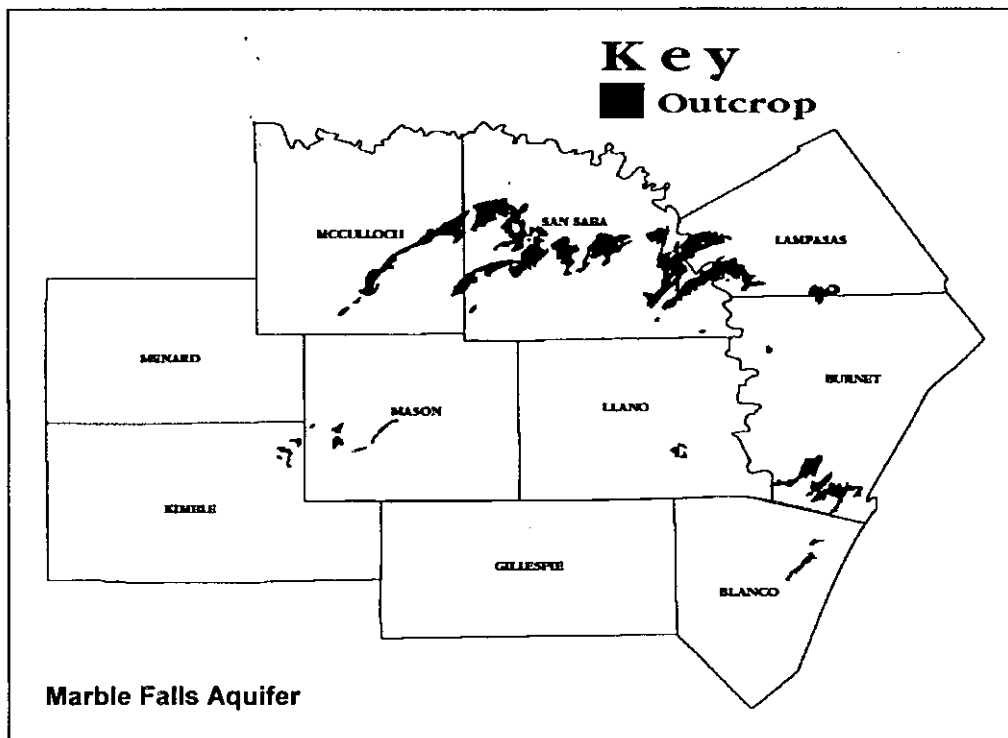
Low transmissivity results in moderate productivity. Source water production costs would be moderate to high, due to the deep nature of the aquifer combined with moderate yields.



Marble Falls Aquifer⁸

The Marble Falls Aquifer occurs primarily in the portions of McCulloch and San Saba counties within the District. Smaller amounts of water are also used for rural domestic supplies, watering of livestock and irrigation. Only small portions of Mason and Kimble counties are affected by this aquifer.

The Marble Falls Aquifer occurs in several outcrops, primarily along the northern and eastern flanks of the Llano Uplift Region of Central Texas. Groundwater occurs in fractures, solution cavities, and channels in the limestone of the Marble Falls Formation of the Pennsylvanian Bend Group. Maximum thickness of the formation is 600 feet. Numerous large springs issue from the aquifer and provide a significant part of the base-flow to the San Saba River in McCulloch and San Saba counties and to the Colorado River in San Saba and Lampasas counties.



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Recharge and Storage

Recharge to the Marble Falls aquifer is from precipitation on the outcrop areas. Discharge is mainly to numerous large springs emanating from the aquifer, and to wells. Groundwater flow is generally from the outcrop areas in a down-dip direction.

Groundwater occurs in solution cavities that have formed along fractures and faults in the limestone. Where underlying beds are thin or absent, the Marble Falls and Ellenburger-San Saba aquifers may be hydrologically connected. The aquifer is capable of producing small to moderate quantities of water to wells, with well yields increasing significantly with acidizing.

Wells completed in the Marble Falls aquifer generally produce less than 100 gpm, although some irrigation wells have been reported to produce as much as 200 gpm. Very few data exist on the overall aquifer characteristics of the Marble Falls aquifer. However, based on well yields and aquifer characteristics of similar aquifers, transmissivities are estimated to average less than 5,000 gpd/ft, storage coefficients are estimated to average 1×10^{-4} , and specific yields are estimated to average 0.02.

Existing data for the Marble Falls aquifer show that it contains mostly fresh water in outcrop areas and becomes mineralized a short distance down-dip from the outcrop areas. However, very few data exist to evaluate the brackish water that is present.

Most wells producing from the Marble Falls aquifer produce fresh Groundwater on the outcrop, while groundwater becomes highly mineralized within a relatively short distance of the down-dip. However, because the areal extent of the Marble Falls aquifer is relatively limited, and because much of the existing data indicate that the aquifer has limited groundwater availability, the Marble Falls aquifer must be considered a very limited source of brackish groundwater. Due to the presumed deep nature where brackish groundwater would be located, and the low productivity of the aquifer, relative costs are expected to be moderate to high.

Surface Water Resources Of The Hickory UWCD No. 1

The only surface water resources impoundment used for other than livestock consumption is Brady Lake. The normal pool capacity is 30,000 acrefeet with a calculated annual firm yield of 3,100 acrefeet. Currently the City of Brady is not utilizing this water, however the city will construct a 3mgd R.O. Treatment Plant to provide the City of Brady adequate water supplies to blend with the Hickory Aquifer wells and maintain a Radium 226/228 level below state and federal standards. These levels are not scientifically proven and constitute another unfunded mandate. Current Brady Lake pumpage is approximately 9 acrefeet annually for domestic purposes. The San Saba and Llano Rivers bisect the District; however, only a small amount is used for other than livestock and domestic purposes.

Total Projected Supply of Water in the District

Projected average annual groundwater available from aquifers within the District is estimated at approximately 36,444 acre-feet per year.^{10 & 11} This number is based on projections from Region F and Region K Water Plans. Numbers used for state planning were for the entirety of each county. Because the District covers only portions of five of its six county jurisdiction, numbers were prorated based on percentage of each county in District. Projections for 2020 and 2050 drop significantly. Estimates for 2020 are 33,770 acre-feet and 33,754 acre-feet for 2050.

Quality of water from the Hickory aquifer is of major concern to municipal users within the area. The aquifer contains naturally occurring radionuclides, supposedly in excess of safety standards. Regulatory agencies are expected to begin enforcement of policy in regard to this issue. If this does occur, Hickory water will no longer be available for municipal use beginning in 2010. The loss of this source and limitations on ground water availability in heavily irrigated counties significantly contribute to projected water shortages in this region.

Natural of Artificial Recharge

The Texas Water Development Board, at the request of the District, completed a study of an area within the District to evaluate the possibility of beneficial artificial recharge of this area of the Hickory Aquifer. *Evaluation of the Hickory Aquifer and Its Relationship to Katemcy Creek and Its Major Tributaries for Beneficial Recharge,*

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McCulloch and Mason Counties, Texas, is available in the District Office. This study, along with subsequent studies, does not support an economically feasible recharge program.

Groundwater Used in the Hickory UWCD

Based on the data obtained from the Texas Water Development Board, the information detailed on the chart below indicates the past groundwater usage in the District from 1990 to 1995.¹²

Year	1990	1991	1992	1993	1994	1995
Concho	3398	3924	4295	7355	5042	3667
Kimble	2393	2260	2147	3255	1647	1713
McCulloch	6194	5926	5939	7113	7098	6810
Mason	18571	19010	14189	15219	14237	13238
Menard	840	954	1239	1158	1187	1116
San Saba	2143	2232	2305	1158	1187	3114
Total	33539	34106	30114	36376	32150	32358

Potential Demands and Aquifer Supply Capability Issues and Solutions

In the year 2050, the total projected water needs of the District are estimated at 30,978 acre-feet. While this number does not appear to be in excess of supply, bureaucratic rules regarding radionuclides will adversely affect this seeming surplus. According to the TCEQ, public water supplies in Mason County do not exceed the radionuclide standards. However, the cities of Brady and Eden, as well as other municipal systems in the area will suffer. Projected municipal usage in these areas is estimated at 3,352 acre-feet in 2010; 3,272 acre-feet in 2020; and 3,205 acre-feet in 2050.¹³

Individually, several counties will be unable to sustain the water demands based on the amount of available groundwater projected. In 2020, McCulloch County's demand of 5908 acre-feet, greatly exceed the projected supply of 4260 acre-feet. Paired with water quality legislation limiting the use of Hickory water for municipalities, the gap could widen even more. Concho County is facing a similar shortage with 985 acre-feet supply in 2020 and a forseen demand of 1,487 acre-feet. The Supply and Demand Table illustrates discrepancies between supply and demand.

The Hickory is permitted for 25,763 acrefeet, currently, of which 12,000 acrefeet is not being used, but permitted to go to the City of San Angelo with anticipated usage after 2036. This amount was established after numerous lawsuits between the City of San Angelo and the District. The current supply will not be adequate if, and when, the City of San Angelo initiates pumping.

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Greater reliance on groundwater will need to be placed on the other aquifers within the District.

Supply and Demand Table (in acre-feet)¹⁴

County	2020			2050		
	Supply	Demand	Difference	Supply	Demand	Difference
Concho	985	1487	-502	975	1493	-518
Kimble	94	94	0	94	98	-4
Mason	20984	19441	1543	20953	18668	2285
McCulloch	4260	5908	-1648	4293	5920	-1627
Menard	912	912	0	904	901	3
San Saba	6535	4202	2333	6535	3898	2637

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Tracking Methodology

The District manager will provide a report of staff activities to the District Board of Directors on a monthly or annual basis to insure management objectives and goals are being achieved.

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Management Goals, Objectives And Performance Standards

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Goal 1.0 Implement management strategies that will protect and enhance the quality of useable quality water by encouraging the most efficient use of groundwater.

Management Objective

1.1 Annually the district will provide educational materials identifying conservation measures for the efficient use of water. Annually, two (2) District newsletter issues will be published that contain water conservation information. Handout packets with conservation literature will be provided at the annual McCulloch County Soil and Water Conservation 5th Grade Field Day or one other water related functions.

Performance Standard

1.1a Number of newsletters published annually containing water conservation information.

1.1b Number of annual events where conservation material was provided.

Management Objective

1.2 To insure available quality groundwater, the District will identify and monitor 100 wells for annual water level monitoring and obtain water levels on 50% of the selected wells annually.

Performance Standards

1.2a Percentage of monitor wells measured annually.

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Goal 2.0 To control and prevent the waste of groundwater.

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Management Objective

2.1 Each year the District will loan flow meters for use by a irrigating farmer within the District to evaluate irrigation systems and reduce waste.

Performance Standard

2.1 A farmer will be loaned flow-meters to assist in evaluating their irrigation systems.

Management Objective

2.2 Each year the District will provide informative speakers to schools and civic groups to raise public awareness to ensure wise use of groundwater.

Performance Standard

2.2 Number of speaking appearances to promote wise water use provided annually.

Goal 3.0 Develop a water quality/monitoring network for the purpose of establishing a baseline water quality.

Management Objective

3.1 The District will identify at least twenty (20) wells to be used as water quality monitoring wells that will be sampled annually.

Performance Standard

3.1 Number of wells will be sampled annually.

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Goal 4.0 Address conjunctive surface water management issues.

Management Objective

4.1 Annually meet, at least once, with City of Brady to discuss and review potential use of surface water resources in the area.

Performance Standard

4.1a Number of meetings with City representatives annually.

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Goal 5.0 Monitor drought conditions and inform water suppliers of severe drought conditions.

Management Objective

5.1 Annually monitor the Palmer Drought Severity Index (PDSI), notifying all public water suppliers of severe drought conditions when applicable.

Performance Standards

5.1a Monitor PDSI and notify all public water suppliers within the District in the event of severe drought conditions.

5.1b Annually report to Board of Directors incidents of severe drought conditions and subsequent notifications of public water suppliers.

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Goal 6.0 Provide and distribute water conservation literature.

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Management Objective

6.1 Annually the district will provide educational literature promoting water conservation.

Performance Standards

6.1a Disseminate water conservation information to area residents.

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6.1b Report to Board of Directors annually number of times water conservation information was distributed.

SB-1 Management Goals Determined Not Applicable

Goal 1.0 Controlling and Preventing Subsidence

The rigid geologic framework of the region precludes significant subsidence from occurring. This goal is not applicable to the operation of the District.

Goal 2.0 Addressing natural resource issues which impact use and availability of groundwater, and which are impacted by the use of groundwater. This goal is not applicable to the operation of the District.


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Statement of Commitment by Hickory Underground Water Conservation District

No. 1, to Effectuation of the District Groundwater Management Plan.

The District will implement the provisions of this plan and/or future amendments and will utilize the provisions of this plan, or amended plan, as a guidepost for determining the direction or priority for District activities as provided for in SB-1.


H.U.W.C.D. No. 1 Board Chairman


H.U.W.C.D. No. 1 General Manager

Bibliography

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- ² Recharge and Storage data obtained from "Hickory Aquifer Data" prepared for Hickory UWCD by R.W. Harden & Associates, August 1986
- ³ Aquifer maps obtained from Water for Texas, 1997, TWDB
- ⁴ Edwards-Trinity Aquifer information obtained from TWDB website:
[http://www.twdb.state.tx.us/publications/reports/GroundWaterReports/GWReports/Brockish%20GW%20Manual/08-Edwards-Trinity\(Plateau\).pdf](http://www.twdb.state.tx.us/publications/reports/GroundWaterReports/GWReports/Brockish%20GW%20Manual/08-Edwards-Trinity(Plateau).pdf) Report by LBG-Guyton Associates
- ⁵ Aquifer maps obtained from Water for Texas, 1997, TWDB
- ⁶ Ellenburger-San Saba Aquifer information obtained from TWDB website:
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- ⁷ Aquifer maps obtained from Water for Texas, 1997, TWDB
- ⁸ Marble Falls Aquifer information obtained from TWDB website:
<http://www.twdb.state.tx.us/publications/reports/GroundWaterReports/GWReports/Brockish%20GW%20Manual/27-MarbleFalls.pdf> Report by LBG-Guyton Associates
- ⁹ Aquifer maps obtained from Water for Texas, 1997, TWDB
- ¹⁰ Region F Water Plan, January 2001
- ¹¹ Region "K" Water Supply Plan for the Lower Colorado Regional Water Planning Group, December 2000
- ¹² TWDB
- ¹³ Region F Water Plan, January 2001
- ¹⁴ Data used to calculate table derived from Region F Adopted Regional Water Plan, Figure 4-1, with the exception of San Saba County, in which numbers derived from Region "K" Water Supply Plan for the Lower Colorado Regional Water Planning Group, December 2000