

Culberson County Groundwater Conservation District  
2013 Management Plan

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# Culberson County Groundwater Conservation District Proposed Management Plan 2013

## **Culberson County Groundwater Conservation District Proposed Management Plan 2013**

The Culberson County Groundwater Conservation District (“District”) is a groundwater conservation district in Culberson County created under and essential to accomplish the purposes of, Section 59, and Article XVI of the Texas Constitution. The District was created in the 75th Texas Legislature by enactment of Senate Bill 1756, which is now codified in Chapter 8816 of the Special Districts Local Laws Code.

### **I. District Mission**

The mission of the District is to develop and implement an environmentally conscious, economically efficient, and scientifically sound groundwater management program to protect and enhance the groundwater resources within the District, thereby extending the quantity and quality of available groundwater while protecting groundwater users.

### **II. Time Period for this Plan**

This plan becomes effective upon adoption by the District Board of Directors and approval by the TWDB and remains in effect until a revised plan is adopted.

### **III. Purpose of the Management Plan**

The purpose of the District is to provide a locally controlled groundwater district to conserve and preserve groundwater, protect groundwater users, protect groundwater, prevent pollution or waste of groundwater within the boundaries of the District, and regulate the transport of water out of the boundaries of the District. The District will adopt rules to regulate groundwater withdrawals, primarily by means of well spacing and production limits. The District will make periodic assessments of groundwater conditions within the District and will report those conditions to the Board. The District will undertake investigations and, to the extent appropriate, cooperate with third-party investigations of the groundwater resources within the District. The results of the investigations will be made available to the public.

The District will adopt rules designed to achieve the desired future conditions (DFCs) for the groundwater resources within the District, as those DFCs are agreed upon by Groundwater Management Area 4 (GMA 4). With respect to the aquifers within the District’s Wild Horse Flat, Michigan Flat, and Lobo Flat management areas, the District will adopt a historic use period and provide preferential permitting rights to those well owners that can demonstrate beneficial and non-wasteful groundwater usage during that period. A similar approach might be adopted for other groundwater sources within the District as well. For the purpose of protecting the

aquifer and groundwater availability, the District may, at the Board's discretion after notice and hearing, amend or revoke any permit for non-compliance or reduce the production authorized by permit. The District will enforce the terms and conditions of permits and the rules of the District as authorized by Chapter 36 of the Texas Water Code.

The District will employ reasonable technical resources within its budgetary constraints to evaluate the groundwater resources within the District and to determine the effectiveness of regulatory or conservation measures.

The District will establish and enforce rules that require, among other things, the following

1. spacing requirements for certain non-exempt groundwater wells;
2. permits limiting the annual amount of groundwater that can be produced from non-exempt wells;
3. a limit on the maximum amount of groundwater permitted for withdrawal from the Wild Horse Flat Management Area;
4. a limit on the maximum amount of groundwater permitted for withdrawal from the Michigan Flat Management Area; and
5. a limit on the maximum amount of groundwater permitted for withdrawal from the Lobo Flat Management Area. This plan is the guideline for the operation of the Culberson County Groundwater Conservation District.

GM John T. Jones (e-mail; [water@telstar1.com](mailto:water@telstar1.com))  
Tel: (432) 283-1548

#### **IV. District Information:**

##### **A. District Creation:**

The District was created by the people of Culberson County on May 2, 1998 through a local election. The District boundaries cover, more or less, the southwestern half of the county. (Please refer to the map for the exact boundaries)

##### **B. Location and Geographical Information:**

The District covers 1,077,638 acres or 1,673 square miles. The population of the District is approximately 2,500 citizens. Within the District is Van Horn, the county seat of Culberson County. There are no other communities within the District. Portions of the Sierra Diablo Wildlife Management Area (TPWD) are located on the western edge of the District. (Refer to the map at the end of plan)

##### **C. Authority/ Regulatory Framework:**

The District has the authority and duties given to the GCDs by the Texas Water Code Chapter 36, 31 Texas Administrative Code (TAC) Chapter 356, and the District's enabling act. The District exercises the powers that it was granted and authorized to use, to preserve and protect the groundwater resources of the Culberson County Groundwater Conservation District through the adoption and implementation of rules for the District.

##### **D. Groundwater Resources of CCGCD**

There are four distinct aquifers located within the District, West Tex. Bolsons; Capitan Reef; Edwards Trinity; and the Igneous aquifer. In the past, annual groundwater usage has varied from a high of 34,520 acre/feet to a low of 10,970 acre/feet. Annual estimated usage for 1974 through 2010 is as follows in the (2012) Texas State Plan Data and Historical water use data.

#### **E. Technical Information Required by Texas Administrative Code**

Culberson County is located in the mountains of West Texas. The District has within its boundaries the Delaware, Sierra Diablo, Apache, Beach, and Wylie Mountain Ranges. Elevations range from 4,000 to 5,800 feet above mean sea level. Interspersed between mountain ranges are the farming areas, with the Wild Horse area being to the southwest of the Delaware and Apache Mountains, and the Lobo Area being to the west of the Wylie Mountains. The District is within the Rio Grande River Basin, with some alluvial drainage to the river and some drainage going northwest into the Salt Basin. Irrigation areas include the Wild Horse Valley, Lobo Valley, and a small amount of irrigation in the Michigan Flat area. There are approximately 39,386.3 acres of irrigatable cropland. (According to Farm Service Agency, 1999 data, El Paso office) The remainder of the land is classified as rangeland.

#### **F. Directors:**

Current board members include Vance Cottrell, chairman; Lane Brewster, vice-chairman; Kyle Brookshier, secretary/treasurer; Director Refugio Corrales and Director George Snyder. John Jones serves as the District's full time manager under chapter 36.056(c) of the Texas Water Code.

#### **V. 2012 Texas State Water Plan Data/Historical Water Use Data Table Definitions**

##### **1. Projected Water Demands\***

From the 2012 State Water Plan Glossary: "WATER DEMAND Quantity of water projected to meet the overall necessities of a water user group in a specific future year." (See 2012 State Water Plan Chapter 3 for more details.)

**Additional explanation:** These are water demand volumes as projected for specific Water User Groups in the 2011 Regional Water Plans. This is NOT groundwater pumpage or demand based on any existing water source. This demand is how much water each Water User Group is projected to require in each decade over the planning horizon.

##### **2. Projected Surface Water Supplies\***

.From the 2012 State Water Plan Glossary: "EXISTING [surface] WATER SUPPLY - Maximum amount of [surface] water available from existing sources for use during drought of record conditions that is physically and legally available for use." (See 2012 State Water Plan Chapter 5 for more detail.)

**Additional explanation:** These are the existing surface water supply volumes that, without implementing any recommended WMSs, could be used during a drought (in each planning decade) by Water User Groups located within the specified geographic area. **There is no surface water located within the CCGC D.**

##### **3. Projected Water Supply Needs\***

From the 2012 State Water Plan Glossary: "NEEDS -Projected water demands in excess of existing water supplies for a water user group or a wholesale water provider." (See 2012 State Water Plan Chapter 6 for more detail.)

**Additional explanation:** These are the volumes of water that result from comparing each Water User Group’s projected existing water supplies to its projected water demands. If the volume listed is a negative number, then the Water User Group shows a projected need during a drought if they do not implement any water management strategies. If the volume listed is a positive number, then the Water User Group shows a projected surplus. Note that if a Water User Group shows a need in any decade, then they are considered to have a potential need during the planning horizon, even if they show a surplus elsewhere.

4. Projected Water Management Strategies\*

From the 2012 State Water Plan Glossary: **“RECOMMENDED WATER MANAGEMENT STRATEGY** - Specific project or action to increase water supply or maximize existing supply to meet a specific need.” (See 2012 State Water Plan Chapter 7 for more detail.)

**Additional explanation:** These are the specific water management strategies (with associated water volumes) that were recommended in the 2011 Regional Water Plans.

Estimated Historical Groundwater Use

**VI CULBERSON COUNTY 45.35 % (multiplier) All values are in acre-feet/year**

Groundwater use estimates are currently unavailable for 2005. TWDB staff anticipates the calculation and posting of these estimates at a later date.

Year	Source	Municipal	Manufacturi	Steam	Irrigation	Mining	Livestock	Total
1974	GW	350	10	0	13,122	2,372	189	16,043
1980	GW	307	3	0	27,210	6,815	185	34,520
1984	GW	313	0	0	9,093	1,204	134	10,744
1985	GW	249	0	0	11,262	288	149	11,948
1986	GW	170	1	0	8,775	0	127	9,073
1987	GW	258	17	0	8,806	861	200	10,142
1988	GW	267	17	0	8,730	658	213	9,885
1989	GW	361	0	0	6,415	1,024	210	8,010
1990	GW	328	0	0	4,146	1,024	207	5,705
1991	GW	305	0	0	3,996	1,010	211	5,522
1992	GW	338	0	0	4,724	882	138	6,082
1993	GW	369	0	0	2,534	882	131	3,916
1994	GW	387	0	0	2,532	909	117	3,945
1995	GW	288	0	0	2,669	970	95	4,022
1996	GW	330	0	0	2,810	970	102	4,212
1997	GW	263	0	0	3,062	998	109	4,432

1998	GW	315	0	0	5,307	626	150	6,398
1999	GW	424	0	0	5,307	626	161	6,518
2000	GW	253	0	0	11,231	626	148	12,258
2001	GW	347	0	0	7,504	626	134	8,611
2002	GW	284	0	0	9,858	626	205	10,973
2003	GW	390	0	0	9,982	626	111	11,109
2004	GW	472	0	0	8,735	626	118	9,951
2006	GW	250	0	0	9,329	0	112	9,691
2007	GW	184	0	0	7,620	0	126	7,930
2008	GW	254	0	0	15,664	0	129	16,047
2009	GW	346	0	0	17,500	15	118	17,979
2010	GW	337	0	0	19,162	10	112	19,621

This data was obtained from the Texas Water Development Board, Water Resources Planning Division. The District is concerned that the irrigation data has been underestimated. The District has received the cooperation from local farmers in sharing their pumping data. In the future, and with anticipated additional data, the Board of Directors would like to address this issue.

## **VII Historical Water Use Compiled by the CCGC District**

Water Usage for Wildhorse, Michigan flats, and Lobo valley for 2008/09 -----	24,011.73 acft
Water Usage for Wildhorse, Michigan flats, and Lobo valley for 2009/10-----	36,135.86 acft
Water Usage for Wildhorse, Michigan flats, and Lobo valley for 2010/11-----	21,837.38 acft
Water Usage for Wildhorse, Michigan flats, and Lobo valley for 2011/12-----	27,173.05 acft
Water Usage for Wildhorse, Michigan flats, and Lobo valley for 2012/13-----	31,360.01 acft

This data was obtained by the use of metering all production wells within the district. The meters if not installed properly could result in an inaccurate reading by as much as 15% if the meter is improperly sized or calibrated.

## **VIII Surface Water Resources**

**There is no surface water in Culberson County.**

**IX Transfer of Water Out of the District**

Currently the town of Sierra Blanca imports 351 acre/feet per year from the City of Van Horn. This contract is administered by the City of Van Horn. At this time the town of Van Horn is the only exporter of water within the District.

Projected Water Demands

**X TWDB 2012 State Water Plan Data**

Please note that the demand numbers presented here include the plumbing code savings found in the Regional and State Water Plans.

**CULBERSON COUNTY** 45.35 % (multiplier) All values are in acre-feet/year

RWPG	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
E	VAN HORN	RIO GRANDE	839	890	907	905	901	901
E	MINING	RIO GRANDE	687	707	715	723	730	740
E	IRRIGATION	RIO GRANDE	21,205	20,751	20,307	19,873	19,447	19,031
E	LIVESTOCK	RIO GRANDE	156	156	156	156	156	156
E	COUNTY-OTHER	RIO GRANDE	34	35	35	35	34	34
<b>Sum of Projected Water Demands</b>			<b>22,921</b>	<b>22,539</b>	<b>22,120</b>	<b>21,692</b>	<b>21,268</b>	<b>20,862</b>

**XI TWDB 2012 State Water Plan Data(Projected water supply needs)** CULBERSON COUNTY

Projected Water Supply Needs

TWDB 2012 State Water Plan Data

Negative values (in red) reflect a projected water supply need, positive values a surplus.

**CULBERSON COUNTY** All values are in acre-feet/year

RWP	WUG	WUG Basin	2010	2020	2030	2040	2050	2060
E	COUNTY-OTHER	RIO GRANDE	4	0	0	1	2	2
E	IRRIGATION	RIO GRANDE	0	1,001	1,980	2,938	3,876	4,794
E	LIVESTOCK	RIO GRANDE	122	122	122	122	122	122
E	MINING	RIO GRANDE	647	601	584	567	551	529
E	VAN HORN	RIO GRANDE	1,245	1,194	1,177	1,179	1,183	1,183
Sum of Projected water Demands (acre/feet/year)			0	0	0	0	0	0

Evaluation and Selection of Water Management Strategies proposed in Water for Texas 2012 State Water Plan, offered in Table Chapter Projected Water Management Strategies

WUG, Basin (**RWPG**) All values are in acre-feet/year

Water Management Strategy	Source Name [Origin]	2010	2020	2030	2040	2050	2060
<b>IRRIGATION, RIO GRANDE (E)</b>							
Sum of Projected Water Management Strategies (acre-feet/year)							
		0	0	0	-8,000	-8,000	-8,000

**IWMS - IMPORT FROM DIABLO FARMS CAPITAN REEF AQUIFER [CULBERSON]**

Sum of Projected Water Management Strategies (Acre-feet/year)	0	0	0	-8,000	-8,000	-8,000
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Evaluation and selection of Water Management Strategies proposed in Water for Texas 2012 State Water Plan, offered in table 7.

**XII Current and Projected Supplies of Groundwater in Culberson County**

The following data is the projected supplies of water for the various aquifers in Culberson County in the year 2050, assuming a drought of record condition.

**Edwards-Trinity:**

Year 2000:

266,000 ac/ft in storage, most being Freshwater (less than 1,000 mg/l TDS)

Year 2050:

266,000 ac/ft in storage, most being Freshwater (less than 1,000 mg/l TDS)

Data obtained from LBG-Guyton & Associates

Chapter 3, Proposed Regional Water Plan

Ref: AA09-12.pdf (Appendix #1)

**Salt Basin:**

**Year 2000:**

3,700,000 ac/ft in storage, slightly to very saline (850 - 3,000 mg/l TDS)

**Year 2050:**

3,700,000 ac/ft in storage, slightly to very saline (850 - 3,000 mg/l TDS)

Data obtained from Dr. Robert I Coward, geologist

Water Works, Inc., Santa Fe, New Mexico

Ref: AA10-38 MAG.pdf (Appendix #2)

**GAM Run 06-03**

Ref: GAM- 06-03 by Andrew C.A. Donnelly P.G Texas water Development Board Groundwater availability

modeling. (Appendix # 3)

**Capitan Reef Complex:**

**Year 2000:**

383,000 ac/ft in storage, (fresh and saline mixed)

**Year 2050:**

383,000 ac/ft in storage, (fresh and saline mixed)

**Data obtained from LBG-Guyton & Associates Chapter 3, Proposed Regional Water Plan Reference: GTA  
Aquifer Assessment 10-21 MAG. August 19, 2011. (Appendix # 5)**

#### 4.4.6 CAPITAN REEF AQUIFER – 2012 Water for Texas DIABLO FARMS (Strategy E-7)

The Capitan Reef Aquifer is recognized as a minor aquifer by the TWDB. The majority of the aquifer is located in Culberson, Hudspeth, Jeff Davis, Pecos, Reeves, Ward, and Winkler Counties. In 2003 and 2004, EPWU purchased about 28,000 acres of land (Diablo Farms) overlying the Capitan Reef Aquifer straddling the Hudspeth and Culberson County lines in an area adjacent to the Salt Basin southeast of Dell City. Recharge estimates for this portion of the Capitan Reef range from 10,000 to 20,000 acre-feet per year. TDS concentrations in the area range from 850 to 1,500 mg/L, although all the operating wells on Diablo Farms (one of the properties recently acquired by EPWU) have TDS values below 1,000 mg/L. However, it is expected that significant increases in historical pumping amounts would result in movement of poorer quality groundwater into the area. EPWU has completed preliminary evaluations of groundwater availability in the area, and has concluded that pumping less than 10,000 acre-feet per year would require no desalination. Pumping between 10,000 and 25,000 acre-feet per year would not result in mining of the aquifer, but the groundwater would likely have to be desalinated over time. These estimates are preliminary, and are subject to confirmation after additional monitoring and tests. Ideally, any development would be completed in phases such that responses to pumping in terms of groundwater level changes and groundwater quality changes could be used to refine and modify future phases. Importation of 10,000 acre-feet per year from the Capitan Reef is proposed by 2040.

(Ref: AA10-21 MAG.pdf) (Appendix: # 5)

(Ref: AA09-08 (Appendix # 9))

#### West Texas Bolsons - Wild Horse and Michigan Flat:

(Refer to Appendix (GAM Run 08-24) Appendix: #7  
Year 2000:

1,365,000 ac/ft in storage, Freshwater in Wildhorse  
315,000 ac/ft in storage, Freshwater in Michigan Flat  
**Subtotal Freshwater :** 1,680,000 acre feet in storage

1,050,000 ac/ft in storage, Slightly Saline in Wildhorse  
105,000 ac/ft in storage, Slightly Saline in Michigan Flat  
**Subtotal Slightly Saline :** 1,155,000 acre feet in storage

Year 2050:

1,365,000 ac/ft in storage, Freshwater in Wildhorse  
315,000 ac/ft in storage, Freshwater in Michigan Flat  
**Subtotal Freshwater:** 1,680,000 acre feet in storage

1,050,000 ac/ft in storage, Slightly Saline in Wildhorse  
105,000 ac/ft in storage, Slightly Saline in Michigan Flat  
**Subtotal Slightly Saline:** 1,155,000 acre feet in storage

Data obtained from Dr. Robert I. Coward, geologist Water Works, Inc., Santa Fe, New Mexico.

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Additional information provided for West Texas Bolsons Aquifer:  
<http://www.twdb.state.tx.us/groundwater/docs/GAMruns/GR06-03.pdf>

**West Texas Bolsons - Lobo Valley:**

**Year 2000:** 746,000 ac/ft in storage, most being Freshwater

**Year 2050:** 703,000 ac/ft in storage, most being Freshwater

**Data obtained from LBG-Guyton & Associates Chapter 3, Regional Water Plan**

Data obtained from Dr. Robert I. Coward, geologist Water Works, Inc., Santa Fe, New Mexico.

Additional information provided for West Texas Bolsons Aquifer: For data information, reference Appendix 3.

<http://www.twdb.state.tx.us/groundwater/docs/GAMruns/GR06-03.pdf>

**MAG for Edwards Trinity in GMA 4**

**(Ref: GR10-048 MAG.pdf) (Appendix # 8)**

TOTAL OF ALL GROUNDWATER SUPPLIES (Year 200):

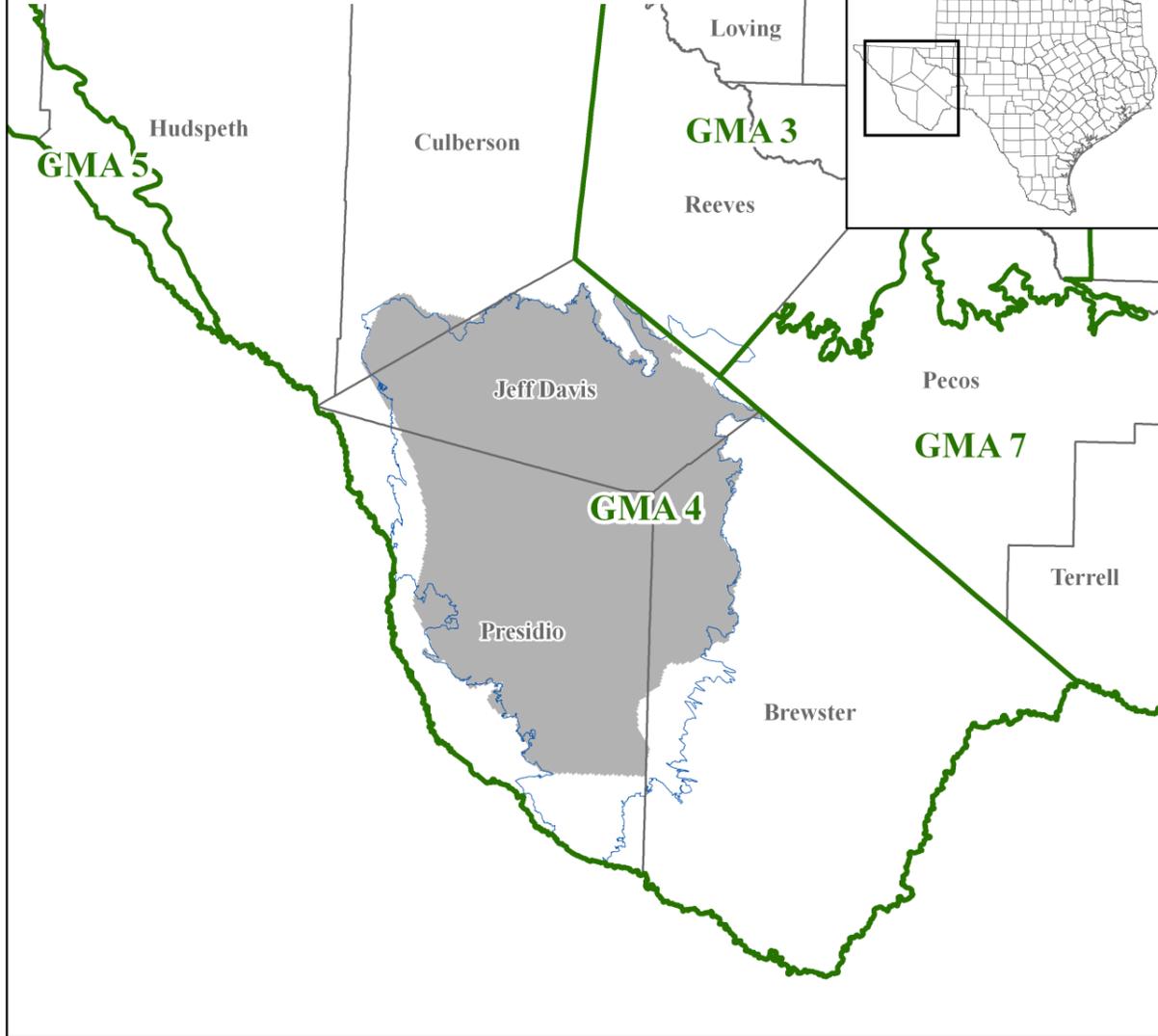
FRESHWATER	-	3,075,000 ACRE / FEET
SLIGHTLY SALINE TO SALINE	-	4,855,000 ACRE / FEET

Reference: GTA Aquifer Assessment 10-38 MAG. August 19, 2011 AA10-38 MAG.pdf  
(Appendix #2)

**MAG for Igneous Aquifer**

Reference: GTA Aquifer Assessment 10-38 MAG, August 19, 2011. GR10-036 MAG. Pdf  
(Appendix #7)

# Groundwater Availability Model for the Igneous Aquifer



## Groundwater Availability Modeling Section

(512) 463-3132

May 25, 2007

**XIII Projected Demands for Groundwater within Culberson County GCD**

The projected demand surplus for the Culberson County GCD is summarized in the table below. This data was obtained from the Proposed Region E - Far West Texas Plan, Chapter 4, developed by LBG-Guyton & Associates.

<u>Water User Group</u>	<u>Year 2050 Surplus</u>
1. City of Van Horn	1,074 ac/ft - no shortage
2. County - other, domestic	28 ac/ft - no shortage
3. Mining	2,073 ac/ft - no shortage
4. Irrigation	2,386 ac/ft - no shortage
5. Livestock	146 ac/ft - no shortage
-----	
Total Demands in Year 2050	5,707 ac/ft - no shortage

**XIV Natural Recharge Occurring in the District**

Ref: [http://www.twdb.state.tx.us/publications/reports/numbered\\_reports/doc/R356/356\\_Aquifers of West Texas.pdf](http://www.twdb.state.tx.us/publications/reports/numbered_reports/doc/R356/356_Aquifers of West Texas.pdf)

(a) The recharge occurring in the Culberson County GCD is estimated in the table below. This information is obtained from LBG - Guyton and Associates in their work preparing the Region E Water Plan. **There is no recharge assumed in drought years.**

- Lobo Valley ----- 750 ac/ft per year assuming average rainfall of 11 inches
- Wildhorse & Michigan Flat----3,700 ac/ft per year assuming average rainfall of 11 inches
- Edwards-Trinity -----1,800 ac/ft per year assuming average rainfall of 10 inches
- Capitan Reef Complex -----12,500 ac/ft per year assuming average rainfall of 14 in.

(b) See appendix (#10)

**XV Additional Amount of Natural / Artificial Recharge That Could Feasibly Be Achieved**

The additional amount of natural or artificial recharge that could be realized from implementation of feasible weather modifications would be an 8% increase in rainfall. This could result in a 1,500 acre feet increase in recharge, assuming average or above average natural rainfall. This data was obtained from the direct gathering of evidence of the High Plains Water District of their weather modification program.

**XVI Management of Groundwater Supplies**

The District will establish and maintain an observation network in order to monitor changing storage conditions of groundwater supplies within the District. By collecting and assimilating this data, the District will manage the supply of groundwater in order to conserve

the resource while seeking to maintain the economic viability of all the resource user groups, public and private. In consideration of economic and cultural activities occurring within the District, the District will identify and engage in such activities and practices, that if implemented, would result in a reduction of groundwater use. The District will make regular assessments of wells within the monitoring network and will report those conditions to the Board of Directors. This District will undertake, as necessary, and co-operate with investigations of groundwater resources within the district and will make the results of those investigations available to the public upon adoption by the board.

The District has rules to regulate groundwater withdrawal by means of spacing regulations and production limitations within designated Production Use Management Areas. Subchapter B, Groundwater Production Limitations, (Rules (§5.101/.102/.103/.104). Rule §5.101(c) will be implemented if the regular monitoring assessment indicates an extreme decline in the aquifer is occurring. Information currently available to the Board indicates that future demands will be well within the ability of the groundwater resources to supply; however, measures within the rules are in place to prevent over-mining and degradation of the aquifer.

The District may deny a well construction permit or limit a high production permit in accordance with the rules in the District. In making a determination to deny a permit or limit production withdrawals from a high production well, the district will consider public benefit against individual hardship after considering all testimony.

The relevant factors to be considered in making a determination to deny a permit or limit groundwater withdrawals include:

- 1) The purpose of the rules of the District
- 2) The equitable distribution of resources.
- 3) The economic hardship resulting from grant or denial of a permit of the terms prescribed by the permit.

In pursuit of the District mission to enable all water rights holders to have equal access to the groundwater under their land, the District may require reduction or limitation of groundwater withdrawal to amounts that will not cause detrimental mining of the aquifer. To achieve this purpose, the District may, at the Board's discretion, amend or revoke any permit after notice and hearing. The determination to seek the amendment or revocation of a permit by the District will be based upon aquifer conditions observed by the District through the Extreme Decline Study Area Process. The District will enforce the terms and conditions of permits and the rules of the District by enjoining the permit holder in a court of competent jurisdiction as provided for in TWC 36.102.

## **XVII Actions, Procedures, Performance and Avoidance for Plan Implementation**

(a)The District will implement the provisions of this plan and will utilize the provision of this plan as a guidepost for determining the direction or priority for all District activities. All operations of the District, all agreements entered into by the District and any additional planning efforts in which the District may participate will be consistent with the provisions of this plan.

(b) The District will adopt rules relating to the permitting of wells and production of groundwater. The rules adopted by the District shall be pursuant to TWC 36 and the provisions of this plan. All rules will be adhered to and enforced. The promulgation and enforcement of the rules will be based upon the best technical evidence available.

(c) The District shall treat citizens with equality. Citizens may apply to the District for discretion in enforcement of the rules on the grounds of adverse economic effects or unique local conditions. In granting of discretion of any rule, the Board shall consider the potential for adverse affects on adjacent land owners. The exercise of said discretion by the Board shall not be construed as limiting the power of the Board.

(d) The District will seek the cooperation in the implementation of the plan and management of groundwater supplies within the District. All activities of the District will be undertaken in co-operation and coordinated with the appropriate state, regional or local water management entity.

(e) A copy of the Culberson County Groundwater Conservation District Rules may be obtained by requesting a copy @ [water@telstar1.com](mailto:water@telstar1.com).

**XVIII The methodology that the District will use to trace its progress on an annual basis in achieving all of its management goals will be as follows:**

The District manager will prepare and present an annual report to the Board of Directors on District performance in regards to achieving management goals and objectives (during the last monthly Board of Directors meeting each fiscal year, beginning with Nov., 2002). The report will include the number of instances each activity was engaged in during the year, referenced to the expenditure of staff time and budget so that the effectiveness and efficiency of each activity may be evaluated. The annual report will be maintained on file at the District office. **Again, there is no surface water within the District.**

**XIX Goals, Water Management Strategies**

**Goal 1.0 -Implement a system to improve the basic understanding of groundwater conditions in the District**

Management Objective:

1.1 To provide the most efficient use of Groundwater within the district.

Performance Standard:

1.1(a) – Encourage laser leveling, center pivots, and more efficient methods of crop watering.

Management Objective:

1.2 -Controlling and preventing waste of Groundwater.

Performance Standard

1.2(a) Check with local producers to establish that leaks and runoff waters are kept to a minimum and that all waters are used for beneficial use as established within the District Rules.

Management Objective:

1.3 -Addressing drought conditions.

Performance Standard

1.3(a) - District will check monthly with the Palmer Index.

1.4(b) - Check web link to TWDB Drought page in the Drought goal section:

<http://www.twdb.state.tx.us/data/drought/> .

**Goal 2.0 –How the District will Manage Groundwater Supplies. As written in the Culberson County Groundwater Conservation District rules pertaining to Historic Use Production Permits § 5.205 – Basis for Action on Historic Use Production Permits.**

Management Objective

2.1 – Groundwater Management pertaining to HUPP’s

Performance Standard:

2.1-(a) Addressing natural resource issues which impact the use and availability of groundwater, and which are impacted by the use of groundwater within the district;

2.1-(b) Addressing drought conditions; facilitate preparation for and in response to drought conditions, so that sufficient water will be available to insure public health, further economic development; and protect the agricultural and natural resources of the State and regional water planning areas.

2.1-(c) Addressing conservation, recharge enhancement, rainwater harvesting, precipitation enhancement, and brush control, where appropriate and cost effective-

2.1-(d) Addressing in a quantitative manner the desired future conditions of the groundwater resources; established pursuant to Texas Water Code §36.108.

2.1(e) There is no surface water in the Culberson County Groundwater Conservation District

Management Objective

2.2- Disperse educational information yearly regarding the current conservation practices for efficient use of water resources.

Performance Standard:

2.2(a).- Each year, report to the board of Directors on the number of articles in the local

newspaper pertaining to current conservation practices for efficient use of groundwater within the Town, and local producers.

2.2 (b) - Report to the board on literature packets received from the TWDB and distributed within the community.

Management Objective:

2.3 -Each year, enforce rules regarding the registration of new wells and the permitting of any “Non Historic” production wells.

Performance Standard:

2.3 (a) - Reports to the Board on a monthly basis the number of “Non Historic” permits issued and wells registered.

Management Objective:

2.4 -Each year, require all drillers to submit a drilling log or acceptable alternative for each exempt new well drilled within the District, Chpt.36.117 (i)

Performance Standard:

2.4- (a) Monthly, report to the Board of Director’s on the number of driller’s Log’s and reports received.

Management Objective:

2.5-Each month require well service personnel to provide updated static levels on all wells serviced in Culberson County GCD.

Performance Standard:

2.5 (a)- Each year provide a report to the Board indicating the number of letters sent to well service businesses.

2.5 (b) Each year, provide a report to the Board indicating the number of new static levels recorded in the District office.

**Goal 3.0 Each year strive to prevent the waste of Groundwater**

Management Objective:

3.1- Investigate all wasteful practices reported within the District, and investigated.

Performance Standard:

3.1(a) - Annual report to the Board of Directors listing the number of wasteful practices identified.

**Goal 4.0 Actions, Procedures, Performance, and Avoidance. Minimize the influence of pumping of wells on the degradation of the aquifers by regulating the spacing of wells and**

by use of a Production Use Management Area. The District in its Rules has included in Subchapter B. Groundwater Production Limitations, designed to establish the aggregate, annual volume of groundwater that may be produced from: (1) Exempt wells; and (2) non-exempt wells operating pursuant to Historic Use Production Permits and Non- Historic Use Production Permits within the designated Wildhorse aquifer, Michigan flats, and Lobo aquifers. A copy of the Culberson County Groundwater Conservation District Rules may be obtain at this time through the District e-mail ([water@telstar1.com](mailto:water@telstar1.com)) .

Management Objective:

4.1- Each year enforce all existing rules regulating the spacing of wells

Performance Standard:

4.1(a) -All wells drilled within the District must comply with spacing requirements as specified in the District Rules.

4.1(b) - Annually, report to the Board of Directors on the numbers of wells drilled, both exempt and permitted.

Management Objective:

4.2 Annually, and if appropriate, designate wells that have shown an extreme decline to be placed into an Extreme Decline Study Area.

Performance Standard:

4.2(a) -Prepare an annual report of all wells that have shown a substantial decline over a three year period.

4.2(b) - Maintain a current report at the District office of all EDSA studies

Management Objective:

4.3- If data so indicates, use the EDSA to institute a Production Use Management Area to limit groundwater withdrawals from a specific area.

Performance Standard:

4.3(a) - Quarterly, supply the Board and the PUMA committee with status reports of any PUMA within the District.

**Goal 5.0 Minimize the potential for contamination of groundwater by new or existing wells.**

Management Objective:

5.1- Each year, enforce rules for the drilling, completing, and equipping of water wells to ensure that all new wells are completed properly to protect the groundwater.

Performance Standard:

5.1(a) - All new wells drilled annually must be constructed to standards set forth by the

TNRCC and District Rules and report annually to the Board all newly constructed wells within the District.

Management Objective

5.2- Each year budget a minimum of \$4,000 per year for capping abandoned or unusable wells as a service to landowners.

Performance Standard:

5.2(a) - Report the annual number of wells capped by the District, and copies of TCEQ Plugging Report's filed.

**Goal 6.0 Monitor water exported out of the district**

Management Objective:

6.1- Each year, monitor the water leaving the district through exportation for the purpose of planning and data inventory.

Performance Standard:

6.1(a) - Annually report to the Board the amount of water being exported out of the district

**Goal 7.0- Implement management strategies that will address drought conditions.**

Management Objectives

7.1 - The District will monitor the Palmer Drought Severity Index (PDSI) by the Texas Climatic Divisions. If the (PDSI) indicates that the District Will experience severe drought conditions, the District will notify all public water suppliers and producers within the District.

Performance Standards

7.1(a) – The District staff will monitor the PDSI and report findings and actions to the District Board on a quarterly basis.

7.1 (b)- The District staff will also monitor the TWDB drought page. At

<http://www.twdb.texas.gov/data/drought/>

**Goal 8.0- Implement management strategies that will promote water conservation and recharge Enhancement, Rainwater Harvesting, Precipitation Enhancement, or Brush Control, where appropriate and cost effective (Implementing TWC§ 36.1071(a) (7)).**

Management Objectives

8.0 (a) - Evaluations and selection of water management strategies as recommended in, 2012 Water for Texas Chapter 7, Appendix A.

### Management Objectives

8.1- Disperse educational information yearly regarding the current conservation practices for efficient use of water resources. Linking with the water conservation best management practices guide presented by the Water Conservation Advisory Council: at (<http://www.savetexaswater.org/bmp/>).

#### Performance Standard

8.1(a) – Each year, report to the Board of Directors the number of water conservation Literature packets handed out.

8.2- Each year, the District will promote rainwater harvesting by posting information on rainwater harvesting through our e-mail ([water@telstar1.com](mailto:water@telstar1.com)) and soon to be provided on a District web site.

#### Performance Standard

8.2 (a) – Each year, the annual report will include a copy of the information on rainwater harvesting, through our e-mail ([water@telstar1.com](mailto:water@telstar1.com)) and soon to be provided on a District web site.

#### Performance Standard

8.3- Each year, the District will provide information relating to recharge enhancement and brush control, through e-mail ([water@telstar1.com](mailto:water@telstar1.com)), and soon to be provided on a District web site.

#### Performance Standard

8.3 (a) – Each year, the District annual report will include a copy of the information that will be provided by the District through e-mail ([water@telstar1.com](mailto:water@telstar1.com)) and soon will be provided on a District web site relating to recharge enhancement and brush control.

### **Goal 9.0 Addressing Desired future conditions of Aquifers within the District (50 Years)**

9.0 (a) – The DFC- Adopted for the West Texas Bolsons is set at a maximum of 78 ft., in fifty years. The DFC for the Capital Reef, Upper Salt Basin and the Edwards Trinity is set at 50 ft., over 50 years. The DFC for the Igneous Aquifer is set at 66 ft. over 50 yrs. The desired future condition of the aquifer(s) may only be determined through joint planning with other GCDs in the same groundwater management area (GMA) as required by the 79 t+h Legislature with the enactment of HB 1763. The District is part of GMA 4, and in 2012 the GCDs of GMA 4 completed the first round of the joint planning process and adopted the DFCs.

9.0 (b) – The goals to address drought, and other natural resource issues, and the adopted desired future conditions are addressed in the previous goals.

9.0 (c) – There are several wells within the district that we have been, and will continue to monitor the static levels for future reference in addressing the DFC.

## **XX SB1 MANAGEMENT GOALS DETERMINED NOT APPLICABLE**

### **Goal 1.0 Control and Prevention of Subsidence**

1.0 (a) -The rigid geologic framework of the region precludes significant subsidence from occurring.

Goal 2.0 -Addressing natural resource issues that impact the use and availability of groundwater or that are impacted by the use of groundwater.

2.0 (a) - The District has no documented occurrences of endangered or threatened species dependent upon groundwater resources within the District, as of this writing.

3.0 - Conjunctive Surface Management Issues

3.1 (a) Not applicable. The reason being, that there is no surface water within the District.

4.0 – Precipitation enhancement:

4.1-Is not an appropriate, or a cost-effective program for the District at this time because there is not an existing precipitation enhancement program operating in nearby counties in which the District could participate and shear costs. The cost of operating a single-county precipitation enhancement program is prohibitive and would require the District to increase taxes in Culberson County.

**XXI Appendix:**

- (1)  AA09-12.pdf by David Thorkildsen, P.G. and Sarah Backhouse  
Texas Water Development Board  
Groundwater Technical Assistance Section (512) 936-0871
- (2)  AA10-38 MAG.pdf by David Wuerch P.G. and Sarah Backhouse.
- (3) GAM 06-03: by Andrew C.A. Donnelly P.G. T.W.D.B.(512)463-3132.
- (4)  GR11-018.pdf GAM Run 11-018 Culberson County Groundwater Conservation  
District by Ian C. Jones Ph. D., P.G  
Management Plan
- (5)  AA10-21 MAG.pdf by David Wuerch P.G. and Sarah Backhouse Texas Water  
Development Board Groundwater Technical Assistance Section  
(512) 936-0870
- (6)  GR10-037\_MAG.pdf  
GAM Run 10-037 MAG  
by Mr. Wade Oliver
- (7)  GR10-036\_MAG.pdf GAM Run 10-036 MAG  
by Mr. Wade Oliver
- (8)  GR10-048\_MAG.pdf GAM Run 10-048 MAG
- (9) GTA Aquifer Assessment 09-08 (Capitan Reef)  
<http://www.twdb.state.tx.us/groundwater/docs/AA/AA09-08.pdf>

(10) (b) Approximately 75% of the recharge in the watershed area originates from the Lobo and Michigan Flat area, indicating a significant portion of the recharge to Wildhorse Flat occurs as ground-water in flow from adjacent basins. One (1%) of the annual precipitation (12) inches would equal approximately 7,710 ac-ft of recharge for the Wildhorse-Michigan-Lobo flat watershed area. (John Shomaker & Associates Inc,) HYDROGEOLOGIC ANALYSIS AND GROUND-WATER FLOW MODEL OF THE WILDHORSE FLAT, ARE, CULBERSON COUNTY, TEXAS. (Prepared for the Culberson County Groundwater Conservation District, August 31, 2001.)

**XXII District Map**

