

**COKE COUNTY
UNDERGROUND WATER
CONSERVATION DISTRICT**

MANAGEMENT PLAN

2013-2018

Adopted: July 9, 2013

P.O. Box 1110
Robert Lee, Texas 76945
Ph: 325-453-2232 Fax: 325-453-2157 E-mail: ccuwcd@wcc.net

**Coke County Underground Water
Conservation District
P.O. Box 1110 Robert Lee, Texas 76945 Phone (325)453-2232**

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COKE COUNTY UNDERGROUND WATER CONSERVATION DISTRICT

DISTRICT MISSION

The overall objective of the Coke County Underground Water Conservation District is to preserve the integrity of the groundwater in the aquifer over which the land in the district is located. This objective may be accomplished as the district provides for the conservation, preservation, protection recharge, and prevention of waste of the groundwater reservoirs. This Management Plan will help provide guidance to accomplish the overall objective of the district. The plan is an open-ended document and can be revised or updated as needed to help meet the district goals and objectives.

REGIONAL COOPERATION AND COORDINATION

The District is a member of the West Texas Regional Groundwater Alliance (WTRGA). This regional alliance consists of seventeen (17) locally created and locally funded districts that encompass approximately eighteen (18.2) million acres or twenty eight thousand three hundred sixty eight (28,368) square miles of West Texas. To put this in perspective, this area is larger than many individual states including Rhode Island (1,045 sq mi), Delaware (1,954 sq mi), Puerto Rico (3,425 sq mi), Connecticut (4,845 sq mi), Hawaii(96,423 sq mi), New Jersey (7,417 sq mi) Massachusetts (7,840 sq mi), New Hampshire (8,968 sq mi), Vermont (9,250 sq mi) Maryland (9,774 sq mi), and West Virginia (24,230 sq mi). This West Texas region is as diverse as the State of Texas. Due to the diversity of the region, each member district provides it's own unique programs to best serve its constituents.

In May of 1988, four (4) groundwater districts; Coke County UWCD, Glasscock County UWCD, Irion County WCD, and Sterling County UWCD adopted the original Cooperative Agreement. As new districts were created, they too adopted the Cooperative Agreement. In the fall of 1996, the original Cooperative Agreement was redrafted and the West Texas Regional Groundwater Alliance was created. The current member districts are:

Coke Co. UWCD (1988)	Crockett Co. GCD (1992)	Glasscock GCD (1988)
Hickory UWCD #1 (1997)	Hill Country UWCD (2005)	Irion Co. WCD (1988)
Kimble GCD (2004)	Lipan-Kickapoo WCD (1989)	Lone Wolf GCD (2002)
Menard Co.UWD (2000)	Middle Pecos GCD (2005)	Permian Basin UWCD (2006)
Plateau UWC & SD (1991)	Santa Rita UWCD (1990)	Sterling Co. UWCD (1988)
Sutton Co. UWCD (1991)	Wes-Tex GCD (2005)	

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

TIME PERIOD FOR THIS PLAN

This amended plan becomes effective upon adoption by the Board of Directors and reapproved by the Texas Water Development Board executive administrator due to change in statute several years ago. This amended plan remains in effect for a ten year period or until such time as a revised or amended plan is approved.

STATEMENT OF GUIDING PRINCIPLES

The District recognizes that the groundwater resources of the region are of vital importance. The preservation of this most valuable resource can be managed in a prudent and cost effective manner through regulation and permitting. The greatest threat to prevent the District from achieving the stated mission is inappropriate management, based in part on a lack of understanding of local conditions. A basic understanding of the aquifers and their hydrogeologic properties, as well as a quantification of resources is the foundation from which to build prudent planning measures. This management document is intended as a tool to focus the thoughts and actions of those given the responsibility for the execution of district activities.

General Description

The Coke County Underground Water District was created by Acts of 69th Legislature (1985), p. 6960, Ch. O50, H.B. 2418 under authority of Articles XVI, Section 59 of the Constitution of Texas.

The residents confirmed the District and also voted to fund the District operations through local property taxes. It became an active district on April 5, 1986. On April 5, 1986, the District adopted rules and by-laws which became effective immediately and on this date the District adopted a management plan. With the adoption of these rules, the District implemented a well-permitting and registration program. The current members of the Board of Directors are: President Joe R. Ash, Vice-President LeDrew Arrott, Secretary Jimmie Byrne, and members Wes Washam, Shane Webb. The District General Manager is Winton Milliff. The Coke County UWCD covers all of Coke County. Recreational areas include golf, hunting and fishing.

Location and Extent

The District has an area extent of 911 square miles located approximately 32 miles north of San Angelo and 65 miles southwest of Abilene. The population of the District was about 3,231 in 2012. Two incorporated cities lie within the boundaries of the District: Robert Lee, population 1046, the county seat and Bronte, population 999.

The economy of Coke County is based on ranching, farming, and oil & gas production. The annual income from agriculture is approximately \$16,615 million. Cattle, sheep and goats sales represent more than 90 percent of the farm and ranch income. In 2012, the county produced 774,897 barrels of oil and 4,399,465 MCF gas. The highly volatile price of petroleum products

makes it very hard to estimate. The water used in Coke County comes from both groundwater and surface water sources. The District has one small lake Mountain Creek and two major reservoirs in the county impounding surface water runoff. The two largest is E.V. Spence Reservoir, which is formed on the Colorado River near Robert Lee, Oak Creek Reservoir, in the northeast corner of the county, furnishes water to the towns of Sweetwater, Bronte, Robert Lee and Blackwell. Bronte's water well field supplements Oak Creek water. Water for livestock needs is furnished by either small surface water catchment tanks or by wells. Groundwater of varying quality is used in drilling and fracturing of oil and gas wells in the District.

Topography and Drainage

The southwestern part of Coke County is in the Edwards Plateau section of the Great Plains physiographical province; the northwestern part of the county is in the Central Texas section, which includes the Callahan Divide. The county is bisected diagonally by the southeastward flowing Colorado River. Altitudes range from about 1,700 feet above mean sea level in the river valley to more than 2,600 feet on the Edwards Plateau.

Except for the rugged and dissected escarpment, the Edwards Plateau is relatively flat. The soils are mostly thin, dark-colored, calcareous loams. The Central Texas section is characterized by a rolling topography and deep red-brown loam soils. Much of the area, however, is capped with caliche.

Surface drainage on the plateau is mostly internal, but during periods of heavy rainfall, some intermittent low-gradient streams flow southward to the North Concho River. Intermittent streams in canyons along the escarpment flow to the Colorado River. The Central Texas section is drained by the Colorado River and its intermittent tributaries, many of which enter Robert Lee Reservoir.

Groundwater Resources of the Coke County UWCD

The oldest geologic units cropping out in the county are the westward-dipping Permian "red beds". These rocks are composed mainly of shale and fine-grained sandstone, and scattered beds, lenses and stringers of gypsum, anhydrite, and dolomite. In the western and southern plateau areas, the Permian rocks are overlain by eastward-dipping sand, clay and limestone of Cretaceous age. Alluvial deposits of Quaternary age occur in the valleys of the Colorado River and its tributaries.

Water in the alluvium and in the Cretaceous rocks (Fredericksburg and Trinity Groups) occurs under water-table conditions. Water in the Permian rocks (Clear Fork, Pease River and Artesian Groups, and Ochoa Series) occurs under both water-table and artesian conditions. The water producing zones in the geological units are (1) sand and gravel in the alluvium, (2) fine sands or fractures and solution openings in limestone beds of the Fredericksburg and Trinity Groups and (3) sand, gypsum and dolomite strings or lenses in the Permian rocks.

The Edwards-Trinity (Plateau) aquifer enters Coke County on the West and progresses to the southeast. Wells in the southeast corner of the county produce large volumes of water. The northeast part of the county lays over the Trinity aquifer.

Chemical quality of the Edwards-Trinity (Plateau) water ranges from fresh to slightly saline. The water is typically hard and may vary widely in concentrations of dissolved solids made up mostly of calcium anbicarbonate. The principal sources of recharge to the aquifers of Coke County are (1) direct precipitation on the outcrops; (2) infiltration of water from surface reservoirs, rivers, and numerous intermittent streams; and (3) subsurface inflow from adjoining counties. (3)

**Groundwater Availability
Model Run 07-39 TWDB**

Table 1: Selected flow terms for each aquifer layer, into of the Coke County Underground Water Conservation District, averaged for the years 1980 to 1999 from the groundwater availability model of the Edwards-Trinity (Plateau) Aquifer and 1980 to 1998 from the model of the Lipan Aquifer. Flows are reported in acre-feet per year. Note: a negative value refers to flow out of the aquifer in the district. A positive value refers to flow into the aquifer in the district. All numbers are rounded to the nearest 1 acre-foot per year. Flow into and out of the confining layers are negligible compared to the aquifers and are not included.

Aquifer	Surface water inflow	Surface water outflow	Lateral inflow into district	Lateral outflow from district	Net inter-aquifer flow (upper)	Net inter-aquifer flow (lower)
Edward-Trinity (Plateau)	0	-6,790	1,238	-549	0	0
Lipan	0	0	489	-2,223	0	0

Source: TWDB Groundwater Availability Model Run 07-39

Table 2: Summarized information needed for the Coke County Underground Water Conservation District’s management plan. All values are reported in acre-feet per year. All numbers are rounded to the nearest 1 acre-foot per year.

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual amount of recharge From precipitation to the district	Edward-Trinity (Plateau)	5,957
	Lipan	1,745
Estimated annual volume of water That discharges from the aquifer to Springs and any surface water body Including lakes, streams, and rivers	Edward-Trinity (Plateau)	6,790
	Lipan	0
Estimated annual volume of flow into The district within each aquifer in the District	Edward-Trinity (Plateau)	1,238
	Lipan	489

Source: TWDB Groundwater Availability Model Run 07-39

Table 2 is continued on the next page.

**Groundwater Availability
Model Run 07-39 TWDB**

Table 2 Continued

Management Plan requirement	Aquifer or confining unit	Results
Estimated annual volume of flow out of the district within each aquifer in the district	Edward-Trinity (Plateau)	549
	Lipan	2,223
Estimated annual net volume of flow between each aquifer in the district	Edward-Trinity (Plateau)	0
	Lipan	0

Source: Kan Tu, P.G. Model Run 07-39 on April 8, 2008

**Annual Amount of Additional Natural
Or Artificial Recharge in Coke County UWCD**

Based on Region F Table 3-1-1 Annual Groundwater Availability, is estimated natural annual recharge within the District is 12 acre feet from the Dockum aquifer and 3,242 acre feet the Edward-Trinity. Due to the minimum amount of annual rainfall in the District, no increase in natural or artificial recharge can be expected. An estimate of the existing total usable amount of groundwater in the District is equal to the recharge.

Table 3-1-1

County	Aquifer	Basin	Annual Recharge During Drought	Annual Supply From Storage	Annual Availability
Coke	Dockum	Colorado	12	0	12
	Edward-Trinity	Colorado	3,242	0	3,242

Source: Region Water Plan March 2005

Tables 1-2-3 on pages 4-5 This data Model Run 07-39 is presented here for comparison purposes. Latest GAM Run 12-019 data in Appendix B is data for Coke County Underground Water Conservation District Management Plan.

DESIRED FUTURE CONDITIONS (DFC)

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 Coke County Underground Water District. An average drawdown of 7 feet for the Edwards-Trinity (Plateau) aquifer, except for the Kinney County GCD based on Scenario 10 of the which is TWDB GAM Run 09-35 incorporated in its entirety into this resolution.

The latest DFC data is found in Appendix C GAM Run 10-043 MAG (Version 2) for Draw Down Data in the Texas State Water Plan.

Surface Water Resources Coke County U WCD

There are 3 surface water lakes in Coke County UWCD, Lake Spence, Mountain Creek Lake located at Robert Lee and Oak Creek Lake located near Blackwell. The water supply from these 3 lakes is estimated.

Projected Surface Water Supplies Coke Country UWCD

RWP G	Water User Group	County	River Basin	Source Name	2000	2010	2020	2030	2040	2050	2060
F	Bronte Village	Coke	Colorado	Oak Creek Lake/ Reservoir	403	0	0	0	0	0	0
F	Robert Lee	Coke	Colorado	Colorado River MWD System	350	256	231	340	317	302	281
F	Robert Lee	Coke	Colorado	Mountain Creek Lake/Reservoir	342	0	0	0	0	0	0
F	Robert Lee	Coke	Colorado	Colorado River Run- Of-River City of R.L.	0	7	7	7	7	7	7
F	County Other	Coke	Colorado	Colorado River MWD System	120	77	65	95	86	82	76
F	Steam Electric Power	Coke	Colorado	Oak Creek Lake/ Reservoir	1,000	0	0	0	0	0	0
F	Mining	Coke	Colorado	Colorado River MWD System	0	232	239	378	378	380	372
F	Irrigation	Coke	Colorado	Colorado River Combined Run-of- River Irrigation	275	41	41	41	41	41	41
F	Livestock	Coke	Colorado	Livestock Local Supply	542	370	370	370	370	370	370
Total Projected Surface Water Supplies (acre-feet per year) =					3,032	983	953	1,231	1,199	1,182	1,147

Source: Volume 3, 2007 State Water Plan Projected Surface Water Supplies.

The latest Surface Water Projection data is in Appendix A of the 2012 Texas State Water Plan.

**Projected Water Supplies to Users
Coke County UWCD
Table 3.5-1**

County	Year 2010	Year 2020	Year 2030	Year 2040	Year 2050	Year 2060
Coke	2,115	2,105	2,349	2,358	2,366	2,345

Source: Region F Water Plan and TWDB Currently available supply reflect the most limiting factor affecting water availability to users in the District These limitations include firm yield of reservoirs and other factors. Current supply to Water users.

Latest Data:

Appendix C Gam Rum 10-043 Mag (Version 2) Modeled Available Groundwater For The Edwards-Trinity (Plateau), Trinity, And Pecos Valley Aquifer in Groundwater Management Area 7.

**Historical Groundwater Pumpage
Summary for Coke County
Unit Acre Feet**

	TOTAL
1999	701 acre-feet per year
2000	1,070 acre-feet per year
2001	963 acre-feet per year
2002	1,138 acre-feet per year
2003	715 acre-feet per year

Source: TWDB Water Use Survey Database 03/28/2007

Latest data Table 1 specified pumpage used in this model simulation in comparison with both GAM Run 07-03 (Donnelly, 2007) baseline pumpage and the groundwater availability numbers from the 2007 State Water Plan.

Potential Supply and Demands Issues and Solutions

Surface water and aquifer supply for Coke County UWCD was projected to be 105,030 acre-feet per year in 2000. Water demands for 2000 were 2,845 acre-feet per year. While water supply for 2050 is projected to be 90,358 acre-feet per year, the demands for 2050 is projected to be 3,310 acre-feet per year. Based on these calculations, it is projected that the Coke County UWCD supply exceeds its demands in year 2050. Data supplied by the Texas Water Supplies Section and Texas Water Planning Databases Volume 3, 2007 and the 2007 State Water Plan.

Information by Source (Values in Acre-Feet) (TWDB Water Supplies Section)

Reservoir/ Aquifer Name	Basin or County	2000	2010	2020	2030	2040	2050
Oak Creek	Colorado	4,800	4,700	4,600	4,500	4,400	4,300
CRMWD	Colorado	96,500	94,000	91,100	88,100	85,200	82,395
Surface Total		101,300	98,700	95,700	92,600	89,600	86,695
Edwards Trinity	Coke	3,145	3,145	3,145	3,145	3,145	3,183
Trinity	Coke	585	585	585	585	858	480
Aquifer Total		3,730	3,730	3,730	3,730	3,730	3,663
Grand Total		105,030	102,430	99,430	96,330	93,330	90,358

Source: TWDB Water Supplies Section.

The latest data in Water Sources is found in Appendix A of the 2012 Texas State Water Plan.

**Projected Water Demands
Coke County UWCD**

RWPG	Water User Group	County	River Basin	2000	2010	2020	2030	2040	2050	2060
F	Bronte Village	Coke	Colorado	231	248	266	266	266	266	266
F	Robert Lee	Coke	Colorado	365	354	354	354	354	354	354
F	County Other	Coke	Colorado	161	178	170	170	170	170	170
F	Steam Electric Power	Coke	Colorado	372	310	247	289	339	401	477
F	Mining	Coke	Colorado	405	488	528	550	572	593	614
F	Irrigation	Coke	Colorado	937	936	936	934	933	933	933
F	Livestock	Coke	Colorado	374	593	593	593	593	593	593
Total Projected Water Demands (acre-feet per year)=				2,845	3,107	3,094	3,156	3,227	3,310	3,407

Source: Volume 3, 2007 State Water Plan Projected Water Demands

All estimates of groundwater availability, usage, supplies, recharge, storage, and future demands are from data supplied by the Texas Water Development Board, unless otherwise noted. Data sources include “Water for Texas-2002” 2007 State Water Plan, data included in the Region F Regional Water Plan adopted in January 2006. These estimates will be used until other data is available from ongoing studies of the region.”

The latest Water Demands data is found in Appendix A of the 2012 Texas State Water Plan.

Management of Groundwater Supplies and Actions, Procedures, Performance and Avoidance for Plan Implementation

The District will manage the supply of groundwater within the District in order to preserve and protect the resource, while seeking to maintain the economic viability of all of the groundwater user groups. In consideration of the 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 preservation and protection of the groundwater. The District will implement provisions of this plan and will utilize the provisions of this plan as guideposts for determining the direction or priority for Districts. Rules adopted by the District shall be pursuant to TWC Chapter 36 and the provisions of this plan. All rules will be enforced and will be based on the best technical evidence available. The District adopted rules in 1989 and amended rules in 1994 and 2003 and will amend the rules as necessary. A copy of the rules is attached.

Methodology for Tracking Progress

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 for the previous fiscal year, during the first meeting of each new fiscal year. The report will include the number of instances each activity was engaged in during the year. The Annual Report will be maintained on file in the District office.

Coke County Water Budget

Table A-I. Annual water budget for each county at the end of the 51-year predictive portion of the model run using the requested pumpage and normal rainfall condition in the groundwater availability model for the Edwards-Trinity (Plateau) Aquifer (in acre-feet per year). Total pumpage for each county listed in Tables 1 and 2 matches the total value listed for wells in the water budget. The model includes two layers, representing the Edwards and associated limestones (Layer 1) and undifferentiated Trinity units (Layer 2). The Pecos Valley Aquifer is included in Layer 1 of the model

Water Budget		
	In	Out
Model Layer 1		
Reservoirs (Constant Head Cells)	--	n
Storage	--	n
Springs and Seeps (Drain Package)	n	n
Inter-aquifer Flow (GHB Package)	..	--
Wells	n	--
Streams and Rivers (Stream Package)	--	n
Recharge	n	--
Lateral Inflow	--	--
Vertical Leakage Downward	n	--
Model Layer 2		
Reservoirs (Constant Head Cells)	0	0
Storage	2	0
Springs and Seeps (Drain Package)	0	3,343
Inter-aquifer Flow (GHB Package)	0	50
Wells	0	3,243
Streams and Rivers (Stream Package)	0	0
Recharge	5,916	0
Vertical Leakage Upward	--	--
Lateral Inflow	1,164	446
Total Pumpage		3,243

Source: Groundwater Availability Model provided by the TWDB. Flow terms expressed in acre-feet per year.

The latest Budget data is found Appendix C GAM Run 10-43 MAG (Version 2) 2012 Texas State Water Plan.

**2007 State Water Plan Projected Water Needs
Coke County UWCD**

RWPG	Water User Group	County	River Basin	2010	2020	2030	2040	2050	2060
F	Bronte Village	Coke	Colorado	-129	-129	-129	-129	-129	-129
F	Robert Lee	Coke	Colorado	-88	-108	5	-14	-27	-48
F	County Other	Coke	Colorado	-28	-32	0	-6	-9	-15
F	Steam Electric Power	Coke	Colorado	-310	-247	-289	-339	-401	-477
F	Mining	Coke	Colorado	-86	-119	-2	-24	-43	-72
F	Irrigation	Coke	Colorado	-363	-363	-361	-360	-360	-360
F	Livestock	Coke	Colorado	0	0	0	0	0	0
Total Projected Water Needs (acre-feet per year) =				-1,004	-998	-776	-872	-969	-1,101

Source: Volume 3, 2007 State Water Plan Projected Water Needs.

The latest Water Needs data is found in Appendix A of the 2012 Texas State Water Plan.

Projected Water Management Strategies Coke County UWCD

RWPG	WUG	WUG County	River Basin	Water Management Strategy	Source Name	Source County	2010	2020	2030	2040	2050	2060
F	Bronte Village	Coke	Colorado	Subordination	Oak Creek Lake/Reservoir	Reservoir	129	129	129	129	129	129
F	Bronte Village	Coke	Colorado	Rehabilitation of Pipeline	Oak Creek Lake/Reservoir	Reservoir	129	129	129	129	129	129
F	Bronte Village	Coke	Colorado	Develop Other Aquifer Supplies	Other Aquifer	Coke	100	100	100	100	100	100
F	Bronte Village	Coke	Colorado	Reuse	Direct Reuse	Coke	0	0	0	110	110	110
F	Bronte Village	Coke	Colorado	Municipal Conservation	Conservation	Coke	16	45	48	48	50	51
F	Robert Lee	Coke	Colorado	Municipal Conservation	Conservation	Coke	16	40	44	45	46	48
F	Robert Lee	Coke	Colorado	New WTP and Storage Facilities	Colorado River MWD System	Reservoir	200	200	200	200	200	200
F	Robert Lee	Coke	Colorado	Reuse	Direct Reuse	Coke	0	0	0	110	110	110
F	Steam Electric	Coke	Colorado	Subordination	Oak Creek Lake/Reservoir	Reservoir	310	247	289	339	401	477
F	Bronte Village	Coke	Colorado	New Pipeline from San Angelo Desalination Plant	Other Aquifer	Tom Green	0	280	280	280	280	280
F	Robert Lee	Coke	Colorado	New Pipeline from San Angelo Desalination Plant	Other Aquifer	Tom Green	0	448	448	448	448	448
F	Bronte Village	Coke	Colorado	Regional System from Lake Brownwood	Brownwood Lake/Reservoir	Reservoir	280	280	280	280	280	280
F	Robert Lee	Coke	Colorado	Regional System from Lake Brownwood	Brownwood Lake/Reservoir	Reservoir	448	448	448	448	448	448
F	Robert Lee	Coke	Colorado	Desalination	Colorado River MWD System	Reservoir	448	448	448	448	448	448
F	Robert Lee	Coke	Colorado	New Reservoir Intake	Mountain Creek Lake/Reservoir	Reservoir	50	50	50	50	50	50
F	County Other	Coke	Colorado	Subordination	Colorado River MWD System	Reservoir	28	32	0	6	9	15
F	Mining	Coke	Colorado	Subordination	Colorado River MWD System	Reservoir	86	119	2	24	43	72
F	Robert Lee	Coke	Colorado	Subordination	Colorado River MWD System	Reservoir	95	115	2	21	34	55
F	Robert Lee	Coke	Colorado	Brush Control	Mountain Creek Lake/Reservoir	Reservoir	0	0	0	0	0	0
Total Projected Water Management Strategies (ac/ft per year)=							2,335	3,110	2,897	3,215	3,315	3,450

Source: TWDB Water Use Survey

The latest Water Management Strategies are found in Appendix A of the Texas State Water Plan.

**GOALS, MANAGEMENT OBJECTIVES
AND PERFORMANCE STANDARDS**

Goal

1.0 Provide for the efficient use and control of groundwater within the District (356.5(a))

Management Objective

1.1 Each year the District will locate at least 1 or more water wells for map location, check water levels and chemical analysis.

Performance Standards

1.1a Annual report to the Board of Directors will include the number of wells located, the number of wells sampled for water levels, and the number of wells sampled for chemical analysis.

Goal

2.0 Control and prevent waste of water (356.5(a)(1)(B))

Management Objective

2.1 Annually, investigate every wasteful practices reported by the public or identified by District personnel within the District.

Performance Standards

2.1a Annual report to Board of Directors will include the number of wasteful practices identified and a summary of action taken to resolve the waste of groundwater in each identified case.

Goal

3.0 District Tracking Process (356.6)(a)

Management Objective

3.1 District Manager will prepare and present an annual report to the Board of Directors on District performance in regards to achieving the management goals and objectives. This annual report will be maintained on file in the District office.

Goal

4.0 Conjunctive surface management issues 356.5(a)(D)

Management Objective

4.1 Monitor rainfall events on the watersheds within the District that will impact surface water runoff and groundwater recharge.

Performance Standards

- 4.1a District will maintain files on rainfall events in order to monitor surface water runoff and underground recharge within the District through a voluntary rainfall network. These rainfall totals will be reported annually to the Board.

**Goal
5.0 Natural Resource Issues 356.5(a)(1)(E)**

Management Objective

- 5.1 To measure, record and accumulate a historic record of static water levels in monitor network wells on a periodic basis.

Performance Standards

- 5.1a The District will establish a water level monitoring network and annually measure at least 5 wells in the network.

**Goal
6.0 Drought Condition (356.5(a)(1)(F)**

Management Objective

- 6.1 District will monitor the Palmer Drought Severity Index (PDSI) by Texas Climate Divisions. If PDSI indicates that the District will experience severe drought conditions, the District will notify all public water suppliers within the District.

Performance Standard

- 6.1a The District staff will monitor the PDSI and report the number of times the PDSI is less than -1 (mild drought) to the District Board of Directors on a quarterly basis.

**Goal
7.0 Conservation, Recharge Enhancement, Rainwater-Harvesting, Precipitation Enhancement and Brush Control where appropriate and cost effective (356.5(a)(1)(G)**

Management Objective

- 7.1 Each year the District will provide and distribute literature on water conservation to promote conservation and efficient use of water.

Performance Standard

7.1a-The District staff will publish an article concerning water conservation in a local news paper at least one time a year.

Management Objective: Recharge Enhancement

7.2 Provide information to area residents about recharge enhancement.

Performance Standard

7.2a District staff will provide information, upon request, to area residents about recharge enhancement.

Management Objective: Rainwater Harvesting

7.3 Provide information to area residents about rainwater harvesting.

Performance Standard

7.3a District staff will provide information, upon request to area residents about rainwater harvesting.

Management Objective: Precipitation Enhancement

7.4 Provide information to area residents about precipitation enhancement.

Performance Standard

7.4a District staff will provide information, upon request to area residents about precipitation enhancement.

Management Objective Brush Control

7.5 Provide information to area residents about brush control.

Performance Standard

7.5a District staff will provide information, upon request to area residents about brush control.

Goal

8.0 Addressing the Desired Future Conditions Adopted by the District (36.1071(a)((8))

8.1 Management Objective

Each year the District will collect at least 90% of their static level monitoring wells.

8.1 Performance Standard

Each year the District will post the static levels measurements collected from the monitoring wells and post them in the news paper and present them to the Board of Directors in the Annual Report.

Management Goal Determined Not-Applicable

Goal

9.0 Control and prevention of Subsidence (356.5)(a)(1)(c)

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.

Summary definitions.

“Abandoned Well” - shall mean:

- 1) a well or borehole the condition of which is causing or is likely to cause pollution of groundwater in the District. A well is considered to be in use in the following cases:
 - (A) a well which contains the casing, pump and pump column in good condition; or
 - (B) a well in good condition which has been capped.
- 2) a well or borehole which is not in compliance with applicable law, including the Rules and Regulations of the District, the Texas Water well Drillers’ Act, Texas Natural Resource Conservation Commission, or any other state or federal agency or political subdivision having jurisdiction, if presumed to be an abandoned or deteriorated well.

“Board” - the Board of Directors of the Coke County Underground Water Conservation District

“District” - the Coke County Underground Water Conservation District

“TCEQ” - Texas Commission on Environmental Quality.

“TWDB” - Texas Water Development Board

“Waste” as defined by Chapter 36 of the Texas Water Code means any one or more of the following:

- (1) withdrawal of groundwater from a groundwater reservoir at a rate and in an amount that caused 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, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road or creek, 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 tail water 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”- means an artificial excavation that is dug or drilled for the purpose of producing groundwater.