

Sutton County Underground Water Conservation District

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Sutton County
Underground Water Conservation District

Management Plan

Mission Statement

The Sutton County Underground Water Conservation District was created by Acts of the 69th Texas Legislature in 1985. The District was created to provide for the conservation, preservation, protection, recharge and prevention of waste of the underground water reservoirs located under the District consistent with Article XVI, Section 59, of the Texas Constitution and Chapter 36 of the Texas Water Code. The District strives to bring about conservation, preservation and the efficient, beneficial and wise use of water for the benefit of the citizens and economy of the District through monitoring and protecting the quantity and quality of the groundwater. The District also strives to maintain groundwater ownership and rights of the landowners as provided in the Texas Water Code §36.002.

Time Period for This Plan

This plan becomes effective upon certification by the Texas Water Development Board and replaces the existing management plan adopted by the Board of Directors. This new plan remains in effect until a revised plan is certified or September 1, 2008, whichever is earlier. 9

General Description

The District is governed by five Directors which are elected by local voters and serve a four year staggered term of office. The current Board of Directors are: Ralph Mayer, Chairman; Jim Cusenbary Secretary, Dean Dermody, Joe David Ross and Bob Brockman. District rules have been in effect since 1992 which will effectuate the management plan. The District encompasses Sutton County which is located in the southwestern part of Texas with Sonora, Texas as the county seat. Sutton County's economy is primarily based on agriculture and the oil and gas industry.

Management of Groundwater Supplies

The District will aid in the management of groundwater supplies within the District in order to conserve the resource while seeking to maintain the economic viability of all resource user groups, public and private. In consideration of the economic and cultural activities occurring within the District, the District will identify and engage in such activities and practices, that could result in a reduction of groundwater use to conserve supply and maintain quality for future population growth, economic development needs and environmental preservation purposes. An observation network shall be maintained in order to monitor changing quality and storage conditions of groundwater supplies within the District. The District will employ technical resources at its disposal to evaluate the resources available within the District and to determine the effectiveness of management or conservation measures.

The District has adopted rules to manage groundwater withdrawals by means of spacing and production limits. The District may deny a well construction permit or limit groundwater withdrawals in accordance with the guidelines stated in the rules of the District. In making a determination to approve or deny a permit or limit groundwater withdrawals, the District will consider the public benefit against individual hardship after considering all appropriate testimony. The relevant factors to be considered in making a determination to deny a permit or limit groundwater withdrawals include: purpose of District rules, legal rights, aquifer recharge values, equitable distribution of resource and economic hardship to both individual surface owners and surrounding community resulting from grant or denial of permit or terms prescribed by the permit.

Regional Cooperation and Coordination

In 1988, four groundwater conservation districts, Coke County UWCD, Glasscock County UWCD, Irion County WCD and Sterling County UWCD signed an original Cooperative Agreement. As new districts were created, they too signed the Cooperative Agreement. In the fall of 1996, the original Cooperative Agreement was redrafted and the West Texas Regional Groundwater Alliance was created. The West Texas Regional Groundwater Alliance consists of twelve locally created and locally funded groundwater conservation districts that encompass almost 11.5 million acres or seventeen thousand eight hundred square miles of West Texas. Due to the diversity of the region, each member district provides it's own unique programs to best serve its

constituents. The current member districts are:

- | | |
|----------------------|--------------------|
| Coke County UWCD | Emerald UWCD |
| Menard WCD | Glasscock UWCD |
| Hickory UWCD#1 | Irion County WCD |
| Lipan-Kickapoo WCD | Lone Wolf GCD |
| Plateau UWCSD | Santa Rita UWCD |
| Sterling County UWCD | Sutton County UWCD |



This Alliance was created to implement the local districts' common objective to facilitate the conservation, preservation and beneficial use of water and related resources. Local districts monitor water-related activities of the State's largest industries such as farming & ranching, oil and gas and municipalities. The Alliance provides coordination to effect region wide planning in an area which has common water resource allocation problems that are unique to this portion of the State of the member districts and the monitoring of activities in order to accomplish their objectives.

West Texas Weather Modification Association

In 1996, the West Texas Weather Modification Association was formed for the purpose of providing weather modification for rainfall enhancement and aquifer recharge. The target area of WTWMA includes 6.4 million acres or ten thousand square miles. The District has participated in WTWMA since 1996.

Aquifer Recharge Study

Groundwater characteristics for the Edwards-Trinity aquifer have been based on very little data and sometimes have been derived from the Edwards Aquifer statistical data.

In an effort to formulate more accurate information about the aquifer, the District in conjunction with other Districts of the WTRGA, Region F RWPG and TWDB have agreed to measure water levels on selected wells on a monthly basis and record rainfall to be combined with other data and evaluated by an independent consultant.

Geographical Information

The District lies within the Edwards Plateau and consists of approximately 955,520 acres in Sutton County, Texas. The land is generally rolling to stony, flat topped hills with elevations from 1900 to 2500 ft. The District is included in two different river basins, the Colorado and the Rio Grande. The western half of the county slopes

southwestward into the Devils River. The eastern half drains to the North Llano River and a small portion drains northeastward to the San Saba River. The land also includes shallow depressions that catch rainfall and runoff to be either evaporated or infiltrated into the soil.

Groundwater Resources

The Edwards-Trinity (Plateau) aquifer is the fresh water source for Sutton County and includes all rocks from the base of the Antlers to the top of the Georgetown Formation (Washita Group). Limestone is the predominant rock underlying the Edwards Plateau soils. The permeability of the limestone is not necessarily due to intergranular pore space as in sandstones, but more to joints, crevices, and solution openings that have been enlarged by solvent action of water charged with carbon dioxide. The Glen Rose in Sutton County consists of limestone, sandstone, and green and red shale. It is underlain by Permian foundations and overlain by the Fredericksburg Group. The Glen Rose pinchout extends eastward from southern Crockett County across Sutton County to the Sutton-Kimble County line, thence northeastward to the northeast corner of Menard County. The Antlers Formation consists of buff to gray, fine to medium-grained, cross-bedded, quartz sand and sandstone interbedded with lesser amounts of red, gray, and purple shale. The Edwards Formation is a granular to crystalline, dolomitic limestone called brown lime or brown sand on local well driller's logs. Caverns or caves and smaller solution channels are common in the Edwards. Alluvial deposits of Pleistocene and Recent age occur along nearly all of the stream courses on the Edwards Plateau. These deposits consist of sand, gravel, silt and clay derived from the erosion of the underlying rocks, and occur primarily as terrace and flood-plain alluvium. Permian limestone contains fresh to slightly saline water in the area of the common corners of Kimble, Menard, Schleicher and Sutton Counties. The Permian is overlain by the Edwards and associated limestones in this area and is recharged by water from the Cretaceous.¹

Groundwater Resource Estimates

All estimates of groundwater availability, usage, supplies, recharge, storage and future demands are from data supplied by the Region F Regional Water Plan, January 2001 or the Texas Water Development Board unless otherwise noted. Data sources include

¹Occurrence, Availability, and Chemical Quality of Ground Water in the Edwards Plateau Region of Texas, Report 235, Texas Department of Water Resources, Loyd E. Walker, July 1979.

"Water for Texas, Today and Tomorrow, August 1997", aquifer parameters derived from pumping tests performed by TWDB, and TWDB personnel. These estimates will be used until alternate numbers are generated. Use of these estimates does not constitute endorsement by the District.

Useable Amount of Groundwater

The total useable amount of groundwater within the Edwards and associated limestone is 597,391 acre feet. This figure is based on saturated thickness data derived from driller's logs within the District. The specific yield was calculated at 0.04.² According to TWDB Report 238, the Edwards and associated limestones is considered an effective aquifer yet difficult to consider developable due partially to it's heterogeneous and anisotropic nature. The total useable amount of groundwater within the Trinity Aquifer is 5,847,677 acre feet. This figure is based on a 84 ft. saturated thickness and 0.074 specific yield.³ Water from the Trinity Aquifer is normally considered not potable.

Projected Water Supply

(expressed in acre feet)

River Basin	Aquifer	1990	2000	2010
Colorado	Edwards-Trinity	12,843	12,843	12,843
Rio Grande	Edwards-Trinity	25,695	25,695	25,695
Total		38,538	38,538	38,538

*source of data - *Water for Texas, Today & Tomorrow*, Texas Water Development Board, 1997.

Information from the Region F RWPG 2001 Plan indicated the following available water supply -

Edwards-Trinity (Colorado River Basin) - 17,355
 Edwards-Trinity (Rio Grande River Basin) - 21,183
 Total 38,538

² Groundwater Availability in Texas, Estimates and Projections Through 2030, Report 238, Texas Department of Water Resources, 1979.

³ Ibid

It should be noted that there are areas where agricultural activity is sustained on wells producing as little as 3 gallons per minute which limits proper grazing distribution and other agricultural enterprises. Although most of the District has available groundwater, the quantity of groundwater dictates surface activities or the limitations thereof. The District consists of 955,520 acres with 38,538 acre feet of water. Dividing the acre feet by total acres brings a total of .04 acre feet/acre or 13,034 gallons/acre.

Amount of Groundwater Used Annually
(expressed in acre feet)

	1990	1991	1992	1993	1994	1995
Municipal	1175	1202	1164	1186	1156	1286
Irrigation	771	771	771	1253	1307	1228
Mining	38	73	77	77	75	75
Livestock	590	623	460	480	500	502
Total	2574	2669	2472	2996	3038	3091

*source of data - *Water for Texas, Today & Tomorrow*, Texas Water Development Board, 1997.

	1996	1997	1998	2000
Municipal	1416	1417	1263	1385
Irrigation	2261	2261	342	1473
Mining	75	75	72	75
Livestock	476	520	490	550
Total	4228	4273	2167	3483

*source of data - Texas Water Development Board

INVASIVE VEGETATION - These figures do not include the water consumption of invasive vegetation. A large mature juniper has a transpiration rate of about 33 gal/day⁴ or 12,045 gal/yr. or 0.04 ac-ft/year. At a density equivalent to only one mature juniper per acre, an estimated loss of 38,220 ac-ft/year occurs within the District.

The transpiration rate of a mesquite tree is estimated at 21 gallons/day⁵ or 7,665 gal/yr. or 0.02 ac-ft/year. At a density equivalent to one mesquite tree per acre, an estimated loss of 22,454 ac-ft/year occurs within the District. The following table is a brief description of brush populations within the District.⁶

Density					
Light		Moderate		Heavy	
Cedar	Mesquite	Cedar	Mesquite	Cedar	Mesquite
639,000 acres	799,000 acres	255,000 acres	40,000 acres	50,000 acres	10,000 acres

Annual Effective Recharge & Recoverable Storage
(expressed in acre feet)

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River Basin	Aquifer	Recharge
Colorado	Edwards-Trinity	12,843
Rio Grande	Edwards-Trinity	25,695
Total		38,538

*source of data - *Water for Texas, Today & Tomorrow*, Texas Water Development Board, 1997. Region F RWPG 2001 Plan also states 38,538 acre feet as annual effective recharge.

Rainfall is the only source of recharge for the District. Many parameters affect the amount of water that actually reaches the aquifer. Vegetative growth, soil construction and rate of rainfall are some of the parameters affecting the amount of water reaching the aquifer.

⁴"Biology and Ecology of Redberry Juniper," by Darrell N. Eckert, Technical Report 97-1, Juniper Symposium 1997, Texas Agricultural Experiment Station, TAMU.

⁵"Biology and Ecology of Redberry Juniper," by Darrell N. Eckert, Technical Report 97-1, Juniper Symposium 1997, Texas Agricultural Experiment Station, TAMU.

⁶Brush Survey of 1973, Sutton County, Soil Conservation Service.

In The Edwards Plateau region, the annual rate of evaporation is three times greater than the annual rate of precipitation, thus creating a perpetual low soil moisture content that retards percolation except under the most ideal conditions. Percolation usually occurs during relative short periods after rainfall. Soil permeability is an expression of the ability of water to pass through pore spaces of the soil and varies throughout the Edwards Plateau from less than 0.06 to 0.63 inches per hour. Rain intensities greater than these rates will produce surface runoff.⁷

Additional Recharge

The estimate of the annual amount of additional natural or artificial recharge of groundwater within the District, that could result from implementation of feasible methods for increasing the natural or artificial recharge is difficult to determine due to the direct correlation to rainfall. There are several feasible methods of additional recharge:

1. Flood Prevention Sites - In 1962, Public Law 566 mandated the construction of thirteen dam sites on the Dry Devil's River Draw and Lowery Draw for the prevention of flooding in Sonora, Texas. Eleven of the sites are located within Sutton County. The structures will detain temporarily the runoff from 76.8% of the contributing portion of the watershed from a storm that can be expected to occur no more often than once in 100 years. The dams were designed to regulate flow of floodwater, thereby releasing water at a predetermined rate to prevent flooding. Although aquifer recharge was not specifically addressed in the design, the sites are capable of holding 35,303 acre feet collectively.⁸ However, since construction of the sites, the only storm event to produce enough storm water to fill structures #9, #10, #11 & #12 occurred in 1990. Structures #1-8 have never been filled to capacity.
2. Weather Modification - Weather modification is another tool considered effective for increased aquifer recharge. The Colorado River Municipal Water District Weather Modification Program indicates a 23% increase in rainfall within the target area over a 26 year period. San Angelo conducted a weather enhancement program from 1985 to 1989 with a result rate of 15% increase in rainfall. The District has been a member of the West Texas Weather Modification Association since the initial season in 1996. The average rainfall for the District is 18.33 in/year and 10.24 in from May through September when weather modification activities occur.⁹ A modest 10% increase of one inch of rainfall during the growing season results in a reduction of pumpage for all users, potential increase in runoff, increases productivity of crops and rangeland, provides additional moisture infiltration below root depth available for recharge and increases spring flow. One inch of rainfall distributed over the entire District is equal to 79,626 ac-ft of rainwater. Under ideal conditions, 20% of rainfall infiltrates beyond the root zone for potential recharge, increased rainfall would result in additional potential recharge as follows:

⁷ Occurrence, Availability, and Chemical Quality of Ground Water in the Edwards Plateau Region of Texas, Report 235, Texas Department of Water Resources, Loyd A. Walker, 1979.

⁸ Workplan for Watershed Protection and Flood Prevention, U.S. Department of Agriculture Soil Conservation Service, 1958

⁹ Sutton County, Texas Soil Survey, United States Department of Agriculture Soil Conservation Service/Texas Agricultural Experiment Station, 1968.

Increase During Growing Season (Ave. 10.24 in, May-September)	10% Increase (1.0 inch)	15% Increase (1.5 inches)	23% Increase (2.3 inches)
Additional Recharge Potential in acre feet	15,957	23,888	36,596

3. Range Management through brush control - Brush control can be accomplished by mechanical control, prescribed burn, combination of mechanical and burn, or chemical application. Brush control may be considered more as a conservation method than an additional recharge method. Effective brush control could potentially conserve up to 19,062 acre feet/year if the entire District were returned to 70% Grass, 12% Oak and 18% Juniper. The following table is results of the water balance on rangeland at the Texas Agriculture Experiment Station, Sonora, Texas.¹⁰

	100% Grass	70% Grass 12% Oak 18% Juniper	40% Grass 24% Oak 36% Juniper
Rainfall (inches)	22.6	22.6	22.6
Interception Loss (inches)	3.0	6.3	9.6
Water Reaching the Soil (inches)	19.6	16.3	13.0
Runoff (inches)	0.2	0.2	0.2
Water Going into the Soil (inches)	19.4	16.1	12.8
Evapotranspiration (inches)	15.7	15.8	12.8
Deep Drainage (inches)	3.7	0.3	0.0

¹⁰“How to Increase or Reduction in Juniper Cover Alters Rangeland Hydrology”, by Thomas L. Thurow and Justin W. Hester, Technical Report 97-1, Juniper Symposium 1997, Texas Agricultural Experiment Station, TAMU.

Moderate Stocking Rate (animal units/sec)	34	22	11
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Projected Water Demand
(expressed in acre feet)

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Demand	River Basin	Aquifer	2010	2020
Sonora	Rio Grande	Edwards-Trinity	1196	1235
Sonora	Colorado	Edwards-Trinity	47	44
County - Other	Rio Grande	Edwards-Trinity	260	245
Mining	Colorado	Edwards-Trinity	36	37
Mining	Rio Grande	Edwards-Trinity	45	44
Irrigation	Colorado	Edwards-Trinity	684	671
Irrigation	Rio Grande	Edwards-Trinity	1522	1493
Livestock	Colorado	Edwards-Trinity	314	314
Livestock	Rio Grande	Edwards-Trinity	376	376
Total			4480	4459

*source of data - *Water for Texas, Today & Tomorrow*, Texas Water Development Board, 1997 & 2001 Region F RWPG Regional Water Plan.

Actions, Procedures, Performance and Avoidance for Plan Implementation

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The District will implement the provisions of this plan and will utilize the provisions 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 will be consistent with the provisions of this plan.

The District has adopted and will amend as necessary rules relating to the permitting of

wells and the production of groundwater. The rules adopted by the District shall be pursuant to TWC Chapter 36 and the provisions of this plan. The promulgation and enforcement of the rules will be based on the best technical evidence available.

The District shall treat all citizens equally. Citizens may apply to the District for discretion in enforcement of the rules on grounds of adverse economic effect or unique local character. In granting of discretion to any rule, 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 the cooperation in the implementation of this plan and the management of groundwater supplies within the District.

In an effort to recognize all potential contamination sources, the District will work to promote capping and plugging of abandoned water wells. The District will also coordinate efforts with the Railroad Commission in identifying abandoned oil and gas wells that pose potential threat to the integrity of the groundwater.

The District supports the efforts of the City of Sonora in the implementation of the Wellhead Protection Program and the Drought Contingency Plan. The District is committed to provide technical assistance appropriate to effectuate water resource planning for the City of Sonora.

Methodology for Tracking Progress

The methodology that the District will use to trace it's progress on an annual basis in achieving it's 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. The annual report will be maintained on file at the District Office.

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Coordination with Surface Water Entities

There are four adjudication certificates held by water users within the District. The District has no authority over surface water.

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Goals

1.0 To provide for the most efficient use of groundwater.

Management Objective (1.1) The District realizes the importance of public education of groundwater usages and conservation practices. Each year, the District will publish at least two educational articles identifying conservation practices for the efficient use of groundwater. Each year, the District will respond to invitations to speak on groundwater topics to at least one group, if requested. Each year, the District will contact all schools within the District with information of educational material available including the availability of 4-H Water Camp to all interested students.

Performance Effectiveness Standard (1.1a) Number of articles published identifying conservation practices for the efficient use of groundwater each year.

Performance Effectiveness Standard (1.1b) Number of speaking engagements responded to on groundwater topics each year.

Performance Effectiveness Standard (1.1c) Number of contacts made to schools regarding available educational material each year.

Management Objective (1.2) The District shall keep on record a list of water well drillers known to drill within the District and send notices of District meetings. The District shall make conservation materials, District rules and information for new landowners within the District available to Realtors within the District.

Performance Effectiveness Standard (1.2a) - Develop and update annually a list of known water well drillers within the District. Create mailing list for monthly mailout of District meeting notice.

Performance Effectiveness Standard (1.2b) - Number of contacts made to Realtors regarding available conservation materials, District rules and information for new landowners.

Management Objective (1.3) According to District rules, wells within the District are required to be registered and/or permitted. As part of daily operations, the District will register all wells upon notification by well drillers or landowners. The District will permit all wells after the District personnel have determined that all criteria have been met by well specification as described by District Rule 4.003. Upon request by the Board, District personnel shall evaluate water usage on a per section basis including exempt and nonexempt usage on specific sections.

Performance Effectiveness Standard (1.3a) Number of wells registered annually.

Performance Effectiveness Standard (1.3b) Number of wells permitted annually.

Performance Effectiveness Standard (1.3c) Number of requests by Board for water usage analysis.

Performance Effectiveness Standard (1.3d) Number of water usage evaluations.

Management Objective (1.4) The District is included in Region F Regional Planning Group. Each year that District personnel serve on the Region F RWPG Board, any committee or office, the District will actively participate in Region F Regional Planning and attend at least 80% of meetings.

Performance Effectiveness Standard (1.4a) Percentage of Region F Regional Planning meetings attended each year.

Performance Effectiveness Standard (1.4b) Number of committees, offices, duties performed by District each year.

Management Objective (1.5) The District will participate in weather enhancement for the purpose of aquifer recharge, reduction in groundwater use and economic benefit. Each year, at least one article will be published on weather modification. All flight paths, if provided by West Texas Weather Modification Association, will be available at the District Office for public view. Rainfall data from a thirty gauge system will be recorded on a monthly basis during program schedule. An annual report of all program results will be given to the Board of Directors

Performance Effectiveness Standard (1.5a) Number of articles written on weather modification each year.

Performance Effectiveness Standard (1.5b) Number of flight paths available for public view each year.

Performance Effectiveness Standard (1.5c) Number of gauges with recorded rainfall data each month.

Performance Effectiveness Standard (1.5d) An annual report of program results to Board of Directors.

Management Objective (1.6) The District has entered into a Cooperative Management Agreement with the West Texas Groundwater Alliance. The purpose of the West Texas Groundwater Alliance is to facilitate the conservation, preservation and to provide for the most efficient use of groundwater. Each year, the District will attend at least 80% of West Texas Groundwater Alliance meetings.

Performance Effectiveness Standard (1.6a) Percentage of West Texas Groundwater Alliance meetings attended each year.

Management Objective (1.7) The District realizes the importance of monitoring the aquifer level to determine usable amount of groundwater. An established groundwater level program of selected wells will be maintained by the District. At least 80% of selected water wells will be measured annually or a reason stated for the inability to measure the well. The District has entered into an agreement with the TWDB and Region F RWPG to participate in an Aquifer Recharge Study. The agreement states that rainfall records and a certain number of water levels will be monitored on a monthly basis. The District will attempt to collect rainfall data and water levels on a monthly basis or given reason of inability.

Performance Effectiveness Standard (1.7a) Number of water well levels or reason of inability to measure water levels obtained on an annual basis from selected monitor wells each year.

Performance Effectiveness Standard (1.7b) Number of water levels measured on a monthly basis or reason of inability to measure water levels.

Performance Effectiveness Standard (1.7c) Number of rainfall records recorded.

(2.0) Implement strategies to control and prevent waste of groundwater.

Management Objective (2.1) Each year, the District will identify and respond to reports of wasteful practices within five working days.

Performance Effectiveness Standard (2.1a) Number of reported wasteful practices identified and responded to each year.

Management Objective (2.2) A water quality baseline has been established for the District through an established monitor well program of approximately sixty wells. At least 33% of the operating monitor wells will be tested each year. A copy of test results from an independent lab will be mailed to landowners within 30 days of receipt from lab.

Performance Effectiveness Standard (2.2a) Number of monitors wells sampled each year.

Performance Effectiveness Standard (2.2b) Number of days required to mail lab results to landowner each year.

Management Objective (2.3) As a service to water well owners within the District a field lab service for water analysis is available. Annually, at least two articles will

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be published advertising the availability of water analysis service performed by the District. Each year the District will continue to perform water quality analysis for residents of the District upon all requests.

Performance Effectiveness Standard (2.3a) Number of articles published advertising the availability of water analysis service performed by the District each year.

Performance Effectiveness Standard (2.3b) Number of water analysis requested and performed each year.

Management Objective (2.4) In order to prevent waste of groundwater all sites of potential groundwater contamination will be reviewed at a Board meeting annually to discuss further action and/or activity of each site. Sites will be dismissed as the Board deems necessary.

Performance Effectiveness Standard (2.4a) Annual review of Potential Groundwater Contamination Sites.

Management Objective (2.5) The City of Sonora Wellhead Protection Plan will be reviewed at least every three years beginning in 2004 for needed updates and/or implementations.

Performance Effectiveness Standard (2.5a) - Review of Sonora Wellhead Protection Plan and results/actions needed.

(3.0) Control and prevent subsidence.

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

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(4.0) Address conjunctive surface water management issues.

All surface water impoundments located within the District are used to supply water for livestock consumption. There are no surface water management entities with surface water storage located within the District. This management goal is not applicable to the operations of the District.

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(5.0) Address natural resources that impact the use and availability of groundwater or are impacted by the use of groundwater within the District.

The District has no documented occurrences of endangered or threatened

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species dependent upon groundwater. Other issues related to resources - air, water, soil, etc. supplied by nature that are useful to life are likewise not documented. The natural resources of the oil and gas industry are regulated by the Railroad Commission of Texas and are exempt by Chapter 36.117(e). Therefore, this management goal is not applicable.

(6.0) Implement strategies that will address drought conditions.

Management Objective 6.1 - On a quarterly basis, review applicable data including Palmer Drought Index to determine status of drought conditions and, if necessary, report to District Board on need to implement drought contingency plan. Also, the City of Sonora Drought Contingency Plan shall be reviewed at least once every three years beginning in 2004.

Performance Effectiveness Standard (6.1a) - Review of drought conditions on quarterly basis.

Performance Effectiveness Standard (6.1b) - Report to District Board if drought conditions warrant.

Performance Effectiveness Standard (6.1c) - Review of City of Sonora Drought Contingency Plan.

(7.0) Address Conservation

Management Objective 7.1 - In an effort to effectively manage the groundwater within the District, the Board shall decide at least every two years beginning in 2004 if the District rules need to be updated or changed due to changes in aquifer conditions, legislative updates or other circumstances.

Performance Effectiveness Standard (7.1a) - Review by the District Board of any known need to review rules for possible updates and/or changes.

Management Objective 7.2 - To ensure best management practices are being actively engaged within the District, District staff will meet with City personnel and any permit holder over 2,500 ac ft/year to review water usage and conservation techniques implemented.

Performance Effectiveness Standard (7.2a) - Annual meeting with City personnel to review water usage and conservation practices.

Performance Effectiveness Standard (7.2b) - Annual meeting with permit holders

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of 2,500 ac ft/year to review water usage and conservation practices.

Definitions:

- "District" - Sutton County Underground Water Conservation District
- "Board" - Sutton County Underground Water Conservation District Board of Directors
- "TWDB" - Texas Water Development Board
- "TAEX" - Texas Agricultural Extension Service
- "Waste" - as defined by Chapter 36 of the Texas Water Code means 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 for 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 TCEQ 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.
- "Abandoned Well" - shall mean a well or borehole the condition of which is causing, or is likely to cause, pollution of groundwater in the District and includes a well which is or is not in use or which contains no pumping equipment (open or uncovered well). A well or borehole which is not in compliance with applicable law, including the Rules of the District, the Texas Water Well Driller's Act, Texas Commission on Environmental Quality, or any other state or federal agency or political subdivision having jurisdiction, is presumed to be an abandoned or deteriorated well.

STATE OF TEXAS
COUNTY OF SUTTON

MANAGEMENT PLAN
1998 - 2008

RECEIVED

JAN 5 - 2004

TWDB Contract Admin. Div

WHEREAS, the Sutton County Underground Water Conservation District is operating under the authority under Acts of the 69th Texas Legislature in 1985, S.B. No. 1161. 10

WHEREAS, the District is required by Senate Bill 1 of 1997 to develop and adopt a management plan; and

WHEREAS, the District is required by Senate Bill 1 to submit the adopted management plan to the executive administrator of the Texas Water Development Board for review and re-certification every five years.

WHEREAS, the District Board of Directors, after review of the existing Management Plan, has determined that this plan should be amended; and


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

WHEREAS, following notice and hearing, the District Board of Directors reviewed and adopted the amended Management Plan at a regular meeting held on September 3, 2003 at 9:00 a.m., Sonora, Tx. and the same recorded in the official minutes.

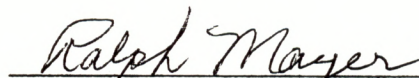
NOW THEREFORE, Sutton County UWCD hereby adopts the amended Management Plan to replace the existing Management Plan as presented at the September 3, 2003 regular business meeting.; and

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

NOW THEREFORE WITNESSED and executed this 9th day of December, 2003.



Director



Director

12-9-03
Date

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Public Notice

PUBLIC NOTICE

The Sutton County
Underground Water
Conservation District will hold
a budget hearing at 9:00 a.m. on
Wednesday, September 3, 2003
at the District Office, 301 S.
Crockett Ave., Sonora.

Immediately following the bud-
get hearing, the District will
hold a management plan hear-
ing.

Immediately following the
management plan hearing, the
District will hold a District
Rules hearing.

Immediately following the
District Rules' hearing, the
Sutton County Underground
Water Conservation District
will hold a meeting to consider
adopting a proposed tax rate for
tax year 2003-2004. The pro-
posed tax rate is \$0.02746 per
\$100 of value. The previous tax
rate was \$0.023 per \$100 of
value. the proposed tax rate
would increase total taxes in the
Sutton County Underground
Water Conservation District by
16.85%. All interested persons
are invited to attend.

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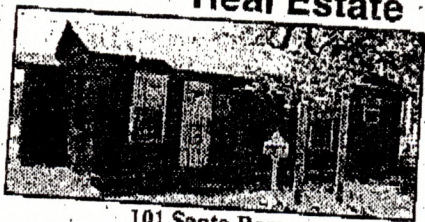
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