MENARD COUNTY UNDERGROUND WATER DISTRICT

Management Plan 2017-2022

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District Mission

The mission of the Menard County Underground Water District is to develop, promote and implement water conservation and management strategies to a) conserve, preserve, and protect the surface and groundwater supplies of the District, b) protect and enhance recharge, c) prevent waste and pollution, d) effect efficient use of groundwater within the District and e) to protect the landowners of water rights within the District from impairment of their groundwater quality and quantity.

Time Period for this Plan

This plan becomes effective upon approval by the Texas Water Development Board. The plan remains in effect for five years after TWDB approval, or until such time as a revised or amended plan is approved.

Statement of Guiding Principles

The District recognizes that its groundwater resources are of utmost importance to the economy and environment, first to the citizens of Menard County and then to the region.

The District is created for the purpose of conserving, preserving and protecting groundwater supply quantity and quality in the District by:

- Acquiring, understanding and beneficially employing scientific data on the District's aquifers and their hydrogeologic qualities and identifying the extent and location of water supply within the District, for the purpose of developing sound management procedures;
- Preventing depletion of the aquifers underlying the District to protect springs, streamflows and groundwater supplies to assure an adequate supply of water for future municipal, domestic, agricultural and commercial use;
- Protecting the private property rights of landowners by ensuring that landowners continue to have an adequate groundwater supply underlying their land:
- Promulgating rules for permitting and regulation of spacing, production and transportation of groundwater resources in the District to protect the quantity and quality of the resource;
- Educating the public and regulating for conservation and beneficial use of the water, and to prevent pollution of groundwater resources;
- Cooperating and coordinating with other groundwater conservation districts with which the District shares aquifer resources.

GENERAL DESCRIPTION OF THE DISTRICT

History

The citizens of Menard County, recognizing the importance of protecting and maximizing beneficial use of the scarce water resources of the county and the necessity for protecting integrity of the county's groundwater quality, introduced legislation in the 71stth Regular Legislative Session (1991) for creation of the District. A confirmation election was held on August 14, 1999 with 119 (94%) of the votes cast in favor of confirming the creation of the District and 7 (6%) against.

The District is governed by a five-member locally-elected Board of Directors. The directors serve staggered two year terms, assuring the District's responsiveness to voters' approval or disapproval of the local management of their groundwater and/or the services provided by the District.

Location and Extent

The Menard County Underground Water District comprises the entire area of Menard County which is not included within the boundaries of the Hickory Underground Water Conservation District No. 1. It covers an area of approximately 502,703 acres (785.5 square miles) in the west-central part of Texas. Land elevations within the District range from 1,890 to 2,700 feet above mean sea level. Total county population is 2,336 including the county seat, the City of Menard (population 1,606).

Topography

The District lies within the Colorado River Basin and is bisected by the San Saba River, the headwaters of which are located in Menard and Schleicher Counties near Ft. McKavett. There are numerous creeks which are tributaries of the San Saba. Drainage of the river is in a generally eastward direction.

The Edwards-Trinity (Plateau) Aquifer is made up of lower Cretaceous age Trinity Group formations and overlying limestones and dolomites of the Comanche Peak, Edwards, and the Georgetown formations. It ranges in thickness from 0 to 250 feet. Springs issuing from the aquifer form the headwaters for the San Saba River, which flows eastward, and supply several creeks which are tributary to the San Saba.

The Edwards-Trinity (Plateau) Aquifer outcrops over the majority of the area in the District with exception of the alluvial areas along the San Saba River and its tributaries and a small portion of the southeastern corner of the county. Underlying the Edwards-Trinity (Plateau) Aquifer in the eastern half of the district is a down-dip portion of the Hickory aquifer. The Ellenburger-San Saba Aquifer has a few small outcrops in the eastern part of the county .

The Hickory Aquifer is comprised of Cambrian-age sands and gravels eroded from the granites of the Llano uplift in central Texas. There is no outcrop area of the Hickory Aquifer in Menard County, but the aquifer down-dips fairly uniformly to the west, underlying the Edwards-Trinity (Plateau) Aquifer in the eastern half of the county.

REGIONAL COOPERATION AND COORDINATION

Regional Water Planning Groups

The District is located in the 32-county Region F Regional Water Planning Group which lies to the west of, and along, the upper Colorado River above the Highland Lakes, extending from Reeves and Pecos Counties on the west to Brown, McCulloch and Mason Counties to the east, and from Borden and Scurry Counties to the north to Crockett, Sutton and Kimble Counties to the south. Most of the groundwater conservation district managers in Region F attend the meetings, and currently the Menard UWD's consulting manager serves as a voting member of the group.

Groundwater Management Area 7

In 2003 the Texas Water Development Board designated the boundaries of 16 groundwater management areas in Texas. The District lies entirely within Groundwater Management Area 7, which encompasses all or parts of 33 counties and 21 groundwater conservation districts within an area of approximately 42,435 square miles. The groundwater management area was designated for the Edwards-Trinity (Plateau) Aquifer, but also includes all or portions of the minor Capitan Reef, Dockum, Ellenburger-San Saba, Hickory, Lipan, and Rustler Aquifers, as well as small portions of the Ogallala and Trinity Aquifers.

The District participates in the mandatory joint planning process mandated by §36.108 of the Texas Water Code and actively worked with the other 20 GMA 7 districts to adopt, in July of 2010, Desired Future Conditions for the management area's aquifers. The District also met with relevant GMA 7 and GMA 8 districts and conferred regularly with the Texas Water Development Board to establish Desired Future Conditions and assist in the calculation of Managed Available Groundwater for the Hickory and Ellenburger-San Saba Aquifers, for which Groundwater Availability Models were not available during this joint planning cycle

West Texas Regional Groundwater Alliance

The District is a member of the West Texas Regional Groundwater Alliance. The regional alliance consists of eighteen (18) locally created and locally funded districts that encompass almost 8.75 million acres or 13,000 square miles of West Central Texas. This region has a large number and diversity of aquifers, with great variations in productivity, water quality, economic activity, and other factors which make it necessary for each member district to develop its unique priority management goals and rules to best serve the needs of 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 Agreement. Since then the number of groundwater conservation districts in the area has more than quadrupled. The current member districts are:

Coke County UWCD	Crockett County GCD	Glasscock GCD
Hickory UWCD	Irion County WCD	Lipan-Kickapoo WCD
Plateau UWC & SD	Santa Rita UWCD	Sterling County UWCD
Sutton County UWCD	Menard County UWD	Lone Wolf GCD
Hill Country UWCD	Jeff Davis UWCD	Kimble County GCD
Middle Pecos GCD	Permian Basin UWCD	Wes-Tex GCD

The Alliance was created for local districts to coordinate and implement common objectives of facilitating the conservation, preservation, and beneficial use of water resources in the region, to exchange information among the districts, and to educate the public about regional water issues. Local districts monitor water-related activities which include but are not limited to farming, ranching, and oil and gas production. The alliance coordinates management activities of the member districts primarily through exchange of information and policy discussions.

GROUNDWATER RESOURCES[1]

Edwards-Trinity (Plateau) Aquifer

The Edwards-Trinity (Plateau) Aquifer is the principal aquifer in the District. The saturated thickness of the formation is from 100–300 feet throughout most of the county, except an area in the northwestern corner of the county where it is only 50-100 feet. The water levels have generally remained constant or have fluctuated only with seasonal use or with unusually large deviations from average annual rainfall. The formation is fractured, with the water supply lying in the joints and fractures of the limestone. The limestone is porous, and recharge to the aquifer is rapid because of the existence of horizontal and vertical dissolution channels in the limestone. The Edwards –Trinity (Plateau) Aquifer underlies 578,196 acres of the county. There is little storage in the aquifer, as most of the recharge and lateral inflows into the aquifer are discharged into streams. [2] There are very few high-production wells in this formation in the District, but supplies are presently believed to be sufficient for domestic and livestock use in the sparsely populated county where wells are drilled into the fractures and joints. Most Edwards-Trinity (Plateau) Aquifer wells in the

[1] All estimates of groundwater availability, usage, supplies, and future demands are from data supplied by the Texas Water Development Board, unless otherwise noted. TWDB data sources include "Groundwater Conditions in Menard County, Texas" Texas Water Commission Bulletin 6519, August 1965; "Water for Texas, Today and Tomorrow, August 1997", and the 2017 State Water Plan

[2] See Table 4. below.

District pump less than 15gpm.
Water quality is good, though generally very hard, with 98.5% of the water supply in the District from this formation having Total Dissolved Solids (TDS) concentrations below 1000 mg/l.[3]

Hickory Aquifer

The Hickory Aquifer has an average saturated thickness of 400-600 feet in the northeast corner of the district and 200-400 feet in the southeast quarter. There is no recharge to the aquifer within the District, but recoverable storage in the District is estimated to be about 4,500,000 acre-feet. The water quality varies, with only about 56% of the supply in the District having TDS <1000 mg/l.[4] The extent of radionuclides, which are known to exist in other areas of the aquifer, is not yet known in Menard County. However, all of the formation within the District is down-dip from the outcrop area, so it is probable that the Hickory Aquifer water supply within the District will contain these radioactive decay products in most areas.

Ellenburger-San Saba aquifer

The Ellenburger-San Saba Aquifer consists of upper Cambrian limestone and sandstone San Saba Formation overlain by the Ordovician limestone and dolomite Ellenburger formation. The latter is highly porous and outcrops in several small areas along the San Saba River in the eastern part of the county. The quality of the water pumped in the District is good, with TDS less than 1000mg/l.

MODELED AVAILABLE GROUNDWATER IN THE DISTRICT

On July 29, 2010, upon completion of the first cycle of joint planning among districts in Groundwater Management Area 7 mandated by Section 36.108 of the Texas Water Code, GMA 7 adopted the following Desired Future Conditions for aquifers of the Menard County Underground Water District:

1) Edwards-Trinity (Plateau) Aquifer: Total net decline in water levels within the Menard County UWD at the end of the 2010-2060 period shall not exceed one (1) foot below 2010 water levels in the aquifer.
2) Hickory Aquifer: Total net decline in water levels within the Menard County UWD at the end of the 2010-2060 period shall not exceed seven (7) feet below 2010 water levels in the aquifer.
3) Ellenburger-San Saba Aquifer: Total net decline in water levels within the Menard County UWD at the end of the 2010-2060 period shall not exceed five (5) feet below 2010 water levels in the aquifer.

[3] Figure 3-2, Edwards Trinity (Plateau) Aquifer Water Quality, Region F Regional Water Plan, January 2001
[4] Table 3-5, Hickory Aquifer, Region F Regional Water Plan, January 2001

Tables 1 through 3 below contain Modeled Available Groundwater values determined by the Texas Water Development Board for the District's aquifers based on the Desired Future Conditions cited above.

TABLE 1.

ESTIMATED MODELED AVAILABLE GROUNDWATER IN THE EDWARDS-TRINITY (PLATEAU) AQUIFER 2010-2060[5]
(acre-feet/year)

MCUWD	2010	2020	2030	2040	2050	2060
MAG	2,194	2,194	2,194	2,194	2,194	2,194

TABLE 2.

ESTIMATED MODELED AVAILABLE GROUNDWATER IN THE HICKORY AQUIFER 2010-2060[6]
(acre-feet/year)

MCUWD	2010	2020	2030	2040	2050	2060
MAG	1,015	1,015	1,015	1,015	1,015	1,015

TABLE 3.

ESTIMATED MODELED AVAILABLE GROUNDWATER IN THE ELLENBURGER-SAN SABA AQUIFER 2010-2060[7]
(acre-feet/year)

MCUWD	2010	2020	2030	2040	2050	2060
MAG	743	743	743	743	743	743

[5] GAM Run 10-043 MAG v. 2, TWDB 2011
[6] GTA Aquifer Assessment 10-11 MAG, TWDB 11-1-2011
[7] GTA Aquifer Assessment 10-10 MAG, TWDB 11-1-2011

TABLE 4.

EDWARDS-TRINITY (PLATEAU) AQUIFER

**ESTIMATED RECHARGE FROM PRECIPITATION,
VOLUME OF WATER THAT DISCHARGES TO SPRINGS
AND SURFACE WATER BODIES,
VOLUME OF FLOW INTO THE DISTRICT WITHIN EACH AQUIFER AND
ANNUAL FLOW OUT OF THE DISTRICT WITHIN EACH AQUIFER**

See Appendix A: GAM Run 17-028: Menard County Underground Water District Management Plan, Texas Water Development Board, March 31 2017, Page 8

(acre-feet/year)

Management Plan Requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Edwards-Trinity (Plateau)	19,258
Estimated annual volume of water that discharges from the aquifer to springs and surface water bodies, including lakes, streams and rivers	Edwards-Trinity (Plateau)	20,347
Estimated annual volume of flow into the district within each aquifer	Edwards-Trinity (Plateau)	10,201
Estimated annual volume of flow out of the district within each aquifer	Edwards-Trinity (Plateau)	10,284
Estimated net annual volume of flow between each aquifer in the district	From Edwards-Trinity (Plateau) to underlying confining units	3,650

Source: GAM Run 17-028; TWDB March 31, 2017

Table 5.

ELLENBURGER-SAN SABA AQUIFER

**ESTIMATED RECHARGE FROM PRECIPITATION,
VOLUME OF WATER THAT DISCHARGES TO SPRINGS
AND SURFACE WATER BODIES,
VOLUME OF FLOW INTO THE DISTRICT WITHIN EACH AQUIFER AND
ANNUAL FLOW OUT OF THE DISTRICT WITHIN EACH AQUIFER**

See Appendix A: GAM Run 17-028: Menard County Underground Water District Management Plan, Texas Water Development Board, March 31 2017, Page10

(acre-feet)

Management Plan Requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge from precipitation to the district	Ellenburger-San Saba Aquifer	0
Estimated annual volume of water that discharges from the aquifer to springs and surface water bodies, including lakes, streams and rivers	Ellenburger-San Saba Aquifer	0
Estimated annual volume of flow into the district within each aquifer in the district	Ellenburger-San Saba Aquifer	126
Estimated annual volume of flow out of the district within each aquifer in the district	Ellenburger-San Saba Aquifer	269
Estimated net annual volume of flow between each aquifer in the district	From younger confining units to Ellenburger-San Saba Aquifer	1,468
	From Ellenburger-San Saba Aquifer to older confining units	1,469
	From brackish portion to Ellenburger-San Saba Aquifer	152

Source: GAM Run 17-028; TWDB March 31, 2017

Table 6.

HICKORY AQUIFER

**ESTIMATED RECHARGE FROM PRECIPITATION,
VOLUME OF WATER THAT DISCHARGES TO SPRINGS
AND SURFACE WATER BODIES,
VOLUME OF FLOW INTO THE DISTRICT WITHIN EACH AQUIFER AND
ANNUAL FLOW OUT OF THE DISTRICT WITHIN EACH AQUIFER**

See Appendix A: GAM Run 17-028: Menard County Underground Water District Management Plan, Texas Water Development Board, March 31 2017, Page12

(acre-feet)

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge From precipitation to the district	Hickory Aquifer	0
Estimated annual volume of water that Discharges from the aquifer to springs and surface water bodies, including lakes, stream and rivers	Hickory Aquifer	0
Estimated annual flow into the district within each aquifer in the district	Hickory Aquifer	1,679
Estimated annual volume of flow out of the district within each aquifer in the district	Hickory Aquifer	4,164
Estimated net annual volume of flow between each aquifer in the district	From younger confining units to Hickory Aquifer	2,451
	From Hickory Aquifer To underlying Precambrian Units	219
	From brackish portion to Hickory Aquifer	289

Source: GAM Run 17-028; TWDB March 31, 2017

ANNUAL AMOUNT OF ADDITIONAL NATURAL OR ARTIFICIAL RECHARGE THAT COULD RESULT FROM IMPLEMENTATION OF A FEASIBLE METHOD FOR RECHARGE

Brush control

Historical accounts of Menard County and historical photographs in the possession of the District make it apparent that during the period from 1850 through 1885, when Menard County was experiencing the beginning of European settlement, the country was mostly open grassland with little brush and few trees. There was considerably greater flow of water in the San Saba River and its creeks and tributaries than occurs at present. Now there is extensive invasion of brush, particularly mesquite and juniper, over large areas of the district.

District personnel have observed that in the late Spring, when brush and trees come out of dormancy, creeks (including those from which there are no irrigation withdrawals at any time) and stretches of the San Saba River dry up and remain in that condition throughout the summer during droughts. In the Fall, when brush and trees become dormant, creeks usually begin to flow again, regardless of whether or not there has been rainfall.

A current study demonstrates that for the entire watershed of the North Concho river, which extends to the northwestern corner of Menard County, average annual water yield level increases by 81%, or about 48,523 acre-feet with removal of all growths of mesquite and juniper. This occurs in areas with heavy and moderate brush coverage (leaving areas with light brush growth intact)[8]. The average annual water yield increase in subbasin 8 of the study, being the subbasin that includes a portion of Menard County, is 89,889 gallons per acre, or .27 acre-foot, annually.[9]

Average annual rainfall for the Main Concho River basin is 23.6 inches annually, compared with Menard County's 22.3 inches. The study finds that the average annual evapo-transpiration for land in the Main Concho River basin with heavy to moderate brush on it is 22.04 inches (93% of precipitation) while it is 20.89 inches (89% of precipitation) for the no-brush condition.[10]

The Edwards-Trinity (Plateau) Aquifer outcrops at the surface of subbasin 8 of the Main Concho basin and over all of Menard County. The authors of the study believe that the re-evaporation coefficient of such shallow aquifers is higher for brush than other types of cover than it is in deeper aquifers because is brush is deeper rooted. They base their

[8] "Main Concho River Watershed" in Brush Management/Water Yield Feasibility Studies of Eight Watersheds in Texas, TWRI Study 182, p. 3
[9] Ibid., p. 3
[10] Ibid., p. 3

assumptions on a re-evaporation coefficient for brush-covered units of 0.4, while non-brush units were estimated at a coefficient of 0.1.[11]

Applying those coefficients to areas of Menard County heavily infested with brush, about 40% of the county, and assuming removal of only half the brush from those areas and that Menard County would, overall, only increase yield by the same average as the entire North Concho basin, (as opposed to the higher yield found in subbasin 8) surface water yield could be increased by 40%, and re-evaporation from the aquifer reduced by approximately 14,000 acre-feet, equivalent to a 70% increase in total annual recharge.

METHODOLOGY FOR CALCULATING HISTORIC USE, WATER SUPPLY AND DEMAND IN THE DISTRICT

Groundwater:

Irrigation and Livestock: Irrigation and livestock numbers for the District are apportioned to the percentage of the area of Menard county within the District, that is, 86.52% of the county.

Mining, Electric Generation and Manufacturing: no mining or electric generation took place within the District 2000-2008. 100% of manufacturing takes place within the District.

Municipal and County Other: Municipal values are not apportioned because the City of Menard is located entirely within the District.

Surface Water: 100% of municipal and irrigation surface water use in Menard County takes place within the district. There is riparian domestic and livestock (d&l) use on the rivers and streams outside the district; d&l surface water use within the district is calculated to be 86.52% of total county surface water used for that purpose.

ESTIMATED HISTORICAL GROUNDWATER USE IN MENARD COUNTY

Estimates of historical groundwater use in Menard County 2009-2014 are set forth in Appendix B: Estimated Historical Groundwater Use and 2017 State Water Plan Datasets: Menard County Underground Water District, Texas Water Development Board, March 29, 2017, page 3.
Highest groundwater use is for irrigation, which varied during the 2011-2015 period from a high of 867 acre-feet in 2012 to a low of 287 acre-feet in 2011.

2020-2070 PROJECTED SURFACE WATER SUPPLIES

Projected District surface water supplies for the planning period 2020-2070 are set forth in Appendix B: Estimated Historical Groundwater Use and 2017 State Water Plan

[11] Ibid. p. 2

Datasets: Menard County Underground Water District, Texas Water Development Board, March 29, 2017 Page 4. The Texas Water Development Board projects total surface water supplies for the entire planning period at 2,033 acre-feet/year.

However, during the 2011-2015 period the Texas Water Development Board estimates that historical surface water use varied from 4,346 acre-feet in 2013 to a low of 1,121 acre-feet in 2012. See Appendix B: Estimated Historical Groundwater Use and 2017 State Water Plan Datasets: Menard County Underground Water District, Texas Water Development Board, March 29, 2017, page 3.

The San Saba River is perennial in the western half of the county due to the presence of aquifer-fed springs that maintain flows. East of the City of Menard springflow is inadequate during times of drought to maintain any flow in many reaches of the river.

2020-2070 PROJECTED WATER DEMANDS AND WATER SUPPLY NEEDS

Projected water demands for the District during the 2020-2070 planning period are set forth in Appendix B; Estimated Historical Groundwater Use and 2017 State Water Plan Datasets: Menard County Underground Water District, Texas Water Development Board, March 29, 2017 Page 5.

Projected water supply needs are set forth in Appendix B; Estimated Historical Groundwater Use and 2017 State Water Plan Datasets: Menard County Underground Water District, Texas Water Development Board, March 29, 2017 Page 6.

Projected water supply and demand estimates for the District indicate that demand will exceed supply for irrigation in amounts varying from 426 acre-feet/year in 2020 to 385 acre-feet/year in 2070. Municipal supplies for the City of Menard will fall short of demand by 210 acre-feet /year in 2020 to 195 acre-feet/year ion 2070.

2020- 2070 PROJECTED WATER MANAGEMENT STRATEGIES

Water management strategies for the District for the planning period 2020-2070 are set forth in Appendix B; Estimated Historical Groundwater Use and 2017 State Water Plan Datasets: Menard County Underground Water District, Texas Water Development Board, March 29, 2017 Page 7.

These include irrigation conservation resulting from reduction in demand for irrigation water, development of Hickory Aquifer supplies for the City of Menard, as well as municipal conservation, reuse, water audits, and reducing leakage.

MANAGEMENT OF GROUNDWATER SUPPLIES

A primary function of the district is to obtain and analyze data about aquifer supplies and hydraulic conditions in order to develop more effective management of the resource. The District will continue to establish monitor wells to gather baseline data concerning aquifer levels within the Edwards-Trinity (Plateau) aquifer. The District will take readings from the monitor wells on a regular basis, make reports thereon to the Board of Directors, and maintain cumulative records of the water levels in the wells.

In 2010 LBG-Guyton Associates completed a springflow protection analysis study for the District defining the boundaries of the catchment basin for Government Springs, which form part of the headwaters of the San Saba River, and Clear Creek springs. Particular emphasis is being placed by the District on selecting and monitoring wells within the catchment basin in Menard County, and working with the Sutton County UWCD and Plateau WS & CD to monitor one or more wells in the catchment basin in each of those districts.

The District has adopted rules to regulate groundwater withdrawal by means of spacing regulation and production limits.
The District may deny a well permit or limit a high production permit in accordance with the provisions of the District Rules and this Management Plan. Some relevant factors to be considered in denying or limiting a permit shall be:

1) the purpose of the District Rules, including but not limited to preserving and protecting the quality and quantity of the aquifer resources;
2) protecting existing groundwater uses
3) protecting existing surface water uses
3) the equitable distribution of resources
4) the economic benefit or hardship resulting from the grant or denial or limitation of a permit.

District Rules provide that monitor wells shall be maintained within District boundaries which shall be measured quarterly to establish baseline data for water level declines. Based on studies of no less than five-year's duration, if the District determines that pumping within the District is depleting the aquifer, the District may, upon notice and hearing, reduce the volume of production of a permitted well.

In 2015 District Rules were amended to require meters on wells newly permitted after April 15, 2015 and to prohibit permits for furrow irrigation after that date.

The District will enforce the terms and conditions of permits and the Rules of the District.

The District recognizes the importance of public education to encourage efficient use, implement conservation practices, prevent waste, and preserve the integrity of groundwater and will seek opportunities to educate the public on water conservation

issues and other matters relevant to the protection of the aquifer resources through public meetings, newspaper articles, and other means which may become available.

ACTIONS, PROCEDURES, PERFORMANCE AND AVOIDANCE FOR PLAN IMPLEMENTATION

The District will implement this plan and utilize its provisions as a guide for determining the direction and/or priority for all District activities. All operations of the District and all agreements entered into by the District will be consistent with the provisions of this plan.

The District has adopted rules for permitting of wells and production of groundwater, pursuant to Chapter 36 of the Texas Water Code and the provisions of this Plan, and will amend those rules as necessary. Rules will be enforced. The promulgation and enforcement of the rules will be based on the best scientific and technical evidence available to the District.

For good cause, the District, in its discretion, and after notice and hearing, may grant an exception to the District Rules. In doing so, the Board shall consider the potential for adverse effect on adjacent landowners. The exercise of said discretion by the Board shall not be construed as limiting the power of the Board.
The District will seek cooperation from, and co-ordinate with, neighboring groundwater districts in managing water resources from common aquifers.

Coordination with Surface Water Entities

The Board of Directors and Manager of the District will meet at least once yearly with the Menard County Water Control and Improvement District No. 1 to discuss joint water management goals.

Methodology for Tracking Progress

The District will hold regular monthly Board Meetings for the purpose of conducting District business. The minutes of the Board meetings and the Manager's Report will reflect the number of meetings attended; number of water levels monitored; articles published concerning water issues; number of water analysis samples collected and analyzed; resulting action regarding potential contamination, or remediation of actual contamination; reports of presentations in public forums; meetings with the surface water management district; and other matters of district importance.

During the last monthly Board of Directors' meeting each fiscal year, beginning with October 1, 2012, 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. The annual report will be maintained on file at the District Office.

GOALS, MANAGEMENT OBJECTIVES AND PERFORMANCE STANDARDS

Goal 1.0 -Providing the Most Efficient Use of Groundwater

1.1. Management Objective
At least once each year the District will provide, in a public meeting or forum, available information on water conservation practices for the efficient use of water. These will include, but are not limited to, publications from the Texas Water Development Board, Texas Natural Resource Conservation Commission, Texas Agricultural Extension Service, and other sources.

1.1 Performance Standard
One distribution of informational materials in a public meeting or forum each year.

Goal 2.0 - Controlling and Preventing the Waste of Groundwater

2.1. Management Objective
To collect data for the purpose of managing for prevention of waste of groundwater, the District will measure, record and accumulate a historic record of static water levels in monitor wells on a regular periodic basis, with priority given to locations that will best enable the district to monitor aquifer levels that affect the major springs in the district

2.1 Performance Standard
The static water levels in six monitor wells will be measured and recorded every quarter, and the measurements submitted to the Texas Water Development Board annually. At least four of the monitor wells will be located in the catchment basin for the Government and Clear Creek springs.

2.2 Management Objective
At least once each year the District will publish the availability of water testing services in the local newspaper.

2.2 Performance Standard
One advertisement for water testing services published each year.

Goal 3.0 - Addressing Natural Resource Issues Which Impact the Use and Availability of Groundwater, and Which are Impacted by the Use of Groundwater

3.1. Management Objective
Although there is very little oil production in Menard County the District will

monitor one or more selected wells within areas of the District where there is oil production, for possible contamination problems which would jeopardize the integrity of the groundwater resource.

3.1 Performance Standard
Once each year one well sample will be collected and analyzed for petroleum-related contamination in areas of the district where there is oil production.

Goal 4.0 - Addressing Conjunctive Surface Water Management Issues

4.1 Management Objective
Each year the District shall conduct joint planning and/or policy meetings with the Menard County Water Control and Improvement District No. 1 to discuss conjunctive use issues.

4.1 Performance standards
One joint planning and/or policy meeting conducted jointly with the Menard County Water Control and Improvement District No. 1, or another surface water entity, each year.

Goal 5.0 -Addressing drought conditions

5.1 Management Objective
To raise public awareness of the need for additional conservation during periods of drought in the district.

5.1 Performance Standard
Publication in the local newspaper of a notice for need to conserve water once each month during times that the LCRA stream gauge at Menard has readings of less than 8 cfs for the duration of a week or more. The notice will include a link to the TWDB drought website at http://www.twdb.state/tx.us/DATA/drought/index.asp. Stream gauge readings will be reported to the board of directors at monthly meetings.

Goal 6.0 - Addressing conservation

6.1 Management Objective
At least once each year the District will publish in a newspaper with local circulation an article on water conservation and availability of information materials in the district office.

6.1 Performance Standard

One article on conservation published each year.

Goal 7.0 - Addressing recharge enhancement

7.1 Management Objective

In the Menard County UWD the best and most practicable management practice for recharge enhancement is brush control. Educating the public about benefits and methods of controlling brush is the most practicable management tool for recharge enhancement within the District.

7.1 Performance Standard.

At least once a year the District will publish an article or advertisement in the local newspaper about the availability of literature on brush control in the District office, or distribute brush control literature in a public forum.

Goal 8.0 - Addressing rainwater harvesting

8.1 Management Objective

To educate the public about the availability and feasibility of rainwater harvesting projects in the District.

8.1 Performance standard

At least once each year the District will publish an article on rainwater harvesting in the local paper or publish an advertisement about the availability of literature on rainwater harvesting in the District office, or distribute rainwater harvesting manuals in a public forum.

Goal 9.0 - Addressing brush control

9.1 Management Objective

Educating the public about benefits and methods of controlling brush for the purpose of enhancing and protecting water resources.

9.2 Performance standard

At least once a year the District will publish an article or advertisement in the local newspaper about the availability of literature on brush control in the District office, or distribute brush control literature in a public forum.

Goal 10.0- Addressing the Desired Future Conditions of the Groundwater Resources in the District

10.1 Management Objective

Track monitor well levels to determine whether the district is on target to meet the Desired Future Conditions submitted to the TWDB.

10.1 Performance Standard

Report to the Board of Directors at least quarterly on monitor well Levels, and once a year submit to the Board a report comparing well levels for the current year with the levels for the previous year and for the year 2010.

Goals not applicable to the Menard County Underground Water District.

Goal 1.0 Management Objective

Controlling and preventing subsidence.

There is no history of subsidence of aquifer formations within the district upon water level depletion and available scientific information is that the formations are of sufficient rigidity that subsidence will not occur.

Goal 2.0 Management Objective

Addressing precipitation enhancement

Although several neighboring districts participate in a weather modification program it is not economically feasible for the Menard UWD to join.

Definitions and Concepts

"Board" - the Board of Directors of the Menard County Underground Water Conservation District.

"District" - the Menard County Underground Water District.

"Effective recharge" - the amount of water that enters the aquifer and is available for development

"Groundwater" - means water percolating below the surface of the earth.

"Integrity" - means the preservation of groundwater quality.

"Natural Recourse Issues" - includes groundwater integrity preservation

"Ownership" - pursuant to TWC Chapter 36, §36.002, means the recognition of the rights of the owners of the land pertaining to groundwater.

“Recharge” - the addition of water to an aquifer.

“Surface Water Entity” - TWC Chapter 15 Entities with authority to store, take divert, or supply surface water for use within the boundaries of a district.

“TCEQ” - Texas Natural Resource Conservation Commission.

“TWDB” - Texas Water Development Board.

"Waste" - pursuant to TWC Chapter 36, §36.001(8), means any one or more of the following:

(1) withdrawal of groundwater from a groundwater reservoir at a rate and in an amount that causes or threatens to cause intrusion into the reservoir of water unsuitable for agricultural, gardening, domestic, or stock raising purposes;

(2) the flowing or producing of wells from a groundwater reservoir if the water produced is not used for a beneficial purpose;

(3) escape of groundwater from a groundwater reservoir to any other reservoir or geologic strata that does not contain groundwater;

(4) pollution or harmful alteration of groundwater in a groundwater reservoir by saltwater or by other deleterious matter admitted from another stratum or from the surface of the ground;

(5) willfully or negligently causing, suffering, or allowing groundwater to escape into any river, creek, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road, or road ditch, or onto any land other than that of the owner of the well unless such discharge is authorized by permit, rule, or order issued by the commission under Chapter 26;

(6) groundwater pumped for irrigation that escapes as irrigation tailwater onto land other than that of the owner of the well unless permission has been granted by the occupant of the land receiving the discharge; or

(7) for water produced from an artesian well, “waste” has the meaning assigned by Section 11.205.

“Well” - an artificial excavation that is dug or drilled for the purpose of producing groundwater.