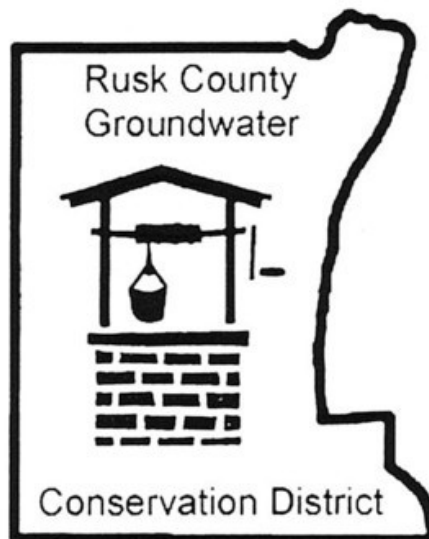


# APPENDIX “A”

*Rusk County Groundwater  
Conservation District*

# *District Management Plan*

*(Revision 1)*



**Adopted – August 15, 2005**  
**Updated – March 3, 2008**

PO. Box 97, Henderson, TX 75653      903.657.1900

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<b>I.</b>	<b>DISTRICT MISSION</b>	

The Rusk County Groundwater Conservation District (RCGCD) mission is to develop and implement an efficient, economical and environmentally sound groundwater management program to protect and sustain the groundwater resources of the District.

## **II. DISTRICT INFORMATION**

Creation of the RCGCD was authorized in 2003 by the 78th Texas Legislature under HB 3569. The citizens of Rusk County confirmed creation of the District by an election held on June 5, 2004. This plan is being submitted within two years of the confirmation election as required by 31 TAC §356.3.

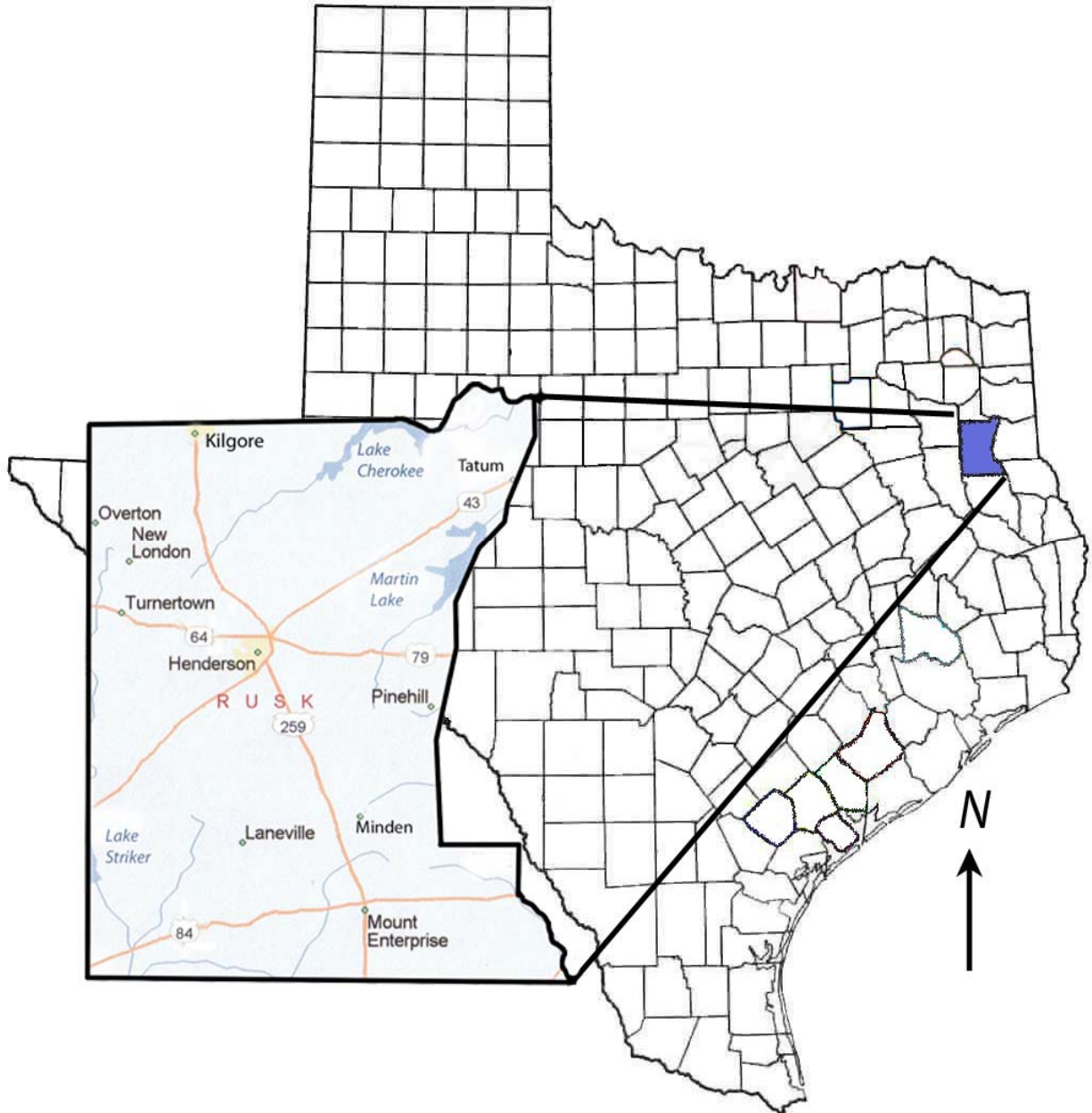
The District was formed to protect the underground water resources for the citizens of Rusk County. Beyond its enabling legislation, the District is governed primarily by the provisions of Chapter 36 of The Texas Water Code.

The current members of the Board of Directors are Worth Whitehead - President, Robert Whaley - Vice President, Ruth Flanagan - Secretary-Treasurer, Amos Standard, Mike Wilhite, R.D. Wittner, David Powell, Hugh Sparkman and Charles Long. The District does not currently have a General Manager. RCGCD has the same area as that of Rusk County, Texas (Exhibit A). The County has a vibrant economy dominated by the energy (oil, gas, coal, electricity) and agricultural communities.

The District has the power and authority to undertake various studies, to adopt and amend as needed, a management plan, to establish a program for the permitting of certain water wells, and to implement structural facilities and non-structural programs to achieve its statutory mandates. The District has rule-making authority to implement its policies and procedures and to help ensure the management of groundwater resources.

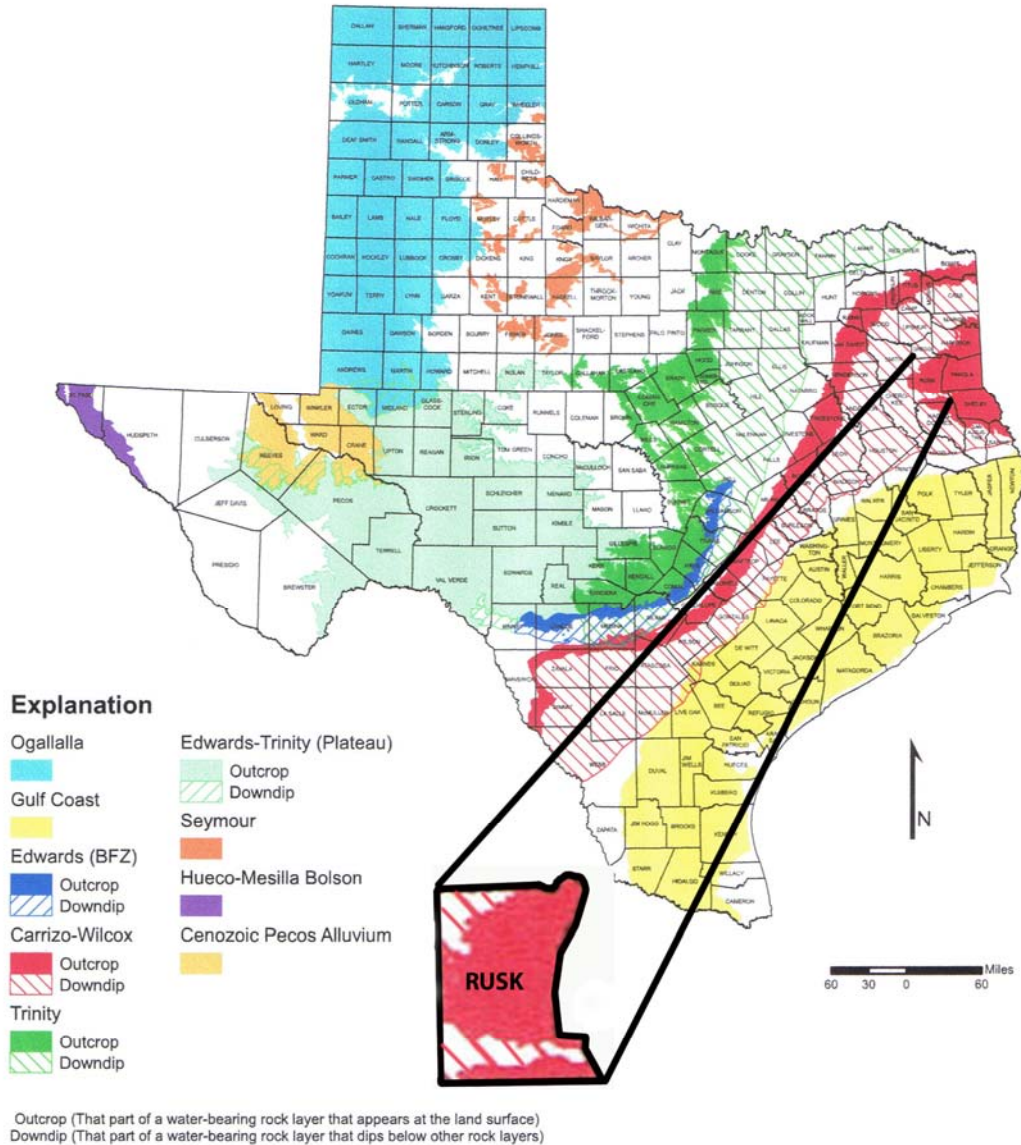
The RCGCD jurisdiction includes all the territory located within Rusk County. This area encompasses approximately 924 square miles. Based on the 2002 Census of Agriculture, approximately 272,400 acres, or 46% of this area, is farmland. Two aquifers are located under Rusk County, the Carrizo-Wilcox major aquifer (Exhibit B) and the Queen City minor aquifer which touches the western edge (Exhibit C). Public water supply entities in Rusk County utilize groundwater.

# Rusk County Groundwater Conservation District



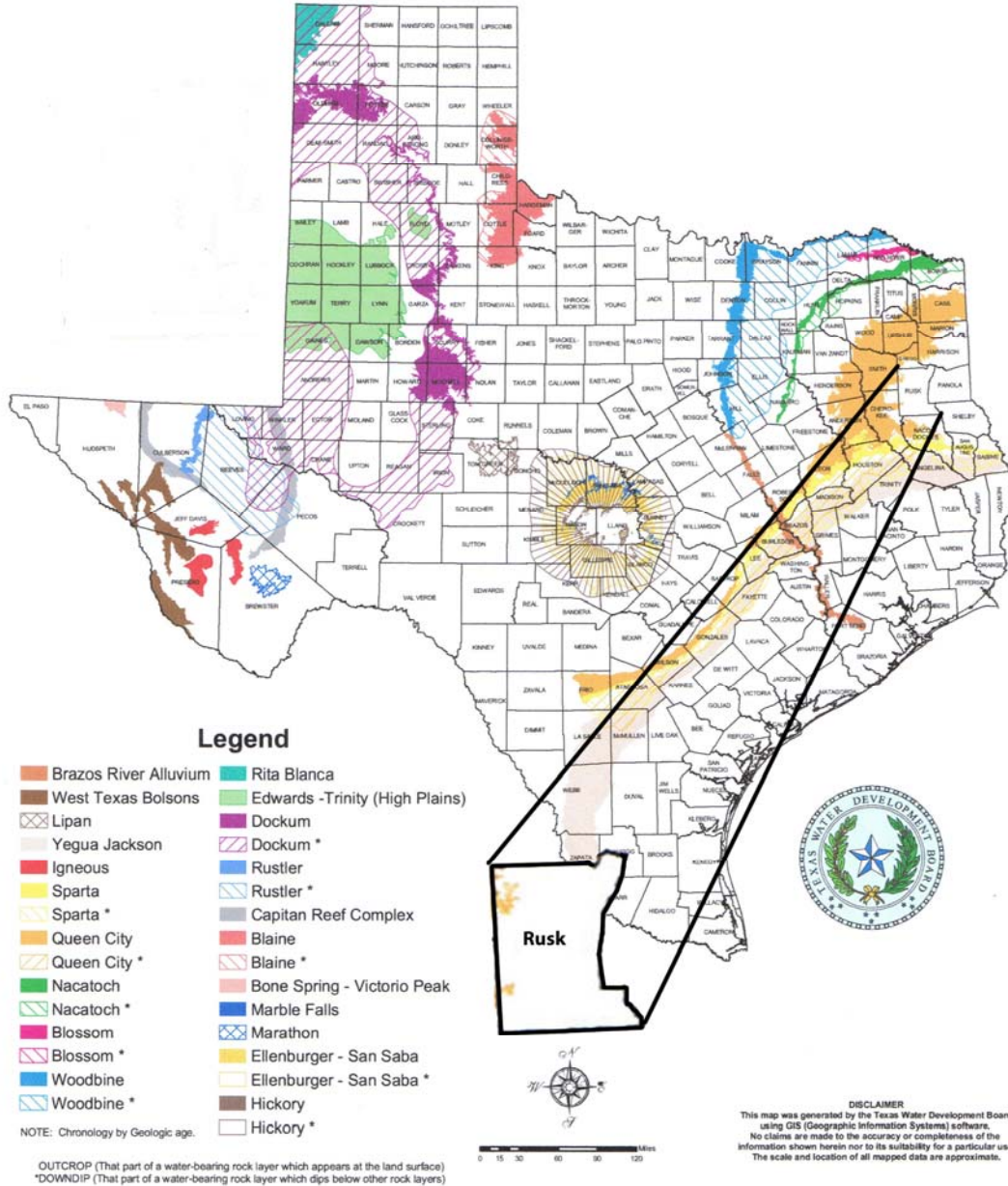
# Rusk County Groundwater Conservation District

## Major Aquifers



# Rusk County Groundwater

# Conservation District Minor Aquifers



### **III. PURPOSE OF THE MANAGEMENT PLAN**

Senate Bill 1 (SB 1) enacted by the 75th Texas Legislature in 1997 requires all underground water conservation districts to develop a management plan which defines the water needs and supply within each district and the goals each district will use to manage the underground water in order to meet the water needs of such district. This groundwater management plan fulfills the requirements of SB 1 and the Texas Water Development Board Rules, specifically Texas Administrative Code, Chapter 356 (31TAC §356). The plan includes the required 13 planning elements, 7 goals, objectives, performance standards, and tracking methods required by the TWDB. These requirements are summarized on pages 21-24.

### **IV. 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 education and cooperation. The greatest threat to prevent the District from achieving the stated mission is inappropriate management, based on a lack of understanding of local conditions. 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.

### **V. CRITERIA FOR PLAN CERTIFICATION.**

#### **A. Planning Horizon**

*Ten year planning period – 31TAC § 356.5(a)*

The board of Directors of the Rusk County Groundwater Conservation District on June 27, 2005 adopted this groundwater management plan, based upon a ten year planning period. The district is scheduling it for certification by the Texas Water Development Board in July 2005. The plan will remain in effect until a revised District Management Plan is certified, or July 2015, whichever occurs first. The plan will be reviewed annually, and be updated and readopted at least every five years. [365.1072(e) TWC]

Water demand and supply projections cover a 50 year period between 2000 and 2050.

## **B. Board Resolution**

*Certified copy of the Rusk County Groundwater Conservation District resolution adopting the plan – 31TAC § 356.6(a) (2)*

A certified copy of the Rusk County Groundwater Conservation District resolution adopting the plan is located in Appendix A– District Resolution.

## **C. Plan Adoption**

*Evidence that the plan was adopted after notice and hearing - 31TAC § 356.6(a) (3)*

Public notices documenting that the plan was adopted following appropriate public meetings and hearings are located in Appendix B – Notice of Meetings.

## **D. Coordination with Surface Water Management Entities**

*Evidence that following notice and hearing the Rusk County Groundwater Conservation District coordinated in the development of its management plan with surface water management entities - 31TAC § 356.6(a)(4)*

Letters to Angelina and Nacogdoches Water Control and Improvement District No. 1 (Lake Striker), Cherokee Water Company (Lake Cherokee), and TXU (Martin Lake), Sabine River Authority of Texas (Sabine river basin), and Angelina & Neches River Authority (Angelina river basin) are located in Appendix C – Letters to Surface Water Management Entities.

## **E. Consistency with Regional Water Plan**

*Evidence of consistency with, and any conflict between, proposed management plan and the regional water plan developed by the regional planning group in which Rusk County Groundwater Conservation District is located. - 31TAC § 356.6(a) (5)*

Letter to the East Texas Regional Water Planning Group confirming consistency with the East Texas Regional Water Planning Group water plan is located in Appendix D - East Texas Regional Water Planning Group Letter



## **VI. DESCRIPTION OF DISTRICT**

### **A. Location and Extent**

Rusk County, having an area extent of 924 square miles, is located in the piney woods area of East Texas. The county is bounded by Gregg and Harrison Counties to the North, Panola and Shelby Counties to the East, Nacogdoches County to the South, and Cherokee and Smith Counties to the West. Henderson which is centrally located in the county is the county seat.

### **B. Topography and Drainage**

Rusk County Groundwater Conservation District is bordered on the northeast by the Sabine River. On the southern boundary, the land is lower in elevation than the rest of the county. The headwaters of the Attoyac River on the southeast corner and the headwaters of the Angelina River become more evident as much of the land becomes wetland. The elevation of Rusk County reaches 650 to 670 feet above sea level.

The majority of the county (89%) is made up of gently sloping to moderately steep rolling hills. Most of this land is of a soil type which is well drained and moderately permeable.

Eleven percent of the land is in a nearly level flood plain with some moderately slowly permeable soils.

It should be noted that currently, large quantities of lignite have been mined and the overburden mixed when the land was reclaimed. The lignite belt follows very closely the mapped portion of the Carrizo-Wilcox aquifer.

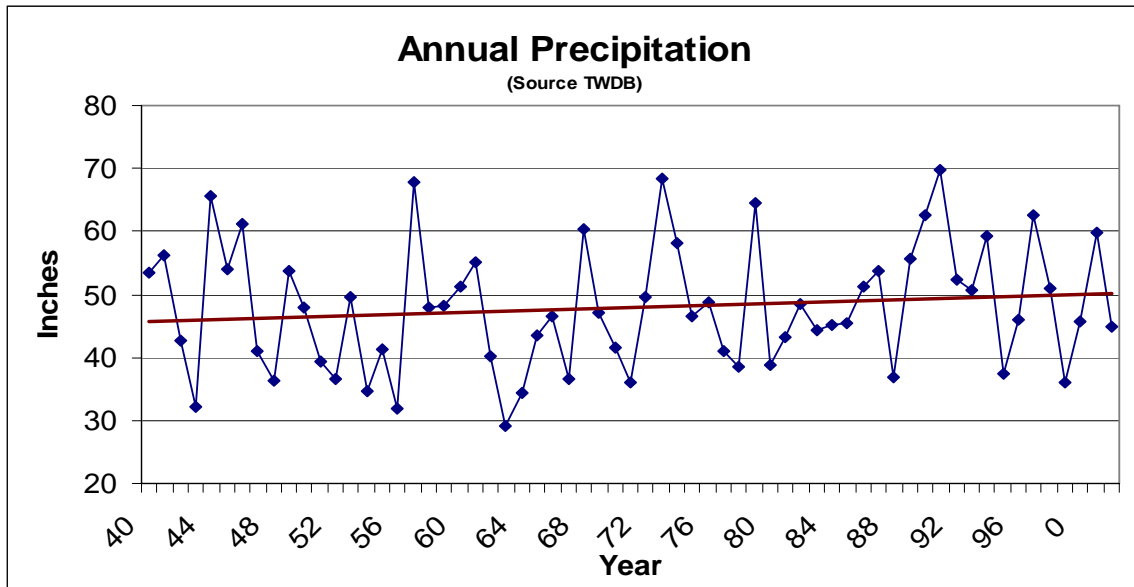
### **C. Groundwater Resources of Rusk County**

There is one major and one minor aquifer located under Rusk County. The Major aquifer is made up of the Wilcox and Carrizo formations. The Wilcox is overlain by the Carrizo formation and is considered as one major aquifer by the TWDB. It extends from the Rio Grande in South Texas northeast into Arkansas and Louisiana, providing water to most of Rusk County and all or parts of sixty counties in Texas (See Exhibit B). The aquifer ranges in thickness from approximately 700 feet in northeast Rusk County to over 1,600 feet in the southwest corner of Rusk County. The Carrizo-Wilcox aquifer yields fresh to slightly saline water. The minor aquifer under the northwest and southwest edge of Rusk County is the Queen City formation (See Exhibit C). It has a maximum thickness of 700 feet in central Smith County. The TWDB has classified the Queen City as a minor aquifer. It yields groundwater that is generally low in dissolved solids concentrations. It does, however, contain high acidity and excessive iron concentrations. (*Source: East Texas Priority Groundwater Management Area File Report – April 2004*)

The average historical usage of groundwater in Rusk County between 1984 and 2000 has dropped slightly, but remains in the 8,000 to 8,500 acre-feet per year range (See Exhibit D). The historical natural recharge for the Carrizo-Wilcox aquifer in Rusk County based on historical water level in 9 state sampling wells and historical usage is estimated at 8,200 acre-feet per year (See Exhibit E).

The historical annual precipitation from 1940 through 2002 is 47.94 inches per year for quad 513 which covers most of Rusk County.

There is currently no feasible method for increasing recharge in the District. The District will be reviewing the possibility of utilizing Aquifer Storage and Recovery (ASR) and the use of Surface Water Recharge Ponds. A primary concern is the identification of basin compartmentalization or impermeable layers within the aquifer which inhibit recharge to the basin aquifers. Also important are concerns about chemical mixing of surface waters and native groundwater, hydrologic variability within the aquifers, and the nature of probable migration of recharged water.



## Rusk County Groundwater Conservation District

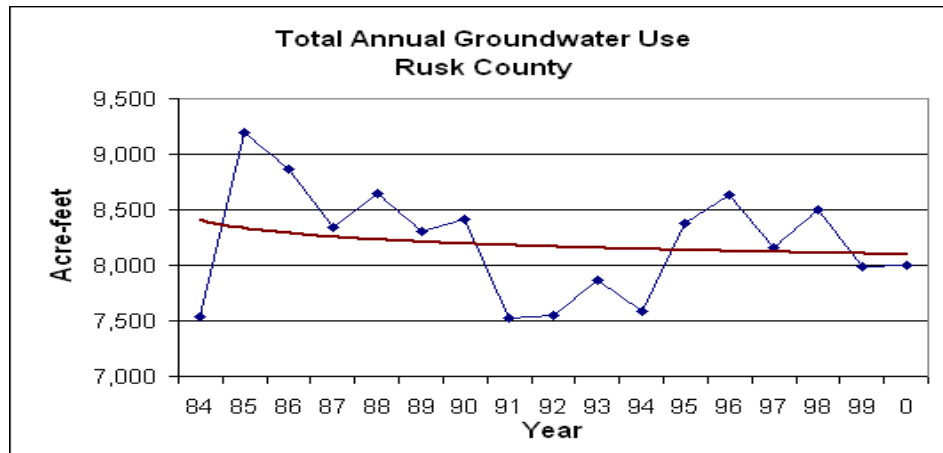
# Historical Groundwater Use in Rusk County

*(Source - Updated Evaluation for the East Texas PGMSA - Technical Summary)*

Year	Pop.	Mun.	Mfg.	Power	Irrg.	Mining	Stock	Total
1984	43,159	4,958	168	125	33	1,690	566	7,540
1985	43,168	5,953	198	11	38	2,492	507	9,199
1986	42,400	5,563	207	20	19	2,584	477	8,870
1987	42,400	5,539	190	24	19	2,111	455	8,338
1988	42,200	5,940	183	16	19	2,020	473	8,651
1989	43,494	5,740	175	17	32	1,855	482	8,301
1990	43,735	5,861	152	17	27	1,855	507	8,419
1991	44,539	5,603	122	18	27	1,241	515	7,526
1992	44,777	5,663	103	24	27	1,232	495	7,544
1993	44,685	5,902	85	23	149	1,202	507	7,868
1994	44,496	5,805	82	18	38	1,173	467	7,583
1995	45,340	6,529	80	20	151	1,189	414	8,383
1996	45,572	6,671	94	179	149	1,189	353	8,635
1997	45,568	6,337	92	14	149	1,201	367	8,160
1998	46,107	6,631	74	18	149	1,201	426	8,499
1999	45,913	6,076	77	19	149	1,201	460	7,982
2000	47,372	6,455	69	18	18	974	462	7,996

<b>Total</b>
<b>Average</b>

101,226	2,151	581	1,193	26,410	7,933	139,494
5,954	127	34	70	1,554	467	8,206



## Rusk County Groundwater Conservation District

# Historical Recharge Estimate for Rusk County

*(Source - Updated Evaluation for the East Texas PGMSA - Technical Summary)*

Well Site	Water Level (depth to water level in feet)			
	1984	2000	Change	% change
Crossroads WSC SWN 35-42-202	-302	-308	-6	-1.9%
R. C. Walling SWN 35-43-501	-57	-64	-7	-10.9%
City of Tatum SWN 35-44-601	-116	-111	5	4.5%
Church Hill WSC SWN 35-51-502	-204	-215	-11	-5.1%
Euel Faulkner SWN 35-52-101	-61	-65	-4	-6.2%
H.H. Truelock SWN 35-52-701	-113	-119	-6	-5.0%
Boyd Patrich SWN 35-59-601	-97	-109	-12	-11.0%
Roger Beard SWN 35-59-302	-192	-203	-11	-5.4%
Mount Enterprise WSC SWN 37-03-201	-171	-203	-32	-15.8%

Average Change	-9
Average Percent Change over 17 years	-6.3%
Average Percent Change per Year	-0.4%
Recharge Rate 100% - Change per Year %	99.6%
Average Historical Usage over 17 years	8,206
Average Historical Recharge Rate	8,175

*Note: The average historical recharge rate was calculated in the following manner.*

- 1. Calculate the average percent of change per year in the test well level (-0.4%)*
- 2. Multiply the inverse of this percentage by the average historical use from Exhibit D above (8,206) to yield the estimated average historical recharge rate. (8,175)*

#### **D. Surface Water Resources of Rusk County**

There are two river basins (Sabine and Angelina) and three reservoirs located partially in Rusk County. (Lake Cherokee, Lake Striker, and Martin Lake) The Sabine River Basin covers the North East half of Rusk County. The Angelina River Basin covers the South West half of Rusk County. Martin Lake is located on the northeast edge of Rusk County. It is not a resource for potable water as it is used as a power plant cooling reservoir and selenium has been detected in the water.

Lake Cherokee, operated by Lake Cherokee Water Company, is located on the north edge of Rusk County and the south edge of Gregg County. Currently available water from this 3,987 acre lake is used by the City of Longview Texas. Lake Striker is a 2,400 acre lake located on the southwest edge of Rusk County. It is operated by the Angelina-Nacogdoches Counties Water Control & Improvement District No.1. It was initially constructed to service a steam generation power plant and paper mill. The paper mill no longer uses the 15 million gallons per day and 10 million gallons of this surface water is available. Currently, the City of Henderson, in alliance with the cities of Jacksonville and Troup, is in negotiations to purchase this water to relieve the pressure on the city's groundwater dependence.

The total projected surface water supplies in Rusk County are estimated at 26,688 acre-feet per year through the year 2050.

#### **SURFACE WATER**

<b>Year</b>	<b>Projected Supply acre-feet per year</b>	<b>Projected Demand acre-feet per year</b>
2000	26,688	31,548
2010	26,688	36,455
2020	26,688	41,385
2030	26,688	46,410
2040	26,688	46,431
2050	26,688	46,443

*(Source: Table 2 and Table 5, 2002 State water planning Database)*

### E. Projected Groundwater Supplies of Rusk County

The projected total usable amount of groundwater for Rusk County is currently estimated at 16,186 acre-feet per year from the Carrizo-Wilcox Aquifer and Queen City Aquifer in both the Sabine and Neches river basins. This supply is projected to increase slightly to 16,339 by the year 2050.

#### GROUNDWATER

Year	Projected Supply acre-feet per year
2000	16,153
2010	16,186
2020	16,223
2030	16,261
2040	16,299
2050	16,339

(Source: Table 4, 2002 State water planning Database)

To insure the validity of the Rusk County Groundwater Conservation District Management Plan to sustain the groundwater resources of the District a Groundwater Availability Model (GAM) run was requested from the TWDB. A summary of the results of this estimate showing water entering and leaving the aquifers in Rusk County is shown below.

#### Groundwater Flow Budget for Rusk County

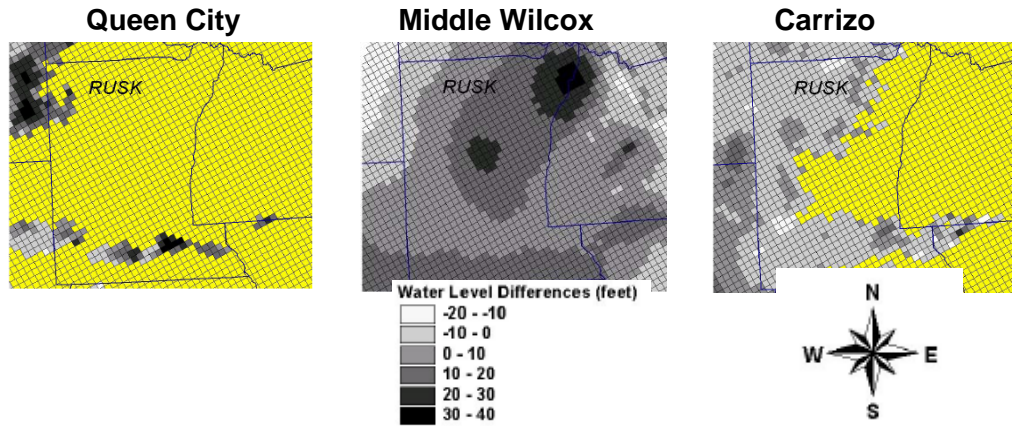
FLOW TERM	FLOW (acre-feet/year)
Lateral flow in	5,348
Lateral flow out	-9,459
Drains	-1,027
Recharge	77,678
Evapotranspiration	-37,108
Net Stream Leakage	-35,433

(A copy of the full GAM run results can be viewed on the District Web site at [www.rcgcd.org](http://www.rcgcd.org))

The gross recharge of 77,678 acre-feet per year less the estimated Evapotranspiration of 37,108 yields a net annual recharge of 40,570 acre-feet per year. Based on this recharge estimate and the estimated groundwater use through the year 2050, the Rusk County Groundwater Conservation District board believes that sustaining the groundwater resources in Rusk County is a viable objective in managing our groundwater resources.

The maps below provided by the GAM run show the projected water level changes to the aquifers in Rusk County from 1999 to 2050.

*(The yellow areas indicate that there is no aquifer present at that location)*



#### F. Groundwater Use in Rusk County

Historical groundwater use in the District has averaged 8,200 acre-feet per year from 1984 through 2000. There is an overall decreased use trend for the district over this 17 year period. However, the Municipal groundwater use has experienced an increase in demand. (See Exhibit F)

#### G. Projected Groundwater Demands for Rusk County

The projected groundwater demands for Rusk County will remain steady or slowly reduce. This reduction is due to a projected reduced demand from the Henderson municipal area based on their anticipated development of new surface water sources.

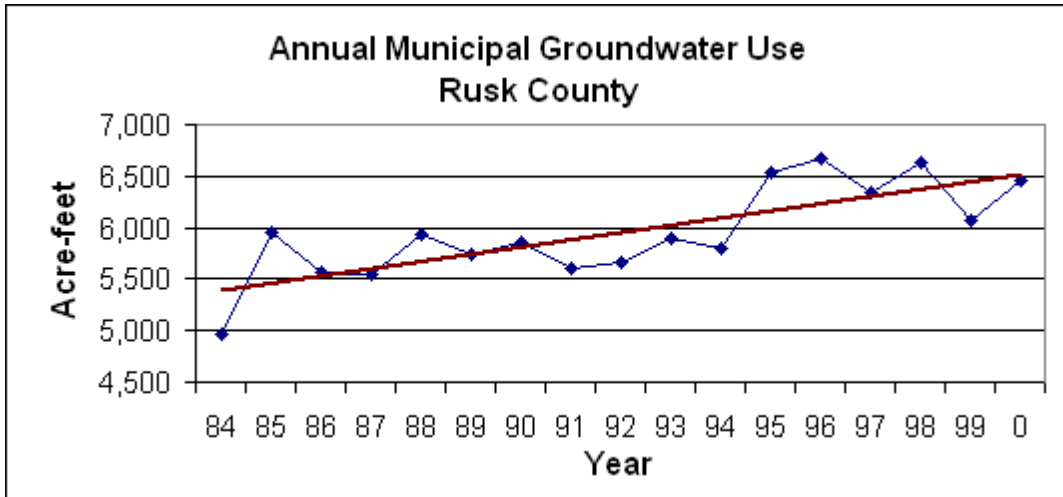
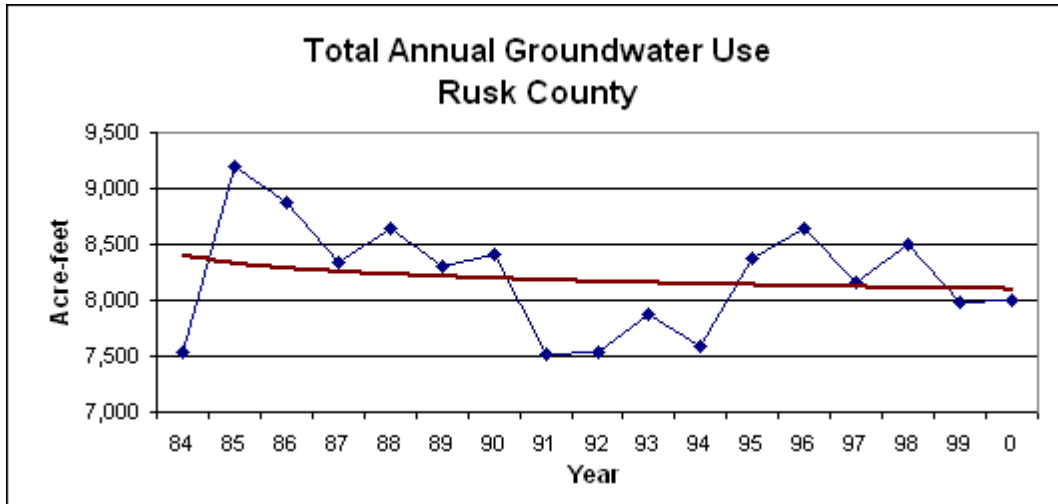
Year	Projected Demand acre-feet per year
2000	9,375
2010	8,872
2020	8,530
2030	8,572
2040	8,583
2050	8,690

Source: Table 2 and Table 5, 2002 State water planning Database

# Rusk County Groundwater Conservation District

## Municipal Groundwater Use Trend

(Source - Updated Evaluation for the East Texas PGMSA - Technical Summary)





## **H. Potential Demand and Supply Issues and Solutions**

Although the data shows that the Carrizo-Wilcox aquifer is a viable source of groundwater into 2050, there are two major areas of concern to Rusk County's water supply and demand.

The first issue is with the municipality of Henderson. The heavy demand on the aquifer is illustrated by the drop in water level at the Mount Enterprise test well site. (Mount Enterprise WSC SWN 37-03-201). This shortfall has been identified by the East Texas Regional Water Planning Group and the City of Henderson. The City of Henderson is actively looking for a future source of surface water to relieve the pressure on the Carrizo-Wilcox aquifer. One current source of surface water for the city of Henderson is the Sabine River.

The supply of water from the Sabine River is the second area of concern to Rusk County as well as the rest of East Texas. The Sabine River forms the boundary line between Texas and Louisiana for the downstream half of its length. Almost the entire basin upstream, from the state line, is in Texas. Texas, however, does not have unrestricted access to water in the Sabine River. According to the Sabine River Compact between the states of Texas and Louisiana, executed in 1953, Texas may have unrestricted access as long as the river maintains a minimum flow of 36 cubic feet per second at the junction between the river and the state line. With the expected growth in East Texas areas that are dependent upon the Sabine River Basin, and the existing contracts between the SRA and the city of Dallas to provide over 300,000 acre-feet of water per year, there is concern for the water availability from this source during drought conditions. The Sabine River Authority is actively working with Texas Regional Planning Groups (C, D, and I) developing long term strategies to meet their projected water needs without increasing groundwater demand from the Carrizo-Wilcox aquifer.

## **VII. MANAGEMENT OF GROUNDWATER SUPPLIES**

The District will manage the supply of groundwater 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 if implemented would result in sustaining the level of groundwater use, while increasing the use of surface water. The existing observation network will be used to monitor changing storage conditions of groundwater supplies within the District. If necessary the network may be expanded. The District will make a regular assessment of water supply and groundwater conditions and will report those conditions to the Board and to the public. The District will cooperate with investigations of the groundwater resources within the District and will make the results of investigations available to the public upon adoption by the Board.

The District will adopt rules to manage groundwater. The District may deny a water well drilling permit or limit groundwater withdrawals in accordance with the guidelines stated in the rules of the District. In making a determination to 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 will include:

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

In pursuit of the District's mission of protecting the resource, the District may require reduction of groundwater withdrawals to amounts that will not cause harm to the aquifer. To achieve this purpose, the District may, at the Board's discretion amend or revoke any permits after notice and hearing. The determination to seek the amendment or revocation of a permit by the District will be based on aquifer conditions observed by the District. The District will enforce the terms and conditions of permits and the rules of the District by injunction or other appropriate relief in a court of competent jurisdiction as provided for in the Texas Water Code (TWC) Section 36.102. A contingency plan to cope with the effects of water supply deficits due to climatic or other conditions will be developed by the District and will be adopted by the Board after notice and hearing. In developing the contingency plan, the District will consider the economic effect of conservation measures upon all water resource user groups, the local implications of the degree and effect of changes in water storage conditions, the unique hydro geologic conditions of the aquifers within the District, and the appropriate conditions under which to implement the contingency plan. The District will evaluate the resources available within the District and determine the effectiveness of regulatory or conservation measures. A public or private user may appeal to the Board for discretion in enforcement of the provisions of the water supply deficit contingency plan on grounds of adverse economic hardship or unique local conditions. The exercise of said discretion by the Board, shall not be construed as limiting the power of the Board.

## **VIII. ACTIONS, PROCEDURES, PERFORMANCE AND AVOIDANCE FOR PLAN IMPLEMENTATION**

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 and any additional planning efforts in which the District may participate will be consistent with the provisions of this plan. The District will adopt rules relating to the permitting of wells and the production of groundwater. The rules adopted by the District for permitting shall be pursuant to TWC 36.113 and the provisions of this plan. All rules will be adhered to and enforced. The promulgation and enforcement of the rules will be based on the best technical evidence available to the District. The District shall treat all citizens with equality. Citizens may apply to the District for discretion in enforcement of the rules on grounds of adverse economic effect or unique local conditions. In granting of discretion to enforcement of 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 cooperation in the implementation of this plan and the management of groundwater supplies within the District. All activities of the District will be undertaken in cooperation and coordinated with the appropriate state, regional or local water management entity.

## **IX. METHODOLOGY FOR TRACKING DISTRICT PROGRESS IN ACHIEVING MANAGEMENT GOALS**

The District staff will prepare and present an annual report to the Board of Directors on District performance in regards to achieving management goals and objectives. The presentation of the report will occur during the last monthly Board meeting each fiscal year, beginning August 2005. The report will include the number of instances in which each of the activities specified in the District's management objectives was engaged in during the fiscal year. Each activity will be referenced to the estimated expenditure of staff time and budget in accomplishment of the activity. The notations of activity frequency, staff time and budget will be referenced to the appropriate performance standard for each management objective describing the activity, so that the effectiveness and efficiency of the District's operations may be evaluated. The Board will maintain the report on file, for public inspection at the District's offices upon adoption. This methodology will apply to all management goals contained within this plan.

## X. GOALS, MANAGEMENT OBJECTIVES and PERFORMANCE STANDARDS

The management goals, objectives, performance standards and tracking methods of the Rusk County Groundwater Conservation District in the emphasis areas defined in 31TAC§356 are addressed below.

### A. **Efficient Use of Groundwater** (31TAC§356.5 (a) (1) (A))

- A.1 **Objective** — The District will require all new exempt or non-exempt wells that are constructed within the boundaries of the District to be registered with the District in accordance with the District rules.  
**Performance Standard** — Issue permits within 20 days of application.  
**Tracking Method** — Each Year the number of exempt and non-exempt wells registered by the District for the year and a list of any permits that were not issued within 20 days with the cause and corrective action taken, will be incorporated into the Annual Report submitted to the Board of Directors of the District.
- A.2 **Objective** - Establish a Groundwater Database for all water wells in the District. The database shall include information relating to well location, production volume, and other information deemed necessary by the District to enable effective monitoring of groundwater in Rusk County.  
**Performance Standard** – Document all new and existing wells by 2010.  
**Tracking Method** – Each Year the number of new and existing groundwater wells added to the database will be presented in the Annual Report submitted to the Board of Directors of the District.
- A.3 **Objective**- Provide Public Education Opportunities.  
**Performance Standard** - Disseminate educational information regarding the hydro-geologic cycle and status of aquifers through at least two articles in Rusk County newspapers, posting on the District internet website, and as needed responses to public inquiries.  
**Tracking Methods** - The Annual Report to the Board of Directors of the District will reflect educational achievements through newspaper articles, the number of hits on the Districts web site, and the number of responses to public inquiries annually.

**B. Minimize Waste of Groundwater (31TAC§356.5 (a) (1) (B))**

**B.1 Objective - Public Education**

**Performance Standard** - The District will provide educational leadership to the citizens of the District concerning this subject through at least one printed publication per year, public speaking at least once per year at service organizations or public schools, and wasteful practices posted on the Districts internet website.

**Tracking Methods** - Each Year the number of publications and speaking appearances by the District each year will be presented in the Annual Report submitted to the Board of Directors of the District

**B.2 Objective - Identify wasteful practices.**

**Performance Standard** –

- a) Write and adopt rules to regulate wasteful practices by December 2008.
- b) Track Water Quality Issues.
- c) Initiate a District wide program to identify the location of all abandoned wells by January 2010.
- d) Develop and adopt guidelines, setting forth the period of time allowed, for abandoned well owners to insure voluntary compliance with Texas Water Code well plugging requirements by January 2010.
- e) Report unplugged abandoned water wells to the well owners and Board within thirty (30) days of discovery.

**Tracking Methods** -

- a) Hold public hearing on proposed rules to regulate wasteful practices by December 2008.
- b) Report achievements in the District's Annual Report.
- c) Provide TECQ and TWDB an annual status report on unplugged abandoned water wells beginning in 2010.

**C. Conjunctive Surface Water Management Issues. (31TAC§356.5 (a) (1) (D))**

- C.1. **Objective** - The District will actively participate with Municipal and County Governments to encourage the development of additional surface water sources for Rusk County.  
**Performance Standard** – Selected board members will attend at least one planning meeting per year with municipal and county government groups addressing surface water options.  
**Tracking Methods** - Each Year, the progress made by Municipal and County Governments will be submitted to the Board of Directors in the Annual Report on advancements made toward increasing surface water availability and reduction of demand on the aquifers in the county.
- C.2. **Objective** - Coordinate conjunctive surface water issues with the East Texas Regional Water Planning Group.  
**Performance Standard** – The District will participate in the regional planning process by attending at least 50% of the East Texas Regional Water Planning Group meetings per year.  
**Tracking Methods** – A report will be made by the board’s representative at each board meeting of the Rusk County Groundwater Conservation District, updating the Board on conjunctive surface water issues being discussed by the ETRWPG.

**D. Addressing Drought Conditions (31TAC§356.5 (a) (1) (F))**

- D.1. **Objective** - The District will develop and adopt a Drought Contingency Plan for the Rusk County Groundwater Conservation District within one year of the adoption and certification of this plan, review it annually, and revise it if necessary.  
**Performance Standards** - A contingency plan to cope with the effects of water supply shortages due to climatic or other conditions will be developed by the District and will be adopted by the Board after notice and hearing. In developing the contingency plan, the District will consider the economic effects of conservation measures upon all water resource user groups, the local implications of the degree and effect of changes in water storage conditions, the unique hydro geologic conditions of the aquifer and the appropriate conditions under which to implement the contingency plan.
- Tracking Methods** –
- a) Development and adoption of a Drought Contingency Plan within one year of the adoption and certification of this plan.
  - b) The Annual Report to the Board of Directors of the District will reflect any implementations of the Drought Contingency Plan in that year. The report will include an appraisal of the plans effectiveness and suggestions for revisions to the plan.

**E. Addressing Conservation (31TAC§356.5 (a) (1) (G))**

- E.1. **Objective** – Public education on groundwater conservation.

Performance Standards - The District will issue at least two articles per year in Rusk County newspapers and on the District internet website regarding water conservation issues applicable to the residence of Rusk County.

Tracking Methods – Copies of the articles posted on the District website regarding groundwater conservation will be included in the Annual Report to the Board of Directors.

## **F. Total Usable Amount of Groundwater**

F.1. **Objective:** The total usable amount of groundwater for the Carrizo-Wilcox Aquifer located in Rusk County shall be “Near Sustainability,” which is a reasonable and attainable goal for the residents of Rusk and the surrounding counties. Near Sustainability is defined as allowing up to an average drawdown of the aquifer between 2010 and 2050 not to exceed 10 feet. This objective is based on the Texas Water Development Board’s (TWDB) Groundwater Availability Model (GAM) and other applicable and available data analyzed by LBG-Guyton Associates and Hydrex Environmental, using the best available science. The District recognizes that the GAM is a model and may be based on inaccurate and/or out of date assumptions. The district reserves the right to adjust its total usable amount of groundwater based on new data, as it is available.

Usable Groundwater: By allowing up to an average drawdown of up to 10 feet, the aquifer will sustain increased groundwater withdrawal of up to 10,000 af/yr. Currently, the estimated amount of groundwater pumped within Rusk County annually is 7,963 acre-feet.

Performance Standards: The RCGCD has contracted with Hydrex Environmental to increase the aquifer monitoring program from 15 sites within the county to approximately 100 sites. Aquifer levels will be monitored at least quarterly for all additional sites. Aquifer levels will be evaluated against recorded precipitation within the county. If the average drawdown of the aquifer in Rusk County exceeds 8 feet for more than two consecutive months the District will implement the Drought Contingency Plan (DCP). The DCP will be lifted after the average aquifer level drawdown is less than 8 Feet for two consecutive months. If the average drawdown of the aquifer in Rusk County exceeds 10 feet for more than two consecutive months, issuance of non exempt permits will be halted until the average aquifer drawdown is less than 8 feet for two consecutive months.

Tracking Methods:

- a) Establish additional aquifer level monitoring sites by the end of 2008.
- b) Set the average aquifer level for the County from the data gathered by January 2010.
- c) Publish the data gathered on the districts web site quarterly beginning in 2009.
- d) Share this data with the TWDB annually.
- e) Report average quarterly aquifer levels in the annual report to the Board of Directors.

Desired Future Conditions: The District is currently involved in joint planning with Groundwater Management Area 11 to determine the desired future conditions of the aquifers within its boundaries. The

District recognizes that once adopted, its desired future conditions must be consistent with those adopted by GMA 11. The District will then submit the adopted desired future conditions as an amendment or revision to its Management Plan for the Texas Water Development Board's approval.

#### **XI. SB-1 MANAGEMENT GOALS DETERMINED NOT-APPLICABLE**

##### **A. Control and Prevention of Subsidence *31TAC§356.5 (a) (1) (C)***

The geologic framework of the region precludes significant subsidence from occurring.

##### **B. Natural Resource Management Issues *31TAC§356.5 (a) (1) (E)***

The District has no documented occurrences of endangered or threatened species dependent upon groundwater resources. However, the District will coordinate with the Texas Commission on Environmental Quality (TCEQ) on water quality issues.