EAST TEXAS REGION
(REGION I)

SPECIAL STUDY NO. 2

REGIONAL SOLUTIONS FOR SMALL WATER SUPPLIERS

Prepared for
East Texas Regional Water Planning Group

Submitted by
SCHAUMBURG & POLK, INC.

FINAL REPORT
APRIL 2009

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The study was conducted to identify small water user groups in the East Texas Regional Water Planning Area with water supply and quality deficiencies and determine interests in correcting the deficiencies through regional water management strategies. Three users, Kervins RV Park, Lakeview RV & Motel and the US Department of Agriculture – Zavala Work Center, indicated interest in the proposed surface water plant strategy for the City of Lufkin that is included in the current Regional Water Plan. Four users; Water Necessities, Inc in Hardin County, Hamshire Community WSC in Jefferson County, Water Necessities, Inc. in Orange County and Timberlane Water Systems, Inc. in Sabine County indicated interests in possible regional water management strategies.

PURPOSE OF STUDY

The purpose of this study is to identify small municipal water suppliers that do not meet certain requirements of the Texas Administrative Code (30 TAC 290) and to determine the feasibility of a regional water strategy to meet the deficiencies. Only the systems meeting both the applicable size and needs criteria were covered in the study.

Small water user groups (WUG) are defined for purposes of state and regional water planning as those serving a population of less than 1500 (typically, 500 connections). Smaller systems typically have fewer resources to use in their long range planning.

The needs addressed in this study are limited to facility sizing and drinking water quality. More specifically, the sizing issues consist of quantity of water supply and total water storage. Water quality problems for the purpose of this study are any violations of the primary (health related) drinking water standards.

This study supports regional water planning by increasing the degree of participation of applicable small water systems in the regional water plan. These systems are afforded an opportunity to consider regional solutions for their problems, involving wholesale purchase of water from another supplier. Alternately they could propose other types of solutions. In either case, they were made more conscious of alternate solutions. In many cases, the local system operators provided valuable input to the Regional Water Planning Group and its consultants. As individual strategies are selected, the overall strategy for the Region can be formed more accurately.

The water management strategies developed from the study will be included in the next cycle of the Regional Water Plan. If a user wishes to seek a grant or loan from the Texas Water Development Board for improvements related to water supply, its strategies must be consistent with the most recently approved Regional and State Water Management Plans.

METHODOLOGY

The study consisted of four tasks:

- Determine water user groups needing assistance
- Locate water user groups needing assistance and identify need
- Determine interest of water supplier in meeting needs with regional projects
- Develop and evaluate potentially feasible water management strategies for regional projects

Each task is discussed in following sections.

TASK 1

DETERMINE WATER USER GROUPS NEEDING ASSISTANCE

The first task was to identify the water systems to be included in the study. The scope of this study is limited to systems in the East Texas Regional Water Planning Area which meet the criteria for size and needs as defined below.

- Size: Small water user groups (WUG) are defined for purposes of state and regional water planning as those serving a population of less than 1500 (typically, 500 connections).

- Needs: To be included in this study, a small user must further be identified as having a water supply or quality problem. Water supply problems identified were of three categories – deficient capacity, deficient storage, and having a daily usage reaching 75% or more of design capacity. Water quality problems were limited to violations of the primary drinking water standards. These problems generally include the parameters covered by 30 TAC 290, Subchapter D, also known as the Drinking Water Standards. Parameters under consideration include various inorganic and organic contaminants; radionuclides, or radioactive substances; microbial contaminants; and disinfection byproducts (DBP*). In practice, the only water quality problems identified for small users in Region I were two DBPs (TTHM, or total trihalomethanes and HAA5, or haloacetic acids); radionuclides; and arsenic.

  * DBPs are compounds formed by reaction between disinfection agents and organic matter present in the water, and they tend to increase with travel time in the water system. They are more prevalent in surface water because of higher organic content in the water. They can increase the risk of cancer after prolonged ingestion.

The beginning point was to identify the small users utilizing the Texas Water Development Board database that is maintained for the water planning process. A query was made to identify systems with a population of 1500 or less in the East Texas Regional Water Planning area. The resulting list was sorted by query to group the small systems into three brackets – less than 50 connections, 50 to 250 connections, and over 250 connections. The sorting was performed to match different production and storage standards (per connection) set forth by 30 TAC 290.

The current capacity and storage for each of the identified small users was obtained using the Texas Commission on Environmental Quality utility database. The capacity and storage requirements, according to 30 TAC 290, Subchapter D, were determined based on the connection categorical classification. The current to required capacities were compared to develop a preliminary list of deficiencies. Additionally, a shortfall relating to 75% of capacity was listed. Appendix A shows the list results of the analysis. The small users identified with deficiencies in Appendix A were placed into a separate list, Appendix B.

A separate list of systems with water quality problems was requested from and provided by the TCEQ. This list included 44 systems and is included as Appendix C.

Additional research and investigation of available data was made of the systems identified in Appendices B and C. Several systems were eliminated based on the following reasons:

- systems located in the four counties partially within the region (Henderson, Polk, Smith, and Trinity) and were located outside the East Texas Regional Water

Planning Area,

- updates to the TCEQ water quality database yielded more current information on connections and the production and supply capacities resulted in deficiencies being eliminated,
- systems served transient populations and thus were subject to less stringent standards,
- TCEQ water quality database indicated some systems to have above the 1500 population level used in selecting the systems.
- two systems were excluded since they were shown to be merged or inactive (in the case of the merged system, the system with which it was merged was checked for possibly resulting deficiencies and was added to the list)
- a few systems were retained because they were marginally adequate because of losing connections and could easily fall out of compliance by regaining a few customers.

The above evaluation resulted in a list of systems to which inquiries regarding the specific deficiencies and request to determine interests in regional solutions were made (Appendix D). Deficiencies related to water production and storage problems were scattered throughout the region, as were disinfectant byproduct problems. Arsenic problems in Region I were limited to northwestern Orange County, although several systems in western Polk County (outside the region) also had the problem. Radionuclide problems were shown in two systems, one in eastern Polk County and the other in western Tyler County.

TASK 2

LOCATE WATER USER GROUPS NEEDING ASSISTANCE AND IDENTIFY NEED

Systems to which inquiries were made (Appendix D) were located using county CCN (Certificate of Convenience and Necessity) maps which were prepared by the TCEQ using TxDOT (Texas Department of Transportation) county maps as base maps.

Most of the systems are operated by water supply corporations, water districts, cities, or private companies which have a CCN for their water system. Although the TCEQ treats water systems and their owners separately, the list of water systems shows an owner for most systems along with a CCN number if it has one. Each county map can then be searched for the territory covered by the relevant CCN number. Since some utility owners have a number of systems under a common CCN number, further research must be done to identify which occurrence of the CCN number represents the system with problems. Many systems serving transient populations (such as RV parks or state parks) do not have a CCN and must be located by an examination of the county map, by use of the Internet, and by telephone calls.

A set of maps was prepared for the counties in the region showing the names, locations, and problems for the various systems covered in this study (Appendix E). The TCEQ CCN maps were used except for Orange County, where a TxDOT county map was used.

The maps were used for the purpose of locating neighboring systems to which each system with problems could consider connection or for development of a regional system.

TASK 3

DETERMINE INTEREST OF WATER SUPPLIER IN MEETING NEEDS WITH REGIONAL PROJECTS

A total of 72 systems were selected to receive letters detailing their apparent problems (based on the TCEQ database), asking for confirmation as to whether the problems still existed, and offering a number of potential solutions including regional solutions where applicable. In several cases where more than one system on the list in one county was under common ownership, those systems were consolidated into a single letter. Appendix F contains a copy of the sixty letters which were sent out.

Mailing addresses were in most cases taken from the TCEQ database. In one case a system in Hardin County was shown in the CCN area of its previous owner, but a telephone inquiry revealed that it had been sold to a utility company in Orange County. All letters were dated July 21, 2008 and requested a response by August 15.

Approximately 30% of the systems responded by August 15, 2008, by letter, phone calls or voice mail. Immediately after that date, a process of followup telephone calls began. By early September, some degree of response had been received from almost all entities, although a few responses merely promised information in a followup call. One small system never responded despite repeated phone calls and faxes.

Response letters to the mailout of Task 3 are included as Appendix B. All responses, whether written or verbal, are summarized in an attached table (Appendix H). The majority of problems were reported as solved or in the process of resolution. Some problems had been solved two or three years earlier, but the corrections had not been reflected in the database. In a few cases, the entity was still in the process of exploring solutions or trying to obtain funding. Several entities had received waivers from the TCEQ for deficient production or storage because of low actual usage.

Several entities which had deficient problems by TCEQ standards had few, if any problems, in actual operation, since they served transient populations or otherwise had low usage. Several systems shown on the TCEQ database to purchase some or all of their water and with inadequate supply, have purchase contracts for more water than shown or which were being upgraded to provide larger amounts. Several entities in Angelina County between Zavala and Sam Rayburn Reservoir indicated an interest to connect to a surface water transmission line from a proposed surface water plant being planned by the City of Lufkin.

The DBP water quality problem in several cases is a result of high chlorine levels in purchased surface water. One of the affected users is working toward a new well to substitute for the surface water. In other cases the wholesale water supplier is cooperating to reduce the initial chlorine dosage, although booster chlorination in far portions of the retail system by be necessary to maintain the required chlorine residual.

One water system owner indicated that the TCEQ has the name of his system wrong on its database. One user has already connected to a local water system for most of its needs but continues to operate its own supply for part of its facility.

One system on Toledo Bend Reservoir has plans for a surface water plant to replace its purchased ground water supply. Several users have lost some customers and thus fallen within capacity, although one system will again become out of compliance after proposed system extensions are completed. One system owner has come into compliance by cutting off service to customers not paying their water bills.

Several systems were eliminated because their water quality problems appeared to be resolved. Two systems, with a common ownership with a nearby system on the list, were added because the operator told about similar problems in those systems.

A number of systems on the mailout list are already regionalized as they obtain all or part of their water supply from a wholesale provider, or in one case have an interconnection which they can open at will. These entities, along with a discussion of the findings are listed in Table 1.

Three of the systems indicated an interest in connecting to the treated surface water transmission line which will pass near their locations and is part of the water management strategy for the City of Lufkin in the current Regional Water Plan. A list of these entities and the small amount of construction required for interconnection is included in Table 2.

Four entities expressed an interest in regional projects as a strategy for addressing water deficiencies. A list of the entities and any construction required for interconnection is included in Table 3.

Table 1 -- East Texas Regional Water Planning - Small WUGs Already Fully or Partially Regionalized or in Progress

Entity	Discussion	Status Summary
ANDERSON CO.		
Cayuga WSC	WSC is in process of consolidating with BCY WSC located to SE (Tennessee Colony area), a system w/population of over 2000..	Continue with the regionalization already planned or in progress.
ANGELINA CO.		
Prairie Grove WSC	Actual demand never exceeds supply since they reworked their wells. They can get any water they need from an existing interconnection with the City of Diboll without getting specific permission from Diboll, even though the connection is listed as an emergency interconnect w/o getting specific permission from Diboll, TCEQ is aware although no contract for specific amount. Possibility of being taken over by Diboll after Diboll gets its new wells on line. Assume no new connecting line or other costs associated with retaining existing interconnection and possible future merger of systems.	Continue existing de facto standby regional supply; possible future merger with City system without any required construction.
CHEROKEE CO.		
North Cherokee WSC	N. Cherokee will continue to purchase all of its water from the City of Jacksonville. The N Cherokee supply formerly all came from Lake Palestine, but in response to DBP problem the City has blended in some water from City wells as well as treating its surface water plant to cut down the TOC which contributes to the DBP problem. No costs to retain existing wholesale service.	Continue existing regional supply. Note that they are also a wholesale provider, selling water to Walnut Grove WSC in Smith County.
Rusk Rural WSC	In process of constructing new well; also have interconnection w/City of Rusk to take care of deficiency. Assume no costs for retaining interconnection.	Continue existing standby or partial regional supply without any required
HENDERSON CO.		
La Poynor ISD	Most of school campus has been connected to Poynor WSC, but campus well is kept in service to supply maintenance & agriculture department *(to keep system active in case it is needed in future)*. Well is still good & producing good water, & TCEQ has indicated that they can leave it as it is for present. Assume no associated costs.	Continue existing partial regional supply.

NOTE: Only systems with existing or proposed regionalization (wholesale supply) are listed in this table.

Information in this table was last updated September 2008.

Table 1 -- East Texas Regional Water Planning - Small WUGs Already Fully or Partially Regionalized or in Progress

HOUSTON CO.		
The Consolidated WSC	The portion of their system with THM violation receives water from City of Crockett who receives their water from Houston County WCID No. 1. They have been unable to work with Houston County WCID No. 1 in resolution of the problem. DBP level is high at entry point & increases above limits because of necessary chlorination in their system. They are trying to get a grant to drill a well on Highway 7 about 5 miles E of Crockett to take place of purchased surface water w/high DBP levels. The well would be located in one of their other systems but would also serve the 287 South system which is subject of letter.	Discontinue existing regional supply for compelling water quality reasons. However, this system would then get regional service from one of owner's neighboring systems.
PANOLA CO.		
A & P WSC	System divided into 2 pressure planes, 1 served by their well & other served by purchased water from Carthage. They appear to have no problems w/inadequate capacity in either pressure plane & have not had problems w/TCEQ. Assume no costs associated with continued regional supply.	Continue existing partial regional supply (serving one of 2 pressure planes).
Clayton WSC Plant 1 & Plant 2	The well for Plant 2 listed on database was placed in service in Dec. 2007 along w/new standpipe. They have been told by TCEQ that they are now meeting requirements for both Plant 1 & Plant 2. Not clear whether they still purchase some water from Carthage. No associated costs if they continue regional supply.	Continue existing partial (or possibly standby) regional supply if it is still in place.
SABINE CO.		
Beechwood WSC	Proposed new surface water treatment, 700 gpm, with a 1 mgd raw water purchase contract for water from Toledo Bend. New plant will be adequate for considerable future growth & will take place of existing purchase from South Sabine.	Discontinue existing regional supply in favor of surface water plant with larger capacity than existing supply.
Brookeland FWSD (Shawnee Shores)	New disinfection plant using liquid ammonium sulfate; interconnection w/South Sabine takes care of capacity problems; 24,000 gallon storage in lieu of 21,000. Assume no costs associated with continued use of interconnection.	Continue existing partial regional supply.

NOTE: Only systems with existing or proposed regionalization (wholesale supply) are listed in this table.

Information in this table was last updated September 2008.

Table 1 -- East Texas Regional Water Planning - Small WUGs Already Fully or Partially Regionalized or in Progress

SAN AUGUSTINE CO.		
Bland Lake Rural WSC	New contract w/City shows 65 to 100 gpm @ each of 2 entry points (can be distributed between points as needed), which is more than adequate. No costs associated with contract renewal.	Continue existing regional supply with increased contract volume.
San Augustine Rural *(previously listed for Study 2 under Deep East Texas Electric Coop. Inc.)*	New contract is being negotiated w/City, in process of being executed.. No costs associated with contract renewal.	Continue existing regional supply with increased contract volume.
SMITH CO.		
Walnut Grove WSC	Production is actually adequate including purchased sources. In addition to their own wells, they have surface water purchase contracts w/North Cherokee (0.2 mgd) & City of Tyler (1.7 mgd). (The 0.741 mgd of purchased capacity shown in database appears to be average usage for 2006 rather than contracted amount.) Trihalomethane problem comes from purchased water from both sources. They are blending purchased water w/their own well water to solve problem at least partially. They are starting to check w/Tyler to find out what their disinfection practices are & how they may be modified.	Continue existing partial regional supplies. (However, in process of blending purchased water w/produced water, they could possibly be reducing volume of purchase.)

NOTE: Only systems with existing or proposed regionalization (wholesale supply) are listed in this table.

Information in this table was last updated September 2008.

Table 2 -- East Texas Regional Water Planning - Small WUGs in Angelina County Planning to Tie into Future Surface Water Transmission Line

Entity	Discussion	Status Summary
ANGELINA CO.		
Kervins RV Park	Plans to add another well next year for reliability, but production would still be deficient by TCEQ standards. Long term plan is to tie to surface water transmission line from the proposed City of Lufkin regional plant on Sam Rayburn Reservoir. Assume 700 ft. of 2½" connecting line from transmission line to this system	Future regionalization depending on facilities constructed by others.
Lakeview RV & Motel	Owner would be interested in tying into surface water transmission line from proposed City of Lufkin plant on Sam Rayburn when it comes available. Assume 150 ft. of 2" connecting line from transmission line to this system.	Future regionalization depending on facilities constructed by others.
US Department of Agriculture (Zavala Work Center) ***(letter sent for Shelby Co.)***	They plan to tie into surface water transmission line from proposed City of Lufkin plant on Sam Rayburn when it comes available. Assume 150 ft. of 1" connecting line from transmission line to this system.	Future regionalization depending on facilities constructed by others.

NOTE: Only systems with existing or proposed regionalization (wholesale supply) are listed in this table.

Information in this table was last updated September 2008.

Table 3 -- East Texas Regional Water Planning - Small WUGs Showing Interest in Regional Projects

Entity	Discussion	Status Summary
HARDIN CO.		
Water Necessities, Inc. (Northwoods)	In the process of rehabilitating well serving Northwoods; also interested in future larger system serving Northwoods and several other of his nearby systems if he could get funding. Assume 15,300 ft. of 3" line to connect existing Northwoods, New Forest, and Breakaway Trails systems together.	Possible future regional system consolidating Northwoods and some of owner's other systems in Hardin County -- no specific plans. Note: They are already considered regional in one sense by TCEQ since they have systems in both Hardin & Orange Counties.
JEFFERSON CO.		
Hamshire Community WSC	They have lost a few connections because of private wells & are just within limits for storage capacity. However, they will again exceed connections limits for existing storage after proposed grant funded water line extensions . They plan to increase storage capacity if they can get funding, but would connect to West Jefferson surface water supply if they could get funding. WSC indicated that 7 miles of connecting line. would be required. Assume 7 miles of 2½" line.	Possible future regional supply depending on funding. (Has already undergone some regionalization in last few years by taking over adjacent Moore system.)

NOTE: Only systems with existing or proposed regionalization (wholesale supply) are listed in this table.

Information in this table was last updated September 2008.

Table 3 -- East Texas Regional Water Planning - Small WUGs Showing Interest in Regional Projects

ORANGE CO.		
Water Necessities, Inc. (Timer, Claire, Corbett)	Purchasing water from Orange County WCID #1 for Claire and Corbett system not acceptable to District. May drill a new well. Timer system should eventually be shutdown. Perhaps creation of a new entity to serve area north of Vidor -- drill new wells or possibility of receiving water from Mauriceville SUD. For assumed new well location on FM 2802 three miles E of FM 105, assume 500 ft. of 2", 500 ft. of 2½", 5300 ft. of 3", and 30,600 ft. of 6". To connect instead to Mauriceville SUD system, increase 6" for total of 500 ft. of 2", 500 ft. of 2½", 5300 ft. of 3", and 37,000 ft. of 6".	Possible future regional supply to two or all of the three systems depending on funding. Regionalization could possibly consist of connecting Claire & Corbett systems to existing Mauriceville system, but more feasible solution appears to be new system which would take in all three small systems. New system could purchase from Mauriceville or have its own supply. See also note for Hardin Co.
SABINE CO.		
Timberlane Water System, Inc.	No. of connections actually 39-40 which make borderline. Has had discussion with SRA to takeover Lakeview Park and supply for additional 27 acres approximately 1 mile away. Assume 5300 ft. of 2" line.	Proposes to take in a neighboring park served by existing on-site ground water system.

NOTE: Only systems with existing or proposed regionalization (wholesale supply) are listed in this table.

Information in this table was last updated September 2008.

TASK 4

DEVELOP AND EVALUATE POTENTIALLY FEASIBLE
WATER MANAGEMENT STRATEGIES FOR REGIONAL PROJECTS

Interests in regional projects, as developed under Task 3, are shown in Table 4.

Table 4. Identified Regional Projects

Entity(ies)	Regional Project
Kervins RV Park, Lakeview RV & Motel USDA-Zavalla	City of Lufkin Surface Water System Sam Rayburn
Water Necessities, Inc. (Hardin County)	Regionalization with New Forest, Breakaway Trail Systems
Hamshire Community WSC	Regionalization with West Jefferson
Timberlane Water Systems, Inc.	Extend service to Lakeview Park
Water Necessities, Inc. (Orange County)	Regionalization of three systems with Mauriceville SUD

The water management strategy for each of the above entities is provided below.

Kervins RV Park

Kervins RV requires a daily supply of .053 mgd. The system is approximately 700 feet from the general vicinity of the City of Lufkin planned transmission line from Lake Sam Rayburn. The strategy would include the line from the transmission line and a ground storage/pump station for receipt and distribution

	2010	2020	2030	2040	2050	2060
Supply (ac-ft/yr)	60	60	60	60	60	60
KRV-1: Water from Lufkin	0	60	60	60	60	60

Strategy	Yield (ac-ft/yr)	Total Capital Cost	Total Annualized Cost	Unit Cost ($/ac-ft)	Unit Cost ($/1000 gal)
KRV-1: Water from Lufkin	602	$226,823	$65,203	$1,087	$3.35

Lakeview RV & Motel

Lakeview requires a daily supply of .043 mgd. The system is approximately 150 feet from the general vicinity of the City of Lufkin planned transmission line from Lake Sam Rayburn. The strategy would include the line from the transmission line and a ground storage/pump station for receipt and distribution

	2010	2020	2030	2040	2050	2060
Supply (ac-ft/yr)	48	48	48	48	48	48
LV-1: Water from Lufkin	0	48	48	48	48	48

Strategy	Yield	Total	Total	Unit Cost	Unit Cost

	(ac-ft/yr)	Capital Cost	Annualized Cost	($/ac-ft)	($/1000 gal)
LV-1: Water from Lufkin	48	$208,203	$55,530	$1,142	$3.52

USDA - Zavalla

USDA-Zavalla requires a daily supply of .04 mgd. The system is approximately 150 feet from the general vicinity of the City of Lufkin planned transmission line from Lake Sam Rayburn. The strategy would include the line from the transmission line and a ground storage/pump station for receipt and distribution

	2010	2020	2030	2040	2050	2060
Supply (ac-ft/yr)	45	45	45	45	45	45
USDA-1: Water from Lufkin	0	45	45	45	45	45

Strategy	Yield (ac-ft/yr)	Total Capital Cost	Total Annualized Cost	Unit Cost ($/ac-ft)	Unit Cost ($/1000 gal)
USDA-1: Water from Lufkin	45	$208,203	$53,170	$1,178	$3.63

Water Necessities (Hardin County)

Water Necessities' Northwood System requires a daily flow of .058 mgd. Consideration has been given to regionalizing with two neighboring systems under the same ownership; New Forest and Breakaway Trails. The strategy includes a new well, new ground storage and high service pumps and approximately 15,300 feet of line.

	2010	2020	2030	2040	2050	2060
Supply (ac-ft/yr)	65	65	65	65	65	65
WN-1: Consolidate with other systems	0	65	65	65	65	65

Strategy	Yield (ac-ft/yr)	Total Capital Cost	Total Annualized Cost	Unit Cost ($/ac-ft)	Unit Cost ($/1000 gal)
WN-1: Consolidate with other systems	65	$532,865	$51,593	$796	$2.45

Hamshire WSC

Hamshire WSC requires .026 mgd daily supply. Consideration has been given to abandonment of groundwater and connection to West Jefferson that uses surface water purchased from the LNVA. Approximately 7 miles of line would be required to obtain water from West Jefferson.

	2010	2020	2030	2040	2050	2060
Supply (ac-ft/yr)	29	29	29	29	29	29
HWSC-1: Water from West Jefferson	0	29	29	29	29	29

Strategy	Yield (ac-ft/yr)	Total Capital Cost	Total Annualized Cost	Unit Cost ($/ac-ft)	Unit Cost ($/1000 gal)
HWSC-1: Water from West Jefferson	29	$1,293,220	$141,961	$4876	$15.00

Timberlane Water System, Inc.

Timberlane has indicated an expression of interest to extend service to Lakeview Park.

	2010	2020	2030	2040	2050	2060
Supply (ac-ft/yr)	7	7	7	7	7	7
TI-1: Extend service to Lakeview Park	0	7	7	7	7	7

Strategy	Yield (ac-ft/yr)	Total Capital Cost	Total Annualized Cost	Unit Cost ($/ac-ft)	Unit Cost ($/1000 gal)
TI-1: Extend service to Lakeview Park	7	$179,427	$14,423	$2,226	$6.86

Water Necessities (Orange County)

Water Necessities has three systems in Orange County. The systems could be joined together and in addition be joined to the Mauriceville SUD system. The strategy shown includes tying to the Mauriceville SUD system.

	2010	2020	2030	2040	2050	2060
Supply (ac-ft/yr)	192	192	192	192	192	192
WNO-1: Extend service to Lakeview Park	0	192	192	192	192	192

Strategy	Yield (ac-ft/yr)	Total Capital Cost	Total Annualized Cost	Unit Cost ($/ac-ft)	Unit Cost ($/1000 gal)
WNO-1: Extend service to Lakeview Park	192	$1,771,251	$175,878	$912	$2.81

RECOMMENDATION

Bringing small water users into the regional water planning process requires persistence. The lack of understanding of the regional process by small user groups may create reluctance to provide information out of concern that the process is related to enforcement. Many small have limited resources and most of their time and energy is spent on solving daily problems with no time to devote to long term planning. However, the process did identify entities that have an interest in regional projects. However, due to distance and the small demand, the economical feasibility to implement the regional system is often a key consideration in the decision process.

Appendix A

Initial List of all Small Users in Region I
(*with apparent deficiencies where applicable*)

County	PWS ID	PWS Name	Population Served	Number of Connections	Total Production (MGD)	Avg Daily Usage (MGD)	Total Storage (MG)	Required Storage, MG	Meets Storage	Required Well Capcity, mgd			Insufficient Production, MGD	Usage > 75% Capacity
										1.5	1	0.6		
	Less than 50 connections (30TAC290.45(b)(1)(A) or (B))													
ANDERSON	10037	CAMP BETTE PEROT	120	1	0.063	0.004	0.033	0.0002				0.001		
ANDERSON	10007	DOGWOOD SPRINGS WSC #1	135	45	0.041	0.008	0.012	0.009				0.039		
ANDERSON	10008	EDGEWATER SHORES WATER SUPPLY	33	11	0.058	0	0			0.024				
ANDERSON	10003	LAKEVIEW METHODIST CONF. CENTER	800	1	0.23	0.031	0.067	0.0002				0.001		
ANGELINA	30092	CASSELS BOYKIN COUNTY PARK	25	20	0.032	0	0			0.043			(0.011)	
ANGELINA	30036	KERVINS RV PARK	111	37	0.012	0	0			0.080			(0.068)	
ANGELINA	30099	MATTIES PLACE	36	12	0.022	0	0			0.026			(0.004)	
ANGELINA	30095	PINE OAKS OASIS	111	37	0.094	0	0			0.080				
ANGELINA	30007	PLEASURE POINT WSC	216	43	0.038	0	0.009	0.0086				0.037		
ANGELINA	30100	SUN N FUN ASSOCIATION	25	32	0	0	0			0.069			(0.069)	
ANGELINA	30091	USCOE HANKS CREEK PARK	58	47	0.043	0	0			0.102			(0.059)	
ANGELINA	30103	USFS ZAVALLA WORK CENTER	38	1	0.019	0	0.017	0.0002				0.001		
CHEROKEE	370043	BROADWAY MOBILE HOME PARK	22	17	0.079	0.003	0			0.037				
CHEROKEE	370040	MOUNTAIN VIEW CAMP	220	26	0.288	0.009	0			0.056				
HARDIN	1000072	BIG THICKET NATURE TRAIL	25	5	0.02	0	0			0.011				
HARDIN	1000053	BIG THICKET RETREAT WATER SYSTEM	102	34	0.058	0.009	0			0.073			(0.015)	
HARDIN	1000069	BREAKAWAY TRAILS SUBDIVISION	114	38	0.136	0.006	0			0.082				
HARDIN	1000067	BULLOCKS MOBILE HOME PARK	50	33	0.115	0.003	0			0.071				
HARDIN	1000065	DAIRYLAND HEIGHTS WATER SYSTEM	120	41	0.116	0.006	0			0.089				
HARDIN	1000073	EARLY CHILDHOOD DEVELOPMENT CENTER	60	1	0.115	0	0			0.002				
HARDIN	1000056	JONES TRAILER PARK	84	28	0.204	0	0			0.060				
HARDIN	1000071	LITTLE BIG HORN SERVICES	81	27	0.041	0.006	0			0.058			(0.017)	
HARDIN	1000062	NEW FOREST ESTATES WATER SYSTEM	63	21	0.115	0	0			0.045				
HARDIN	1000060	NORTHWOODS SUBDIVISION	117	39	0.08	0	0			0.084			(0.004)	
HARDIN	1000070	RANCHLAND	51	17	0.835	0	0			0.037				
HARDIN	1000038	WHISPERING PINES SUBDIVISION	60	20	0.056	0.004	0			0.043				
HENDERSON	1070196	CAMP LONE STAR	200	20	0.072	0	0			0.043				
HENDERSON	1070194	CHRISTIAN YOUTH FOUNDATION MAIN	250	14	0.072	0.01	0.026	0.0028				0.012		
HENDERSON	1070155	FLAT CREEK COVE PROPERTY OWNERS ASSOCI/	129	43	0.058	0.006	0.009	0.0086				0.037		
HENDERSON	1070199	LA POYNOR ISD	550	48	0.086	0	0			0.104			(0.018)	
HENDERSON	1070024	TWIN OAKS MHP	75	25	0.101	0	0			0.054				
HOUSTON	1130025	AMPACET TEXAS LP	62	5	0	0.116	0.21	0.001				0.004	(0.004)	(0.116)
HOUSTON	1130021	RATCLIFF RECREATION AREA USFS	250	11	0.025	0	0.005	0.0022				0.010		
HOUSTON	1130022	RATCLIFF RECREATIONAL DOGWOOD LOOP	250	26	0.027	0	0.01	0.0052				0.022		
JASPER	1210061	BUCK SPRINGS BOTTLED WATER CO.	25	1	0.094	0	0.051	0.0002				0.001		
JASPER	1210056	EVADALE ISD	561	2	0.19	0.002	0			0.004				
JASPER	1210062	LEOFFLER SPRINGS	25	1	0.081	0.001	0.053	0.0002				0.001		
JASPER	1210049	MULBERRY WATER SUPPLY	99	33	0.072	0.005	0.01	0.0066				0.029		
JASPER	1210050	WESTVACO TEXAS EVADALE MILL	810	1	21.9	0	0.22	0.0002				0.001		
JEFFERSON	1230087	DOE STRATEGIC PETROLEUM BIG HILL	100	1	0	0.003	0			0.002			(0.002)	(0.003)
JEFFERSON	1230072	HAMSHIRE FANNETT ISD	680	14	0.207	0.003	0			0.030				
JEFFERSON	1230074	MOORE WATER SYSTEM	102	34	0.05	0	0			0.073			(0.023)	
JEFFERSON	1230082	ONYX ENVIRONMENTAL SERVICES	250	1	0.029	0.003	0.016	0.0002				0.001		
JEFFERSON	1230083	SUNCHASE SUBDIVISION	120	40	0.112	0	0			0.086				
JEFFERSON	1230052	TPWD SEA RIM STATE PARK	25	31	0	0.004	0.022			0.067			(0.067)	(0.004)
NACOGDOCHES	1740033	UNION SPRINGS WATER CO.	25	1	0.017	0	0			0.002				
NEWTON	1760018	CAMP OTANYA	40	10	0.064	0	0			0.022				
NEWTON	1760010	CAMP RED OAK SPRINGS	90	9	0.034	0.001	0.003	0.0018				0.008		
NEWTON	1760004	EAST NEWTON WSC	384	12	0.118	0	0.03	0.0024				0.010		
NEWTON	1760011	EAST TEXAS BAPTIST ENCAMPMENT	125	41	0.09	0	0.022	0.0082				0.035		
ORANGE	1810178	CAPRI AND GALL STREETS	66	22	0.032	0	0			0.048			(0.016)	
ORANGE	1810018	CHERRY HILL SUBDIVISION	66	22	0.059	0	0			0.048				
ORANGE	1810172	CHEVRON PHILLIPS EMPLOYEES RECREATION AI	25	3	0.01	0.001	0			0.006				
ORANGE	1810008	CISD HIGH SCHOOL	1275	5	0.648	0	0			0.011				
ORANGE	1810143	CLAIRE STREET WATER SYSTEM	93	31	0.102	0	0			0.067				

County	PWS ID	PWS Name	Population Served	Number of Connections	Total Production (MGD)	Avg Daily Usage (MGD)	Total Storage (MG)	Required Storage, MG	Meets Storage	Required Well Capcity, mgd			Insufficient Production, MGD	Usage > 75% Capacity
										1.5	1	0.6		
ORANGE	1810123	CORBETT WATER SYSTEM 1	87	29	0.073	0.012	0			0.063				
ORANGE	1810094	HONEYWELL	130	12	0.924	0.047	0.015	0.0024				0.010		
ORANGE	1810023	HOUSEMAN PARK	78	26	0.072	0	0			0.056				
ORANGE	1810061	IWANDA MOBILE HOME PARK	83	29	0.105	0	0			0.063				
ORANGE	1810025	LAKEVIEW ESTATES	84	28	0.095	0	0			0.060				
ORANGE	1810007	LANXESS CORPORATION	300	1	7.2	0.006	0.005	0.0002				0.001		
ORANGE	1810077	MOBILE ESTATES MOBILE HOME PARK	56	33	0.063	0.005	0			0.071			(0.008)	
ORANGE	1810179	OAK ACRES MOBILE HOME PARK	90	30	0.043	0	0			0.065			(0.022)	
ORANGE	1810065	OAK LEAF CAMPGROUND 3	35	27	0.02	0.001	0			0.058			(0.038)	
ORANGE	1810010	ORANGEFIELD WATER WORKS 1	189	1	0.08	0	0			0.002				
ORANGE	1810127	PARKVIEW WATER SUPPLY	84	28	0.27	0	0.021	0.0056				0.024		
ORANGE	1810168	PRINT PACK INC	80	1	0.374	0.034	0			0.002				
ORANGE	1810062	RANCHETTE ESTATES	75	25	0.075	0	0			0.054				
ORANGE	1810125	RIVER BEND WATER SYSTEM	54	18	0.089	0.006	0			0.039				
ORANGE	1810034	SAWMILL ADDITION	72	24	0.092	0	0			0.052				
ORANGE	1810177	SUNRISE EAST APARTMENTS	132	44	0.065	0.009	0			0.095			(0.030)	
ORANGE	1810083	SUSAN CIRCLE COMMUNITY WS	51	17	0.043	0	0			0.037				
ORANGE	1810170	TIMER WATER SYSTEM	33	11	0.072	0.003	0			0.024				
ORANGE	1810148	TXDOT COMFORT STATION IH 10 NORTH	600	1	0.087	0.001	0			0.002				
ORANGE	1810176	TXDOT MAINTENANCE FACILITY	35	1	0	0.057	0			0.002			(0.002)	(0.057)
ORANGE	1810150	YEAGER ESTATES ADDITION	60	20	0.079	0.006	0			0.043				
PANOLA	1830005	CLAYTON WSC PLANT 1	132	44	0.034	0.01	0.031	0.0088				0.038	(0.004)	
PANOLA	1830018	DANIEL SPRINGS BAPTIST CAMP	320	36	0.086	0	0.065	0.0072				0.031		
PANOLA	1830020	PIRTLE SCOUT RESERVATION WATER SYSTEM	330	33	0.072	0	0.002	0.0066	(0.005)			0.029		
PANOLA	1830021	TX UTILITIES MINING CO BECKVILLE	250	1	0.964	0	0.126	0.0002				0.001		
PANOLA	1830031	TX UTILITIES MINING CO MARTIN LAKE	50	1	0.964	0	0.126	0.0002				0.001		
RUSK	2010010	CRIMS CHAPEL WSC PLANT NO 1	114	38	0.059	0.014	0.044	0.0076				0.033		
RUSK	2010013	DIRGIN WSC	75	25	0.086	0.001	0.013	0.005				0.022		
RUSK	2010055	KENNEDY ROAD WSC	100	30	0	0.005	0			0.065			(0.065)	(0.005)
SABINE	2020055	TIMBERLANE ESTATES PROPERTY OWNERS ASS	45	30	0.034	0.002	0.008	0.006				0.026		
SABINE	2020054	TIMBERLANE WATER SYSTEM INC	120	48	0.03	0.003	0.02	0.0096				0.041	(0.011)	
SABINE	2020018	USFS INDIAN MOUND RECREATION AREA	25	7	0.389	0	0.033	0.0014				0.006		
SABINE	2020057	USFS LAKEVIEW RECREATION AREA	10	2	0.035	0	0			0.004				
SAN AUGUSTINE	2030013	EL PINON ESTATES WATER SYSTEM	141	47	0.023	0	0			0.102			(0.079)	
SAN AUGUSTINE	2030032	GLEN OAKS WATER SYSTEM	138	46	0.03	0.004	0.021	0.0092				0.040	(0.010)	
SAN AUGUSTINE	2030005	HICKORY HOLLOW WATER SYSTEM	132	44	0.035	0.005	0.034			0.095			(0.060)	
SAN AUGUSTINE	2030015	LA PLAYA SUBDIVISION WATER SYSTEM	33	11	0.022	0	0.005	0.0022				0.010		
SAN AUGUSTINE	2030006	LAKEWOOD WATER SYSTEM	93	31	0.032	0.001	0.011	0.0062				0.027		
SAN AUGUSTINE	2030014	SUTTON HILLS ESTATES	28	18	0.043	0.001	0.005	0.0036				0.016		
SHELBY	2100018	ON SITE WATER WORKS	75	25	0.067	0.012	0			0.054				
SHELBY	2100035	ROLLING HILLS SUBDIVISION	93	31	0	0	0			0.067			(0.067)	
SMITH	2120081	GARDEN VALLEY RESORT INC	90	29	0.144	0.019	0			0.063				
SMITH	2120070	PINE COVE CONFERENCE CENTER	220	40	0.072	0.017	0.014	0.008				0.035		
SMITH	2120090	PINE COVE RANCH CAMP	490	10	0.043	0.013	0.03	0.002				0.009		
SMITH	2120071	PINE COVE TOWERS CAMP	120	20	0.043	0.009	0.006	0.004				0.017		
TRINITY	2280036	NIGTON WAKEFIELD WSC	25	10	0	0	0			0.022			(0.022)	
TYLER	2290021	LAKESIDE WATER SUPPLY 1	111	37	0.04	0.003	0			0.080			(0.040)	
TYLER	2290039	LAKESIDE WATER SUPPLY 2	99	33	0.04	0.003	0			0.071			(0.031)	
TYLER	2290040	LAKESIDE WATER SUPPLY 3	90	30	0.035	0.002	0			0.065			(0.030)	
TYLER	2290041	LAKESIDE WATER SUPPLY 4	99	33	0.04	0.003	0			0.071			(0.031)	
TYLER	2290042	LAKESIDE WATER SUPPLY 5	117	39	0.046	0.005	0			0.084			(0.038)	
TYLER	2290027	MONT NECHES LAKE ESTATES	78	26	0.072	0.005	0			0.056				
TYLER	2290043	TOWN BLUFF WATER SYSTEM	48	16	0.05	0.003	0			0.035				
TYLER	2290024	TPWD MARTIN DIES PARK CHEROKEE UNIT	25	6	0.017	0	0			0.013				
TYLER	2290032	USCOE MAGNOLIA RIDGE PARK	85	48	0.069	0.001	0			0.104			(0.035)	
TYLER	2290014	WAYWARD WINDS OASIS LL	87	29	0.075	0.01	0							

County	PWS ID	PWS Name	Population Served	Number of Connections	Total Production (MGD)	Avg Daily Usage (MGD)	Total Storage (MG)	Required Storage, MG	Meets Storage	Required Well Capcity, mgd			Insufficient Production, MGD	Usage > 75% Capacity
										1.5	1	0.6		
TYLER	2290038	WINDMILL MOBILE HOME ESTATES	60	20	0.072	0	0							
50 - 250 Connections (30TAC290.45 (b) (1) (B))														
ANDERSON	10019	CAYUGA WSC	240	80	0.082	0.015	0.02	0.016				0.069	0.013	
ANDERSON	10039	DOGWOOD HILLS EAST	204	68	0	0.019	0	0.0136	(0.014)			0.059	(0.059)	(0.019)
ANDERSON	10038	DOGWOOD HILLS NORTH	189	63	0	0.014	0	0.0126	(0.013)			0.054	(0.054)	(0.014)
ANDERSON	10059	DOGWOOD SPRINGS WSC PLANT 2	375	125	0.144	0.015	0.048	0.025				0.108		
ANDERSON	10054	LAKE IONI WATER SUPPLY	180	60	0.057	0.025	0.02	0.012				0.052		
ANDERSON	10023	MANTALBA WSC	528	176	0.187	0.067	0.043	0.0352				0.152		
ANDERSON	10049	TDCJ ID POWLEDGE	1256	127	0.893	0.334	0.57	0.0254				0.110		
ANGELINA	30102	ANGELINA COUNTY FWSD 1	573	191	0	0.31	0	0.0382	(0.038)			0.165	(0.165)	(0.310)
ANGELINA	30017	BEULAH WSC	618	206	0.418	0.035	0.04	0.0412	(0.001)			0.178		
ANGELINA	30015	FORT STANELY AREA WATER UTILITY	216	72	0.097	0	0.021	0.0144				0.062		
ANGELINA	30042	LAKEVIEW RV PARK	150	50	0.007	0	0.005	0.01	(0.005)			0.043	(0.036)	
ANGELINA	30031	LUFKIN STATE SCHOOL	1300	65	0.648	0.092	0.22	0.013				0.056		
ANGELINA	30027	PRAIRIE GROVE WSC	603	201	0.068	0.055	0.02	0.0402	(0.020)			0.174	(0.106)	(0.004)
ANGELINA	30053	TX AIRSTREAM HARBOR INC WATER CO	216	72	0.078	0.003	0.02	0.0144				0.062		
ANGELINA	30006	WALNUT RIDGE ESTATES WATER SYSTEM	195	65	0.058	0.005	0.009	0.013	(0.004)			0.056		
CHEROKEE	370051	CUNEY RURAL WATER SUPPLY	234	78	0.14	0.021	0.088	0.0156				0.067		
CHEROKEE	370052	EAGLES BLUFF	171	57	0.432	0.042	0.03	0.0114				0.049		
CHEROKEE	370019	FOREST WSC	501	167	0.158	0.031	0.052	0.0334				0.144		
CHEROKEE	370022	IRON HILL WSC	375	125	0	0.024	0.064	0.025				0.108	(0.108)	(0.024)
CHEROKEE	370024	MAYDELLE WSC	711	237	0.245	0.048	0.159	0.0474				0.205		
CHEROKEE	370027	NEW CONCORD WSC	333	111	0.14	0.024	0.02	0.0222	(0.002)			0.096		
CHEROKEE	370039	REKLAW WSC	576	192	0.266	0.049	0.073	0.0384				0.166		
CHEROKEE	370037	RUSK STATE HOSPITAL	785	71	0.806	0.081	0.8	0.0142				0.061		
HARDIN	1000061	COUNTRYWOOD WATER SYSTEM	417	139	0.171	0.029	0.04	0.0278				0.120		
HARDIN	1000037	ENCHANTED FOREST	312	103	0.154	0.027	0.021	0.0206				0.089		
HARDIN	1000030	QUAIL VALLEY ESTATES MOBILE HOME	210	70	0.216	0.007	0	0.014	(0.014)			0.060		
HENDERSON	1070176	CAPE TRANQUILITY SYSTEM	189	63	0.101	0.016	0.015	0.0126				0.054		
HENDERSON	1070228	CRS WSC	342	114	0.098	0.033	0.044	0.0228				0.098	(0.000)	
HENDERSON	1070197	LAKE PALESTINE CAMPGROUND	234	78	0.021	0.003	0.001	0.0156	(0.015)			0.067	(0.046)	
HENDERSON	1070059	LAKE UTILITY CO	318	106	0.108	0.015	0.044	0.0212				0.092		
HENDERSON	1070009	LAKEWOOD WATER EAST	276	92	0.23	0	0.03	0.0184				0.079		
HENDERSON	1070039	LOLLIPOP WATER WORKS INC	234	78	0.156	0.013	0.046	0.0156				0.067		
HENDERSON	1070165	MICHAELS COVE WATER SUPPLY	186	63	0.075	0.011	0.015	0.0126				0.054		
HENDERSON	1070174	PARKSIDE SHORES WATER SYSTEM	444	148	0.225	0.024	0.065	0.0296				0.128		
HENDERSON	1070162	PARTICIPATION DEVELOPMENT OF TEXAS PINNA	555	188	0.16	0.034	0.091	0.0376				0.162	(0.002)	
HENDERSON	1070151	POINT ROYAL WATER SYSTEM	171	57	0.072	0.012	0.023	0.0114				0.049		
HENDERSON	1070234	POYNOR COMMUNITY WSC	720	240	0.266	0.059	0.12	0.048				0.207		
HENDERSON	1070222	TPWD PURTIS CREEK STATE PARK	25	82	0.088	0.005	0.025	0.0164				0.071		
HENDERSON	1070032	UNION HILL WSC	456	152	0.187	0.065	0.064	0.0304				0.131		
HOUSTON	1130011	CITY OF KENARD	534	178	0.327	0.081	0.066	0.0356				0.154		
HOUSTON	1130020	RATCLIFF WSC	342	114	0.17	0.028	0.044	0.0228				0.098		
JASPER	1210048	CITY OF BROWNDELL	330	110	0.314	0.044	0.04	0.022				0.095		
JASPER	1210019	COUGAR COUNTRY WATER SYSTEM	270	90	0.192	0	0.024	0.018				0.078		
JASPER	1210011	EVADALE WATER SYSTEM	705	239	0.824	0.062	0.096	0.0478				0.206		
JASPER	1210012	FOREST HILLS WATER SUPPLY	390	130	0.152	0.017	0.021	0.026	(0.005)			0.112		
JASPER	1210013	HARRISBURG WSC	156	52	0.05	0.021	0.015	0.0104				0.045		
JASPER	1210004	HOLLY HUFF WSC	744	248	0.331	0.089	0.098	0.0496				0.214		
JASPER	1210054	TPWD MARTIN DIES STATE PARK HEN HOUSE	381	127	0.086	0.005	0.02	0.0254	(0.005)			0.110	(0.024)	
JASPER	1210055	TPWD MARTIN DIES STATE PARK WALNUT RIDGE	327	109	0.072	0.004	0.02	0.0218	(0.002)			0.094	(0.022)	
JASPER	1210064	UPPER JASPER COUNTY WATER AUTHORITY 2	624	208	0.497	0.046	0.162	0.0416				0.180		
JASPER	1210040	USCOE SANDY CREEK PARK 1	80	64	0.104	0.003	0	0.0128	(0.013)			0.055		
JASPER	1210007	WESTWOOD WSC	447	149	0.122	0.02	0.042	0.0298				0.129	(0.007)	
JEFFERSON	1230020	CARDINAL MEADOWS IMPROVEMENT DISTRICT	159	56	0	0.011	0	0.0112	(0.011)			0.048	(0.048)	(0.011)
JEFFERSON	1230025	HAMSHIRE COMMUNITY WSC	207	69	0.202	0.015	0.02	0.0138				0.060		

County	PWS ID	PWS Name	Population Served	Number of Connections	Total Production (MGD)	Avg Daily Usage (MGD)	Total Storage (MG)	Required Storage, MG	Meets Storage	Required Well Capcity, mgd			Insufficient Production, MGD	Usage > 75% Capacity
										1.5	1	0.6		
JEFFERSON	1230086	NORTHWEST FOREST MUD	642	214	0.123	0.045	0	0.0428	(0.043)			0.185	(0.062)	
NACOGDOCHES	1740012	LIBBY WSC	525	175	0.397	0.056	0.13	0.035				0.151		
NACOGDOCHES	1740013	LILBERT LOONEYVILLE WSC	516	172	0.273	0.059	0.05	0.0344				0.149		
NACOGDOCHES	1740029	NACOGDOCHES COUNTY MUD 1	123	64	0	0.018	0	0.0128	(0.013)			0.055	(0.055)	(0.018)
NACOGDOCHES	1740018	SACUL WSC	516	172	0.228	0.046	0.06	0.0344				0.149		
NEWTON	1760024	ARTESIAN SPRINGS	300	66	0	0	0	0.0132	(0.013)			0.057	(0.057)	
NEWTON	1760008	BON WIER WSC	602	201	0.305	0.075	0.052	0.0402				0.174		
NEWTON	1760023	JAMESTOWN WSC	558	186	0.266	0.05	0.079	0.0372				0.161		
NEWTON	1760015	TALL TIMBERS WSC	258	86	0.076	0.013	0.028	0.0172				0.074		
ORANGE	1810154	CHASE HOLLOW WATER SYSTEM	687	229	0.328	0.035	0.065	0.0458				0.198		
ORANGE	1810060	COUNTRY SQUIRE WATER & SEWER INC	714	238	0.489	0.073	0.084	0.0476				0.206		
ORANGE	1810117	EVERGREEN PARK HICKORY HILLS WATER SYSTI	480	160	0.288	0.035	0.031	0.032	(0.001)			0.138		
ORANGE	1810076	HI HO ACRES SUBDIVISION	258	86	0.176	0	0.022	0.0172				0.074		
ORANGE	1810059	KINARD ESTATES	285	95	0.137	0.154	0.032	0.019				0.082		(0.051)
ORANGE	1810015	LONGFORD PLACE WATER SYSTEM	279	93	0.095	0.032	0.042	0.0186				0.080		
ORANGE	1810015	LONGFORD PLACE WATER SYSTEM	279	93	0.095	0.032	0.042	0.0186				0.080		
ORANGE	1810039	OAK LEAF CAMPGROUND 1	210	70	0.14	0.003	0	0.014	(0.014)			0.060		
ORANGE	1810103	SUGAR PINES MHP	156	52	0.118	0	0.018	0.0104				0.045		
ORANGE	1810175	WATERWOOD ESTATES	177	59	0.252	0.024	0.05	0.0118				0.051		
PANOLA	1830017	A & P WSC PUMP 1	570	190	0.081	0.035	0.065	0.038				0.164	(0.083)	
PANOLA	1830030	CLAYTON WSC PLANT3	306	102	0.144	0.02	0.032	0.0204				0.088		
PANOLA	1830006	DEBERRY WSC	666	222	0.369	0.089	0.168	0.0444				0.192		
PANOLA	1830007	FAIRPLAY WSC	666	222	0.37	0.052	0.128	0.0444				0.192		
PANOLA	1830010	MURVAUL WSC	711	237	0.239	0.023	0.061	0.0474				0.205		
PANOLA	1830019	RIDERVILLE WSC	744	248	0	0.06	0.04	0.0496	(0.010)			0.214	(0.214)	(0.060)
PANOLA	1830027	SOUTH MURVAUL WSC	534	178	0.72	0.025	0.138	0.0356				0.154		
POLK	1870126	DALLARDSVILLE SEGNO WSC	501	225	0.158	0	0.04	0.045	(0.005)			0.194	(0.036)	
POLK	1870125	MOSCOW WSC 2	405	147	0.393	0.026	0.035	0.0294				0.127		
POLK	1870004	WOODS CREEK WSC	282	94	0.108	0.019	0.015	0.0188	(0.004)			0.081		
RUSK	2010008	CHURCH HILL WSC	387	129	0.094	0.036	0.022	0.0258	(0.004)			0.111	(0.017)	
RUSK	2010058	CROSS ROADS WSC GREENWOOD RANCH ME	261	87	0.035	0.027	0	0.0174	(0.017)			0.075	(0.040)	(0.001)
RUSK	2010020	LANEVILLE WSC PLANT 1	225	75	0.098	0.016	0.06	0.015				0.065		
RUSK	2010036	LEVERETTS CHAPEL WSC	510	170	0.288	0.058	0.055	0.034				0.147		
RUSK	2010025	NEW PROSPECT WSC PLANT 1	636	212	0.418	0.095	0.075	0.0424				0.183		
RUSK	2010028	OAKLAND WSC	198	66	0.088	0.015	0.02	0.0132				0.057		
RUSK	2010007	PINE HILL CHAPMAN WSC	495	165	0.374	0.028	0.042	0.033				0.143		
RUSK	2010030	PLEASANT HILL WSC	675	225	0.305	0.046	0.055	0.045				0.194		
RUSK	2010031	PRICE WSC	735	245	0.307	0.06	0.1	0.049				0.212		
RUSK	2010042	SHAN D WATER SUPPLY	195	65	0.065	0.018	0.017	0.013				0.056		
RUSK	2010049	SOUTH RUSK COUNTY WSC COMPTON MCKNIGH	531	177	0.194	0.046	0.035	0.0354	(0.000)			0.153		
RUSK	2010052	TPWD MARTIN CREEK STATE PARK	900	101	0.072	0.006	0.06	0.0202				0.087	(0.015)	
SABINE	2020004	BROOKELAND WATER SUPPLY	744	203	0.153	0.056	0.063	0.0406				0.175	(0.022)	
SABINE	2020013	EL CAMINO BAY WATER SYSTEM	363	121	0.102	0.01	0.025	0.0242				0.105	(0.003)	
SABINE	2020028	FRONTIER PARK MARINA	360	120	0.092	0.013	0.022	0.024	(0.002)			0.104	(0.012)	
SABINE	2020027	MID LAKE KAMPGROUND	50	126	0.144	0	0.025	0.0252	(0.000)			0.109		
SABINE	2020020	PENDLETON UTILITY CORP.	552	184	0.508	0.041	0.038	0.0368				0.159		
SABINE	2020050	SHAWNEE SHORES	246	106	0.099	0.007	0.021	0.0212	(0.000)			0.092		
SAN AUGUSTINE	2030010	ANTHONY HARBOR SUBDIVISION	156	52	0.094	0.005	0.013	0.0104				0.045		
SAN AUGUSTINE	2030002	BLAND LAKE RURAL WSC	507	169	0.202	0.047	0.064	0.0338				0.146		
SAN AUGUSTINE	2030003	CITY OF BROADDUS	537	179	0.295	0.047	0.08	0.0358				0.155		
SAN AUGUSTINE	2030011	PARKWAY WATER SYSTEM	447	149	0.252	0.016	0.042	0.0298				0.129		
SAN AUGUSTINE	2030023	POWELL POINT WATER SYSTEM	456	152	0.094	0.021	0.063	0.0304				0.131	(0.037)	
SHELBY	2100032	BUENA VISTA WSC	672	224	0.23	0.054	0.101	0.0448				0.194		
SHELBY	2100034	HASLAM COMMUNITY	351	117	0	0.025	0	0.0234	(0.023)			0.101	(0.101)	(0.025)
SHELBY	2100009	HUBER WSC	405	135	0.158	0.042	0.045	0.027				0.117		
SHELBY	2100012	PAXTON WSC	714	238	0.348	0.063	0.06	0.0476				0.206		

County	PWS ID	PWS Name	Population Served	Number of Connections	Total Production (MGD)	Avg Daily Usage (MGD)	Total Storage (MG)	Required Storage, MG	Meets Storage	Required Well Capcity, mgd			Insufficient Production, MGD	Usage > 75% Capacity
										1.5	1	0.6		
SHELBY	2100031	PAXTON WSC JACKSON PLANT	711	237	0.207	0.054	0.05	0.0474				0.205		
SHELBY	2100017	TENNESSEE WSC	417	139	0.305	0.03	0.06	0.0278				0.120		
SMITH	2120007	CARROLL WSC WELL 3	456	152	0.317	0.049	0.03	0.0304	(0.000)			0.131		
SMITH	2120097	EAST LAKE WOODS	243	81	0.096	0.023	0.044	0.0162				0.070		
SMITH	2120034	MOUNT SYLVAN WATER SYSTEM	510	170	0.23	0.04	0.042	0.034				0.147		
SMITH	2120062	SOUTHPARK MOBILE HOME ESTATES	246	82	0.05	0.011	0.02	0.0164				0.071	(0.021)	
TRINITY	2280006	NOGALUS CENTRALIA WSC	660	220	0.132	0.038	0.055	0.044				0.190	(0.058)	
TRINITY	2280010	WOODLAKE JOSSERAND WSC	732	244	0.298	0.053	0.093	0.0488				0.211		
TYLER	2290015	BARLOW LAKE ESTATES	198	66	0.105	0.018	0	0.0132	(0.013)			0.057		
TYLER	2290007	CYPRESS CREEK WSC	735	245	0.367	0.087	0.07	0.049				0.212		
TYLER	2290004	DOUCETTE WATER SYSTEM	426	142	0.177	0.035	0.022	0.0284	(0.006)			0.123		
Over 250 Connections (30TAC290.45 (b) (1) (D))														
ANDERSON	10046	ANDERSON COUNTY CEDAR CREEK WSC	1077	359	0.374	0.077	0.216	0.0718				0.310		
ANDERSON	10015	BBS WSC	1188	396	0.412	0.123	0.115	0.0792				0.342		
ANDERSON	10021	LONE PINE WSC	963	321	0.36	0.083	0.119	0.0642				0.277		
ANDERSON	10047	NORWOOD WSC	1089	363	0.789	0.101	0.132	0.0726				0.314		
ANDERSON	10026	PLEASANT SPRINGS WSC	804	268	0.432	0.193	0.055	0.0536				0.232		
ANDERSON	10029	TUCKER WSC	1422	474	0.497	0.134	0.149	0.0948				0.410		
CHEROKEE	370014	AFTON GROVE WSC	1158	386	0	0.129	0.156	0.0772				0.334	(0.334)	(0.129)
CHEROKEE	370029	BLACKJACK WSC	825	275	0.373	0.121	0.08	0.055				0.238		
CHEROKEE	370017	DIALVILLE OAKLAND WSC	825	275	0.274	0.059	0.04	0.055	(0.015)			0.238		
CHEROKEE	370020	GALLATIN WSC	876	292	1.141	0.052	0.093	0.0584				0.252		
CHEROKEE	370021	GUM CREEK WSC	1269	423	0	0.128	0.15	0.0846				0.365	(0.365)	(0.128)
CHEROKEE	370031	RUSK RURAL WSC CROCKETT ST PLANT	1383	461	0.252	0.127	0.164	0.0922				0.398	(0.146)	
CHEROKEE	370033	STRYKER LAKE WSC	816	272	0.245	0.098	0.056	0.0544				0.235		
HARDIN	1000016	HARDIN COUNTY WCID 1	1185	409	1.209	0.177	0.149	0.0818				0.353		
HARDIN	1000018	WILDWOOD RESORT CITY	1377	597	1.432	0.117	0.167	0.1194				0.516		
HENDERSON	1070074	CARRIZO WATER CORP FOREST GROVE	837	279	0.363	0.054	0.126	0.0558				0.241		
HENDERSON	1070211	PHOENIX WATER WORKS	780	260	0.301	0.068	0.152	0.052				0.225		
HENDERSON	1070071	THREE COMMUNITY WSC	768	256	0.422	0.25	0.084	0.0512				0.221		
HENDERSON	1070085	WESTWOOD BEACH	1122	374	0.559	0.053	0.162	0.0748				0.323		
JASPER	1210015	RURAL WSC	1320	440	0.605	0.098	0.94	0.088				0.380		
JASPER	1210063	SOUTH JASPER WSC	1119	373	0.266	0.064	0.146	0.0746				0.322	(0.056)	
JASPER	1210016	SOUTH KIRBYVILLE RURAL WSC	927	309	0.549	0.075	0.116	0.0618				0.267		
JEFFERSON	1230037	COUNTRY SIDE ESTATES	1452	484	0	0	0	0.0968	(0.097)			0.418	(0.418)	
NEWTON	1760003	BURKEVILLE WSC	942	314	0.373	0.062	0.08	0.0628				0.271		
NEWTON	1760002	TOLEDO VILLAGE WSC	1500	500	0.278	0.064	0.084	0.1	(0.016)			0.432	(0.154)	
ORANGE	1810140	CYPRESS BAYOU WATER & SEWER INC	834	278	0.359	0.079	0.084	0.0556				0.240		
PANOLA	1830029	CLAYTON WSC PLANT 2	816	272	0.1	0.076	0.021	0.0544	(0.033)			0.235	(0.135)	(0.001)
PANOLA	1830025	DEADWOOD WSC	915	305	0.325	0.084	0.325	0.061				0.264		
PANOLA	1830008	GARY WSC	846	282	0.18	0.057	0.05	0.0564	(0.006)			0.244	(0.064)	
PANOLA	1830009	HOLLANDS QUARTER WSC	1164	388	0.094	0.089	0.307	0.0776				0.335	(0.241)	(0.019)
PANOLA	1830012	REHOBETH WSC	975	325	0	0.065	0.111	0.065				0.281	(0.281)	(0.065)
PANOLA	1830014	ROCK HILL WSC	969	288	0.158	0.084	0.138	0.0576				0.249	(0.091)	
RUSK	2010004	ARLAM CONCORD WSC	1050	350	0.318	0.079	0.084	0.07				0.302		
RUSK	2010012	CRYSTAL FARMS WSC	822	274	0.389	0.067	0.06	0.0548				0.237		
RUSK	2010014	EBENEZER WSC	786	262	0.36	0.079	0.153	0.0524				0.226		
RUSK	2010017	JACOBS WSC PLANTS 1 & 2	816	272	0.261	0.089	0.06	0.0544				0.235		
SABINE	2020014	BEECHWOOD WSC	1131	443	0.096	0.058	0.295	0.0886				0.383	(0.287)	
SAN AUGUSTINE	2030004	DENNING WSC	750	253	0.266	0.106	0.075	0.0506				0.219		
SAN AUGUSTINE	2030007	SAN AUGUSTINE RURAL WSC	1305	435	0	0.118	0.086	0.087	(0.001)			0.376	(0.376)	(0.118)
SHELBY	2100005	CHOICE WSC	815	326	0.672	0.117	0.178	0.0652				0.282		
SHELBY	2100006	EAST LAMAR WSC	715	286	0.31	0.081	0.07	0.0572				0.247		
SHELBY	2100008	FIVE WAY WSC	1371	457	0.495	0.15	0.2	0.0914				0.395		
SHELBY	2100007	FLAT FORK WSC	879	293	0.338	0.097	0.088	0.0586				0.253		
SHELBY	2100011	MCCLELLAND WSC	1365	546	0.388	0.19	0.194	0.1092				0.472	(0.084)	

County	PWS ID	PWS Name	Population Served	Number of Connections	Total Production (MGD)	Avg Daily Usage (MGD)	Total Storage (MG)	Required Storage, MG	Meets Storage	Required Well Capcity, mgd			Insufficient Production, MGD	Usage > 75% Capacity
										1.5	1	0.6		
SHELBY	2100013	SAND HILLS WSC	1308	436	0.13	0.156	0.294	0.0872				0.377	(0.247)	(0.059)
SHELBY	2100014	SHELBYVILLE WSC	927	309	0.266	0.151	0.078	0.0618				0.267	(0.001)	
SMITH	2120008	COMMUNITY WATER CO MONTGOMERY GARDEN	783	261	0.23	0.057	0.123	0.0522				0.226		
SMITH	2120064	LAKEWAY HARBOR	1086	362	0.288	0.063	0.084	0.0724				0.313	(0.025)	
SMITH	2120035	PINE TRAIL SHORES	810	270	0.482	0.055	0.084	0.054				0.233		
SMITH	2120027	WRIGHT CITY WSC 1	1140	380	0.379	0.078	0.084	0.076				0.328		
TRINITY	2280005	CENTERVILLE WSC	1200	400	0.428	0.082	0.08	0.08				0.346		
TYLER	2290002	CHESTER WSC	1323	441	0.612	0.133	0.171	0.0882				0.381		
TYLER	2290011	SENECA WSC	1083	361	0.5	0.126	0.18	0.0722				0.312		
TYLER	2290012	WHITE TAIL RIDGE LAKE ESTATES	363	121	0.213	0.038	0.024	0.0242	(0.000)			0.105		

Appendix B

Preliminary List of Small Users with Apparent Water Supply Problems

Non-compliance with TCEQ Capacity Limits for Water Supply - East Texas Regional Water Planning Area Water Users with less than 1500 population

County	PWS ID	PWS Name	Population Served	Number of Connections	Total Production (MGD)	Avg Daily Usage (MGD)	Total Storage (MG)	Storage Shortage, MG	Insufficient Production, MGD	Usage > 75% Capacity, MGD
	Less than 50 connections (30TAC290.45(b)(1)(A) or (B))									
ANGELINA	30092	CASSELS BOYKIN COUNTY PARK	25	20	0.032	0	0		(0.011)	
ANGELINA	30036	KERVINS RV PARK	111	37	0.012	0	0		(0.068)	
ANGELINA	30099	MATTIES PLACE	36	12	0.022	0	0		(0.004)	
ANGELINA	30091	USCOE HANKS CREEK PARK	58	47	0.043	0	0		(0.059)	
HARDIN	1000053	BIG THICKET RETREAT WATER SYSTEM	102	34	0.058	0.009	0		(0.015)	
HARDIN	1000071	LITTLE BIG HORN SERVICES	81	27	0.041	0.006	0		(0.017)	
HARDIN	1000060	NORTHWOODS SUBDIVISION	117	39	0.08	0	0		(0.004)	
HENDERSON	1070199	LA POYNOR ISD	550	48	0.086	0	0		(0.018)	
JEFFERSON	1230074	MOORE WATER SYSTEM	102	34	0.05	0	0		(0.023)	
ORANGE	1810178	CAPRI AND GALL STREETS	66	22	0.032	0	0		(0.016)	
ORANGE	1810077	MOBILE ESTATES MOBILE HOME PARK	56	33	0.063	0.005	0		(0.008)	
ORANGE	1810179	OAK ACRES MOBILE HOME PARK	90	30	0.043	0	0		(0.022)	
ORANGE	1810065	OAK LEAF CAMPGROUND 3	35	27	0.02	0.001	0		(0.038)	
ORANGE	1810177	SUNRISE EAST APARTMENTS	132	44	0.065	0.009	0		(0.030)	
PANOLA	1830005	CLAYTON WSC PLANT 1	132	44	0.034	0.01	0.031		(0.004)	
SABINE	2020054	TIMBERLANE WATER SYSTEM INC	120	48	0.03	0.003	0.02		(0.011)	
SAN AUGUSTINE	2030032	GLEN OAKS WATER SYSTEM	138	46	0.03	0.004	0.021		(0.010)	
SAN AUGUSTINE	2030005	HICKORY HOLLOW WATER SYSTEM	132	44	0.035	0.005	0.034		(0.060)	
TYLER	2290021	LAKESIDE WATER SUPPLY 1	111	37	0.04	0.003	0		(0.040)	
TYLER	2290039	LAKESIDE WATER SUPPLY 2	99	33	0.04	0.003	0		(0.031)	
TYLER	2290040	LAKESIDE WATER SUPPLY 3	90	30	0.035	0.002	0		(0.030)	
TYLER	2290041	LAKESIDE WATER SUPPLY 4	99	33	0.04	0.003	0		(0.031)	
TYLER	2290042	LAKESIDE WATER SUPPLY 5	117	39	0.046	0.005	0		(0.038)	
TYLER	2290032	USCOE MAGNOLIA RIDGE PARK	85	48	0.069	0.001	0		(0.035)	
50 - 250 Connections (30TAC290.45 (b) (1) (C))										
ANGELINA	30017	BEULAH WSC	618	206	0.418	0.035	0.04	(0.001)		
ANGELINA	30042	LAKEVIEW RV PARK	150	50	0.007	0	0.005	(0.005)	(0.036)	
ANGELINA	30027	PRAIRIE GROVE WSC	603	201	0.068	0.055	0.02	(0.020)	(0.106)	(0.004)
ANGELINA	30006	WALNUT RIDGE ESTATES WATER SYSTEM	195	65	0.058	0.005	0.009	(0.004)		
CHEROKEE	370027	NEW CONCORD WSC	333	111	0.14	0.024	0.02	(0.002)		
HARDIN	1000030	QUAIL VALLEY ESTATES MOBILE HOME	210	70	0.216	0.007	0	(0.014)		
HENDERSON	1070228	CRS WSC	342	114	0.098	0.033	0.044		(0.000)	
HENDERSON	1070197	LAKE PALESTINE CAMPGROUND	234	78	0.021	0.003	0.001	(0.015)	(0.046)	
HENDERSON	1070162	PARTICIPATION DEVELOPMENT OF TEXAS PINNA	555	188	0.16	0.034	0.091		(0.002)	
JASPER	1210012	FOREST HILLS WATER SUPPLY	390	130	0.152	0.017	0.021	(0.005)		
JASPER	1210054	TPWD MARTIN DIES STATE PARK HEN HOUSE	381	127	0.086	0.005	0.02	(0.005)	(0.024)	
JASPER	1210055	TPWD MARTIN DIES STATE PARK WALNUT RIDGE	327	109	0.072	0.004	0.02	(0.002)	(0.022)	
JASPER	1210040	USCOE SANDY CREEK PARK 1	80	64	0.104	0.003	0	(0.013)		
JASPER	1210007	WESTWOOD WSC	447	149	0.122	0.02	0.042		(0.007)	
JEFFERSON	1230086	NORTHWEST FOREST MUD	642	214	0.123	0.045	0	(0.043)	(0.062)	
ORANGE	1810117	EVERGREEN PARK HICKORY HILLS WATER SYST	480	160	0.288	0.035	0.031	(0.001)		
ORANGE	1810059	KINARD ESTATES	285	95	0.137	0.154	0.032			(0.051)
ORANGE	1810039	OAK LEAF CAMPGROUND 1	210	70	0.14	0.003	0	(0.014)		
PANOLA	1830017	A & P WSC PUMP 1	570	190	0.081	0.035	0.065		(0.083)	
POLK	1870126	DALLARDSVILLE SEGNO WSC	501	225	0.158	0	0.04	(0.005)	(0.036)	

Non-compliance with TCEQ Capacity Limits for Water Supply - East Texas Regional Water Planning Area Water Users with less than 1500 population

County	PWS ID	PWS Name	Population Served	Number of Connections	Total Production (MGD)	Avg Daily Usage (MGD)	Total Storage (MG)	Storage Shortage, MG	Insufficient Production, MGD	Usage > 75% Capacity, MGD
POLK	1870004	WOODS CREEK WSC	282	94	0.108	0.019	0.015	(0.004)		
RUSK	2010008	CHURCH HILL WSC	387	129	0.094	0.036	0.022	(0.004)	(0.017)	
RUSK	2010058	CROSS ROADS WSC GREENWOOD RANCH ME	261	87	0.035	0.027	0	(0.017)	(0.040)	(0.001)
RUSK	2010049	SOUTH RUSK COUNTY WSC COMPTON MCKNIGH	531	177	0.194	0.046	0.035	(0.000)		
RUSK	2010052	TPWD MARTIN CREEK STATE PARK	900	101	0.072	0.006	0.06		(0.015)	
SABINE	2020004	BROOKELAND WATER SUPPLY	744	203	0.153	0.056	0.063		(0.022)	
SABINE	2020013	EL CAMINO BAY WATER SYSTEM	363	121	0.102	0.01	0.025		(0.003)	
SABINE	2020028	FRONTIER PARK MARINA	360	120	0.092	0.013	0.022	(0.002)	(0.012)	
SABINE	2020027	MID LAKE KAMPGROUND	50	126	0.144	0	0.025	(0.000)		
SABINE	2020050	SHAWNEE SHORES	246	106	0.099	0.007	0.021	(0.000)		
SAN AUGUSTINE	2030023	POWELL POINT WATER SYSTEM	456	152	0.094	0.021	0.063		(0.037)	
SMITH	2120007	CARROLL WSC WELL 3	456	152	0.317	0.049	0.03	(0.000)		
SMITH	2120062	SOUTHPARK MOBILE HOME ESTATES	246	82	0.05	0.011	0.02		(0.021)	
TRINITY	2280006	NOGALUS CENTRALIA WSC	660	220	0.132	0.038	0.055		(0.058)	
TYLER	2290015	BARLOW LAKE ESTATES	198	66	0.105	0.018	0	(0.013)		
TYLER	2290004	DOUCETTE WATER SYSTEM	426	142	0.177	0.035	0.022	(0.006)		
Over 250 Connections (30TAC290.45 (b) (1) (D))										
CHEROKEE	370017	DIALVILLE OAKLAND WSC	825	275	0.274	0.059	0.04	(0.015)		
CHEROKEE	370031	RUSK RURAL WSC CROCKETT ST PLANT	1383	461	0.252	0.127	0.164		(0.146)	
JASPER	1210063	SOUTH JASPER WSC	1119	373	0.266	0.064	0.146		(0.056)	
NEWTON	1760002	TOLEDO VILLAGE WSC	1500	500	0.278	0.064	0.084	(0.016)	(0.154)	
PANOLA	1830029	CLAYTON WSC PLANT 2	816	272	0.1	0.076	0.021	(0.033)	(0.135)	(0.001)
PANOLA	1830008	GARY WSC	846	282	0.18	0.057	0.05	(0.006)	(0.064)	
PANOLA	1830009	HOLLANDS QUARTER WSC	1164	388	0.094	0.089	0.307		(0.241)	(0.019)
PANOLA	1830014	ROCK HILL WSC	969	288	0.158	0.084	0.138		(0.091)	
SABINE	2020014	BEECHWOOD WSC	1131	443	0.096	0.058	0.295		(0.287)	
SHELBY	2100011	MCCLELLAND WSC	1365	546	0.388	0.19	0.194		(0.084)	
SHELBY	2100013	SAND HILLS WSC	1308	436	0.13	0.156	0.294		(0.247)	(0.059)
SHELBY	2100014	SHELBYVILLE WSC	927	309	0.266	0.151	0.078		(0.001)	
SMITH	2120064	LAKEWAY HARBOR	1086	362	0.288	0.063	0.084		(0.025)	
TYLER	2290012	WHITE TAIL RIDGE LAKE ESTATES	363	121	0.213	0.038	0.024	(0.000)		

Appendix C

Preliminary List of Small Users with Apparent Water Quality Problems

Drinking Water Supply Contaminant Violation in East Texas Regional Water Planing Area

PWS_ID	PWS_NAME	Contaminant Violation	County
0010019	CAYUGA WSC	Trihalomethanes	Anderson
0030023	HUDSON WSC	Trihalomethanes	Angelina
0030103	USFS ZAVALLA WORK CENTER	Trihalomethanes	Angelina
0370018	NORTH CHEROKEE WSC	Trihalomethanes	Cherokee
0370019	FOREST WSC	Trihalomethanes & Haloacetic Acids	Cherokee
0370033	STRYKER LAKE WSC	Trihalomethanes	Cherokee
1070019	EAST CEDAR CREEK FWSD B A MCKAY	Trihalomethanes	Henderson
1070069	BEACHWOOD ESTATES & NORTH TRINIDAD	Trihalomethanes & Haloacetic Acids	Henderson
1070167	EAST CEDAR CREEK FWSD BROOKSHIRE	Trihalomethanes	Henderson
1070206	CHEROKEE SHORES WATER SUPPLY	Trihalomethanes & Haloacetic Acids	Henderson
1130038	CONSOLIDATED WSC 287 SOUTH	Trihalomethanes	Houston
1230004	MEEKER MWD	Trihalomethanes	Jefferson
1230048	TOTAL PETRO CHEMICALS USA PORT ART	Trihalomethanes	Jefferson
1740012	LIBBY WSC	Trihalomethanes	Nacogdoches
1810139	CITY OF ROSE CITY	Haloacetic Acids	Orange
1810170	TIMER WATER SYSTEM	Arsenic	Orange
1830008	GARY WSC	Trihalomethanes & Haloacetic Acids	Panola
1870019	BASS BAY INDIAN HILL NO 1	Arsenic	Polk
1870040	INDIAN SPRINGS LAKE ESTATE LL	Gross Alpha and Combined Radium	Polk
1870044	CRYSTAL LAKE ESTATES WATER SYSTEM	Gross Alpha and Combined Radium	Polk
1870065	NATASHA HEIGHTS WATER SYSTEM LL	Arsenic	Polk
1870068	FOREST HILLS WATER SYSTEM LL	Arsenic	Polk
1870076	PARADISE ACRES WATER SYSTEM	Gross Alpha	Polk
1870093	GREEN ACRES	Arsenic	Polk
1870105	TEMPE WSC 1	Arsenic, Gross Alpha and Combined Radium	Polk
1870149	SPRING CREEK PURE UTILITIES	Arsenic	Polk
1870151	TEXAS LANDING UTILITIES	Arsenic	Rusk
2010011	CROSS ROADS WSC	Trihalomethanes	Rusk
2010042	SHAN D WATER SUPPLY	Trihalomethanes	Rusk
2010062	JACOBS WSC PLANT 3 & 4	Trihalomethanes	Rusk

Drinking Water Supply Contaminant Violation in East Texas Regional Water Planing Area

PWS_ID	PWS_NAME	Contaminant Violation	County
2030002	BLAND LAKE RURAL WSC	Trihalomethanes	San Augustine
2030006	LAKEWOOD WATER SYSTEM	Trihalomethanes & Haloacetic Acids	San Augustine
2030007	SAN AUGUSTINE RURAL WSC	Trihalomethanes	San Augustine
2030011	PARKWAY WATER SYSTEM	Trihalomethanes	San Augustine
2030013	EL PINON ESTATES WATER SYSTEM	Trihalomethanes	San Augustine
2030023	POWELL POINT WATER SYSTEM	Trihalomethanes & Haloacetic Acids	San Augustine
2100019	CITY OF HUXLEY	Trihalomethanes & Haloacetic Acids	Shelby
2120001	CITY OF ARP	Trihalomethanes	Smith
2120024	WALNUT GROVE WSC	Trihalomethanes	Smith
2120051	HEIGHTS WATER CO	Trihalomethanes	Smith
2120100	STARRVILLE WSC	Trihalomethanes	Smith
2280037	WHISPERING PINES GOLF CLUB	Trihalomethanes	Trinity
2290012	WHITE TAIL RIDGE LAKES ESTATES	Gross Alpha and Combined Radium	Tyler

Appendix D

Mailout List for Small Users

Entity	Address	City	State	Zip	Contact	Title	Phone Number
		ANDERSON CO.					
Cayuga WSC	P.O. Box 338	Cayuga	TX	75832	David Kelly	President	(903) 449-2637
		ANGELINA CO.					
Beulah WSC	12182 FM 58 Ste 200	Lufkin	TX	75901	Olen Blake	President	(936) 829-4147
US Army Corps of Engineers *[Hanks Creek]*	RR 3 Box 486	Jasper	TX	75951	Ed Shirley	Project Engineer	(409) 384-5716
Kervins RV Park	161 Annas Lange	Zavalla	TX	75980	Arthur Kervin	Owner	(936) 897-2901
Lakeview RV & Motel	5896 State Highway 147	Zavalla	TX	75980	Gordon Rogers	Owner	(936) 897-2107
Prairie Grove WSC	3436 FM 1818	Diboll	TX	75941	Eddie Courtney	General Manager	(936) 829-3429
Walnut Ridge Estates Water System *[See Shelby Co. for USDA Zavalla Work Center]*	P.O. Box 427	Zavalla	TX	75980	Leo Bird	Owner	(936) 897-2323
		CHEROKEE CO.					
Dialville Oakland WSC	P.O. Box 1029	Rusk	TX	75785	Charles Peters	President	(903) 683-8686
Forest WSC	P.O. Box 311	Wells	TX	75976	Kathy Oliver	President	(903) 867-5533
New Concord WSC	P.O. Box 115	Price	TX	75687	James Galloway	President	(903) 842-3615
North Cherokee WSC	P.O. Box 1021	Jacksonville	TX	75766	Oscar McAnally	President	(903) 894-3385
Rusk Rural WSC	P.O. Box 606	Rusk	TX	75785	Ewell Newman	President	(903) 683-6178
Stryker Lake WSC	P.O. Box 156	New Summerfield	TX	75780	Jim Ross	President	(903) 726-3230
		HARDIN CO.					
Little Big Horn Services	8029 FM 92	Silsbee	TX	77656	Dolores Luke	Owner	(409) 384-2669
Water Necessities, Inc. *[Northwoods]*	P.O. Box 62	Vidor	TX	77670	Kelly Brewer	Operator	(409) 769-1176
		HENDERSON CO.					
Lake Palestine Campground *[should have been Lake Palestine Resort]*	P.O. Box 1074	Frankston	TX	75763	Donald Tolner	Owner	(903) 876-2253
La Poynor ISD	13155 US Highway 175E	Larue	TX	75770	Eugene Buford	Superintendent	(903) 876-2373
		HOUSTON CO.					
The Consolidated WSC	P.O. Box 1226	Crockett	TX	75835	Johnny Babb	President	(936) 544-2986
		JASPER CO.					
Brookeland FWSD *[Forest Hill Water Supply]*	P.O. Box 5350	Sam Rayburn	TX	75951	Jerry Shands	General Manager	(409) 698-2100
Texas Parks & Wildlife Department *[Hen House Ridge & Walnut Ridge units of Martin Dies State Park]*	4200 Smith School Road	Austin	TX	78744	Janelle Taylor	TCEQ Coordinator	(512) 389-4665
Westwood WSC	RR 3 Box 519-118A	Jasper	TX	75951	James Gray	President	(409) 384-9785
		JEFFERSON CO.					
Hamshire Community WSC	P.O. Box 417	Hamshire	TX	77622	Steve Rose	President	(409 243-2690
Meeker MWD	807 N Meeker Road	Beaumont	TX	77713	John Cochran	President	(409) 866-6185

[Italicized text not part of mailout address but inserted where needed to identify water system]

Total Fina Petrochemicals, Inc.	P.O. Box 849	Port Arthur	TX	77641	David French	PWTC Process Supvr	(409) 963-6906
		NACOGDOCHES CO.					
Libby WSC	P.O. Box 115	Martinsville	TX	75958	E Walker	Manager	(936) 560-5097
		NEWTON CO.					
Brookeland FWSD *[Toledo Village WSC]*	P.O. Box 5350	Sam Rayburn	TX	75951	Jerry Shands	General Manager	(409) 698-2100
		ORANGE CO.					
Evergreen Park Hickory Hills Water System	1590 N Main St	Vidor	TX	77662	James Manchac	Owner	(409) 769-9555
City of Rose City	370 Rose City Dr.	Vidor	TX	77662	David Bush	Mayor	(409) 769-6809
Water Necessities, Inc. *[Timer, Claire, & Corbett systems]*	P.O. Box 62	Vidor	TX	77670	Kelly Brewer	Operator	(409) 769-9030
		PANOLA CO.					
A & P WSC	P.O. Box 322	Carthage	TX	75633	Jerry Peace	President	(903) 693-5880
Clayton WSC Plant 1 *[& Plant 2]*	P.O. Box 3	Clayton	TX	75637	Mike Pennington	President	(903) 693-2209
Gary WSC	P.O. Box 160	Gary	TX	75643	Walter Craft	President	(903) 685-2479
Rock Hill WSC	P.O. Box 673	Beckville	TX	75631	Jackie Merket	President	(903) 678-2359
		POLK CO.					
Dallardsville Segno WSC	P.O. Box 133	Dallardsville	TX	77332	Sissie Hendrix	President	(936) 563-4494
Lake Livingston Water Supply & SS Corp *[Indian Springs]*	P.O. Box 1149	Livingston	TX	77351	Doyle Lagow	Board President	(936) 327-3107
Woods Creek WSC	2120 US Highway 190W	Livingston	TX	77351	Walter Knebel	President	(409) 563-5354
		RUSK CO.					
Church Hill WSC	P.O. Box 482	Henderson	TX	75653	David Whitehead	President	(903) 889-2178
Cross Roads SUD	P.O. Box 1001	Kilgore	TX	75663	Scott Mason	President	(903) 984-8014
Jacobs WSC	P.O. Box 954	Henderson	TX	75653	Wayne Holland	President	(903) 657-4899
Texas Park & Wildlife Department *[Martin Creek State Park]*	4200 Smith School Road	Austin	TX	78744	Victor Perez	Park Manager	(903) 836-4336
Shan D Water Supply	465 Desirees Trail	Tatum	TX	75691	David Shivers	Owner	(903) 836-2540
South Rusk County WSC	P.O. Box 38	Laneville	TX	75667	Rodney Lewis	President	(903) 863-2124
		SABINE CO.					
Beechwood WSC	120 Eastwood Loop	Hemphill	TX	75948	Michelle Brown	President	(409) 579-3926
El Camino Bay WSC	118 Lakeview Dr.	Hemphill	TX	75948	Jack Clark	Director	(409) 787-2766
Frontier Park Marina	RR 1 Box 1690	Hemphill	TX	75948	Michael Oneill	Owner	(936) 625-4712
Brookeland FWSD *[Shawnee Shores]*	P.O. Box 5350	Sam Rayburn	TX	75951	Jerry Shands	General Manager	(409) 698-2100
Timberlane Water System, Inc.	P.O. Box 1611	Nederland	TX	77627	Thomas Minaldi	Owner	(409) 727-8180
		SAN AUGUSTINE CO.					
Bland Lake Rural WSC	P.O. Box 209	San Augustine	TX	75972	Charles Ponder	President	(936) 288-0489
El Pinon Estates Water System	RR 1 Box 121	Broaddus	TX	75929	Curtis White	Owner	(409) 584-3457

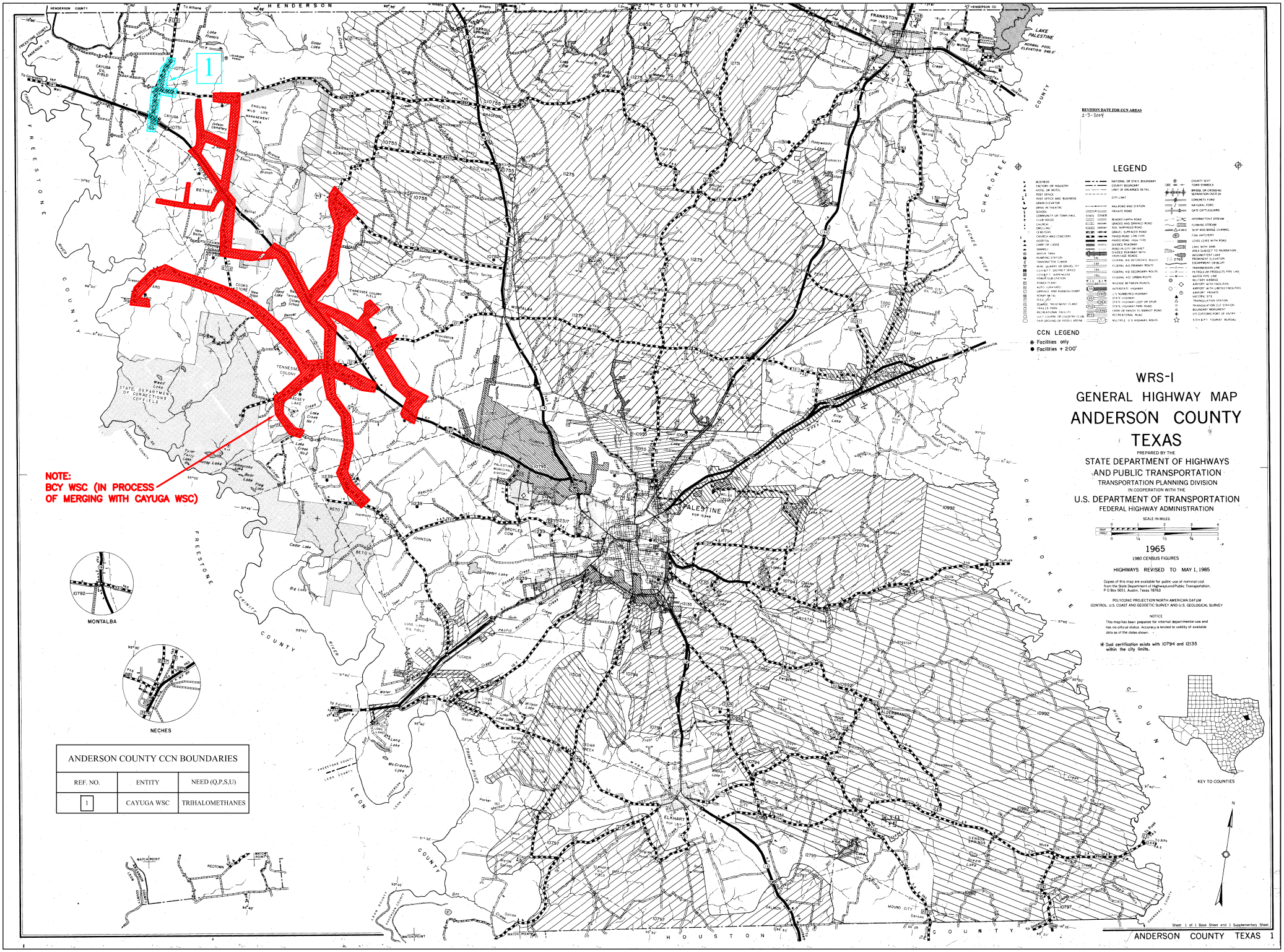
[Italicized text not part of mailout address but inserted where needed to identify water system]

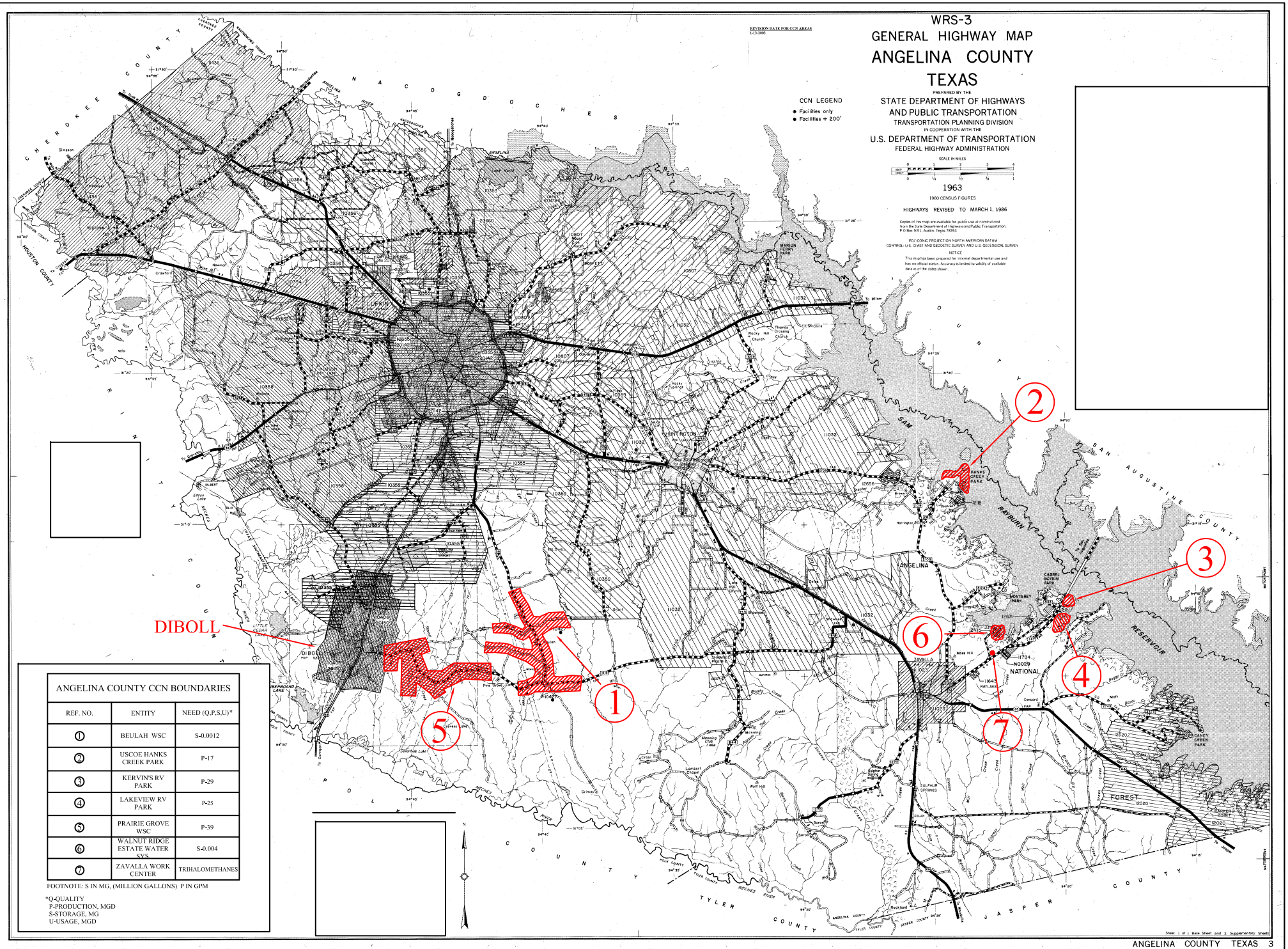
Sam Rayburn Water, Inc. *[Glen Oaks, Hickory Hollow, Lakewood, Parkway, & Powell Point]*	P.O. Box 154322	Lufkin	TX	75915	Don Johnson, Jr.	Owner	
Deep East Texas Electric Coop. Inc. *[San Augustine Rural WSC]*	P.O. Box 209	San Augustine	TX	75972	Charles Sharp	President	
		SHELBY CO.					
City of Huxley	11798 FM 2694	Shelbyville	TX	75973	Larry Vaughn	Mayor	
McClelland WSC	6438 State Highway 87S	Shelbyville	TX	75973	Charles Jones	President	(936) 598-7943
US Department of Agriculture *[Zavalla Work Center; turned out to be located in Angelina Co.]*	415 S. 1st St. Ste 110	Lufkin	TX	75901	Fred Salinas	Forest Supervisor	(409) 639-8501
		SMITH CO.					
City of Arp	P.O. Box 68	Arp	TX	75750	Vernon Bedair	Mayor	(903) 859-6131
Southwest Water Company *[Lakeway Harbor]*	9511 Ranch Rd 620 N	Austin	TX	78726	David Yohe	Regional Mgr.	(512) 335-7580
Alpha Casco *[Southpark Mobile Home Estates]*	13529 State Highway 110 S Lot 127	Tyler	TX	75707	Richard Caswell	President	(903) 534-2830
Walnut Grove WSC	P.O. Box 269	Whitehouse	TX	75791	Hank Gilbert	President	(903) 839-4372
		TYLER CO.					
Lakeside Water Supply 1 *[Lakeside Water Supply 1 ~ 5]*	P.O. Box 697	Doucette	TX	75942	Charles Branch	Owner	(409) 837-5660
Pure Utilities LC *[White Tail Ridge]*	3595 FM 3277	Livingston	TX	77351	MS Jackson	Managing Member	(936) 327-7070

[Italicized text not part of mailout address but inserted where needed to identify water system]

Appendix E

Maps Showing Locations of Small Users and Neighboring System to Which They Could Potentially Connect

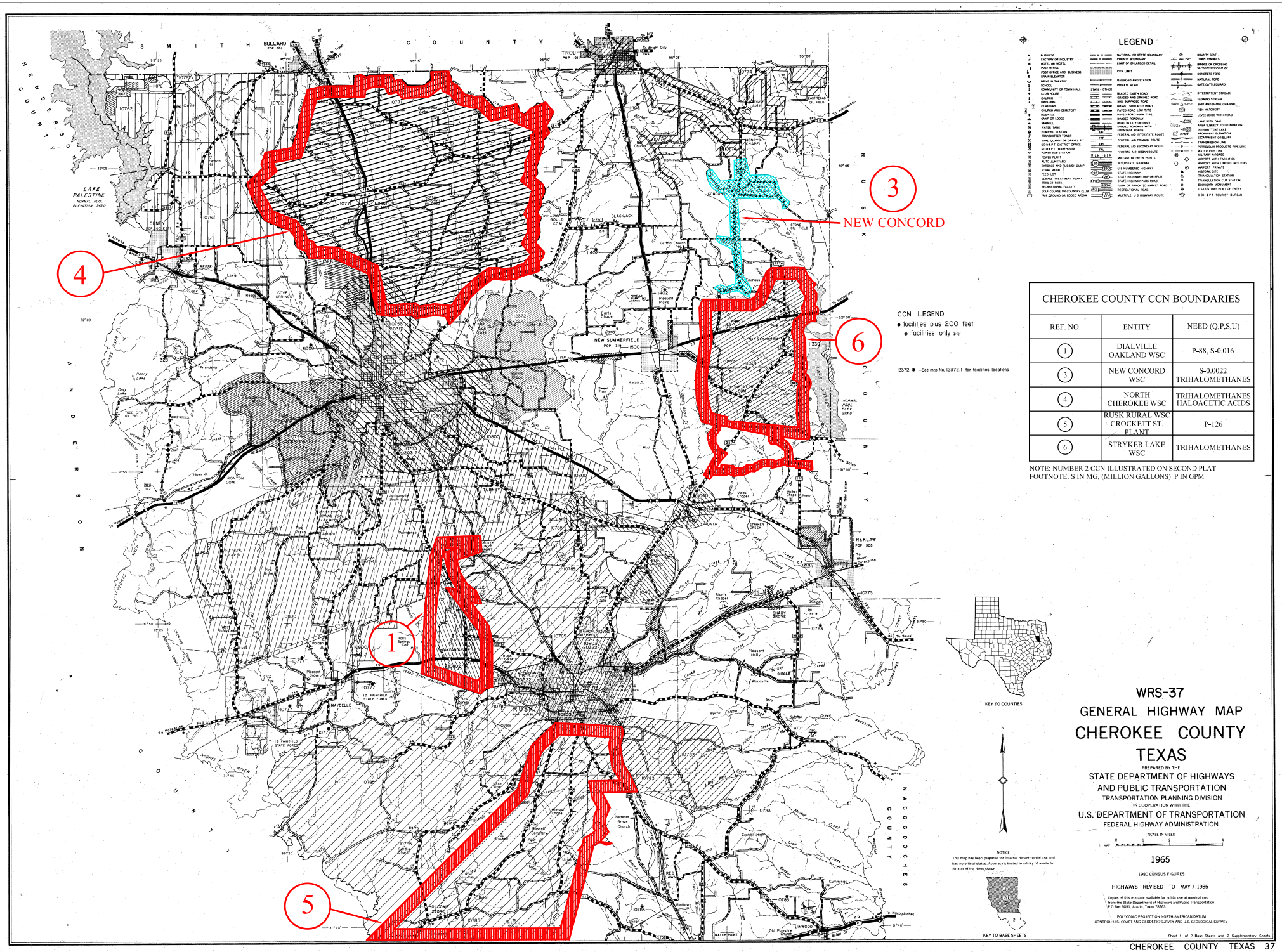

1
NOTE:
BCY WSC (IN PROCESS OF MERGING WITH CAYUGA WSC)
REVISION DATE FOR CCN AREAS
2-3-2004
LEGEND
CCN LEGEND
Facilities only
Facilities + 200'
WRS-1
GENERAL HIGHWAY MAP
ANDERSON COUNTY
TEXAS
PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE IN MILES
1965
1980 CENSUS FIGURES
HIGHWAYS REVISED TO MAY 1, 1985
Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763
POLYCONIC PROJECTION NORTH AMERICAN DATUM
CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY
NOTICE
This map has been prepared for internal departmental use and has no official status. Accuracy is limited to validity of available data as of the dates shown.
* Dual certification exists with 10794 and 12135 within the city limits.
MONTALBA
NECHES
KEY TO COUNTIES
ANDERSON COUNTY CCN BOUNDARIES
REF. NO. | ENTITY | NEED (Q,P,S,U)
1 | CAYUGA WSC | TRIHALOMETHANES
HENDERSON COUNTY
FREESTONE COUNTY
LEON COUNTY
HOUSTON COUNTY
CHEROKEE COUNTY
TRINITY RIVER
NECHES RIVER
FRANKSTON
PALESTINE
ELKHART
LAKE PALESTINE
NORMAL POOL ELEVATION 345.0'
BETHEL
MONTALBA
NECHES
ALDERSON
TENNESSEE COLONY
STATE DEPARTMENT OF CORRECTIONS COFFIELD
MATCH POINT
REDTOWN



ANGELINA COUNTY CCN BOUNDARIES		
REF. NO.	ENTITY	NEED (Q,P,S,U)*
①	BEULAH WSC	S-0.0012
②	USCOE HANKS CREEK PARK	P-17
③	KERVIN'S RV PARK	P-29
④	LAKEVIEW RV PARK	P-25
⑤	PRAIRIE GROVE WSC	P-39
⑥	WALNUT RIDGE ESTATE WATER SYS.	S-0.004
⑦	ZAVALLA WORK CENTER	TRIHALOMETHANES

FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM

*Q-QUALITY
P-PRODUCTION, MGD
S-STORAGE, MG
U-USAGE, MGD



CHEROKEE COUNTY CCN BOUNDARIES		
REF. NO.	ENTITY	NEED (Q,P,S,U)
1	DIALVILLE OAKLAND WSC	P-88, S-0.016
3	NEW CONCORD WSC	S-0.0022 TRIHALOMETHANES
4	NORTH CHEROKEE WSC	TRIHALOMETHANES HALOACETIC ACIDS
5	RUSK RURAL WSC CROCKETT ST. PLANT	P-126
6	STRYKER LAKE WSC	TRIHALOMETHANES

NOTE: NUMBER 2 CCN ILLUSTRATED ON SECOND PLAT
FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM

WRS-37
GENERAL HIGHWAY MAP
CHEROKEE COUNTY TEXAS

PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

1965

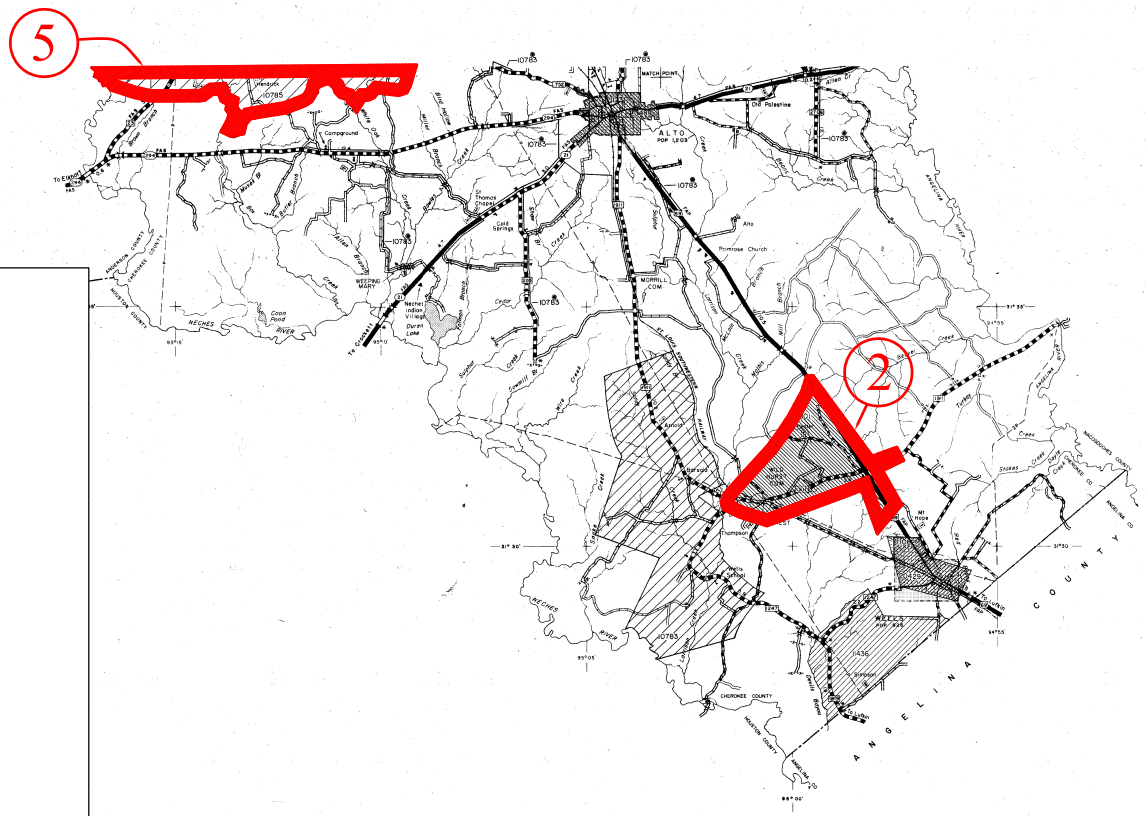
1980 CENSUS FIGURES

HIGHWAYS REVISED TO MAY 1 1985

Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P O Box 5051, Austin, Texas 78763

POLYCONIC PROJECTION NORTH AMERICAN DATUM
CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY

Sheet 1 of 2 Base Sheets and 2 Supplementary Sheets



CHEROKEE COUNTY CCN BOUNDARIES

REF. NO.	ENTITY	NEED (Q,P,S,U)
(2)	FOREST WSC	TRIHALOMETHANES & HALOACETIC ACIDS
(5)	RUSK RURAL WSC CROCKETT ST. PLANT	P-126

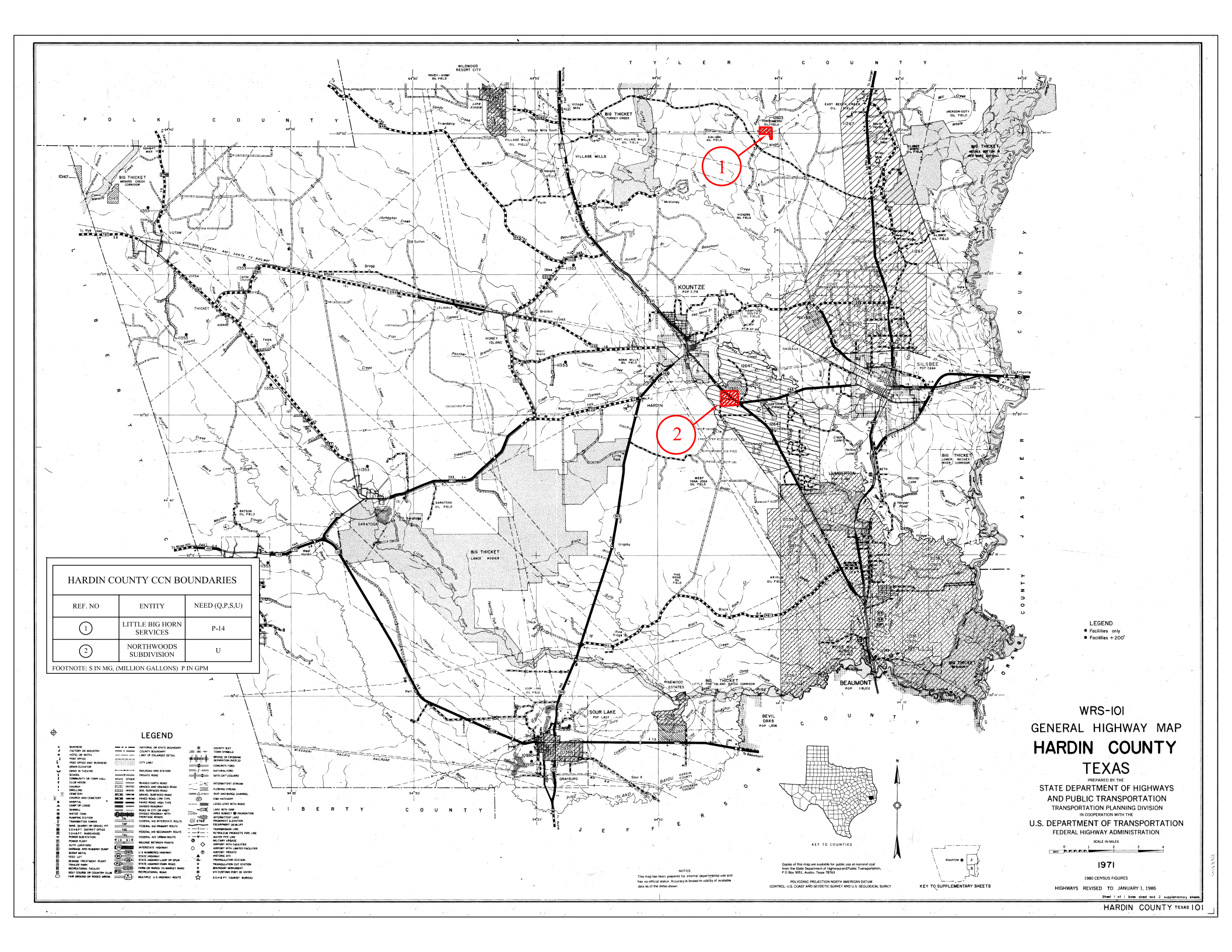
FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM

NOTICE
This map has been prepared for internal departmental use and has no official status. Accuracy is levied to validity of available data as of the dates shown.

WRS-37
CHEROKEE COUNTY
TEXAS
SCALE IN MILES
MAP
SHEET
1965
1980 CENSUS FIGURES
HIGHWAYS REVISED TO MAY 1, 1985

Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P O Box 5051, Austin, Texas 78763

Sheet 2 of 2 Base Sheets and 2 Supplementary Sheets



HARDIN COUNTY CCN BOUNDARIES		
REF. NO	ENTITY	NEED (Q,P,S,U)
(1)	LITTLE BIG HORN SERVICES	P-14
(2)	NORTHWOODS SUBDIVISION	U

FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM

LEGEND

- Facilities only
- Facilities + 200'

LEGEND

BUSINESS
FACTORY OR INDUSTRY
HOTEL OR MOTEL
POST OFFICE
POST OFFICE AND BUSINESS
GRAIN ELEVATOR
DRIVE IN THEATRE
SCHOOL
COMMUNITY OR TOWN HALL
CLUB HOUSE
CHURCH
DWELLING
CEMETERY
CHURCH AND CEMETERY
HOSPITAL
CAMP OR LODGE
SAWMILL
WATER TANK
PUMPING STATION
TRANSMITTER TOWER
MINE, QUARRY OR GRAVEL PIT
S.D.H.&P.T. DISTRICT OFFICE
S.D.H.&P.T. WAREHOUSE
S.D.H.&P.T. SECTION
POWER PLANT
AUTO JUNKYARD
GARBAGE AND RUBBISH DUMP
SCRAP METAL
FEED LOT
SEWAGE TREATMENT PLANT
TRAILER PARK
RECREATIONAL FACILITY
GOLF COURSE OR COUNTRY CLUB
FAIR GROUND OR RODEO ARENA

NATIONAL OR STATE BOUNDARY
COUNTY BOUNDARY
LIMIT OF ENLARGED DETAIL
CITY LIMIT
RAILROAD AND STATION
PRIVATE ROAD
STATE OTHER
GRADED EARTH ROAD
GRADED AND DRAINED ROAD
SOIL SURFACED ROAD
GRAVEL SURFACED ROAD
PAVED ROAD, LOW TYPE
PAVED ROAD, HIGH TYPE
DIVIDED ROADWAY
ROAD IN CITY OR INSET
DIVIDED ROADWAY WITH FRONTAGE ROADS
FEDERAL AID INTERSTATE ROUTE
FEDERAL AID PRIMARY ROUTE
FEDERAL AID SECONDARY ROUTE
FEDERAL AID URBAN ROUTE
MILEAGE BETWEEN POINTS
INTERSTATE HIGHWAY
U.S. NUMBERED HIGHWAY
STATE HIGHWAY
STATE HIGHWAY LOOP OR SPUR
STATE HIGHWAY FARM ROAD
FARM OR RANCH TO MARKET ROAD
RECREATIONAL ROAD
MULTIPLE U.S. HIGHWAY ROUTE

COUNTY SEAT
TOWN SYMBOLS
BRIDGE OR CROSSING SEPARATION OVER 20
CONCRETE FORD
NATURAL FORD
GATE CATTLEGUARD
INTERMITTENT STREAM
FLOWING STREAM
SHIP AND BARGE CHANNEL
FISH HATCHERY
LEVEE-LIKE WITH ROAD
LAKE WITH DAM
AREA SUBJECT TO INUNDATION
INTERMITTENT LAKE
TRANSMISSION LINE
PETROLEUM PRODUCTS PIPE LINE
WATER PIPE LINE
MILITARY, ARMY
MILITARY, AIRFORCE
AIRPORT WITH FACILITIES
AIRPORT WITH LIMITED FACILITIES
AIRPORT, PRIVATE
HISTORIC SITE
TRIANGULATION STATION
TRIANGULATION CUT STATION
BOUNDARY MONUMENT
U.S. CUSTOMS PORT OF ENTRY
S.D.H.&P.T. TOURIST BUREAU

KEY TO COUNTIES

KEY TO SUPPLEMENTARY SHEETS

NOTICE
This map has been prepared for internal departmental use and has no official status. Accuracy is limited to validity of available data as of the dates shown.

Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763

POLYCONIC PROJECTION NORTH AMERICAN DATUM
CONTROL U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY

WRS-101

GENERAL HIGHWAY MAP

HARDIN COUNTY

TEXAS

PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES
0 1 2 3 4

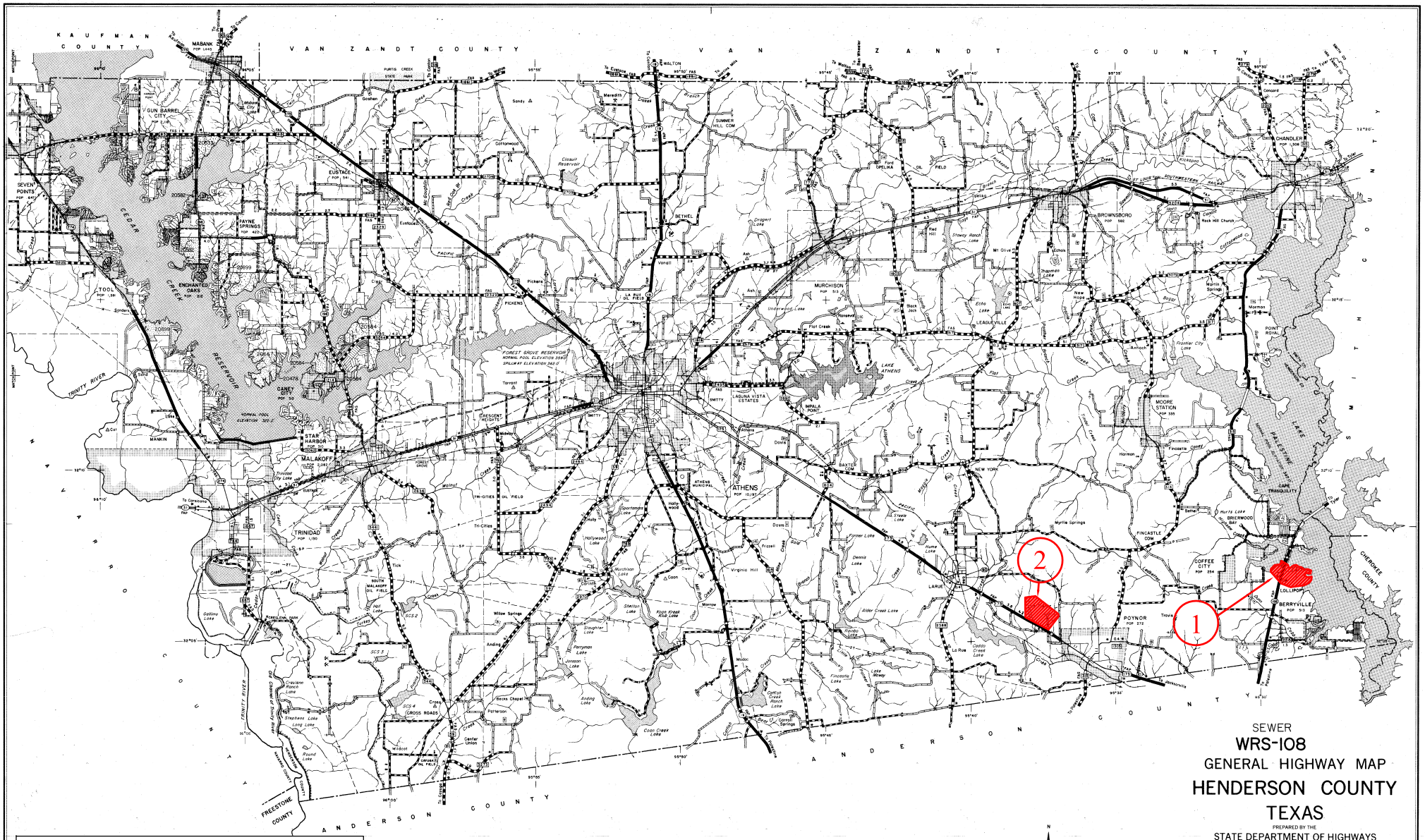
1971

1980 CENSUS FIGURES

HIGHWAYS REVISED TO JANUARY 1, 1985

Sheet 1 of 1 base sheet and 2 supplementary sheets

HARDIN COUNTY TEXAS 101



SEWER

WRS-108

GENERAL HIGHWAY MAP

HENDERSON COUNTY TEXAS

PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

1971

1980 CENSUS FIGURES

HIGHWAYS REVISED TO MAY 1, 1987

Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P O Box 5051, Austin, Texas 78763

POLYCONIC PROJECTION NORTH AMERICAN DATUM
CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY

NOTICE

This map has been prepared for internal departmental use and has no official status. Accuracy is limited to validity of available data as of the dates shown.

Sheet 1 of 2 Base Sheets and 3 Supplementary Sheets

HENDERSON COUNTY CCN BOUNDARIES		
REF. NO	ENTITY	NEED (Q,P,S,U)
1	LAKE PALESTINE CAMPGROUND	S-0.0146, P-29
2	LAPOYNOR ISD	S-0.00615

FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM

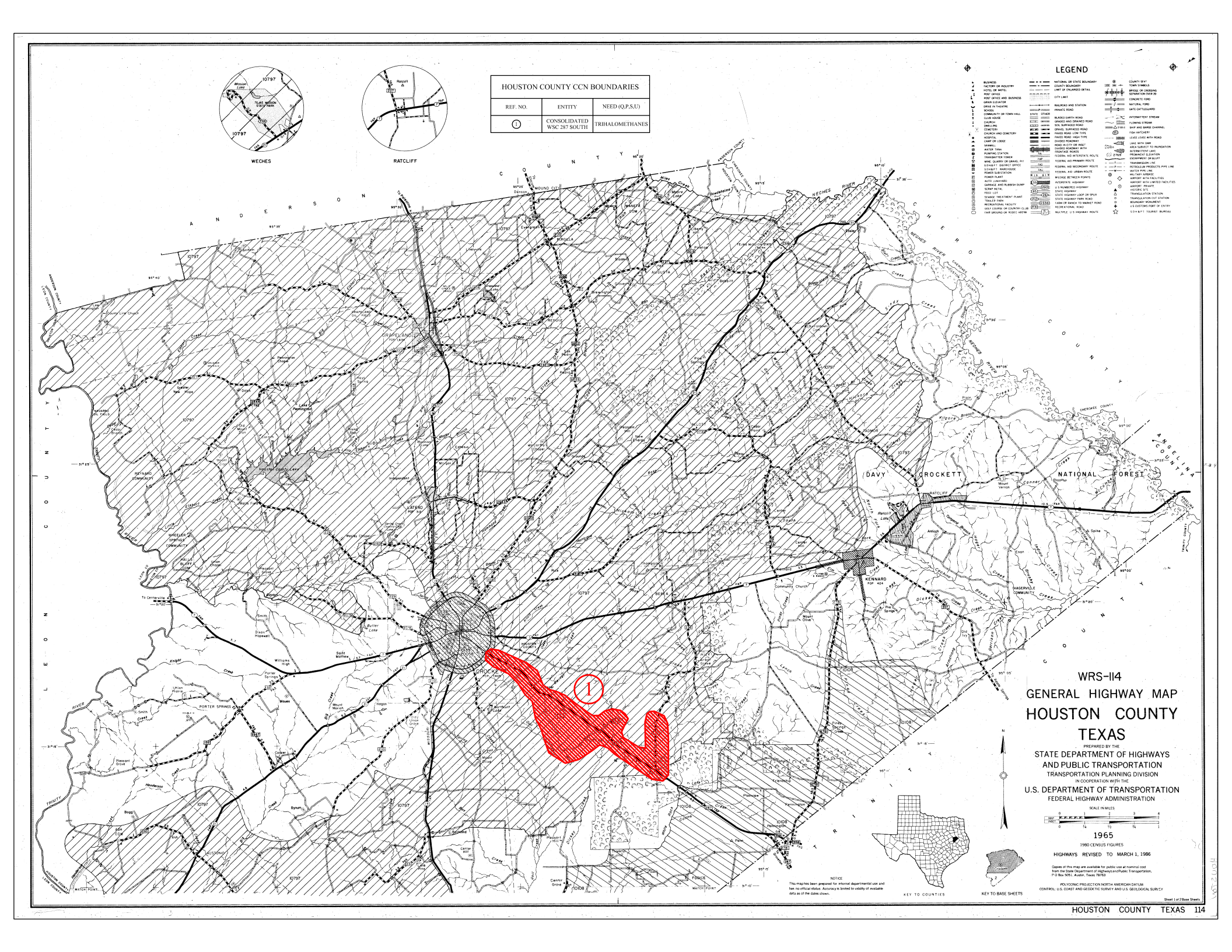
NOTE:
LAKE PALESTINE CAMPGROUND
ACCORDING TO TCEQ (INCORRECT)
LAKE PALESTINE RESORT (CORRECT)

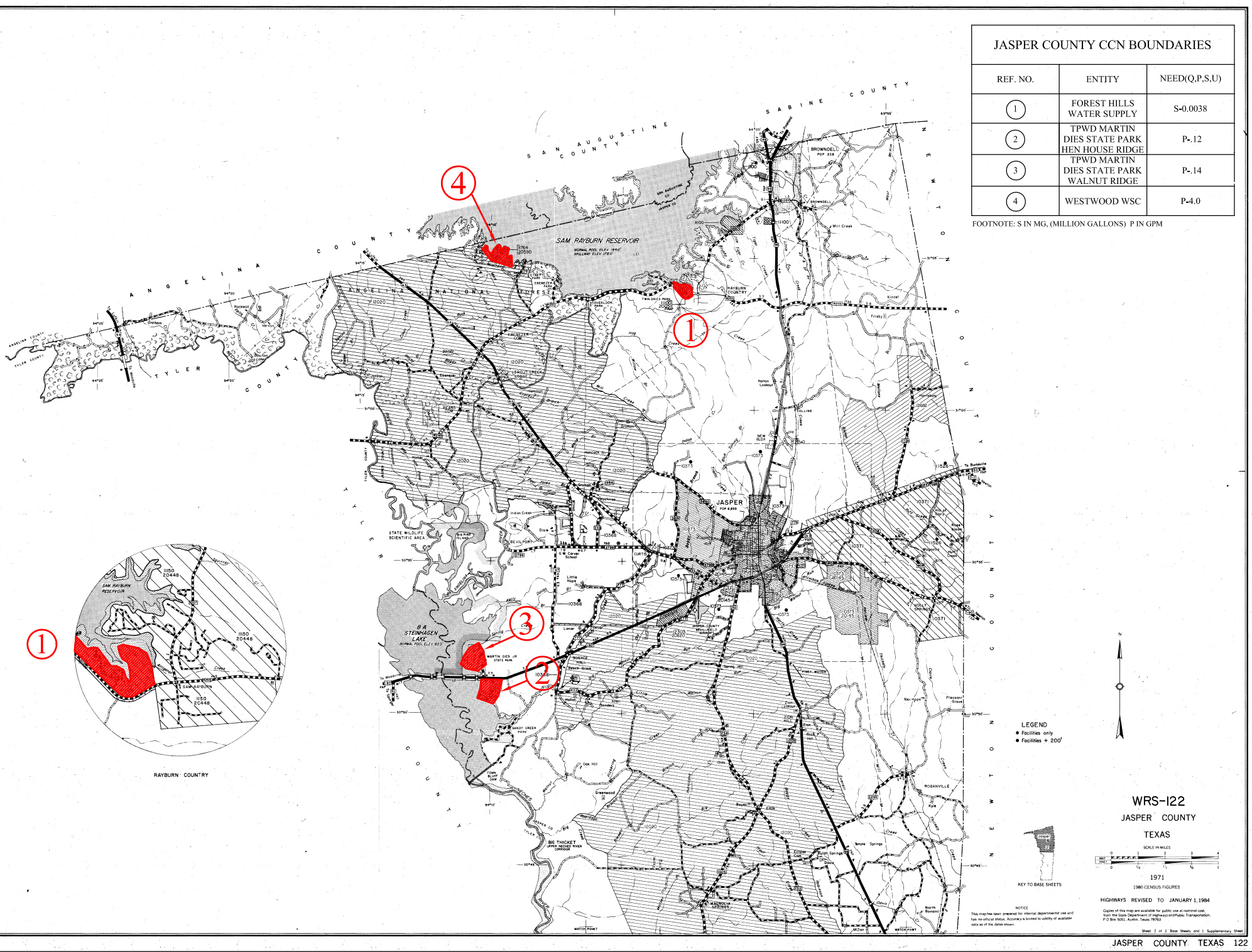
KEY TO COUNTIES

KEY TO SUPPLEMENTARY SHEETS

KEY TO BASE SHEETS

SEE HENDERSON


HOUSTON COUNTY CCN BOUNDARIES
REF. NO. | ENTITY | NEED (Q,P,S,U)
1 | CONSOLIDATED WSC 287 SOUTH | TRIHALOMETHANES
WECHES
RATCLIFF
LEGEND
WRS-114
GENERAL HIGHWAY MAP
HOUSTON COUNTY
TEXAS
PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE IN MILES
1965
1980 CENSUS FIGURES
HIGHWAYS REVISED TO MARCH 1, 1986
Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763
POLYCONIC PROJECTION NORTH AMERICAN DATUM
CONTROL U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY
NOTICE
This map has been prepared for internal departmental use and has no official status. Accuracy is limited to validity of available data as of the dates shown.
KEY TO COUNTIES
KEY TO BASE SHEETS
Sheet 1 of 2 Base Sheets
ANDERSON COUNTY
CHEROKEE COUNTY
ANGELINA COUNTY
TRINITY COUNTY
LEON COUNTY
HOUSTON COUNTY
DAVY CROCKETT NATIONAL FOREST
CROCKETT
KENNARD
RATCLIFF
PORTER SPRINGS
NECHES RIVER
TRINITY RIVER



JASPER COUNTY CCN BOUNDARIES		
REF. NO.	ENTITY	NEED(Q,P,S,U)
1	FOREST HILLS WATER SUPPLY	S-0.0038
2	TPWD MARTIN DIES STATE PARK HEN HOUSE RIDGE	P-.12
3	TPWD MARTIN DIES STATE PARK WALNUT RIDGE	P-.14
4	WESTWOOD WSC	P-4.0

FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM

LEGEND
- Facilities only
- Facilities + 200'

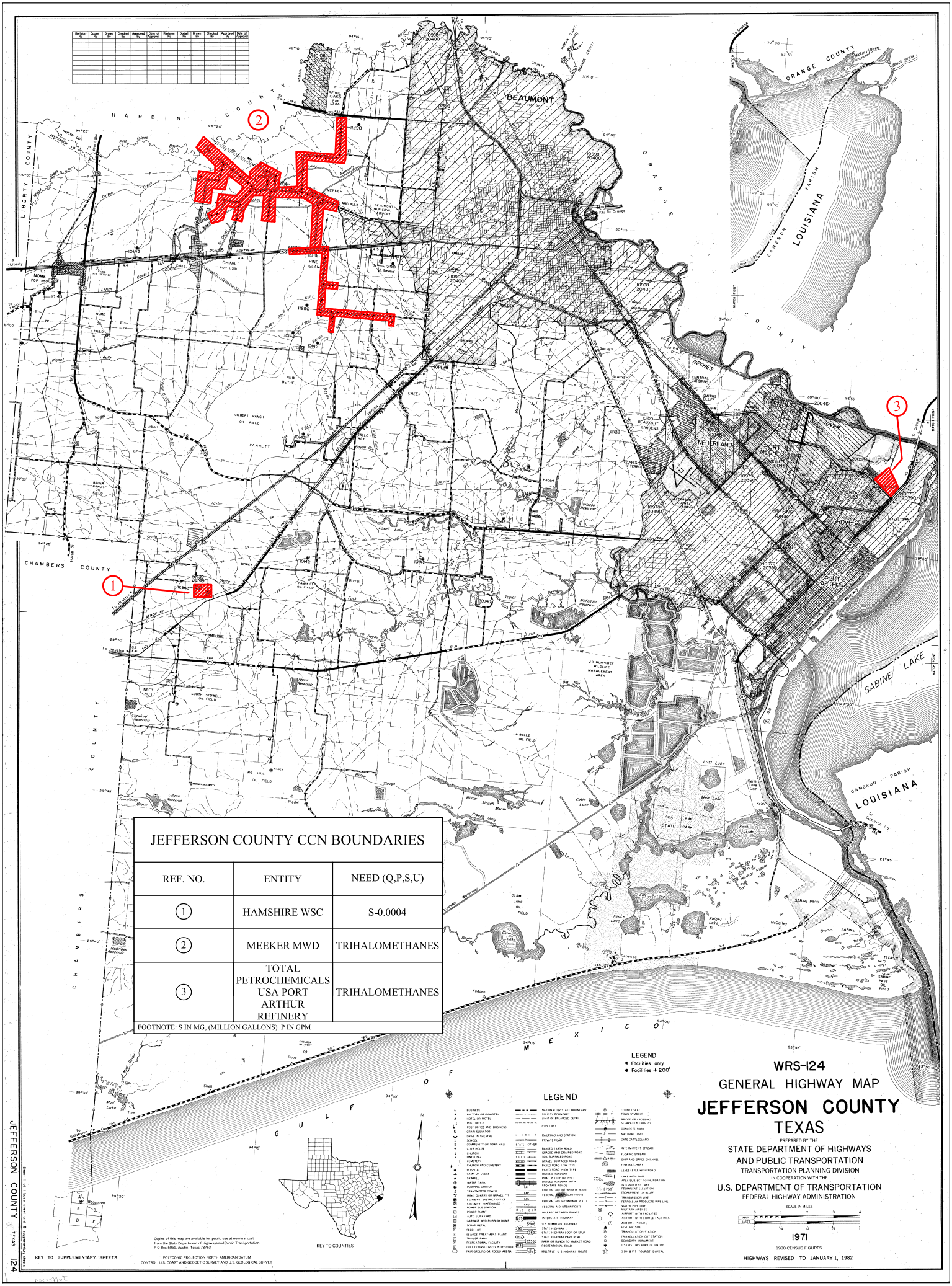
KEY TO BASE SHEETS

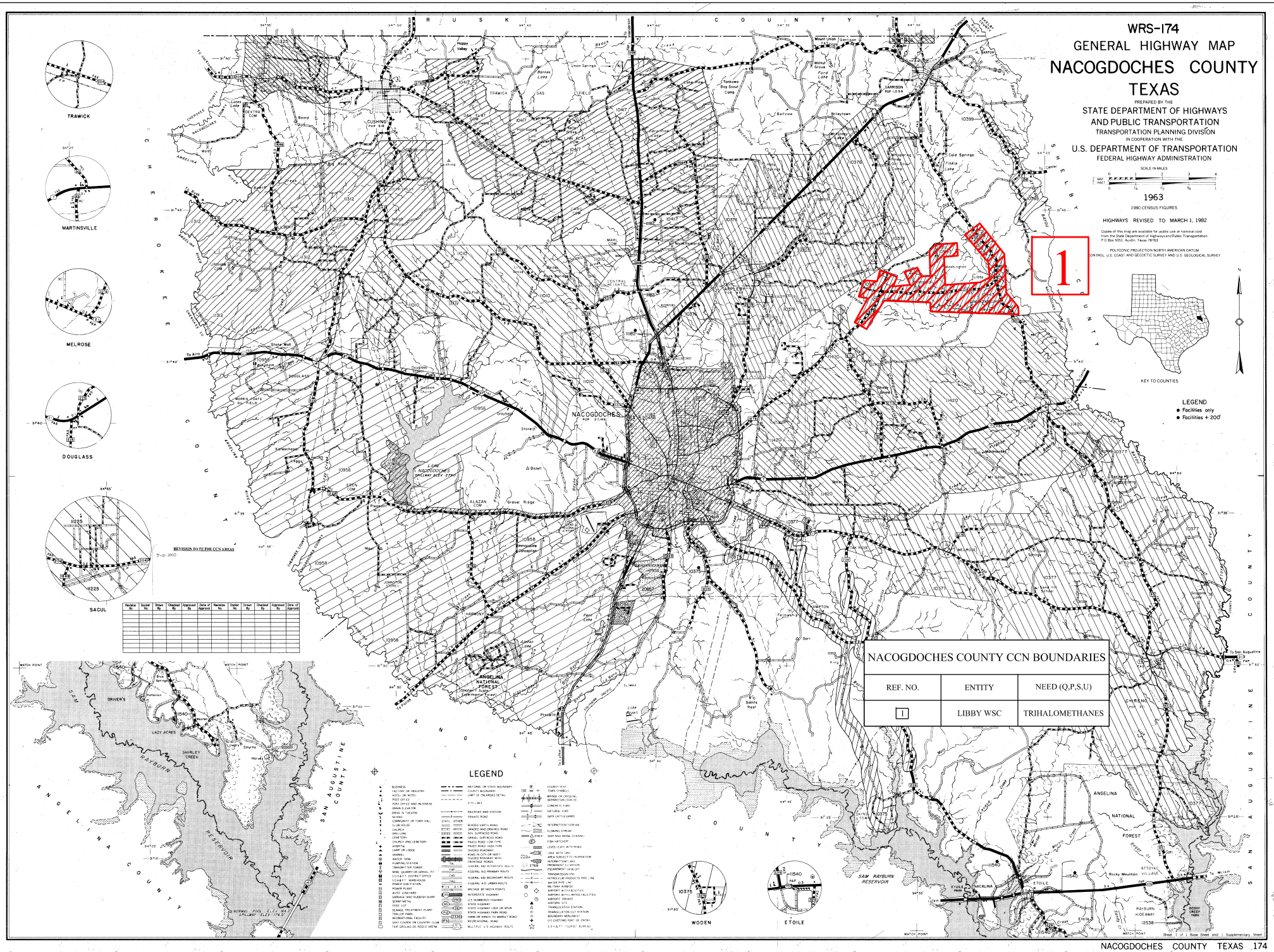
NOTICE
This map has been prepared for internal departmental use and has no official status. Accuracy is limited to validity of available data as of the dates shown.

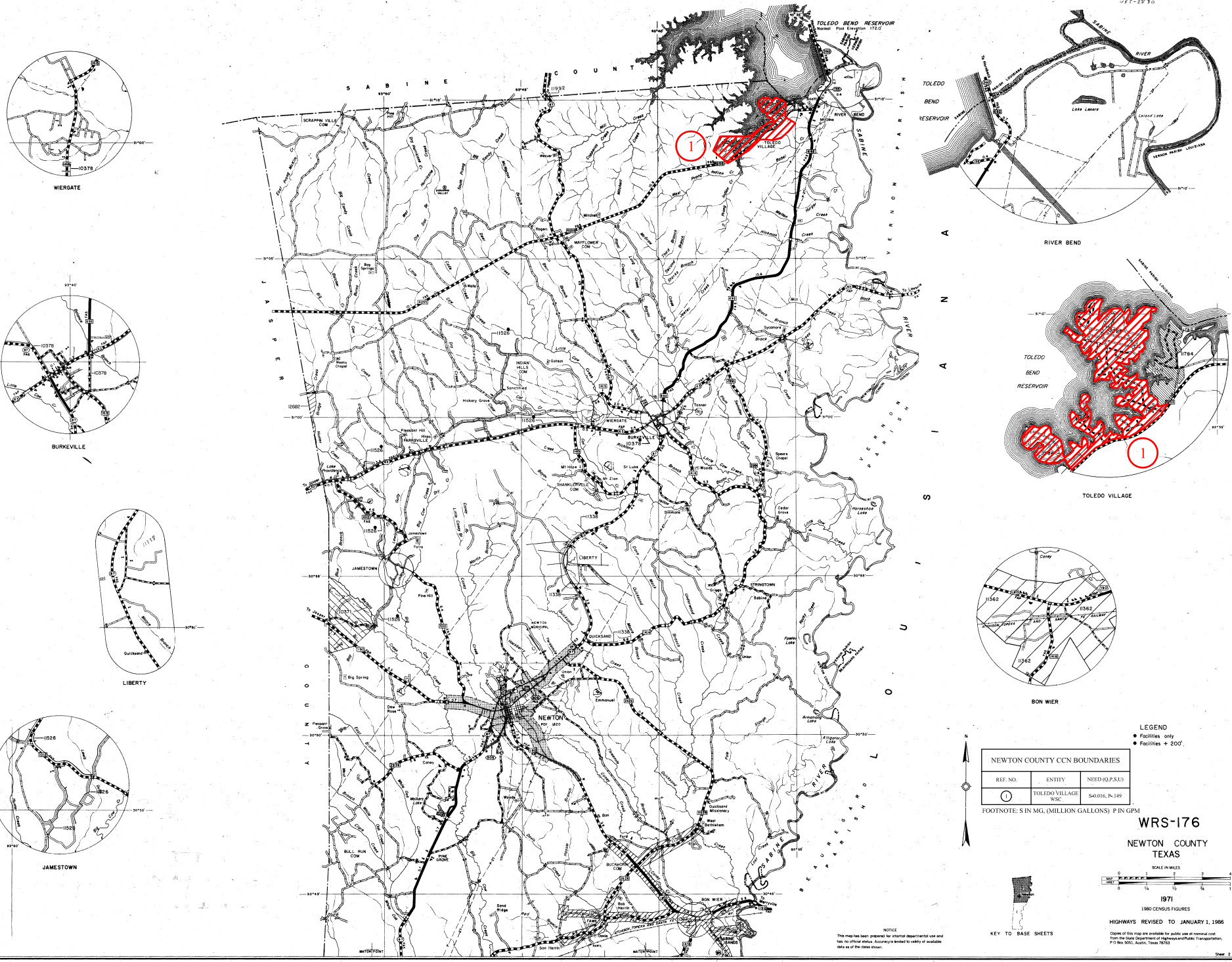
WRS-122
JASPER COUNTY
TEXAS
SCALE IN MILES
1971
1980 CENSUS FIGURES
HIGHWAYS REVISED TO JANUARY 1, 1984

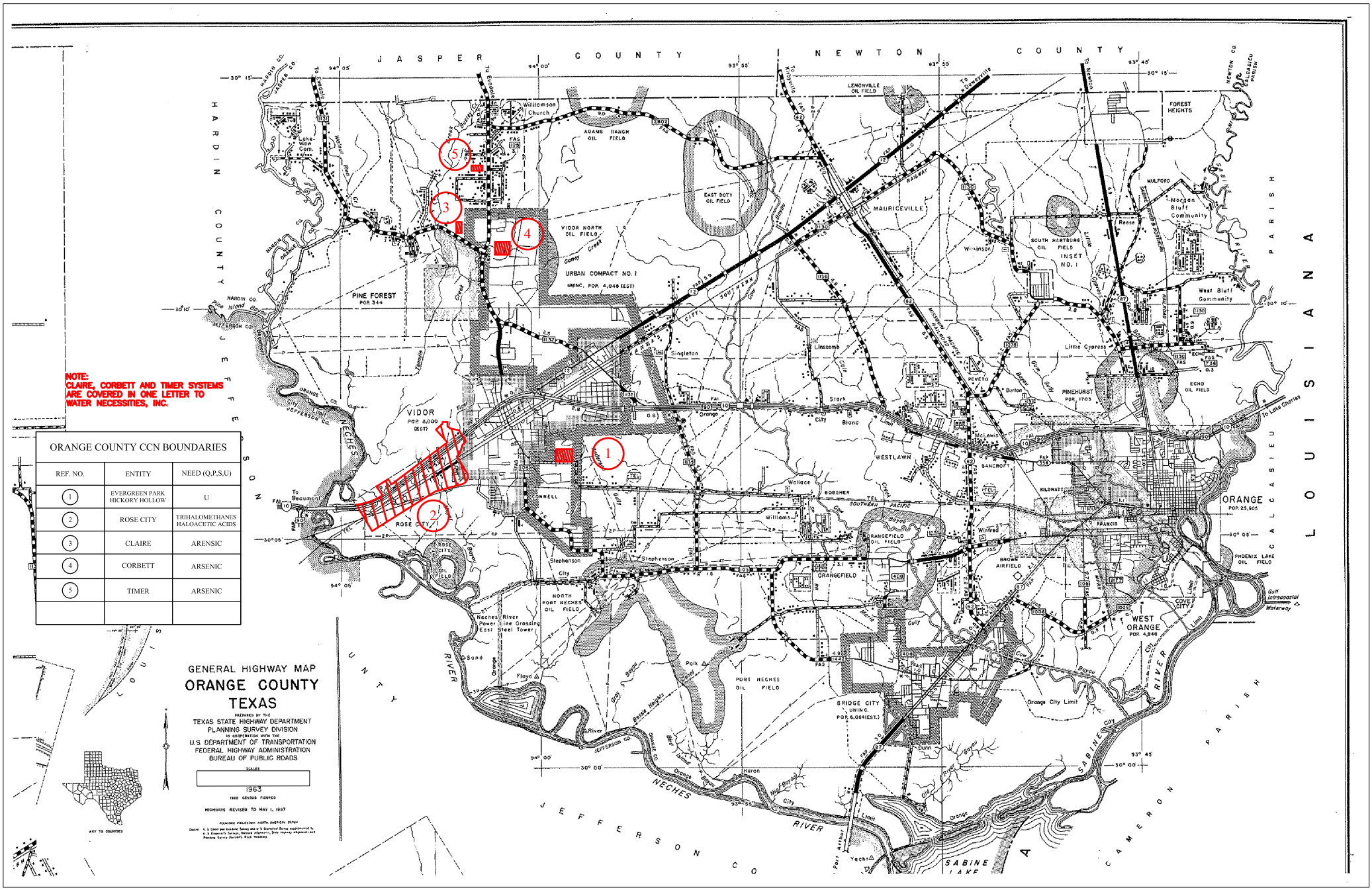
Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763

Sheet 2 of 2 Base Sheets and 1 Supplementary Sheet


JEFFERSON COUNTY CCN BOUNDARIES
REF. NO. | ENTITY | NEED (Q,P,S,U)
1 | HAMSHIRE WSC | S-0.0004
2 | MEEKER MWD | TRIHALOMETHANES
3 | TOTAL PETROCHEMICALS USA PORT ARTHUR REFINERY | TRIHALOMETHANES
FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM
WRS-124
GENERAL HIGHWAY MAP
JEFFERSON COUNTY
TEXAS
PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
1971
1980 CENSUS FIGURES
HIGHWAYS REVISED TO JANUARY 1, 1982
LEGEND
KEY TO SUPPLEMENTARY SHEETS
KEY TO COUNTIES
POLYCONIC PROJECTION NORTH AMERICAN DATUM
CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY
Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763
BEAUMONT
PORT ARTHUR
NEDERLAND
PORT NECHES
ORANGE COUNTY
CHAMBERS COUNTY
HARDIN COUNTY
LIBERTY COUNTY
LOUISIANA
SABINE LAKE
GULF OF MEXICO
JEFFERSON COUNTY, TEXAS
SHEET 1 OF 1 SHEET OF 6 SUPPLEMENTARY SHEETS
124


WRS-174
GENERAL HIGHWAY MAP
NACOGDOCHES COUNTY
TEXAS
PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE IN MILES
1963
1980 CENSUS FIGURES
HIGHWAYS REVISED TO MARCH 1, 1982
Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763
POLYCONIC PROJECTION NORTH AMERICAN DATUM
CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY
KEY TO COUNTIES
LEGEND
Facilities only
Facilities + 200'
1
NACOGDOCHES COUNTY CCN BOUNDARIES
REF. NO.
ENTITY
NEED (Q,P,S,U)
1
LIBBY WSC
TRIHALOMETHANES
TRAWICK
MARTINSVILLE
MELROSE
DOUGLASS
SACUL
REVISION DATE FOR CCN AREAS
7-10-2003
WOODEN
ETOILE
LEGEND
RUSK COUNTY
CHEROKEE COUNTY
ANGELINA COUNTY
SAN AUGUSTINE COUNTY
NACOGDOCHES
LAKE NACOGDOCHES
SPILLWAY ELEV. 278.0'
SAM RAYBURN RESERVOIR
ANGELINA NATIONAL FOREST
Sabine National Forest
HAMPTON
CHIRENO
ATTOYAC
NACALINA
ANGELINA NATIONAL FOREST
Sabine National Forest
NORMAL POOL ELEV. 164.0'
SPILLWAY ELEV. 178.0'
MATCH POINT
Sheet 1 of 1 Base Sheet and 1 Supplementary Sheet


WIERGATE
BURKEVILLE
LIBERTY
JAMESTOWN
RIVER BEND
TOLEDO VILLAGE
BON WIER
TOLEDO BEND RESERVOIR
Normal Pool Elevation 172.0'
SABINE COUNTY
VERNON PARISH
LOUISIANA
SABINE RIVER
NEWTON
NEWTON COUNTY CCN BOUNDARIES
REF. NO.
ENTITY
NEED (Q,P,S,U)
1
TOLEDO VILLAGE WSC
S=0.016, P=149
FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM
LEGEND
Facilities only
Facilities + 200'
WRS-176
NEWTON COUNTY
TEXAS
SCALE IN MILES
1971
1980 CENSUS FIGURES
HIGHWAYS REVISED TO JANUARY 1, 1986
KEY TO BASE SHEETS
NOTICE
This map has been prepared for internal departmental use and has no official status. Accuracy is limited to validity of available data as of the dates shown.
Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763
Sheet 2 of 2 base sheets



NOTE:
CLAIRE, CORBETT AND TIMER SYSTEMS ARE COVERED IN ONE LETTER TO WATER NECESSITIES, INC.

ORANGE COUNTY CCN BOUNDARIES

REF. NO.	ENTITY	NEED (Q,P,S,U)
1	EVERGREEN PARK HICKORY HOLLOW	U
2	ROSE CITY	TRIHALOMETHANES HALOACETIC ACIDS
3	CLAIRE	ARENSIC
4	CORBETT	ARSENIC
5	TIMER	ARSENIC

GENERAL HIGHWAY MAP
ORANGE COUNTY
TEXAS

PREPARED BY THE
TEXAS STATE HIGHWAY DEPARTMENT
PLANNING SURVEY DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

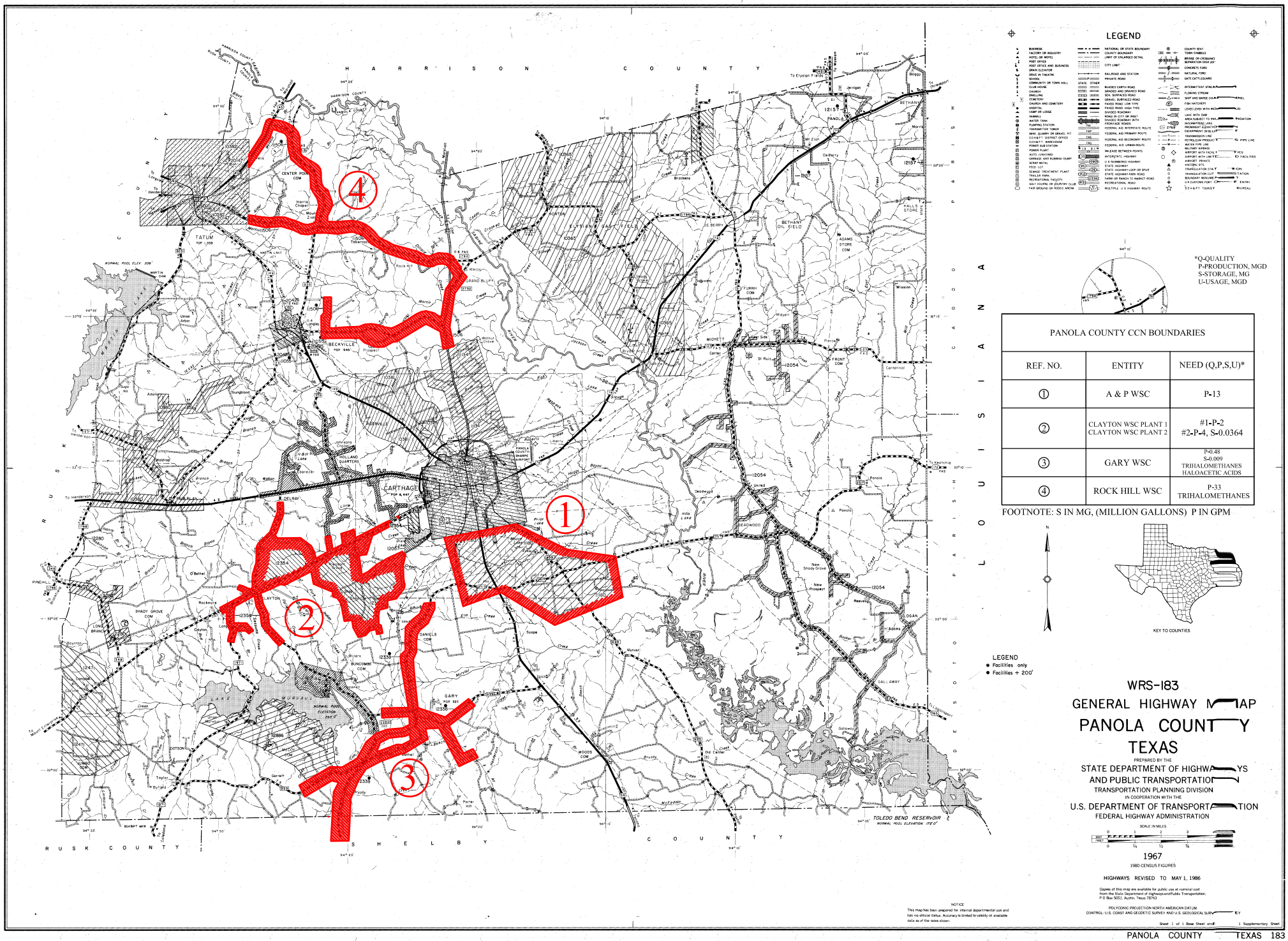
SCALES

1963

1960 CENSUS FIGURES

HIGHWAYS REVISED TO MAY 1, 1962

Projection: North American Datum
Control: U.S. Coast and Geodetic Survey and U.S. Corps of Engineers Surveys supplemented by U.S. Engineers Surveys, Railroad Alignments, State Highway Alignment and Planning Survey District's Field Inventory



LEGEND

*Q-QUALITY
P-PRODUCTION, MGD
S-STORAGE, MG
U-USAGE, MGD

PANOLA COUNTY CCN BOUNDARIES		
REF. NO.	ENTITY	NEED (Q,P,S,U)*
①	A & P WSC	P-13
②	CLAYTON WSC PLANT 1 CLAYTON WSC PLANT 2	#1-P-2 #2-P-4, S-0.0364
③	GARY WSC	P-0.48 S-0.009 TRIHALOMETHANES HALOACETIC ACIDS
④	ROCK HILL WSC	P-33 TRIHALOMETHANES

FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM

KEY TO COUNTIES

LEGEND
● Facilities only
● Facilities + 200'

WRS-183
GENERAL HIGHWAY MAP
PANOLA COUNTY
TEXAS

PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

1967
1980 CENSUS FIGURES

HIGHWAYS REVISED TO MAY 1, 1986

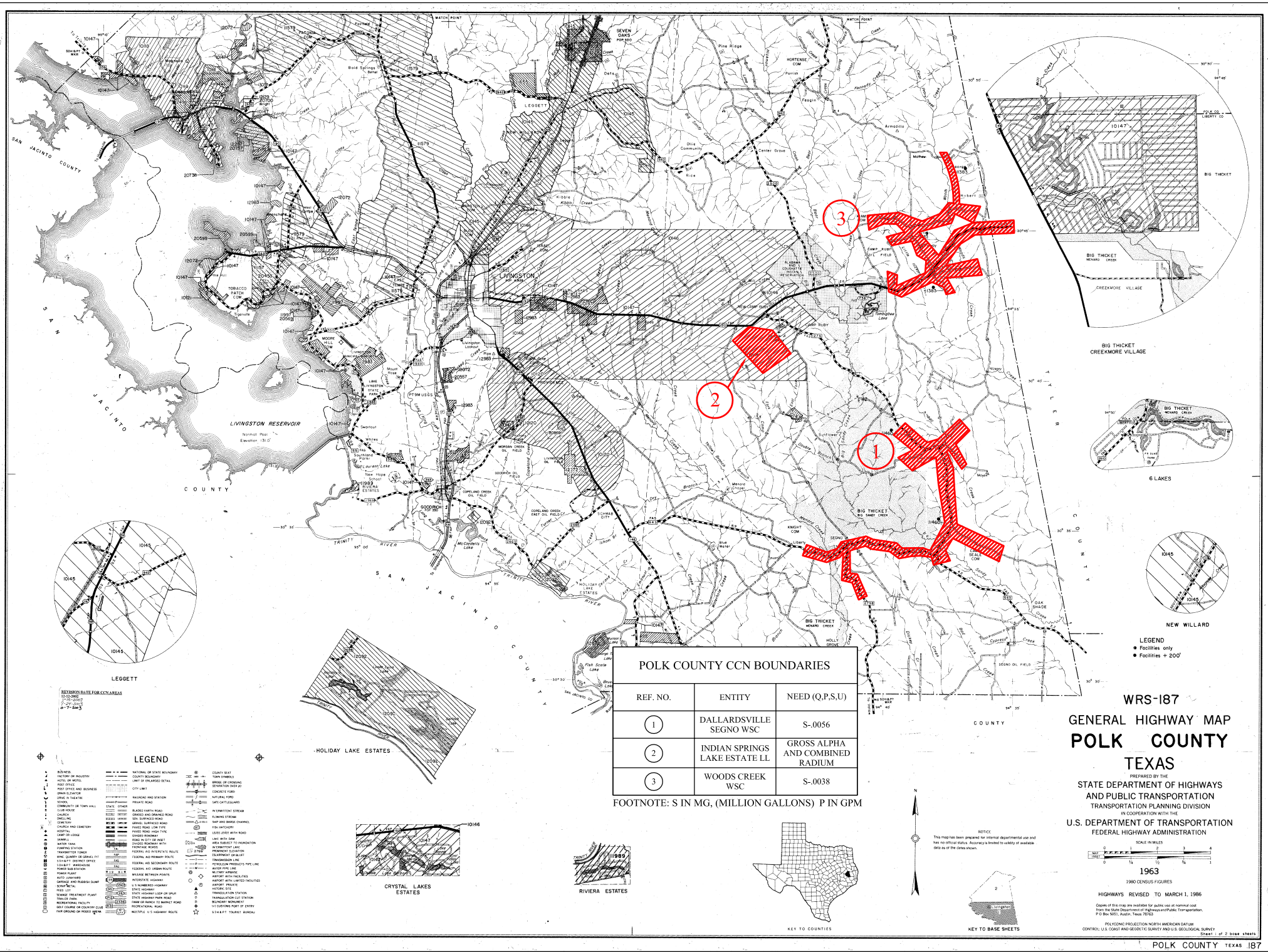
Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763

POLYCONIC PROJECTION NORTH AMERICAN DATUM
CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY

NOTICE
This map has been prepared for internal departmental use and has no official status. Accuracy is limited to validity of available data as of the dates shown.

Sheet 1 of 1 Base Sheet and 1 Supplementary Sheet

PANOLA COUNTY TEXAS 183



POLK COUNTY CCN BOUNDARIES

REF. NO.	ENTITY	NEED (Q,P,S,U)
(1)	DALLARDSVILLE SEGNO WSC	S-.0056
(2)	INDIAN SPRINGS LAKE ESTATE LL	GROSS ALPHA AND COMBINED RADIUM
(3)	WOODS CREEK WSC	S-.0038

FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM

LEGEND
- Facilities only
- Facilities + 200'

REVISION DATE FOR CCN AREAS
12-12-2002
1-15-2007
7-29-2013
10-7-2015

LEGEND

KEY TO COUNTIES

KEY TO BASE SHEETS

NOTICE
This map has been prepared for internal departmental use and has no official status. Accuracy is limited to validity of available data as of the dates shown.

WRS-187
GENERAL HIGHWAY MAP
POLK COUNTY
TEXAS

PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

1963

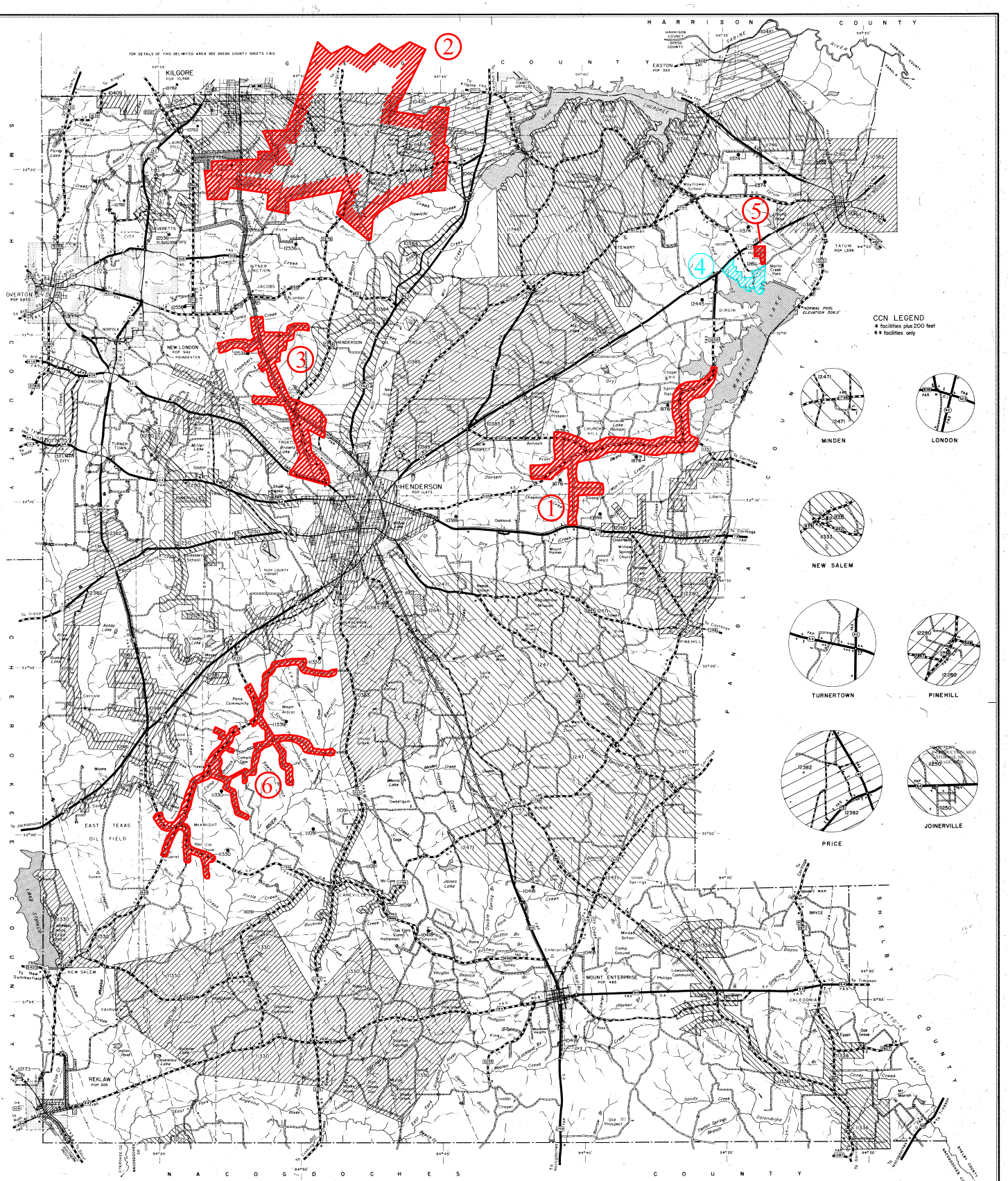
1980 CENSUS FIGURES

HIGHWAYS REVISED TO MARCH 1, 1986

Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763

POLYCONIC PROJECTION NORTH AMERICAN DATUM
CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY

Sheet 1 of 2 base sheets



GENERAL HIGHWAY MAP
RUSK COUNTY
TEXAS

PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

1965
1960 CENSUS FIGURES

HIGHWAYS REVISED TO MAY 1, 1984

WATER
WRS-201

RUSK COUNTY CCN BOUNDARIES

REF. NO.	ENTITY	NEED (Q,P,S,U)*
①	CHURCH HILL WSC	P-28 S-0.004
②	CROSS ROADS SUD	P-219 S-0.0168 Q-TRIHALOMETHANES
③	JACOBS WSC PLANT 3&4	Q-TRIHALOMETHANES
④	TPWD MARTIN CREEK STATE PARK	P-11
⑤	SHAN D WATER SUPPLY	Q-TRIHALOMETHANES
⑥	SOUTH RUSK COUNTY WSC COMPTON MCKNIGHT	S-0.0038

FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM

NOTICE
This map has been prepared for internal de
has no official status. Accuracy is limited by
data as of the dates shown.

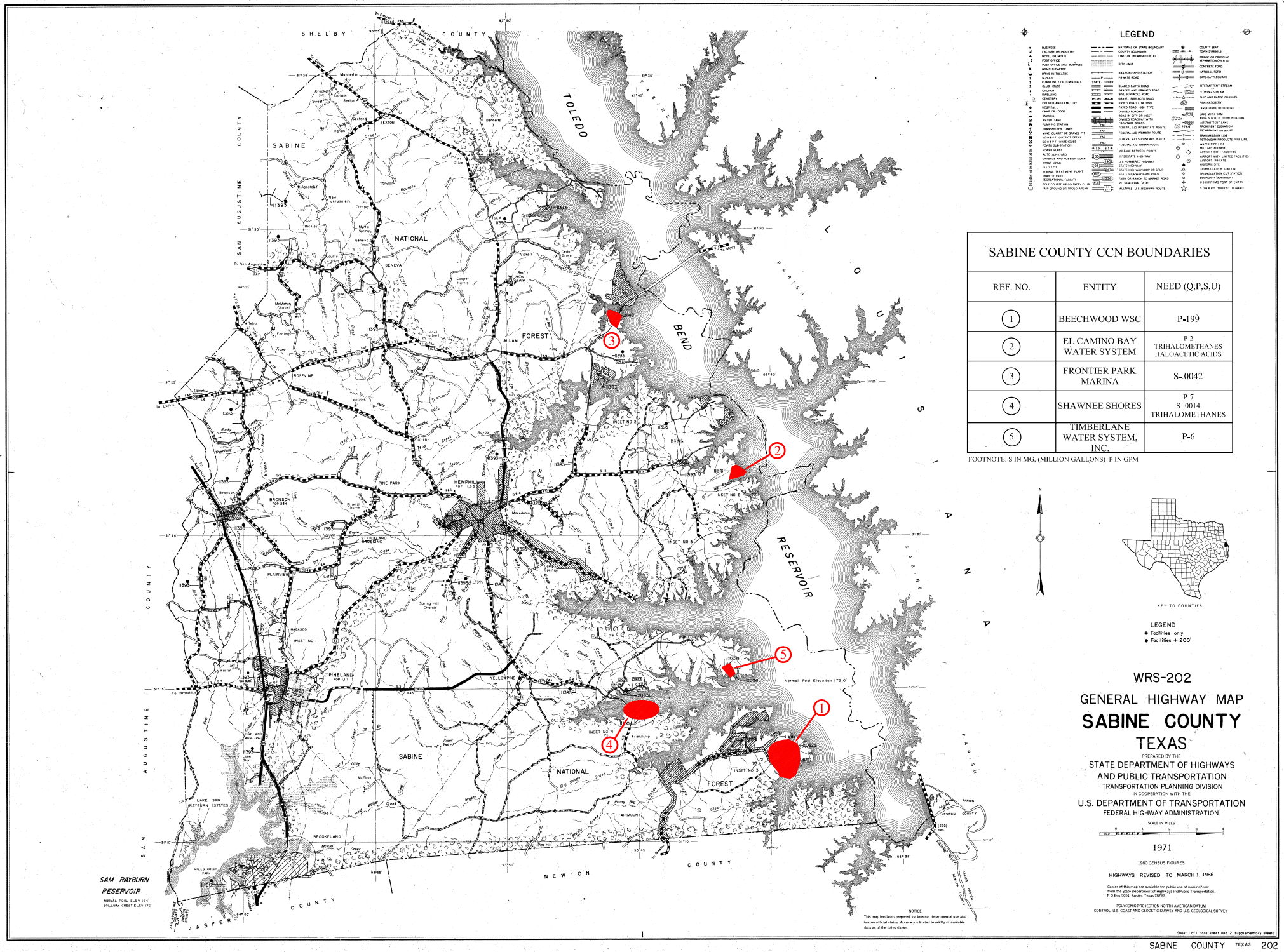
Copies of this map are available for public u
from the State Department of Highways and
P.O. Box 5051, Austin, Texas 78763

POLYCONIC PROJECTION NORTH AM
CONTROL: U.S. COAST AND GEODETIC SURVEY AN

COUNTIES

LEGEND

RUSK COUNTY TEXAS 201
Sheet 1 of 1 Sheet Sheet 1 of 1 Supplementary Sheet



LEGEND

SABINE COUNTY CCN BOUNDARIES		
REF. NO.	ENTITY	NEED (Q,P,S,U)
1	BEECHWOOD WSC	P-199
2	EL CAMINO BAY WATER SYSTEM	P-2 TRIHALOMETHANES HALOACETIC ACIDS
3	FRONTIER PARK MARINA	S-.0042
4	SHAWNEE SHORES	P-7 S-.0014 TRIHALOMETHANES
5	TIMBERLANE WATER SYSTEM, INC.	P-6

FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM

WRS-202

GENERAL HIGHWAY MAP

SABINE COUNTY

TEXAS

PREPARED BY THE

STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

TRANSPORTATION PLANNING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

1971

1980 CENSUS FIGURES

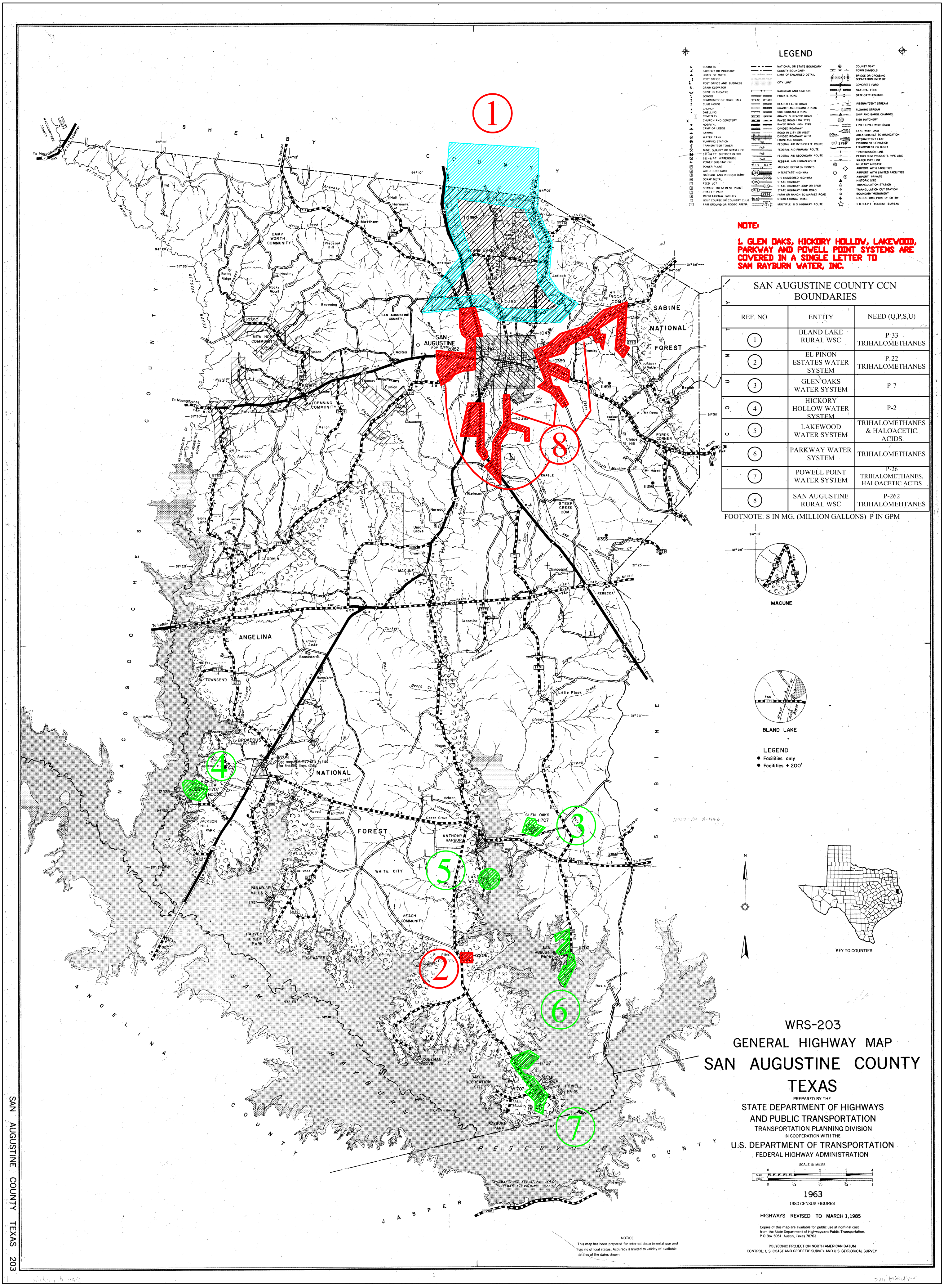
HIGHWAYS REVISED TO MARCH 1, 1986

Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763

POLYCONIC PROJECTION NORTH AMERICAN DATUM

CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY

Sheet 1 of 1 base sheet and 2 supplementary sheets

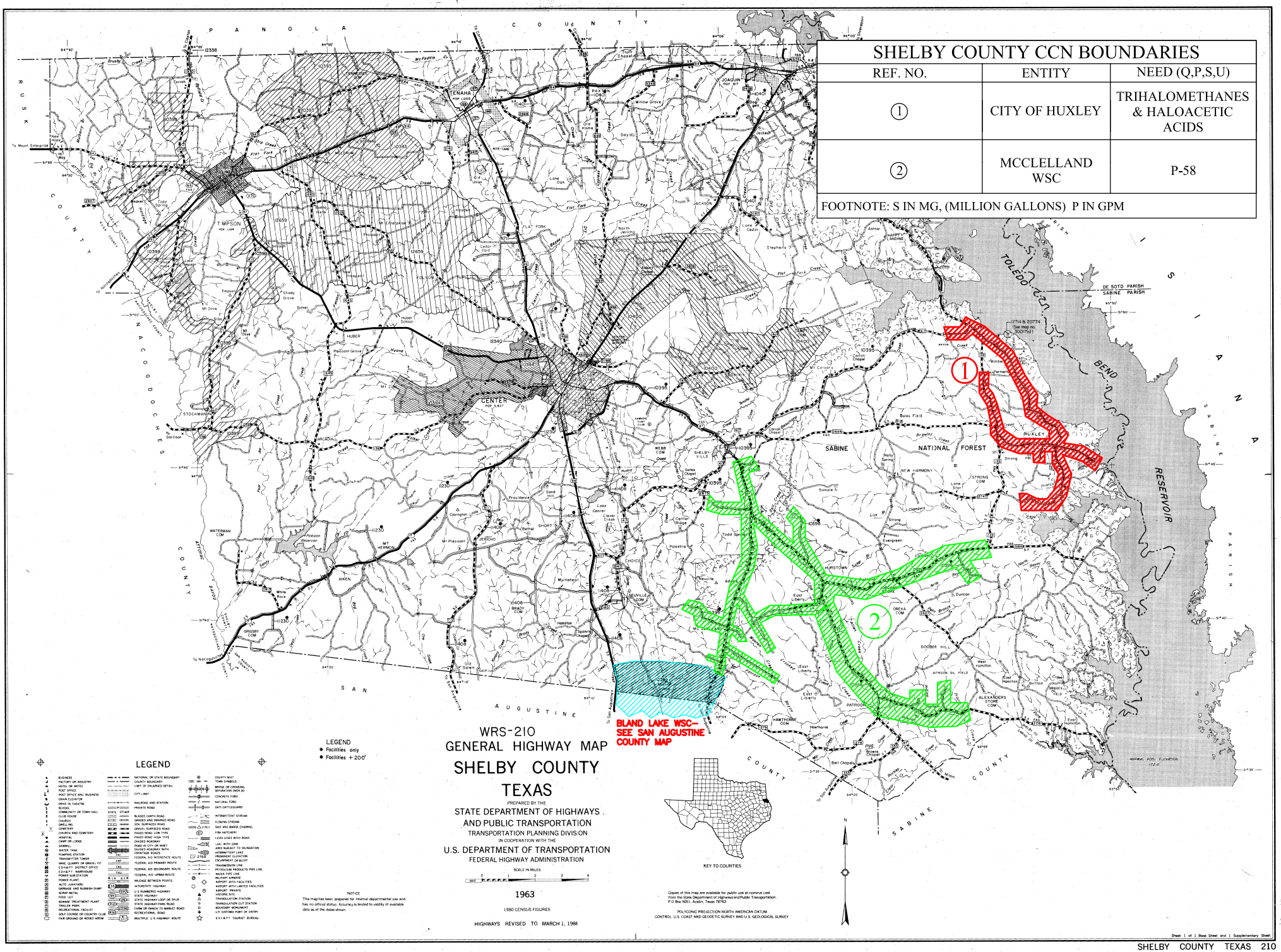

LEGEND
WRS-203
GENERAL HIGHWAY MAP
SAN AUGUSTINE COUNTY
TEXAS
PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
SCALE IN MILES
1963
1980 CENSUS FIGURES
HIGHWAYS REVISED TO MARCH 1, 1985
Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763
POLYCONIC PROJECTION NORTH AMERICAN DATUM
CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY
NOTICE
This map has been prepared for internal departmental use and has no official status. Accuracy is limited to validity of available data as of the dates shown.
SHELBY COUNTY
NACOGDOCHES COUNTY
SABINE COUNTY
SABINE NATIONAL FOREST
ANGELINA NATIONAL FOREST
SAM RAYBURN RESERVOIR
JASPER COUNTY
ANGELINA COUNTY
SAN AUGUSTINE
BROADDUS
MACUNE
BLAND LAKE
KEY TO COUNTIES
Facilities only
Facilities + 200'
SAN AUGUSTINE COUNTY TEXAS 203
1
2
3
4
5
6
7
8

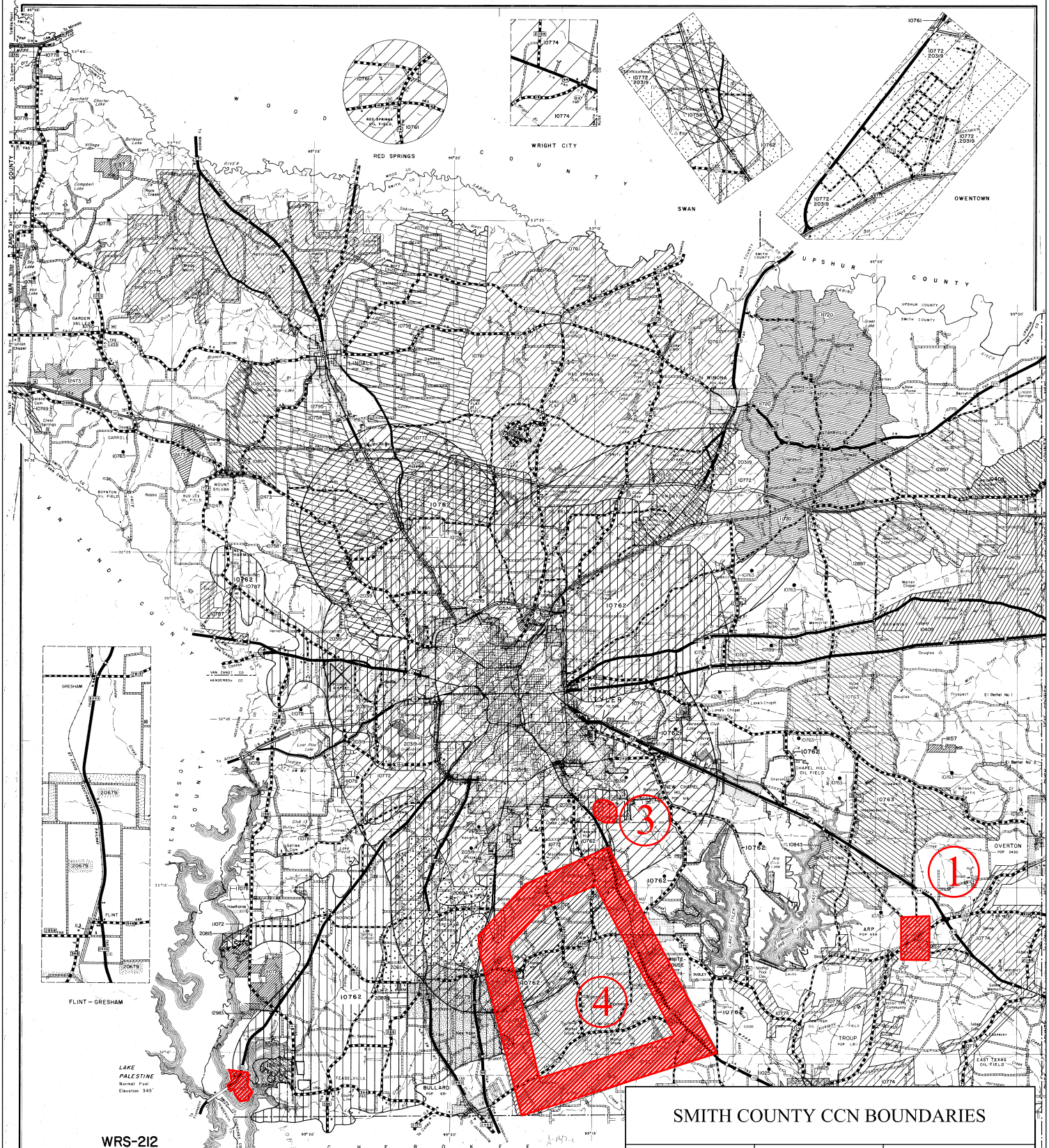
NOTE:

1. GLEN OAKS, HICKORY HOLLOW, LAKEWOOD, PARKWAY AND POWELL POINT SYSTEMS ARE COVERED IN A SINGLE LETTER TO SAM RAYBURN WATER, INC.

SAN AUGUSTINE COUNTY CCN BOUNDARIES		
REF. NO.	ENTITY	NEED (Q,P,S,U)
1	BLAND LAKE RURAL WSC	P-33 TRIHALOMETHANES
2	EL PINON ESTATES WATER SYSTEM	P-22 TRIHALOMETHANES
3	GLEN OAKS WATER SYSTEM	P-7
4	HICKORY HOLLOW WATER SYSTEM	P-2
5	LAKEWOOD WATER SYSTEM	TRIHALOMETHANES & HALOACETIC ACIDS
6	PARKWAY WATER SYSTEM	TRIHALOMETHANES
7	POWELL POINT WATER SYSTEM	P-26 TRIHALOMETHANES, HALOACETIC ACIDS
8	SAN AUGUSTINE RURAL WSC	P-262 TRIHALOMEHTANES

FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM


SHELBY COUNTY CCN BOUNDARIES
REF. NO. | ENTITY | NEED (Q,P,S,U)
① | CITY OF HUXLEY | TRIHALOMETHANES & HALOACETIC ACIDS
② | MCCLELLAND WSC | P-58
FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM
BLAND LAKE WSC— SEE SAN AUGUSTINE COUNTY MAP
WRS-210
GENERAL HIGHWAY MAP
SHELBY COUNTY
TEXAS
PREPARED BY THE
STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION
TRANSPORTATION PLANNING DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
1963
1980 CENSUS FIGURES
HIGHWAYS REVISED TO MARCH 1, 1986
LEGEND
Facilities only
Facilities + 200'
NOTICE
KEY TO COUNTIES
SABINE NATIONAL FOREST
SABINE RESERVOIR
TOLEDO BEND
SHELBY COUNTY TEXAS 210



WRS-212

GENERAL HIGHWAY MAP

SMITH COUNTY

TEXAS

PREPARED BY THE

STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

TRANSPORTATION PLANNING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

1965

1980 CENSUS FIGURES

HIGHWAYS REVISED TO MAY 1, 1982

LEGEND

Facilities only

Facilities + 200

REVISION DATE FOR CCN AREAS

11-25-2003

2-17-2004

Copies of this map are available for public use at nor eral cost from the State Department of Highways and Public Tr nsportation P O Box 5051, Austin, Texas 78763

POLYCONIC PROJECTION NORTH AMERICAN DATUM

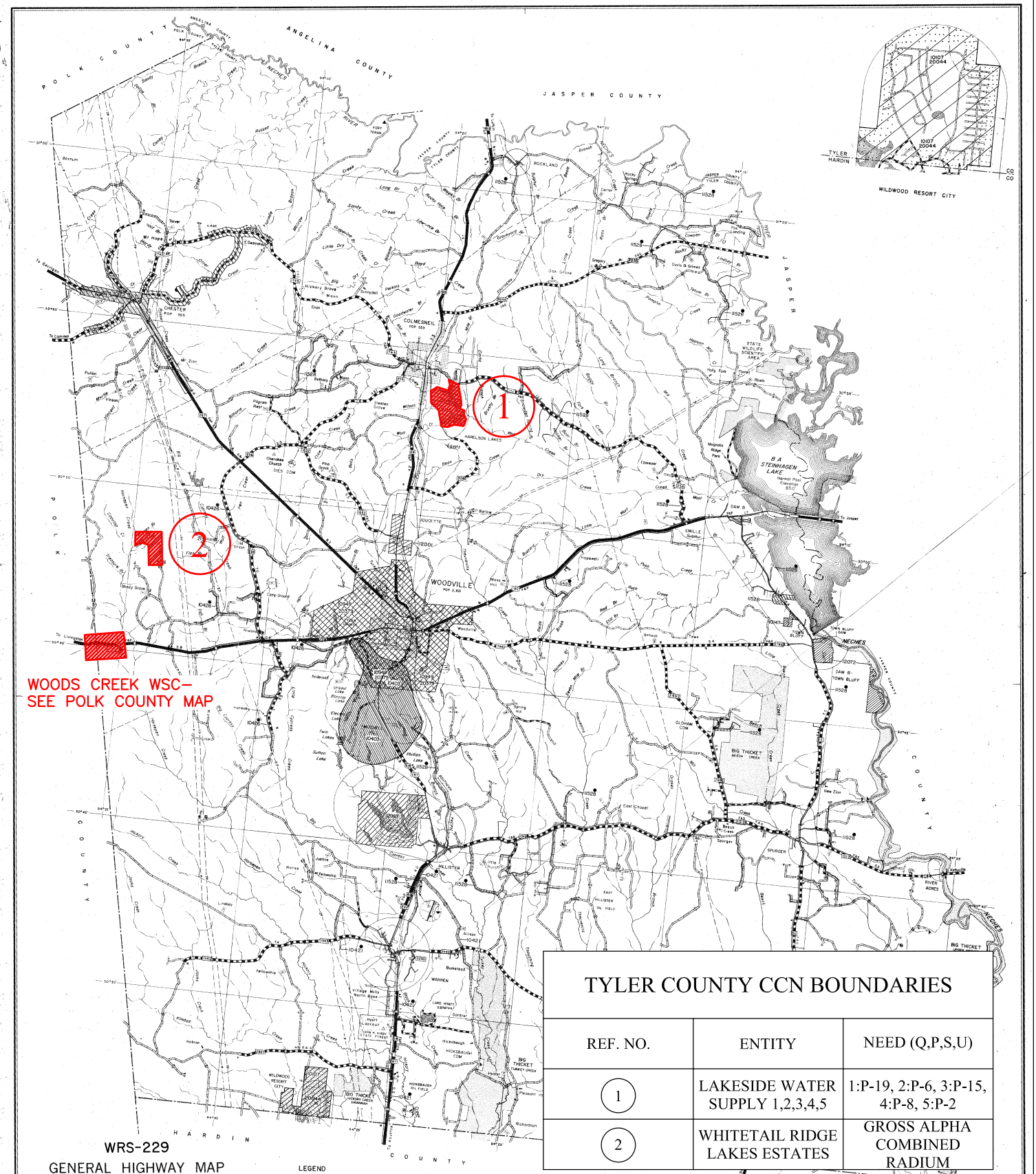
CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY

SMITH COUNTY

SMITH COUNTY CCN BOUNDARIES

REF. NO.	ENTITY	NEED (Q,P,S,U)
1	CITY OF ARP	TRIHALOMETHANES
2	LAKEWAY HARBOR	P-36
3	SOUTHPARK MOBILE HOME ESTATES	P-23
4	WALNUT GROVE WSC	P-135 TRIHALOMETHANES

FOOTNOTE: S IN MG, (MILLION GALLONS) P IN GPM



TYLER COUNTY CCN BOUNDARIES		
REF. NO.	ENTITY	NEED (Q,P,S,U)
1	LAKESIDE WATER SUPPLY 1,2,3,4,5	1:P-19, 2:P-6, 3:P-15, 4:P-8, 5:P-2
2	WHITETAIL RIDGE LAKES ESTATES	GROSS ALPHA COMBINED RADIUM

WRS-229

GENERAL HIGHWAY MAP

TYLER COUNTY

TEXAS

PREPARED BY THE

STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

TRANSPORTATION PLANNING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

1971

1980 CENSUS FIGURES

HIGHWAYS REVISED TO JANUARY 1, 1986

Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P.O. Box 5051, Austin, Texas 78763

LEGEND

- Facilities only
- Facilities + 200'

KEY TO COUNTIES

POLYCONIC PROJECTION NORTH AMERICAN DATUM

CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY

NOTICE

This map has been prepared for internal departmental use and has no official status. Accuracy is limited to validity of available data as of the dates shown.

LEGEND

TYLER COUNTY TEXAS 229

Appendix F

Letters Sent to Small Users

SPI SCHUMBURG & POLK, INC.
BEAUMONT · HOUSTON · TYLER

July 21, 2008

Mr. David Kelly, President
Cayuga WSC
P.O. Box 338
Cayuga, Texas 75832

Re: WUG Water Problems
Anderson County

Dear Mr. Kelly:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality concerns. Specifically, the concern in your system is trihalomethanes. Data to identify this concern was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from ground water and disinfect with hypochlorination. A review of CCN boundary maps indicates that your service area comes within two miles of the CRC WSC area in Henderson County. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

- Purchase all of your water supply from the CRC WSC, provided they have adequate capacity and are willing to serve you. Approximately two miles of connecting line would be required. This strategy may be counterproductive, since any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers.

- If your trihalomethane problem is confined to the north part of your system, connect only that part of the system to CRC.

8865 College Street Beaumont, Texas 77707 · www.spi-eng.com 409.866.0341 P 409.866.0337 F

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Olen Blake
Beulah WSC
12182 FM 58 Ste 200
Lufkin, Texas 75901

Re: WUG Water Problems
Angelina County

Dear Mr. Blake:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of storage capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as followed:

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 206 connections, a storage capacity of 41,200 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 40,000 gallons, 1200 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your service area is near or adjacent to those of Angelina WSC and Prairie Grove WSC. The Prairie Grove WSC (although suffering from production deficiency per TCEQ criteria) has a connection to the adjacent City of Diboll. Strategies for resolving the above stated problem are as follows:

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement).*

- Purchase all or part of your supply from a neighboring system, provided the other system has adequate supply and storage capacity to offset your storage deficiency and is willing to serve you.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

8885 College Street Beaumont, Texas 77707 www.spi-eng.com 409.866.0341 P 409.866.0337 F

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Ed Shirley
US Army Corps of Engineers
RR 3 Box 486
Jasper, Texas 75951

Re: WUG Water Problems
Angelina County – USCOE Hanks Creek Park

Dear Mr. Ed Shirley:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as followed:

- *capacity: TCEQ requires a capacity of 1 gallon per minute per connection (in the absence of storage) as defined by 290.45(b)). Based on 47 connections, a capacity of 47 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.043 mgd (30 gpm), 17 gpm short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates your entity is within three miles of the CCN area of the Four Way WSC, as well as being next to Sam Rayburn Reservoir. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well if feasible).*
- Connect to the Four Way WSC system, requiring an estimated two to three miles of line provided they have adequate capacity and are willing to serve you.
- Construct a storage tank so as to reduce your required production to 0.6 gpm per connection, or 28 gpm. The storage requirement would be 200 gallons per connection, or 9400 gallons minimum.

8865 College Street | Beaumont, Texas 77707 | www.spi-eng.com | 409.866.0341 P | 409.866.0337 F

- Construct a surface water plant with an intake from the reservoir. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Arthur Kervin, Owner
161 Annas Lane
Zavalla, Texas 75980

Re: WUG Water Problems
Angelina County-KERVIN'S RV PARK

Dear Mr. Kervin:

Gentlemen

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as followed:

- *capacity: TCEQ requires a capacity of 1 gallon per minute per connection (in the absence of storage) as defined by 290.45(b)). Based on 37 connections, a capacity of 37 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.012 mgd (8 gpm), 29 gpm short of the requirement, although your well is rated at 38 gpm.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps and other information indicates that your entity is within one to four miles of several community and noncommunity systems. Of these systems, Lakeview RV Park appears to have production deficiencies similar to yours, while Cassels Boykin County Park has marginally adequate capacity. Knupp's Korner Store is reportedly inactive. Other neighboring systems are Pleasure Point WSC, Rocky Creek Water System, Sun-n-Fun Association, and Walnut Ridge Estates. Additionally, your facility is near Sam Rayburn Reservoir. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well to restore its rated capacity if feasible)*. Possibly the problem could be in the pump.

- Connect to a neighboring system, provided any of the systems has adequate capacity and is willing to serve you. Several miles of line would be required for a connection.

8865 College Street • Beaumont, Texas 77707 www.spi-eng.com • 409.866.0341 P • 409.866.0337 F

- Construct a storage tank so as to reduce your required production to 0.6 gpm per connection, or 22 gpm. The storage requirement would be 200 gallons per connection, or 7400 gallons minimum. Note, however, that most available tank sizes are considerably larger. Note also that your production capacity would still have to be increased by almost a factor of three along with the storage tank.

- Construct a surface water plant with an intake from the reservoir. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPL SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Gordon Rogers, Owner
Lakeview RV & Motel
5896 State Highway 147
Zavalla, Texas 75980

Re: WUG Water Problems
Angelina County- Lake View RV Park (Lakeview RV & Motel)

Dear Mr. Rogers:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as followed:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 50 connections, a capacity of 30 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.007 mgd (5 gpm), 25 gpm short of the requirement, although your well is rated at 57 gpm*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps and other information indicates that your entity is within one to four miles of several community and noncommunity systems. Of these systems, Kervin's RV Park appears to have production deficiencies similar to yours, while Cassels Boykin County Park has marginally adequate capacity. Knupp's Korner Store is reportedly inactive. Other neighboring systems are Pleasure Point WSC, Rocky Creek Water System, Sun-n-Fun Association, and Walnut Ridge Estates. Additionally, your facility is near Sam Rayburn Reservoir. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well to restore much of its rated capacity if feasible)*. Possibly the problem could be in the pump.

- Connect to a neighboring system, provided any of the systems has adequate capacity and is willing to serve you. Several miles of line would be required for a connection.

8865 College Street : Beaumont, Texas 77707 · www.spl-eng.com · 409.866.0341 P : 409.866.0337 F

- Construct a surface water plant with an intake from the reservoir. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SL. IAUMBURG & POLK, INC
BEAUMONT · HOUSTON · TYLER

July 21, 2008

Prairie Grove WSC
C/O Eddie Courtney
General Manager
3436 FM 1818
Diboll, Texas 75941-4026

RE: WUG Water Problems
Angelina County- Prairie Grove WSC

Dear Mr. Courtney:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as followed:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 206 connections, a capacity of 124 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.123 mgd (85 gpm). 39 gpm short of the requirement. The database also shows that your Well 2 (one of the Sherwood Forest wells) has a rated capacity of 40 gpm although its tested capacity was only 8 gpm.*

The TCEQ database indicates that you receive your water supply from ground water and also have an operational connection with the City of Diboll, although there is no indication of any quantity actually purchased or any maximum purchased capacity. *(Your average daily consumption rate is listed as 0.054 mgd, which is less than half of your listed production capacity.)* A review of CCN boundary maps indicates that your entity is adjacent to the City of Diboll CCN as well as being close to the Beulah WSC. However, the Beulah WSC appears to have deficient storage problems. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing Well 2 to a larger portion of its rated capacity if feasible)*. Possibly the problem could be in the pump.

8865 College Street · Beaumont, Texas 77707 · www.epi-eng.com 409.866.0341 P · 409.866.0337 F

- Use your interconnection to the Diboll system any time your demand exceeds your production capacity, provided the system has adequate capacity to serve you as well as themselves during such peak usage periods. Note that you may need to provide the TCEQ with a purchase contract to demonstrate the availability of purchased water to satisfy your production requirements.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SLAUMBURG & POLK, INC
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Leo Bird, Owner
Walnut Ridge Estates Water System
P.O. Box 427
Zavalla, Texas 75980-0427

RE: WUG Water Problems
Angelina County-Walnut Ridge Estates

Dear Mr. Bird:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of storage capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as followed:

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 65 connections, a storage capacity of 13,000 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 9,000 gallons, 4000 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your service area is approximately a mile from that of Pleasure Point WSC and within three miles of that of the City of Zavalla. Strategies for resolving the above stated problem are as follows:

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement).*

- Purchase all or part of your supply from a neighboring system, provided the other system has adequate supply and storage capacity to offset your storage deficiency and is willing to serve you. One to three miles of connecting line would be required.

Additionally, an examination of the TCEQ database shows your production capacity to be only slightly more than the required capacity (40 gpm tested capacity for the two wells as compared with the requirement of 0.6 gpm per connection or 39 gpm). Normally the TCEQ requires steps toward system upgrading when it is nearing capacity. Unless you have a waiver from the TCEQ, you may need to take steps such as adding a new well, upgrading or rehabilitating an existing well, replacing a defective well pump, or interconnecting with another system.

8865 College Street · Beaumont, Texas 77707 · www.spi-eng.com · 409.866.0341 P · 409.866.0337 F

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Charles Peters,
President
Dialville Oakland WSC
P. O. Box 1029
Rusk, Texas 75785-7029

RE: WUG Water Problems
CHEROKEE County- DIALVILLE OAKLAND WSC

Dear Mr. Peters:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the two concerns in your system are shortage of production capacity and shortage of storage. Data to identify these concerns was generated from the TCEQ Water Utility Database and was analyzed as followed:

- *capacity: TCEQ requires at least two wells with a capacity of 0.6 gallons per minute per connection as defined by 290.45(b). Based on 280 connections, a capacity of 168 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.115 mgd (80 gpm), 88 gpm short of the requirement. The database also shows that one of your two wells to have a tested capacity of 80 gpm as compared to its rated capacity of 160 gpm. The other well, although rated at 250 gpm, showed a tested capacity of zero.*

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 280 connections, a storage capacity of 56,000 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 40,000 gallons, 16,000 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your CCN area is adjacent to or very near those of Craft-Turney WSC, Rusk Rural WSC, and the City of Rusk. Additionally, your CCN area comes within three miles of that of the City of Jacksonville, a major water provider. (Note, however, that the Rusk Rural WSC suffers from a production deficiency at one of its water plants.) Strategies for resolving the above stated problem are as follows:

8865 College Street Beaumont, Texas 77707 www.spi-eng.com 409.866.0341 P 409.866.0337 F

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing Well 2 to restore at least a large portion of its rated capacity if feasible).* Possibly the problem could be in the pump.

- Purchase all or part of your supply from a neighboring system, provided the other system has adequate supply and storage capacity to offset your storage deficiency and is willing to serve you. Note, however, that this strategy may lead to a problem with disinfectant byproducts in your system, since those parameters tend to increase with distance from the source and disinfection point.

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement).*

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SCHAUMBURG & POLK, INC
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Kathy Oliver
President
Forest WSC
P.O. Box 311
Wells, Texas 75976-9002

RE: WUG Water Problems
Cherokee County - Forest WSC

Dear Ms. Oliver:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality concerns. Specifically, the concerns in your system are trihalomethanes and haloacetic acids. Data to identify these concerns was generated from the TCEQ Water Utility Database.

Trihalomethanes and haloacetic acids are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in you water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from ground water and disinfect with gaseous chlorine. A review of CCN boundary maps indicates that your CCN area is adjacent or very near those of Alto Rural WSC and the City of Wells, as well as coming within two miles of that of the Pollock-Redtown WSC. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing chlorine dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

- Purchase all of your water supply from neighboring systems, provided they have adequate capacity and are willing to serve you. However, this strategy may be counterproductive, since any disinfection byproducts in their water systems will tend to increase over the additional distance to your system and to your customers.

The purpose of this letter is to request your input into the following:

8865 College Street · Beaumont, Texas 77707 · www.spi-eng.com 409.866.0341 P · 409.866.0337 F

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

Ricky J Bourque

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI LJHAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. James Galloway
President
New Concord WSC
P.O. Box 115
Price, Texas 75687-0115

RE: WUG Water Problems
Cherokee County- New Concord WSC

Dear Mr. Galloway:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having both possible water supply and water quality concerns. Specifically, the water supply concern in your system is shortage of production capacity, while your water quality concern is trihalomethanes. Data to identify these concerns was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 111 connections, a storage capacity of 22,200 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 20,000 gallons, 2200 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water and disinfect with gaseous chlorination. You are also shown to have an interconnection with another system (possibly one of the Wright City or South Rusk systems). A review of CCN boundary maps indicates that your service area is adjacent or very near to those of Stryker Lake WSC, Wright City WSC, and South Rusk WSC. (Note that the Stryker Lake WSC has a trihalomethane problem, which could aggravate your own problem if not corrected.) The Stryker Lake WSC, although presently using ground water, could potentially draw water from the adjacent Lake Stryker by arrangement with the lake's owner, Angelina-Nacogdoches WCID No. 1. Strategies for resolving the above stated problem are as follows:

8865 College Street Beaumont, Texas 77707 www.spi-eng.com • 409.866.0341 P . 409.866.0337 F

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in more outlying portions of the system.

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement)*.
- Purchase all or part of your supply from a neighboring system, provided the other system has adequate supply and storage capacity to offset your storage deficiency and is willing to serve you. This strategy may be counterproductive with regard to your disinfectant byproduct problem, since any byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers.

- If your disinfectant byproduct problem is confined to parts of your system near neighboring systems, connect only those parts of your system to the other systems.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

Ricky J Bourque

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Oscar McAnally
President
North Cherokee WSC
P.O. Box 1021
Jacksonville, Texas 75766-1021

RE: WUG Water Problems
Cherokee County

Dear Mr. Oscar McAnally:

Gentlemen

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality concerns. Specifically, the concern in your system is trihalomethanes and haloacetic acids. Data to identify this concern was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in you water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from ground and surface water purchased from the City of Jacksonville and disinfect with gaseous chlorine. The City is listed as using gaseous chlorine for both their ground and surface water. Surface water comes from Lake Jacksonville. Other adjacent water systems are not relevant in your case. Strategies for resolving the above stated problem are as follows:

- Coordinate with the City of Jacksonville to determine whether they are taking any actions with regard to their disinfection strategy which would reduce the levels of disinfection byproducts at your entry points. The lower the levels are at the entry points, the lower they will be at the far reaches of your system. Also, if the City can reduce the total organic carbon content of its water, there will be less carbon for the disinfectants to react with.

- If feasible, check with the City on the possibility of using the wells for all or your supply instead of surface water, since ground water tends to have lower organic carbon levels.

8865 College Street : Beaumont, Texas 77707 : www.epl-eng.com 409.866.0341 P 409.866.0337 F

- If feasible, check with the City on the possibility of using the wells for all or your supply instead of surface water, since ground water tends to have lower organic carbon levels.

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing chlorine dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

Additionally, an examination of the TCEQ database shows your maximum purchased capacity as 0.8 mgd as compared with the requirement of 0.6 gpm per connection or 1.512 mgd). Normally the TCEQ requires steps toward system upgrading when it is nearing capacity. Unless you have a waiver from the TCEQ, you may need to take steps such as increasing your contracted purchase amount.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SC AUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Ewell Newman
President
Rusk Rural WSC
P.O. Box 606
Rusk, Texas 75785-0606

RE: WUG Water Problems
Cherokee County- Rusk Rural WSC Crockett St. Plant

Dear Mr. Newman:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. One of your systems (the Crockett Street Plant) has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as followed:

- *capacity: TCEQ requires two or more wells with a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 485 connections, a capacity of 291 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.252 mgd (175 gpm), 126 gpm short of the requirement.*

The TCEQ database shows that your entity serves a large area in Cherokee County from Rusk westward with three water systems – the above referenced Crockett Street plant, the Loop 343 Plant, and the U. S. 69 Plant, all of which provide ground water. Each of your systems is shown to have one well. Your Crockett Street system is shown to have two interconnections, with three interconnections each for the other systems. The U. S. 69 system is shown as having an interconnection with the City of Rusk. Possibly all three of your systems are interconnected with each other. It appears that the requirement for two or more wells is satisfied by having interconnections between your systems.

A review of CCN boundary maps indicates that your entity is adjacent to the CCN areas for the City of Rusk, Craft-Turney WSC, and Dialville-Oakland WSC (which has a storage deficiency). Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well if feasible).*

8865 College Street Beaumont, Texas 77707 www.spi-eng.com : 409.866.0941 P · 409.866.0937 F

- Leave the interconnections between the Crockett Street system and one or both of your other systems open permanently, provided the other systems have adequate capacity. Pressure reducing valves may be necessary if the systems are in different pressure planes. One potential disadvantage is that the increased travel distance for water may increase the level of disinfection byproducts in the far reaches of your system.

- Purchase part of your supply from the Rusk or Craft-Turney system provided either system has adequate capacity and is willing to serve you. Any such connection could cause a problem with disinfection byproducts as discussed above.
- Investigate the possibility of obtaining surface water from the proposed Lake Columbia on the Angelina River not far from your CCN area.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SLAUMBURG & POLK, INC.
BEAUMONT · HOUSTON · TYLER

July 21, 2008

Mr. Jim Ross
President
Stryker Lake WSC
P.O. Box 156
New Summerfield, Texas 75780-0156

RE: WUG Water Problems
Cherokee County Stryker Lake WSC

Dear Mr. Ross:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality concerns. Specifically, the concern in your system is trihalomethanes. Data to identify this concern was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in you water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from ground water and disinfect with gaseous chlorine. A review of CCN boundary maps indicates that your service area is adjacent to that of the New Concord WSC (which is suffering from a storage deficit) and across Lake Stryker from New Salem WSC in Rusk County. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing chlorine dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

- Purchase all of your water supply from either of the neighboring systems, provided they have adequate capacity and are willing to serve you. However, this strategy may be counterproductive, since any disinfection byproducts in their water system will tend to increase over the additional distance to your system and to your customers. The storage deficit in the New Concord system may preclude any water from that entity.

8866 College Street Beaumont, Texas 77707 . www.spi-eng.com : 409.866.0341 P 409.866.0337 F

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SC. AUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Ms. Dolores Luke
Owner/Operator
Little Big Horn Services
8029 FM 92
Silsbee, Texas 77656-6370

RE: WUG Water Problems
Hardin County- Little Big Horn Services

Dear Ms. Luke:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as followed:

- *capacity: TCEQ requires a capacity of 1.5 gallons per minute per connection in the absence of storage) as defined by 290.45(b)). Based on 28 connections, a capacity of 42 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.041 mgd (28 gpm), 14 gpm short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your entity is within a few miles of the service area of North Hardin Water Supply Corporation. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well if feasible).*

- Connect to the North Hardin system, provided the system has adequate capacity. About 3½ miles of connection line would be required. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists

8865 College Street Beaumont, Texas 77707 www.epi-eng.com 409.866.0341 P : 409.866.0337 F

- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

July 21, 2008

Kelly Brewer
Operator
Water Necessities, Inc.
P.O. Box 62
Vidor, Texas 77670-0062

Re: WUG Water Problems
Hardin County- NORTHWOODS SUBDIVISION (NOW OWNED BY WATER NECESSITIES OF VIDOR)

Dear Mr. Brewer:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity was initially identified as having possible water supply concerns, although updated information showed that your number of connections had fallen to a level within capacity. Specifically, the earlier (and potentially recurring) concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 1.5 gallons per minute per connection (in the absence of storage) as defined by 290.45(b)). Based on 32 connections, a capacity of 48 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.081 mgd (56 gpm), more than of the requirement. However, an initial screening showed 39 connections, requiring 59 gpm, 3 gpm over your capacity.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your entity is within the CCN area of Johnson Water Service and also comes within a short distance from Ranchland (operated by a property owners' association). However, conversations with you and with Johnson Water Service indicate that they sold your company the Northwoods system several years ago and do not operate any water system in the remainder of the CCN area. You have indicated that you operate two other systems within that CCN area – New Forest and Breakaway Trails, and that you are interested in connecting the various systems. The New Forest system appears to be about two miles from Northwood and could be considered for connection. Additionally, the map shows Northwoods to be within two miles of the City of Kountze.

Strategies for resolving the above stated problem, should it recur, are as follows:

8865 College Street Beaumont, Texas 77707 www.spl-eng.com 409.866.0341 P 409.866.0337 F

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well if feasible).*\

- Construct a storage tank so as to reduce your required production to 0.6 gpm per connection, 19 to 23 gpm. The storage requirement would be 200 gallons per connection, or 7800 gallons minimum. Note, however, that most available tank sizes are considerably larger.
- Connect to a neighboring system, provided the system has adequate capacity and is willing to serve you. About one to two miles of connection line would be required, depending on which system is being tied into. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

You have also expressed interest in expanding your water service to various unserved portions of the CCN in which Northwood and two of your other systems are located. In the process, your three existing systems might become regionalized into one larger system.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPL SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Donald Tolner
Owner
Lake Palestine Campground
P.O. Box 1074
Frankston, Texas 75763-1074

RE: WUG Water Problems
Henderson County- ***LAKE PALESTINE CAMPGROUND***

Dear Mr. Tolner:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the two concerns in your system are shortage of production capacity and shortage of storage. Data to identify these concerns was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 78 connections, a capacity of 47 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.026 mgd (18 gpm), 29 gpm short of the requirement.*

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 78 connections, a storage capacity of 15,600 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 1000 gallons, 14,600 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your entity is near one of the CCN areas of Monarch Utilities 1LP *(apparently their Highsaw system)*. Your entity is also located near a smaller system, the Echo Hills system. Both systems use ground water according to the TCEQ database. However, your entity and neighboring systems are located near Lake Palestine. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well if feasible)*. Additional storage capacity would be also needed as discussed below.

8865 College Street Beaumont, Texas 77707 www.spl-eng.com : 409.866.0341 P : 409.866.0337 F

- Connect to the Highsaw system, provided the system has adequate capacity and is willing to serve you. Additional storage capacity would also be needed as discussed below unless the Highsaw system has enough storage to make up your deficiency.

- Investigate the possibility of obtaining water from Lake Palestine through one of the entities which participated in construction of the reservoir and who are allotted water from the reservoir. Note that the reservoir belongs to the Upper Neches River Municipal Water Authority, created by the participating entities. Note, however, that you would need a surface water plant, which may not be cost effective for a small user. Additional storage capacity would still be needed.

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement).*

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPL SLAUMBURG & POLK, INC
BEAUMONT · HOUSTON · TYLER

July 21, 2008

Mr. Eugene Buford
Superintendent
La Poynor ISD
13155 US Highway 175 E
Larue, Texas 75770-5706

RE: WUG Water Problems
Henderson County-LAPOYNER ISD

Dear Mr. Buford:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of storage. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *storage: TCEQ requires a capacity of total storage capacity of 50% of maximum daily demand as defined by 290.45(b)). For a school, assuming cafeterias, gymnasiums, and showers, maximum daily demand is taken as 30 gallons per day per connection (for 300 or more persons served) as defined by 290.45(b)). Based on 410 persons served, a capacity of 12,300 gpd is required to meet TCEQ regulations. Thus, required storage would be 50% of 12,300 or 6150 gallons. The database indicates you have no storage (the TCEQ does not count pressure tank capacity as storage).*

A review of CCN boundary maps indicates that your entity is within the CCN area of Poynor Community WSC and about a mile from that of Virginia Hill WSC. Strategies for resolving the above stated problem are as follows:

- Construct a storage tank large enough to meet the requirement (6150 gallons minimum).

- Connect to the Poynor system, provided the system has adequate capacity and storage capacity to offset your storage deficiency and is willing to serve you. Alternately, you could connect to the Virginia Hill system, requiring at least a mile of connection line. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

The purpose of this letter is to request your input into the following:

8885 College Street . Beaumont, Texas 77707 www.spl-eng.com 409.866.0341 P · 409.866.0337 F

One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

Ricky J. Bourque

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI S...HAUMBURG & POLK, INC.
BEAUMONT · HOUSTON · TYLER

July 21, 2008

Mr. Johnny Babb
President
The Consolidated WSC
P.O. Box 1226
Crockett, Texas 75835-1226

RE: WUG Water Problems
HOUSTON County-CONSOLIDATED WSC (287 SOUTH PLANT)

Dear Mr. Babb:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. One of your systems, 287 South, has been identified as having possible water quality concerns. Specifically, the concern in your system is trihalomethanes. Data to identify this concern was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The database shows that you operate fourteen water systems covering the majority of Houston County. The TCEQ database indicates that you purchase your water supply for the 287 South system from the City of Crockett. The City has one well on line but purchases all or part of its water as surface water from Houston County WCID No. 1 (the District). The database does not show that you provide any disinfection in your system, but shows gaseous chlorine applied by the City. The District is shown to provide two types of disinfection in its surface water plant – gaseous chlorine and chloramines.

A review of CCN boundary maps indicates that your CCN area comes within two miles of the CRC WSC area in Henderson County and within a mile of the Pennington WSC in Trinity and Houston Counties. However, given your existing purchase arrangements, most solutions involving the other water systems appear to be irrelevant to your problem. Strategies for resolving the above stated problem are as follows:

- Coordinate with the City of Crockett and also with the District 1 to determine whether they are taking any actions with regard to their disinfection strategy which would reduce the levels of disinfection byproducts at your entry points. The lower the levels are at the

8865 College Street : Beaumont, Texas 77707 : www.spi-eng.com 409.866.0341 P : 409.866.0337 F

entry points, the lower they will be at the far reaches of your system. Also, if the District can reduce the total organic carbon content of its water, there will be less carbon for the disinfectants to react with.

- Look into an arrangement with the City to reduce the initial chlorine dosage applicable to the water feeding your system. You may need to compensate by adding booster disinfection points in your system, particularly in outlying areas. This type of arrangement is feasible only if your feed point is favorably located in relation to the City's intake and chlorination points.

- If the City is operating its well and if it is located favorably for you, look into the possibility of obtaining all or part of your water from the well, since ground water tends to have lower organic carbon levels. With this approach, you may also try to arrange for reduced initial chlorine dosages (or alternated disinfection methods) along with booster disinfection in your system.

- If your trihalomethane problem is confined to the parts of your system near the Pennington system, connect those parts of your system to their system provided they have adequate capacity and are willing to serve you.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

Ricky J Bourque

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

G:\Region I 3rd Cycle\Study No. 2\Letters\REGISmallWUG\hou\Consolidated.doc

SCHAUMBURG & POLK, INC.
BEAUMONT · HOUSTON · TYLER

July 21, 2008

Mr. Jerry Shands
General Manager
Brookeland FWSD
P.O. Box 5350
Sam Rayburn, Texas 75951-7700

RE: WUG Water Problems
Jasper County-Forest Hill Water Supply

Dear Mr. Shands:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your Forest Hills water system has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of storage capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 124 connections, a storage capacity of 24,800 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 21,000 gallons, 3800 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your service area is adjacent to that of Rayburn Country MUD, as well as being next to Sam Rayburn Reservoir. Strategies for resolving the above stated problem are as follows:

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement).*

- Purchase all or part of your supply from Rayburn Country MUD, provided that system has adequate supply and storage capacity to offset your storage deficiency and is willing to serve you.

- Construct a surface water plant with an intake from the reservoir for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

8865 College Street , Beaumont, Texas 77707 www.spi-eng.com 409.866.0341 P ; 409.866.0337 F

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI S. HAUMBURG & POLK, INC
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Janelle Taylor
TCEQ Coordinator
Texas Parks & Wildlife Department
4200 Smith School Road
Austin, Texas 78744-3218

RE: WUG Water Problems
JASPER County TPWD MARTIN DIES STATE PARK (HEN HOUSE RIDGE AND WALNUT RIDGE)

Dear Ms. Taylor:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your two systems in Martin Dies State Park on the east side of Steinhagen Reservoir have been identified as having possible water supply concerns. These systems serve the Hen House Ridge Unit on the south side of U. S. 190 and the Walnut Ridge Unit on the north side of that highway. Specifically, the concerns in both systems are shortage of production capacity. Data to identify these concerns was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires two or more wells with a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 127 connections for Hen House Ridge, a capacity of 76 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.089 mgd (64 gpm), 12 gpm short of the requirement. Walnut Ridge has a similar shortage. Although the current TCEQ database shows only one connection for the Walnut Ridge system, an examination of the map of the two units shows it to be similar and almost equal to Hen House Ridge. Based on the served population of 300, it appears that Walnut Ridge has the equivalent of 100 connections, requiring 60 gpm to meet TCEQ regulations. The database indicates you have a capacity of 0.066 mgd (46 gpm), 14 gpm short of the requirement.*

The TCEQ database shows your two systems to receive their water supply from ground water and to have an emergency interconnection between them. Our information shows a Corps of Engineers park (Sandy Creek) to be located about a mile south of Hen House Ridge, but it has only slightly larger production capacity than your large well and lacks storage. A review of CCN boundary maps indicates that your two systems are within three miles of the CCN area for the Upper Jasper County Water Authority, as well as being next to Sam Rayburn Reservoir. Strategies for resolving the above stated problem are as follows:

8685 College Street Beaumont, Texas 77707 : www.spi-eng.com : 409.866.0341 P . 409.866.0337 F

CCN boundary maps indicates that your two systems are within three miles of the CCN area for the Upper Jasper County Water Authority, as well as being next to Sam Rayburn Reservoir. Strategies for resolving the above stated problem are as follows:

- Construct a new well for each large enough to make up the deficiency *(or rehabilitate or upgrade your existing Walnut Ridge well to restore its rated 100 gpm capacity if feasible).*

- Consolidate both systems by leaving the interconnection open permanently and construct only one well (or upgrade the Walnut Ridge well) to achieve the total required capacity of 136 gpm minimum.

- Purchase all or part of your supply for one or both systems from the Upper Jasper County Water Authority system provided they have adequate capacity and are willing to serve you. Any such connection could cause a problem with disinfection byproducts because of the distance from their disinfection points to your systems.

- Construct a surface water plant with an intake from the reservoir for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI STAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. James Gray
President
Westwood WSC
RR 3 Box 519-118A
Jasper, Texas 75951-9541

Re: WUG Water Problems
JASPER County- WESTWOOD WSC

Dear Mr. Gray:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your Westwood water system has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 149 connections, a capacity of 89 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.122 mgd (85 gpm), 4 gpm short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your entity is adjacent to the CCN area of the Upper Jasper County Water Authority as well as being next to Sam Rayburn Reservoir. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade one or both of your existing wells to their rated capacities if feasible).* Possibly the problem in one or both wells is the pump.

- Purchase all or part of your water supply from the Upper Jasper County Water Authority system, provided the system has adequate capacity. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

- Construct a surface water plant with an intake from the reservoir for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

8865 College Street Beaumont, Texas 77707 : www.spi-eng.com : 409.866.0341 P : 409.866.0337 F

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SCHUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Steve Rose
President
Hamshire Community WSC
P.O. Box 417
Hamshire, Texas 77622-0471

RE; WUG Water Problems
Jefferson County- Hamshire WSC

Dear Mr. Rose:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of storage capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b). Based on 102 connections, a storage capacity of 20,400 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 20,000 gallons, 400 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your entity is within a few miles of the CCN areas of West Jefferson MWD and Gray Utilities Service (Sunchase on Interstate 10) as well as Trinity Bay Conservation District in Chambers County (Region H). Several miles of connecting line would be required. Strategies for resolving the above stated problem are as follows:

- Purchase all or part of your water supply from a neighboring system, provided the system has adequate supply and storage capacity to offset your storage deficiency and is willing to serve you. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, use a size well above your minimum requirement)*.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists

8865 College Street Beaumont, Texas 77707 www.spi-eng.com 409.866.0341 P 409.866.0337 F

- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and

- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SC. AUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. John Cochran
President
Meeker MWD
807 N Meeker Road
Beaumont, Texas 77713-3151

Re: WUG Water Problems
Jefferson County- Meeker MWD

Dear Mr. Cochran:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality concerns. Specifically, the concern in your system is trihalomethanes. Data to identify this concern was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in you water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from ground water and disinfect with gaseous chlorine. Additionally, you have an emergency interconnection with the City of Beaumont, which disinfects its surface water with chloramines and is in the process of converting its ground water disinfection from gaseous chlorine to chloramines. A review of CCN boundary maps shows your CCN area to adjoin or come near the CCN areas of the cities of Beaumont and China as well as Bevil Oaks MUD, Northwest Forest MUD (wholesale customer of Beaumont), and West Jefferson MWD. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing chlorine dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

- Purchasing all of your water supply from one of the neighboring systems, provided they have adequate capacity and are willing to serve you. However, this strategy may be counterproductive, since any disinfection byproducts in their water system

8865 College Street | Beaumont, Texas 77707 | www.spi-eng.com | 409.866.0341 P 409.866.0337 F

(trihalomethanes and haloacetic acids) will tend to increase over the additional distance to your system and to your customers.

- If your trihalomethane problem is confined to the parts of your system adjacent to neighboring systems, connect only those parts of the system to other systems.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SC. AUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. David French
Total Fina Petrochemicals, Inc.
P.O. Box 849
Port Arthur, Texas 77641-0849

RE: WUG Water Problems
Jefferson County-TOTAL PETROCHEMICAL USA PORT ARTHUR REFINERY

Dear Mr. French:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality concerns. Specifically, the concern in your system is trihalomethanes in what appears to be your domestic water supply system for your plant. Data to identify this concern was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive the water supply for your own supply system from ground water and disinfect with gaseous chlorination. A review of CCN boundary maps indicates that your plant is adjacent or very near the cities of Groves and Port Arthur as well as being near the LNVA canal system. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

- Purchase all or part of your water supply from either of the two cities, provided they have adequate capacity and are willing to serve you. This strategy may be counterproductive, since any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers.

8865 College Street Beaumont, Texas 77707 . www.spi-eng.com | 409.866.0341 P 409.866.0337 F

- Construct a surface water plant with an intake from the LNVA canal system for all or part of your domestic supply. Possibly you have an existing surface water plant to treat canal water for use in your industrial processes and can modify your plant to provide water treatment for domestic use. You may possibly need to modify any contract which you may have with the LNVA to provide for a larger volume of usage.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SL. AUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. E. Walker
Manager
Libby WSC
P.O. Box 115
Martinsville, Texas 75958-0115

RE: WUG Water Problems
Nacogdoches County- Libby WSC

Dear Mr. Walker:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality concerns. Specifically, the concern in your system is trihalomethanes. Data to identify this concern was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from ground water and disinfect with hypochlorination. A review of CCN boundary maps indicates that your CCN area is very near those of the Swift WSC and the Appleby WSC and comes within a mile of the Timpson Rural WSC. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

- Purchase part or all of your water supply from neighboring systems provided they have adequate capacity and are willing to serve you. This strategy may be counterproductive, since any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers.

- If your trihalomethane problem is confined to the parts of your system near other systems, connect only those parts of your system to the other systems.

8865 College Street · Beaumont, Texas 77707 www.spi-eng.com · 409.866.0341 P · 409.866.0337 F

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SL. LAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Jerry Shands
General Manager
Brookeland FWSD
P.O. Box 5350
Sam Rayburn, Texas 75951-7700

RE: WUG Water Problems
Newton County - *TOLEDO VILLAGE WSC (now part of Brookeland FWSD)*

Dear Mr. Shands

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your Toledo Village water system has been identified as having possible water supply concerns. Specifically, the two concerns in your system are shortage of production capacity and shortage of storage. Data to identify these concerns was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 500 connections, a capacity of 300 gpm is required to meet TCEQ regulations. The database indicates you have two wells of total capacity of 151 gpm (0.217 mgd), 149 gpm short of the requirement. (The total production of 0.278 mgd listed in the database is inconsistent with the pump capacities, but would still be inadequate.)*

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 500 connections, a storage capacity of 100,000 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 84,000 gallons, 16,000 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your entity is within three miles of Beechwood WSC, as well as being adjacent to Toledo Bend Reservoir. However, that WSC appears to have problems with deficient production. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing wells if feasible).*

8885 College Street Beaumont, Texas 77707 ; www.spi-eng.com ! 409.866.0341 P ; 409.866.0337 F

- Construct a surface water plant with an intake from the reservoir for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement).*

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

July 21, 2008

Mr. James Manchac
Owner
Evergreen Park Hickory Hills Water System
1590 N. Main St.
Vidor, Texas 77662-3012

RE: WUG Water Problems
Orange County Ever Green Park Hickory Hills System

Dear Mr. Manchac:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity was initially identified as having possible water supply concerns, although updated information showed that your number of connections had fallen to a level within capacity. Specifically, the earlier (and potentially recurring) concern in your system is shortage of storage capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b). Based on 153 connections, a storage capacity of 30,600 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 31,000 gallons, slightly more than the requirement. However, an initial screening showed 160 connections, requiring 32,000 gallons, 1000 gallons over your capacity.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your service area is near or adjacent to those of Community Water System (Capri and Gull Streets), Lexington Water Systems, Orange County WCID No. 1, Orangefield WSC, and Water Necessities, Inc. (two subdivisions on FM 105 toward Orangefield). Strategies for resolving the above stated problem are as follows:

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement).*

- Purchase all or part of your supply from a neighboring system, provided the other system has adequate supply and storage capacity to offset your storage deficiency and is willing to serve you. (Only the Orangefield and Orange County WCID No. 1 systems appear to be large enough to help you.) One potential problem would increased levels of disinfection byproducts from the increased distance that the water must travel.

6965 College Street · Beaumont, Texas 77707 : www.spi-eng.com 409.866.0341 P : 409.866.0337 F

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SC AUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Honorable David Bush
Mayor
City of Rose City
370 Rose City Dr.
Vidor, Texas 77662-9466

Re: WUG Water Problems
Orange County-City of Rose City

Honorable Mr. Bush:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality concerns. Specifically, the concerns in your system are trihalomethanes and haloacetic acids. Data to identify these concerns was generated from the TCEQ Water Utility Database.

Trihalomethanes and haloacetic acids are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from surface water (treated in your own plant) and disinfect with gaseous chlorination prior to filtration, then with chloramines after filtration. A review of CCN boundary maps indicates that your service area is adjacent to the CCN of the Orange County WCID No. 1, which uses ground water. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

- Purchase all or part of your water supply from the Orange County WCID No. 1, provided they have adequate capacity and are willing to serve you. Approximately two miles of connecting line would be required. This strategy may be counterproductive, since any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers.

8865 College Street : Beaumont, Texas 77707 · www.spl-eng.com 409.866.0341 P 409.866.0337 F

- If your disinfectant problem is confined to the east part of your system, connect only that part of the system to Orange County WCID No. 1.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

July 21, 2008

Mr. Kelly Brewer
Operator
Water Necessities, Inc.
P.O. Box 62
Vidor, Texas 77670-0062

Re: WUG Water Problems
Orange, County- Timer, Claire and Corbett Systems

Dear Mr. Brewer:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Three of your systems north of Vidor (Timer, Claire, and Corbett, all served by ground water) have been identified as having possible water quality concerns. Specifically, the concern in each of those systems is arsenic. Data to identify this concern was generated from the TCEQ Water Utility Database (in the case of Timer) and from a conversation between you and our staff on June 24, 2008.

Arsenic is a metal which occurs in ground and/or surface water in some areas. The metal has long been associated with poisoning. A presentation from the TCEQ shows several main points:

- Ingestion arsenic at the levels found in some ground water over long periods of time can cause several health problems including cancer and cardiovascular and pulmonary problems.

- Arsenic in ground water is prevalent in several parts of the nation, but in Southeast Texas it appears to be found in problem concentrations only in northeastern Orange County. It is found in some portions of the Gulf Coast Aquifer (the only major aquifer in Southeast Texas) which includes the Jasper, Chicot, and Evangeline Aquifers.

- Arsenic is difficult and expensive to remove. Treatment methods include ion exchange, activated alumina, iron based sorbents (which you mentioned), reverse osmosis, and several precipitation/filtration processes.

You indicated that the Timer system has only 11 connections. The TCEQ database shows 32 connections for Claire and 30 for Corbett. A review of CCN boundary maps indicates that the Timer system is located about two miles outside the CCN of the Orange County WCID No. 1 and about three miles outside that of the Mauriceville SUD, making a connecting line with those

8865 College Street · Beaumont, Texas 77707 www.spi-eng.com · 409.866.0341 P · 409.866.0337 F

entities prohibitively expensive for the small number of customers. The Claire and Corbett systems are located adjacent or near the Orange County WCID No. 1 CCN near Pine Forest. It should be noted also that the area along FM 105 for several miles north of Pine Forest (including the Timer and Corbett systems) is heavily populated with only two small local water systems in addition to yours. The rest of the residents are apparently served by individual wells.

You indicated that the Pine Forest area (part of the Orange County WCID No. 1) is served by a well approximately two miles to the south, and that you do not yet know whether that well has arsenic problems. Strategies for resolving the above stated problem are as follows:

- Possibly drill a new well (at least in the case of the Timer system), but you may have to go some distance away to find ground water without the arsenic problem. Alternately, since the Gulf Coast Aquifer is composed of several component aquifers, you may be able to find good water at a different depth from that of your existing wells. You indicated that you would talk to local well drillers and also have your own well water tested.

- Purchase water from the Orange County WCID No. 1 for the Claire and Corbett systems, provided the District has the capacity and the necessary water quality and is willing to serve you. You may have to construct connecting lines from that system to your systems. You may wish to replace your well supplies entirely or blend your well water with District water to dilute the arsenic concentration to an acceptable level.

- Treat your well water with one of the various methods. However, you have indicated that such treatment could be prohibitively expensive, especially for Timer.

- Take steps toward forming a larger water system covering the heavily populated area north of Pine Forest. For a system serving hundreds or possibly several thousand customers, water service would be more cost effective. Alternate supplies could include a pair of wells at the nearest location where good water can be found; or wholesale connecting lines to either of the two nearby large systems. Treatment, although expensive, could possibly be cost effective for a system of that size.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

July 21, 2008

Mr. Jerry Peace
President
A & P WSC
P.O. Box 322
Carthage, Texas 75633-0322

RE: WUG Water Problems
Panola County- A & P WSC Pump 1

Dear Mr. Peace:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 190 connections, a capacity of 114 gpm is required to meet TCEQ regulations. The database indicates you have a production capacity of 0.052 mgd (36 gpm) plus a maximum purchased capacity of 0.100 mgd (69 gpm) for a total of 105 gpm, 13 gpm short of the requirement.*

The TCEQ database indicates that you have two sources for your water supply -- ground water from one well of your own and purchased water from the City of Carthage. Your data sheet shows that all of your water including that from the City is ground water, but it also shows Lake Murvaul (the City's surface water source) as the source of your purchased water. A review of CCN boundary maps indicates that your entity is adjacent to the CCN area of Carthage and within a few miles of the CCN areas of the Gary WSC and the Clayton WSC. Since the two latter systems are listed as having production problems of their own, it appears that only the City of Carthage is relevant. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well to its rated capacities if feasible)*. Possibly the problem is the pump.

- Reactivate your abandoned Pump 2 well if feasible. The TCEQ database shows that well to be used for non-drinking water purposes. It may require sterilization measures, or it may have other problems which make use of that well unfeasible.

8865 College Street Beaumont, Texas 77707 www.spi-eng.com 409.866.0341 P . 409.866.0337 F

- Modify your purchase contract with the City of Carthage if possible to increase your allowable purchase.

- Construct a surface water plant with an intake from the Sabine River. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SC. AUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Mike Pennington
President
Clayton WSC
P.O. Box 3
Clayton, Texas 75637-0003

Re: WUG Water Problems
Panola County - Clayton WSC Plant 1 & 2

Dear Mr. Pennington

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Two of your three systems, Plants 1 and 2, have been identified as having possible water supply concerns. Specifically, the two concerns in your systems are shortage of production capacity (apparently in both systems) and shortage of storage for Plant 2. Data to identify these concerns was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 43 connections for Plant 1, a capacity of 26 gpm is required to meet TCEQ regulations. The database indicates you have one well with a capacity of 24 gpm (0.34 mgd), 2 gpm short of the requirement. For Plant 2, based on 287 connections, a capacity of 172 gpm (0.248 mgd) is required. The database is not completely clear as to your production capacity. It shows 0.100 mgd maximum purchased capacity from the City of Carthage. It also shows your production capacity as 0.173 mgd which (combined with the purchased capacity) would be more than adequate. However, your only well has a rated capacity listed at 100 gpm (0.144 mgd), resulting in a combined production and purchase capacity of 0.248 mgd, 4 gpm short of the requirement. No tested well capacity is shown.*

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 287 connections for Plant 2, a storage capacity of 57,400 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 21,000 gallons, 36,400 gallons short of the requirement. However, it is possible that the City of Carthage has adequate storage to cover all or part of your requirement. The database shows the City to have 4 million gallons of storage as compared with 6330 retail and wholesale connections, over three times the required 200*

8865 College Street : Beaumont, Texas 77707 . www.spi-eng.com · 409.866.0341 P 409.866.0337 F

gallons per connection. However, the requirements must be met for each pressure plane, and it is not clear whether your Plant 2 system is in the same pressure plane as the City, regarding whether the entire City is in one pressure plane.

The TCEQ database indicates that Plant 1 receives its water supply from ground water, and that Plant 2 receives surface water from the City but can provide ground water from its own well. A review of CCN boundary maps indicates that your overall CCN area touches that of the Hollands Quarter WSC as well as that of Carthage, and also comes near those of Gary WSC, A & P WSD, and the Murvaul WSC. However, the first two of those WSC's appear to have problems with deficient production.

Your CCN area also comes close to Lake Murvaul. The geographic boundaries of your three systems are not clear. Strategies for resolving the above stated problem are as follows:

- Construct one or more new wells large enough to make up the deficiencies in Plant 1 and/or Plant 2 *(or rehabilitate or upgrade your existing wells if feasible)*.

- Transfer some water from Plant 3 if it has adequate capacity. Booster pumps and/or pressure reducing valves may be needed if the plants are in different pressure planes.

- Modify your purchase contract with the City of Carthage if possible to increase your allowable purchase for Plant 2.

- Construct a surface water plant with an intake from Lake Murvaul for all or part of your supply, provided you can obtain or lease the necessary water rights from the Panola County FWSD No. 1. This alternative may be less cost effective than other solutions for a supply requirement this small.

- Increasing your storage capacity for Plant 2 by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement)*.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SCHAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Walter Craft
President
P.O. Box 160
Gary, Texas 75643-0160

Re: WUG Water Problems
Panola County- Gary WSC

Dear Mr. Craft:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having both possible water supply and water quality concerns. Specifically, the two water supply concerns in your system are shortage of production capacity and shortage of storage, while your water quality concerns are trihalomethanes and haloacetic acids. Data to identify these concerns was generated from the TCEQ Water Utility Database.

Trihalomethanes and haloacetic acids are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 295 connections, a capacity of 177 gpm is required to meet TCEQ regulations. The database indicates you have a production capacity of 0.180 mgd (125 gpm), but the tested capacities of your three wells add up to 129 gpm, still 48 gpm short of the requirement.*

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 295 connections, a storage capacity of 59,000 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 50,000 gallons, 9000 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water and disinfect with Miox (a mixed oxidant product) with booster chlorination at a point within your system. A review of CCN boundary maps indicates that your CCN area is near or adjacent to those of A & P WSC, Clayton WSC, Murvaul WSC, and South Murvaul WSC in Panola County,

8865 College Street Beaumont, Texas 77707 www.spi-eng.com 409.866.0341 P 409.866.0337 F

as well as Timpson Rural WSC in Shelby County. Your CCN area also comes near Lake Murvaul. However, the first two nearby systems listed above appear to have problems with deficient production. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in more outlying portions of the system.

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing wells if feasible)*.

- Purchase part of your water supply from the City of Carthage from their raw water line from Lake Murvaul, provided they have sufficient capacity and are willing to serve you. A surface water plant would be needed to treat the water. This strategy may be counterproductive with regard to your disinfectant byproduct problem, since any byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers. Additionally, surface water tends to have more organic carbon and thus forms more byproducts.

- If your disinfectant byproduct problem is confined to parts of your system near the City of Carthage facilities, connect only that part of the system to the City.

- Construct a surface water plant with an intake from the reservoir for all or part of your supply, provided you can obtain or lease the necessary water rights from Panola County FWSD No. 1. This alternative may be less cost effective than other solutions for a supply requirement this small.

- Purchase all or part of your water supply from neighboring systems, provided they have adequate capacity. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

- Increasing your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement)*.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering (or already implementing, such as your present disinfection methods)), as possible solutions,

- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SCHAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Jackie Merket
President
Rock Hill WSC
P.O. Box 673
Beckville, Texas 75631-0673

RE: WUG Water Problems
Panola County- Rock Hill WSC

Dear Mr. Merket:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having both possible water supply and water quality concerns while your water quality concern is trihalomethanes.. Specifically, the water supply concern in your system is shortage of production capacity. Data to identify these concerns was generated from the TCEQ Water Utility Database and was analyzed as followed:

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 307 connections, a capacity of 184 gpm is required to meet TCEQ regulations. The database indicates you have a production capacity of 0.167 mgd (116 gpm) plus a maximum purchased capacity of 0.050 mgd (35 gpm) for a total of 151 gpm, 33 gpm short of the requirement.*

The TCEQ database indicates that you can receive ground water from your own well and can purchase surface water from the City of Carthage. You are shown to disinfect the purchased water with gaseous chlorination and your own well water with chloramines. A review of CCN boundary maps indicates that your CCN area overlaps or comes near those of the City of Beckville, the City of Tatum, Rehobeth WSC, and Riderville WSC, as well as coming near the Sabine River. This is in addition to your operational connection to the City of Carthage. Strategies for resolving the above stated problem are as follows:

8865 College Street · Beaumont, Texas 77707 ; www.spi-eng.com 409.866.0341 P . 409.866.0337 F

- Coordinate with the City of Carthage to determine whether they are taking any actions with regard to their disinfection strategy which would reduce the levels of disinfection byproducts at your entry points. The lower the levels are at the entry points, the lower they will be at the far reaches of your system. Also, if the City can reduce the total organic carbon content of its water, there will be less carbon for the disinfectants to react with.

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in more outlying portions of the system.

- Look into an arrangement with the City to reduce the initial chlorine dosage applicable to the water feeding your system. You may need to compensate by adding booster disinfection points in your system, particularly in outlying areas. This type of arrangement is feasible only if your feed point is favorably located in relation to the City's intake and chlorination points.

- If your trihalomethane problem is confined to the parts of your system near other neighboring systems, connect those parts of your system to their systems provided they have adequate capacity and are willing to serve you. NOTE: It is likely that all that you would have to do would be construct a connecting line and contract for the required amount of water, then use that water only during peak usage or failure of other sources.

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well if feasible)*.

- Modify your purchase contract with the City of Carthage if possible to increase your allowable purchase.

- Construct a surface water plant with an intake from the Sabine River for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPL SCHAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Ms. Sissie Hendrix
President
Dallardville Segno WSC
P.O. Box 133
Dallardsville, Texas 77332-0133

RE: WUG Water Problems
Polk County-Dallardsville-Segno WSC

Dear Ms. Hendrix:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of storage capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 233 connections, a storage capacity of 46,600 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 41,000 gallons, 5600 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates no other CCN areas within five miles of your system. The Indian Springs system is located approximately six miles outside your system. Strategies for resolving the above stated problem are as follows:

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement).*

- Purchase all or part of your supply from a neighboring system, provided the other system has adequate supply and storage capacity to offset your storage deficiency and is willing to serve you. However, unless new systems are constructed in your area, this would require over six miles of connecting line, and the disinfection byproducts would tend to increase over that distance.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,

8885 College Street Beaumont, Texas 77707 | www.spl-eng.com 409.866.0341 P 409.866.0337 F

- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPL LAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Doyle Lagow
Board President
Lake Livingston Water Supply & Sewer Service Corporation
P.O. Box 1149
Livingston, Texas 77351-1149

Re: WUG Water Problems
Polk County- Indian Springs Lake Estates (owned by Lake Livingston WSS Corp.)

Dear Mr. Lagow:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your Indian Springs water system between Livingston and Woodville has been identified as having possible water quality concerns. Specifically, the concerns in your system are two radioactive parameters – gross alpha and combined radium. Data to identify these concerns was generated from the TCEQ Water Utility Database.

Radium is a metal which occurs in ground water in some areas. The metal is a product of radioactive decay of uranium and is itself radioactive. Gross alpha is a measurement of alpha particles, one type of particles generated and emitted by radioactive substances. The alpha particles contain a positive charge. The main health effect of radium and alpha particles in drinking water is that they can cause increased cancer risk after ingesting them for a period of years.

Removal of radium and other radioactive materials from the water would automatically eliminate the alpha particles. However, removal of these materials may be expensive. In New Hampshire, where radioactivity in ground water is relatively common, at least two removal methods are used for on-site home water systems – ion exchange and reverse osmosis. Removal may be applied to the entire home water supply or only at faucets where drinking water is obtained. Some removal can be obtained by filters such as greensand if iron or manganese is also present in the water.

The TCEQ database indicates that you receive your water supply from ground water from four wells at depths varying from 255 to 1185 feet. Sequestration is used at both entry points, presumably to prevent undesirable effects of iron or manganese in the water. A review of CCN boundary maps indicates that the Indian Springs system is located within (or surrounded by) the CCN of the Soda WSC. Previous conversations with your office indicate that they have a water line along the highway in front of the entrance to Indian Springs. The database shows them to have .596 connections as compared to your 348 and that their water comes from five wells. strategies for resolving the above stated problem are as follows:

8865 College Street Beaumont, Texas 77707 www.spl-eng.com 409.866.0341 P 409.866.0337 F

- Possibly drill a new well, but you may have to go some distance away to find ground water without the radionuclide problem. Alternately, you may be able to find good water at a different depth from that of your existing wells. The database shows most of your well capacity to come from your deepest well. You need to review the test results from each well to see whether the radium problem comes from all wells or only wells at certain depths. It would also help to check with local well drillers to see how widespread the radium problem is.

  Possibly a well located a few miles away or screened at a different depth may produce water free from radioactive problems. Depending on the output and quality of water from the new well, you may wish to substitute it for an existing well or blend the water with existing water to dilute the radium concentration to an acceptable level.

- Purchase water from the Soda WSC, provided they have the capacity and the necessary water quality and are willing to serve you. You may have to construct connecting lines from that system to your systems. You may wish to replace your well supplies entirely or blend your well water with WSC water to dilute the radium.

- Treat your well water with one of the various methods. Some methods may be considerably more expensive than an alternate supply. However, depending on the radium concentration, one possible treatment method could be greensand filtration in lieu of filtration to remove iron or manganese, removing some or all radium in the process.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

G:\Region I 3rd Cycle\Study No. 2\Letters\REGISmallWUG\polk\Indian.doc

SPI SC. AUMBURG & POLK, INC.
BEAUMONT · HOUSTON · TYLER

July 21, 2008

Mr. Walter Knebel
President
Woods Creek WSC
2120 US Highway 190 W
Livingston, Texas 77351-9602

Re: WUG Water Problems
Polk County-Woods Creek WSC

Dear Mr. Knebel:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of storage capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 94 connections, a storage capacity of 18,800 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 15,000 gallons, 3800 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates the closest CCN areas to your system to be those for Cypress Creek WSC and White Tail Ridge (in Tyler County, 3½ miles) and Soda WSC (in Polk County, 4 miles). The two Alabama-Coushatta systems approximately 1½ miles outside your system are listed as inactive and could possibly be receiving service from Soda WSC. Strategies for resolving the above stated problem are as follows:

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement).*

- Purchase all or part of your supply from a neighboring system, provided the other system has adequate supply and storage capacity to offset your storage deficiency and is willing to serve you. This would require 1½ to 4 miles of connecting line, and the disinfection byproducts would tend to increase over that distance.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,

8865 College Street Beaumont, Texas 77707 www.spi-eng.com 409.866.0341 P · 409.866.0337 F

- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SL. LAUMBURG & POLK, INC.
BEAUMONT · HOUSTON · TYLER

July 21, 2008

Mr. David Whitehead
President
Church Hill WSC
P.O. Box 482
Henderson, Texas 75653-0482

RE: WUG Water Problems
Rusk County- Church Hill WSC

Dear Mr. Whitehead:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the two concerns in your system are shortage of production capacity and shortage of storage. Data to identify these concerns was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 130 connections, a capacity of 78 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 50 gpm (0.072 mgd), 28 gpm short of the requirement.*

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 130 connections, a storage capacity of 26,000 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 22,000 gallons, 4000 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your CCN area comes near those of Fairplay WSC, New Prospect WSC, and Pine Hill-Chapman WSC, as well as being adjacent to Martin Creek Lake. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing wells if feasible).*

- Purchase all or part of your supply from a neighboring system, provided the other system has adequate supply and storage capacity to offset your storage deficiency and is willing

8865 College Street · Beaumont, Texas 77707 ; www.epl-eng.com 409.866.0341 P · 409.866.0337 F

to serve you. This would require up to a mile of connecting line, and the disinfection byproducts would tend to increase over the increased distance to your system.

- Construct a surface water plant with an intake from Martin Lake for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement).*

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Scott Mason
President
Cross Roads SUD
P.O. Box 1001
Kilgore, Texas 75663-1001

Re: WUG Water Problems
Rusk County-Cross Roads SUD

Dear Mr. Mason:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having both possible water supply and water quality concerns. Specifically, the two water supply concerns in your system are shortage of production capacity and shortage of storage, while your water supply concern is trihalomethanes. Data to identify these concerns was generated from the TCEQ Water Utilities Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b). Based on 914 connections, a capacity of 548 gpm is required to meet TCEQ regulations. The database indicates you have three operational well with a total capacity of 329 gpm (0.474 mgd), although your total capacity is listed as 0.704 mgd (which would be 489 gpm). (A fourth well is listed as a test well drilled in 2003 with a capacity of 165 gpm.) Your production capacity is 219 gpm short of the requirement (54 gpm short if the fourth well is actually in production).*

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b). Based on 914 connections, a storage capacity of 182,800 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 166,000 gallons, 16,800 gallons short of the requirement.*

8865 College Street • Beaumont, Texas 77707 • www.spi-eng.com 409.866.0341 P • 409.866.0337 F

The TCEQ database indicates that you receive your water supply from ground water and disinfect with gaseous chlorination. (However, you are listed as a surface type system with no obvious reason.) A review of CCN boundary maps indicates that your CCN area is mainly in Rusk County (Region I), with a substantial part in Gregg County (Region D). Your CCN area is show to overlap, adjoin, or come near those of Chalk Hill SUD, Crim's Chapel WSC, Jacobs WSC, Kennedy Road WSC, Leverett's Chapel WSC, and Southern Utilities (in Rusk County) as well as the City of Kilgore and Elderville WSC, both overlapping Rusk and Gregg Counties). Also, your CCN area comes near Lake Cherokee (which overlaps both counties) as well as coming within a few miles of the Sabine River in Gregg County. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficit (sized to reflect any production you may be receiving from the 2003 test well).

- Construct a surface water plant with an intake from Lake Cherokee (with approval of its owner, Cherokee Water Company) or from the Sabine River, requiring water rights in either case. This alternative may be less cost effective than other solutions for a supply requirement this small.

- Purchase part of your water supply from a neighboring system (probably Kilgore, Chalk Hill, or Elderville) provided that system has adequate capacity and are willing to serve you. One potential problem would be increased levels of disinfection byproducts from the increased distance that water would travel. Note that this option may satisfy your storage requirement, provide the other system has adequate storage capacity and is in the same pressure plane.

- Increase your storage capacity by adding another tank *(or if an existing tank needs replacement, using a size well above your minimum requirements).*

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system. (In a conversation with our staff earlier this year, your entity indicated that you expect to complete one or more disinfection systems of a different type this summer.)

- If your trihalomethane problem is confined to parts of your system near other systems, connect only those parts of the system to other systems.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPL SC. LAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Wayne Holland
President
Jacobs WSC
P.O. Box 954
Henderson, Texas 75653-0954

Re: WUG Water Problems
Rusk County- Jacobs WSC Plant 3 & 4

Dear Mr. Holland:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. One of your systems (Plant 3 & 4) has been identified as having possible water quality concerns. Specifically, the concern in your system is trihalomethanes. Data to identify this concern was generated from the TCEQ Water Utilities Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from ground water and disinfect with gaseous chlorination. A review of CCN boundary maps indicates that your overall CCN area comes near or adjacent to (or overlaps) those of the City of Henderson, Cross Road SUD, Crim's Chapel WSC, Kennedy Road WSC, Leverett's Chapel WSC, and Pleasant Hill WSC, and also the City of New London service area. The boundary between your two systems is not clear, but it appears from various database information that it may be Caney Creek south of FM 850. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

- Transfer some water from your Plants 1 & 2 system if it has adequate capacity. Booster pumps and/or pressure reducing valves may be needed if the plants are in different pressure planes.

8865 College Street . Beaumont, Texas 77707 . www.spl-eng.com : 409.866.0341 P 409.866.0337 F

- Purchase all or part of your water supply from a neighboring water system, provided they have adequate capacity and are willing to serve you. This strategy may be counterproductive, since any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers.

- If your trihalomethane problem is confined to parts of your system near other users, connect only those parts of the system to other systems.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Victor Perez
Park Manager
TPWD Martin Creek State Park
Texas Parks & Wildlife Department
4200 Smith School Road
Austin, Texas 78744-3218

Re: WUG Water Problems
Rusk County- TPWD Martin Creek State Park

Dear Mr. Perez:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b). Based on 101 connections, a capacity of 61 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.072 mgd (50 gpm), 11 gpm short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your entity is near the CCN area of the Shan D Water Supply as being next to Martin Creek Lake. However, the Shan D system has disinfection byproduct problems. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well to its rated capacity if feasible)*. Possibly the problem is the pump.

- Purchase all or part of your water supply from the Shan D system, provided the system has adequate capacity. About a mile of connecting line would be necessary. One potential problem would be the disinfection byproducts in that system, with increased levels because of the increased distance that the water would travel.

- Construct a surface water plant with an intake from the reservoir for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

8885 College Street Beaumont, Texas 77707 www.spi-eng.com : 409.866.0341 P 409.866.0337 F

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. David Shivers
Owner
Shan D Water Supply
465 Desirees Trail
Tatum, Texas 75691-3415

Re: WUG Water Problems
Rusk County – Shan D Water Supply

Dear Mr. Shivers:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality concerns. Specifically, the concern in your system is trihalomethanes. Data to identify this concern was generated from the TCEQ Water Utilities Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from ground water and disinfect with hypochlorination. A review of CCN boundary maps indicates that your service area comes within a mile of that of the City of Tatum and also the Martin Creek Park system. However, the Martin Creek system suffers from a production deficiency. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

- Purchase all of your water supply from the City of Tatum, provided they have adequate capacity and are willing to serve you. Approximately a mile of connecting line may be required. This strategy may be counterproductive, since any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers.

8885 College Street . Beaumont, Texas 77707 | www.spl-eng.com : 409.866.0341 P : 409.866.0337 F

- If your trihalomethane problem is confined to the north part of your system, connect only that part of the system to Tatum.

- Construct a surface water plant with an intake from the reservoir for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPL SC. AUMBURG & POLK, INC.
BEAUMONT * HOUSTON * TYLER

July 21, 2008

Mr. Rodney Lewis
President
South Rusk County WSC
P. O. Box 38
Laneville, Texas 75667-0038

Re: WUG Water Problems
Rusk County- South Rusk WSC Compton-McKnight

Dear Mr. Lewis:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your Compton-McKnight system has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of storage capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 179 connections, a storage capacity of 35,800 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 32,000 gallons, 3800 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your overall CCN area is of two types – facilities-only and normal certificated area. It appears that your facilities-only area covers your Compton-McKnight system and that your normal area covers your main system which appears to include the former New Salem system. Your Compton-McKnight CCN area comes within two to three miles of your main area and is also near or adjacent to those of Ebenezer WSC and Goodsprings WSC. Strategies for resolving the above stated problem are as follows:

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement)*.

- Interconnect with your main system and provide for the interconnection to remain open, if that system has adequate capacity. Booster pumps and/or pressure reducing valves may be needed if the plants are in different pressure planes. Actual transfer of water may not be needed on a regular basis.

8865 College Street Beaumont, Texas 77707 · www.spl-eng.com · 409.866.0341 P · 409.866.0337 F

- Purchase all or part of your supply from a neighboring system, provided the other system has adequate supply and storage capacity to offset your storage deficiency and is willing to serve you. It appears that less than a mile of connecting line would be needed in some locations. As in the case of your main system, actual supply from those systems may not be needed on a regular basis.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SCHUMBURG & POLK, INC.
BEAUMONT · HOUSTON · TYLER

July 21, 2008

Ms. Michelle Brown
President
Beechwood WSC
120 Eastwood Loop
Hemphill, Texas 75948-6659

Re: WUG Water Problems
Sabine County-Beechwood WSC

Dear Ms. Brown:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database.

The database information is very unclear in several ways. The database shows that you have 443 connections in your retail system (with population 1131). Additionally, the database shows 6 connections for wholesale water supply, but also shows 133 meters and 125 population. The database also shows your only wholesale customer to be Paradise Point Marina, which has been inactive for several years. The database shows a production capacity of 0.96 mgd, apparently for your Toledo Bend Water Treatment Plant (WUD Plant # 15043) which is also listed as inactive and capped. Your maximum purchased capacity is listed as zero, but it appears that you purchase all your water from South Sabine WSC which supplies ground water. The data was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 443 retail connections, a capacity of 266 gpm is required to meet TCEQ regulations. The database indicates you have a production capacity of 0.096 mgd (67 gpm), 199 gpm short of the requirement. If you serve any wholesale customers, the shortage is even worse.*

The TCEQ database indicates that you receive your water supply from ground water purchased from South Sabine WSC. A review of CCN boundary maps indicates no other water systems near your CCN area, but you are next to Sam Rayburn Reservoir. Strategies for resolving the above stated apparent problem are as follows:

8885 College Street : Beaumont, Texas 77707 ; www.spi-eng.com ; 409.866.0341 P ; 409.866.0337 F

- Make sure that you have a purchase contract with South Sabine WSC for enough water to cover all of your connections (443 plus any current equivalent wholesale connections).

- Reactivate your surface water plant if feasible if you cannot produce an adequate water purchase contract.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

July 21, 2008

Mr. Jack Clark
Director
El Camino Bay Water System
118 Lakeview Dr.
Hemphill, Texas 75948-9408

Re: WUG Water Problems
Sabine County- El Camino Bay Water System

Dear Mr. Clark:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having both possible water supply and water quality concerns. Specifically, the water supply concern in your system is shortage of production capacity while your water quality concerns are trihalomethanes and haloacetic acids. Data to identify these concerns was generated from the TCEQ Water Utility Database.

Trihalomethanes and haloacetic acids are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 121 connections, a capacity of 73 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.102 mgd (71 gpm), 2 gpm short of the requirement.*

The TCEQ database indicates that you receive your water supply from your own surface water treatment plant and disinfect with gaseous chlorination and chloramines at different points in the treatment process. A review of CCN boundary maps indicates that your entity is within two miles of the CCN area of the G-M WSC as well as being next to Sam Rayburn Reservoir. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required

8865 College Street Beaumont, Texas 77707 www.spi-eng.com · 409.866.0341 P · 409.866.0337 F

minimum residuals, or reducing your initial dosage and applying booster dosages in more outlying portions of the system.

- After checking your water plant information to verify that the 0.102 mgd capacity on the database is correct, take any feasible measures to upgrade your plant capacity. You may need additional water rights. Any upgraded capacity should include an allowance for any future growth.
- Purchase all or part of your water supply from the G-M WSC, provided the system has adequate capacity. Approximately two miles of connecting line would be needed. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

- If your disinfectant byproduct problem is confined to parts of your system near the G-M system, connect only those parts of your system to that system.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Michael O'Neill
Owner
Frontier Park Marina
RR 1, Box 1690
Hemphill, Texas 75948-9748

Re: WUG Water Problems
Sabine County-Frontier Park Marina

Dear Mr. O'Neill

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of storage capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 131 connections, a storage capacity of 26,200 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 22,000 gallons, 4200 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps and other information indicates that your service area is near Mid Lake Kampground. Strategies for resolving the above stated problem are as follows:

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement)*.

- Purchase all or part of your supply from Mid Lake Kampground, provided they have adequate supply and storage capacity to offset your storage deficiency and are willing to serve you. However, the necessary connecting line may be several miles long unless it can pass under the local cove of the reservoir.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and

8865 College Street Beaumont, Texas 77707 . www.spl-eng.com 409.866.0341 P . 409.866.0337 F

- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SCHUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Jerry Shands
General Manager
Brookeland FWSD
P.O. Box 5350
Sam Rayburn, Texas 75941-7700

Re: WUG Water Problems
Sabine County- Shawnee Shores

Dear Mr. Shands:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your Shawnee Shores water system has been identified as having both possible water supply and water quality concerns. Specifically, the two water supply concerns in your system are shortage of production capacity and shortage of storage, while your water quality concerns are trihalomethanes. Data to identify these concerns was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b). Based on 112 connections, a capacity of 67 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.086 mgd (60 gpm), 7 gpm short of the requirement. Note, however, that the database for your system shows a purchased source (operational) without specific information and shows zero for maximum purchased capacity. The database for the neighboring South Sabine WSC shows that your system is one of their wholesale customers.*

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 112 connections, a storage capacity of 22,400 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 21,000 gallons, 1400 gallons short of the requirement.*

8865 College Street . Beaumont, Texas 77707 www.spi-eng.com 409.866.0341 P 409.866.0337 F

The TCEQ database indicates that you receive your water supply from ground water in addition to your purchased ground water from South Sabine WSC. *(Your average daily consumption rate is listed as 0.007 mgd, which is a small fraction of your listed production capacity.)* You are shown to disinfect with hypochlorination, although it appears that you disinfect only your own well water. A review of CCN boundary maps indicates that your entity is across a cove of the reservoir from G-M WSC, less than two miles away, as well as a similar distance from South Sabine WSC. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in more outlying portions of the system.

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well if feasible)*.

- Use your interconnection to the South Sabine system any time your demand exceeds your production capacity, provided the system has adequate capacity to serve you as well as themselves during such peak usage periods. Note that you may need to provide the TCEQ with a purchase contract to demonstrate the availability of purchased water to satisfy your production requirements. Note also that this option may satisfy your storage requirements provided the other system has adequate storage capacity and is in the same pressure plane. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

- If your trihalomethane problem is confined to parts of your system near the South Sabine system, connect only those parts of your system to that system.

- Construct a surface water plant with an intake from the reservoir for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement)*.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and

- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI S. IAUMBURG & POLK, INC.
BEAUMONT * HOUSTON * TYLER

July 21, 2008

Mr. Thomas Minaldi
Owner
Timberlane Water System Inc.
P.O. Box 1611
Nederland, Texas 77627-1611

Re: WUG Water Problems
Sabine County- Timberlane Water System, Inc.

Dear Mr. Minaldi

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as followed:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b)). Based on 48 connections, a capacity of 29 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.033 mgd (23 gpm), 6 gpm short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your entity is across a cove of the reservoir from Timberlane Estates Property Owners Association, a smaller system than your own, as well as being about a mile from G-M WSC. You are also adjacent to Toledo Bend Reservoir. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade one or both of your existing wells if feasible).*

- Purchase all or part of your water supply from one of the neighboring systems, provided the system has adequate capacity. About a mile of connecting line would be needed to connect to G-M, while you may have to go farther to the other Timberlane system unless you can go under the cove. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

8865 College Street Beaumont, Texas 77707 www.spi-eng.com : 409.866.0341 P 409.866.0337 F

- Construct a surface water plant with an intake from the reservoir for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SL. AUMBURG & POLK, INC
BEAUMONT * HOUSTON * TYLER

July 21, 2008

Mr. Charles Ponder
President
Bland Lake WSC
P.O. Box 209
San Augustine, Texas 75972-0209

Re: WUG Water Problems
San Augustine County-Bland Lake Rural WSC

Dear Mr. Ponder:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality and/or supply concerns. Specifically, the concerns in your system are trihalomethanes and possibly shortage of production capacity. Data to identify these concerns was generated from the TCEQ Water Utility Database and the TCEQ database for water quality violations.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in you water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b). Based on 170 connections, a capacity of 102 gpm is required to meet TCEQ regulations. The database indicates you have a production capacity of 0.100 mgd (69 gpm), 33 gpm short of the requirement, with maximum purchased capacity of zero. However, the database also shows that you purchase all of your water from the City of San Augustine with no production facilities of your own.*

The TCEQ database indicates that you purchase your water supply from the City of San Augustine. The City has a surface water plant as its only active supply but also has an inactive well. The database does not show that you provide any disinfection in your system, but shows gaseous chlorination by the City in its surface water plant and the same disinfection installed for its inactive well.

8885 College Street , Beaumont, Texas 77707 : www.spi-eng.com · 409.866.0341 P · 409.866.0337 F

A review of CCN boundary maps indicates that your service area comes near those of San Augustine Rural WSC (the City's other wholesale customer) in San Augustine County and McClelland WSC in Shelby County, as well as the City of San Augustine. However, given your existing purchase agreement, most solutions involving other water systems appear to be irrelevant to your problem. Note also that a small lake, Bland Lake, is located near the middle of your service area.) Strategies for resolving the above stated problem are as follows:

- Coordinate with the City of San Augustine to determine whether they are taking any actions with regard to their disinfection strategy which would reduce the levels of disinfection byproducts at your entry points. The lower the levels are at the entry points, the lower they will be at the far reaches of your system. Also, if the City can reduce the total organic carbon content of its water, there will be less carbon for the disinfectants to react with.

- Look into an arrangement with the City to reduce the initial chlorine dosage applicable to the water feeding your system. You may need to compensate by adding booster disinfection points in your system, particularly in outlying areas.

- If your trihalomethane problem is confined to the northeast part of your system, connect only that part of the system to McClelland WSC. This strategy may be counterproductive, since any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers.

- Make sure that you have a purchase contract with the City for enough water to cover all of your connections (170 plus any anticipated future growth).

- If you cannot produce an adequate water purchase contract, construct a well large enough to make up the deficiency.

- Purchase part of your water supply from the McClelland WSC, provided they have adequate capacity and are willing to serve you.

- Construct a surface water plant with an intake from Bland Lake for part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

8865 College Street Beaumont, Texas 77707 : www.spl-eng.com : 409.866.0341 P : 409.866.0337 F

SC. AUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Curtis White
Owner
El Pinon Estates Water System
RR 1, Box 121
Broaddus, Texas 75929-9601

Re: WUG Water Problems
San Augustine County - El Pinon Estates Water System

Gentlemen
The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having both possible water supply and water quality concerns. Specifically, the water supply concern in your system is shortage of production capacity, while your water quality concern is trihalomethanes. Data to identify these concerns was generated from the TCEQ Water Utility database and the TCEQ database for water quality violations.

Trihalomethanes are disinfection byproducts resulting from reaction of halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *capacity: TCEQ requires a capacity of 1 gallon per minute per connection (in the absence of storage) as defined by 290.45(b). Based on 49 connections, a capacity of 49 gpm is required to meet TCEQ regulations. The database indicates you have a production capacity of 0.039 mgd (27 gpm) for both of your wells, 22 gpm short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water and disinfect by hypochlorination. A review of CCN boundary maps indicates that your CCN area is four to five miles from the nearest CCN areas, those of Lakewood Water System and Powell Point Water System, with no indication of any nearer systems. Your system is also near Sam Rayburn Reservoir. Strategies for resolving the above stated problem are as follows:

8885 College Street . Beaumont, Texas 77707 www.epi-eng.com · 409.866.0341 P ; 409.866.0337 F

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in more outlying portions of the system. This last strategy would be applicable only to your Well 2 on FM 705 if it is located at a distance from your system, since your system is very small and Well 1 appears to be located near the system.

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing wells if feasible)*.
- Construct a surface water plant with an intake from the reservoir for all or part of your supply, provided you can obtain or lease the necessary water rights. This alternative may be less cost effective than other solutions for a supply requirement this small.

- Construct a storage tank (minimum capacity 980 gallons) to reduce your required capacity to 0.6 gpm per connection, but your capacity would still need to be increased by 2 gpm.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering (or already implementing, such as your present disinfection methods)), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SC. AUMBURG & POLK, INC.
BEAUMONT · HOUSTON · TYLER

July 21. 2008

Mr. Don Johnson, Jr.
Owner
Sam Rayburn Water, Inc.
P.O. Box 154322
Lufkin, Texas 75915-4322

Re: WUG Water Problems
San Augustine County- Sam Rayburn Water, Inc. (Owner- Glen Oaks, Hickory Hollow, Lake wood, Parkway, Powell Point)

Dear Mr. Johnson:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Five of your systems in San Augustine County have been identified as having possible water supply and/or water quality concerns. Specifically, the concerns in your systems are as follows:

- Glen Oaks and Hickory Hollow -- shortage of production capacity.
- Lakewood – trihalomethanes and haloacetic acids.
- Parkway – trihalomethanes.
- Powell Point – trihalomethanes, haloacetic acids, and shortage of production capacity.

Data to identify these concerns was generated from the TCEQ Water Utility Database.

Trihalomethanes and haloacetic acids are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b). Your systems with production deficiencies are as follows:*

8865 College Street Beaumont, Texas 77707 · www.spi-eng.com : 409.866.0341 P 409.866.0337 F

System	No. connections	Capacity		Deficiency
		Required	Existing	
Glen Oaks	46	28 gpm	21 gpm (0.030 mgd)	7 gpm
Hickory Hollow	44	26 gpm	24 gpm (0.050 mgd)	2 gpm
Powell Point	152	91 gpm	65 gpm (0.094 mgd)	26 gpm

The TCEQ database indicates that you receive your water supply from ground water. The database also shows that you use hypochlorination in the three smaller systems (Glen Oaks, Hickory Hollow, and Lakewood) and gaseous chlorination in the two larger systems.
A review of CCN boundary maps shows Glen Oaks to be across the Ayish Bayou branch of Sam Rayburn Reservoir from the Anthony Harbor. Hickory Hollow is about two miles from the City of Broadus, while Lakewood is within two miles of Anthony Harbor and four miles from El Pinon, which has its own production deficiency. Parkway and Powell Point are each five to six miles from the nearest neighboring system. Glen Oaks is within a mile of the reservoir, while your other systems are on the shores of the reservoir. Strategies for resolving the above stated problem are as follows:

- Reclassify the Glen Oaks Well 2 (which is listed as an emergency source) as a demand well, provided it has adequate capacity. That well would probably not need to be operated frequently.

- Construct new wells large enough to make up the deficiencies *(or rehabilitate or upgrade existing wells where if feasible)*. In the case of Hickory Hollow, the pump may be the problem.

- Purchase all or part of your water supply from neighboring systems (except for Parkway and Powell Point, which are isolated), provided they have adequate capacity and are willing to serve you. This strategy may be counterproductive, since any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your systems and to your customers.

- Construct surface water plants with intakes from the reservoir for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for supply requirements this small. A single plant at Parkway could serve both Parkway and Glen Oaks, but would require about six miles of connecting line.

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SC. AUMBURG & POLK, INC
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Charles Sharp
President
San Augustine Rural WSC
Deep East Texas Electric Cooperative, Inc.
P.O. Box 209
San Augustine, Texas 75972-0209

Re: WUG Water Problems
San Augustine County- San Augustine Rural WSC

Dear Mr. Sharp:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality and/or supply concerns. Specifically, the concerns in your system are trihalomethanes and possibly shortage of production capacity. Data to identify these concerns was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in you water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b). Based on 437 connections, a capacity of 262 gpm is required to meet TCEQ regulations. The database also shows that you purchase all of your water from the City of San Augustine with no production facilities of your own, but also shows a maximum purchased capacity of zero.*

The CCN map shows that you appear to have several systems just outside San Augustine in various directions. The TCEQ database indicates the City of San Augustine has a surface water plant as its only active supply but also has an inactive well. The database does not show that you provide any disinfection in your system, but shows gaseous chlorination by the City in its surface water plant and the same disinfection installed for its inactive well.

A review of CCN boundary maps indicates that your service area comes near those of Bland Lake Rural WSC (the City's other wholesale customer), the Denning WSC, and the G-M WSC,

8865 College Street Beaumont, Texas 77707 www.spi-eng.com 409.866.0341 P 409.866.0337 F

as well as the City of San Augustine. However, given your existing purchase agreement, most solutions involving other water systems appear to be irrelevant to your problem. Strategies for resolving the above stated problem are as follows:

- Coordinate with the City of San Augustine to determine whether they are taking any actions with regard to their disinfection strategy which would reduce the levels of disinfection byproducts at your entry points. The lower the levels are at the entry points, the lower they will be at the far reaches of your system. Also, if the City can reduce the total organic carbon content of its water, there will be less carbon for the disinfectants to react with.

- Look into an arrangement with the City to reduce the initial chlorine dosage applicable to the water feeding your system. You may need to compensate by adding booster disinfection points in your system, particularly in outlying areas.

- If your trihalomethane problem is confined to the portions of your systems near the Denning and/or G-M systems, connect only those parts of your systems to those systems. This strategy may be counterproductive, since any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers.

- Make sure that you have a purchase contract with the City for enough water to cover all of your connections (437 plus any anticipated future growth).

- If you cannot produce an adequate water purchase contract, construct one or more wells large enough to make up the deficiency.

- Purchase part of your water supply from the McClelland WSC, provided they have adequate capacity and are willing to serve you.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SCHAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Honorable Larry Vaughn
City of Huxley
11798 FM 2694
Shelbyville, Texas 75973-2780

Re: WUG Water Problems
Shelby County-City of Huxley

Dear Honorable Mayor Vaughn:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality concerns. Specifically, the concerns in your system are trihalomethanes and haloacetic acids. Data to identify these concerns was generated from the TCEQ Water Utilities Database.

Trihalomethanes and haloacetic acids are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from your own surface water plant and disinfect with both chloramines and gaseous chlorine at different stages in the treatment process. A review of CCN boundary maps indicates that your CCN area is near those of McClelland WSC and Shelbyville WSC, both of which have production deficiencies. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in more outlying portions of the system.

- Upgrade your treatment plant and/or relocate intakes so as to reduce the total organic carbon which reaches the disinfectant points.

- If your disinfectant byproduct problems are confined to outlying parts of your system, construct one or more new wells located so as to. supply those areas without long connecting lines, since ground water tends to have lower organic carbon concentrations.

The purpose of this letter is to request your input into the following:

8865 College Street : Beaumont, Texas 77707 : www.spi-eng.com : 409.866.0341 P : 409.866.0337 F

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering (or already implementing, such as your present disinfection methods)), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SL. AUMBURG & POLK, INC
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Charles Jones
President
McClelland WSC
6438 State Highway 87 S
Shelbyville, Texas 75973-2919

Re: WUG Water Problems
Shelby County-McClelland WSC

Dear Mr. Jones:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b). Based on 546 connections, a capacity of 328 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.389 mgd (270 gpm), 58 gpm short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water. A review of CCN boundary maps indicates that your CCN area is adjacent or near those of Bland Lake Rural WSC and the City of Huxley (both of which have trihalomethane problems), the Shelbyville WSC (which has a production deficiency), and the Choice WSC. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade one or both of your existing wells if feasible).*

- Purchase all or part of your water supply from Choice or Huxley, provided the system has adequate capacity. About three to four miles of connecting line would be needed to connect to either of those systems. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists

8865 College Street . Beaumont, Texas 77707 · www.spi-eng.com · 409.866.0341 P · 409.866.0337 F

- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SLAUMBURG & POLK, INC.
BEAUMONT • HOUSTON • TYLER

July 21, 2008

Mr. Fred Salinas
Forest Supervisor
Zavalla Work Center
US Department of Agriculture
415 S. 1st St. Ste 110
Lufkin, Texas 75901-3801

Re: WUG Water Problems
Shelby County- USFS Zavalla Work Center

Dear Mr. Salinas:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your system in Shelby County has been identified as having possible water quality concerns. Specifically, the concern in your system is trihalomethanes. Data to identify this concern was generated from the TCEQ Water Utilities Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from ground water and disinfect with hypochlorination. A review of CCN boundary maps indicates that your facility is over four miles from the nearest neighboring CCN areas, making service from those systems uneconomical for your limited needs. The facility is also adjacent to Toledo Bend Reservoir. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, or reducing disinfectant dosage while maintaining required minimum residuals.

- Reduce your initial dosage and applying booster dosages in outlying portions of the system. However, it is not apparent whether your system extends for a distance from your well or whether the problem is long residence times because of long periods of little or no usage.

8865 College Street Beaumont, Texas 77707 www.spi-eng.com | 409.866.0341 P : 409.866.0337 F

- If your problem is intermittent usage, run the water to flush out the disinfectant byproducts before drinking it.

- Construct a surface water plant with an intake from the reservoir for all or part of your supply. This alternative would require water rights and may be less cost effective than other solutions for a supply requirement this small.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SLAUMBURG & POLK, INC.
BEAUMONT * HOUSTON * TYLER

July 21, 2008

Honorable Vernon Bedair
Mayor
City of Arp
P.O. Box 68
Arp, Texas 75750-0068

Re: WUG Water Problems
Smith County- City of Arp

Honorable Mayor Bedair:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water quality concerns. Specifically, the concern in your system is trihalomethanes. Data to identify this concern was generated from the TCEQ Water Utilities Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

The TCEQ database indicates that you receive your water supply from ground water and disinfect with gaseous chlorination. A review of CCN boundary maps indicates that your service area is adjacent to that of Wright City WSC and comes within a mile of the Jackson WSC area. Strategies for resolving the above stated problem are as follows:

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

- Purchase all or part of your water supply from a neighboring system, provided they have adequate capacity and are willing to serve you. Approximately a mile of connecting line would be required to connect to Jackson. This strategy may be counterproductive, since any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers.

8865 College Street Beaumont, Texas 77707 www.spi-eng.com : 409.866.0341 P · 409.866.0337 F

- If your trihalomethane problem is confined to the parts of your system near other systems, connect only those parts of the system to the other systems.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SL. LAUMBURG & POLK, INC.
BEAUMONT * HOUSTON * TYLER

July 21, 2008

Mr. David Yohe,
Regional Mgr Env. Aff.
Lakeway Harbor
Monarch Utilities I LP
C/O Southwest Water Company
9511 Ranch Road 620 N
Austin, Texas 78726-2908

Re: WUG Water Problems
Smith County- Lakeway Harbor

Dear Mr. Yohe:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b). Based on 343 connections, a capacity of 205 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 0.244 mgd (169 gpm), 36 gpm short of the requirement.*

The TCEQ database indicates that you receive your water supply from your own surface water plant. A review of CCN boundary maps indicates that your CCN area is adjacent or near those of Emerald Bay MUD and Southern Utilities Company. Strategies for resolving the above stated problem are as follows:

- After checking your water plant information to verify that the 0.244 mgd capacity on the database is correct, take any feasible measures to upgrade your plant capacity. You may need additional water rights. Any upgraded capacity should include an allowance for any future growth.

- Construct a new well large enough to make up the deficiency.

- Purchase all or part of your water supply from one of the neighboring systems, provided the system has adequate capacity. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel.

8885 College Street Beaumont, Texas 77707 : www.spi-eng.com ! 409.866.0341 P ; 409.866.0337 F

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

SPI SL. AUMBURG & POLK, INC.
BEAUMONT · HOUSTON · TYLER

July 21, 2008

Mr. Richard Caswell
President
Alpha Casco
13529 State Highway 110 S
Lot 127
Tyler, Texas 75707-6359

Re: WUG Water Problems
Smith County- Southpark Mobile Home Estates

Dear Mr. Caswell

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having possible water supply concerns. Specifically, the concern in your system is shortage of production capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b). Based on 83 connections, a capacity of 50 gpm is required to meet TCEQ regulations. The database indicates you have a capacity of 27 gpm, which would be 0.39 mgd, 23 gpm short of the requirement. However, the database also shows a total production capacity of 0.05 mgd with no clear explanation An emergency connection with another system is noted, but both maximum purchased capacity and emergency capacity are listed as zero.*

The TCEQ database indicates that you receive your water supply from ground water but that you have an emergency interconnection with the City of Tyler, which . A review of CCN boundary maps indicates that you have no CCN, but from all available information your facility appears to be within the portion of the Southern Utilities CCN area which has dual certification with the City of Tyler and is near the CCN area of the Walnut Grove WSC (which has a trihalomethane problem).. Strategies for resolving the above stated problem are as follows:

- Construct a new well large enough to make up the deficiency *(or rehabilitate or upgrade your existing well if feasible)*. Possibly the problem is the pump.

- Arrange with the City of Tyler to reclassify your interconnection to active, and set up controls if possible so that the interconnection will automatically open any time your

8865 College Street · Beaumont, Texas 77707 www.spi-eng.com 409.866.0341 P | 409.866.0337 F

demand exceeds capacity. Since your average consumption is only 0.011 mgd, the interconnection will seldom need to operate.

- Purchase all or part of your water supply from Southern Utilities or Walnut Grove, provided the system has adequate capacity. One potential problem would be increased levels of disinfection byproducts from the increased distance that the water would travel, and note that Walnut Grove already has a trihalomethane problem.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

July 21, 2008

Mr. Hank Gilbert
President
Walnut Grove WSC
P.O. Box 269
Whitehouse, Texas 75791-0269

Re: WUG Water Problems
Smith County- Walnut Grove WSC

Dear Mr. Gilbert:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having both possible water supply and water quality concerns. Specifically, the water supply concern in your system is shortage of production capacity, while your water supply concern is trihalomethanes. Data to identify these concerns was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in you water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *capacity: TCEQ requires a capacity of 0.6 gallons per minute per connection as defined by 290.45(b). Based on 2321 connections, a capacity of 1393 gpm (2.005 mgd) is required to meet TCEQ regulations. The database shows that you have five operational wells with a total capacity of 743 gpm (which equals 1.07 mgd). You are also shown to have operational interconnections with North Cherokee WSC (ground water) and with the City of Tyler (surface water). Additionally, you are shown to have an interconnection with Southern Utilities for surface water, but the status of that interconnection is not clear on the database. Your maximum purchased capacity is listed as 0.741 mgd, for a total capacity of 1.811 mgd including water from your own wells. This represents an apparent deficiency of 0. 194 mgd (135 gpm) between your capacity and the requirement.*

A review of CCN boundary maps indicates that your CCN area overlaps, adjoins, or comes near the CCN or service areas of the cities of Bullard and Tyler, North Cherokee WSC, Wright City WSC, and Southern Utilities. The database shows that you disinfect by gaseous chlorination at

all disinfection points in your system. North Cherokee is also shown to use gaseous chlorination following similar disinfection by the City of Jacksonville from which it purchases water. The City of Tyler is shown to use both gaseous chlorination and chloramines in its surface water plant at Lake Tyler, the probable source of water supplied to you by the City. Southern Utilities is shown to use gaseous chlorination except for hypochlorination at some smaller wells.

Strategies for resolving the above stated problem are as follows:

- Coordinate with the City of Tyler and North Cherokee WSC to determine whether they are taking any actions with regard to their disinfection strategy which would reduce the levels of disinfection byproducts at your entry points. The lower the levels are at the entry points, the lower they will be at the far reaches of your system. Also, if the City can reduce the total organic carbon content of its water, there will be less carbon for the disinfectants to react with.

- Look into arrangements with the City and/or North Cherokee to reduce the initial chlorine dosage applicable to the water feeding your system. You may need to compensate by adding booster disinfection points in your system, particularly in outlying areas.

- If your trihalomethane problem is confined to the portions of your systems near neighboring systems, connect only those parts of your systems to those systems. This strategy may be counterproductive, since any disinfection byproducts (trihalomethanes and haloacetic acids) in their water systems will tend to increase over the additional distance to your system and to your customers.

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in outlying portions of the system.

- Construct new wells large enough to make up the deficiencies *(or rehabilitate or upgrade existing wells where if feasible)*. In the case of Wells 5 and 6, the pumps may be the problem.

- Try to amend one or more of your purchase contracts to provide enough water to make up your deficiency.

- Purchase part of your water supply from neighboring systems not already serving you, provided they have adequate capacity and are willing to serve you.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

8865 College Street Beaumont, Texas 77707 www.spi-eng.com 409.866.0341 P 409.866.0337 F

SPI S. . HAUMBURG & POLK, INC.
BEAUMONT * HOUSTON * TYLER

July 21, 2008

Mr. Charles Branch
Owner
Lakeside Water Supply
P.O. Box 697
Doucette, Texas 75942-0697

Re: WUG Water Problems
Tyler County- Lakeside Water Supply 1 Through Lakeside Water Supply 5

Dear Mr. Branch

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Five of your systems in Tyler County east of Colmesneil in the Harelson Lake area (Lakeside Water Supply 1 ~ 5) have been identified as having possible water supply concerns. Specifically, the concern in each of your systems is shortage of storage capacity. Data to identify this concern was generated from the TCEQ Water Utility Database and was analyzed as follows:

- *capacity: TCEQ requires a capacity of 1 gallon per minute per connection (in the absence of storage) as defined by 290.45(b). Your systems with production deficiencies are as follows:*

System	No. connections	Capacity		Deficiency
		Required	Existing	
Lakeside 1	40	40 gpm	21 gpm (0.030 mgd)	19 gpm
Lakeside 2	31	31 gpm	25 gpm (0.036 mgd)	6 gpm
Lakeside 3	32	32 gpm	17 gpm (0.024 mgd)	15 gpm
Lakeside 4	33	33 gpm	25 gpm (0.036 mgd)	8 gpm
Lakeside 5	37	37 gpm	35 gpm (0.050 mgd)	2 gpm

The TCEQ database indicates that each of those systems receives its water supply from ground water. A review of CCN boundary maps and other information indicates that the portion of your CCN area in which those systems area located is adjacent to the Tyler County WSC, almost adjacent to the City of Colmesneil, and about four miles from your main service area. Strategies for resolving the above stated problem are as follows:

8985 College Street ; Beaumont, Texas 77707 ; www.spi-eng.com · 409.866.0341 P 409.866.0337 F

- Construct one or more new wells large enough to make up the deficiency *(or rehabilitate or upgrade one or more of your existing well if feasible)*. Possibly the problem is the pump in some cases. NOTE: If you do not provide the required capacity for each system separately, you must consolidate some or all of the systems by interconnecting them. If they are in different pressure planes, pressure reducing valves and possibly booster pumps will be needed.

- Purchase all or part of your supply from a neighboring system, provided they have adequate supply and are willing to serve you. One disadvantage is that any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your systems and to your customers.

- Transfer water from your main system. However, that system has a storage deficiency and may need more storage improvements as a result of the transfer. Another disadvantage is that any disinfection byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your Lakeside systems and to your customers.

- Construct storage tanks for one or more systems so as to reduce your required production to 0.6 gpm per connection. In the cases of Lakeside 1 and 3, this strategy would be insufficient and some additional capacity would still be needed. The storage requirement would be 200 gallons per connection for each system so served. Alternately, you could consolidate some or all of the systems when providing storage.

- Construct a surface water plant with an intake from one of the Harelson Lakes for part of your supply. This alternative would require water rights and may be less cost effective than other solutions for supply requirements this small. Also, unless the lakes are well fed from springs they may not have enough water to make up the deficiency.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vie President

SPI SL. IAUMBURG & POLK, INC.
BEAUMONT * HOUSTON * TYLER

July 21, 2008

Mr. M.S. Jackson
Managing Member
White Tail Ridge Lakes Estates
Pure Utilities LC
3595 FM 3277
Livingston, Texas 77351-1661

Re: WUG Water Problems
Tyler County- White Tail Ridge Lakes Estates

Dear Mr. Jackson:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your White Tail Ridge water system between Livingston and Woodville has been identified as having possible water quality concerns. Specifically, the concerns in your system are two radioactive parameters – gross alpha and combined radium. Data to identify these concerns was generated from the TCEQ Water Utility Database.

Radium is a metal which occurs in ground water in some areas. The metal is a product of radioactive decay of uranium and is itself radioactive. Gross alpha is a measurement of alpha particles, one type of particles generated and emitted by radioactive substances. The alpha particles contain a positive charge. The main health effect of radium and alpha particles in drinking water is that they can cause increased cancer risk after ingesting them for a period of years.

Removal of radium and other radioactive materials from the water would automatically eliminate the alpha particles. However, removal of these materials may be expensive. In New Hampshire, where radioactivity in ground water is relatively common, at least two removal methods are used for on-site home water systems – ion exchange and reverse osmosis. Removal may be applied to the entire home water supply or only at faucets where drinking water is obtained. Some removal can be obtained by filters such as greensand if iron or manganese is also present in the water.

The TCEQ database indicates that you receive your water supply from ground water from two wells at depths of 430 and 450 feet. Apparently there is no iron or manganese problem, since no sequestration or filtration is listed as a treatment process. A review of CCN boundary maps indicates that the White Tail system is located comes within three to four miles of the CCN areas of Cypress Creek WSC and Woods WSC. Strategies for resolving the above stated problem are as follows:

8865 College Street Beaumont, Texas 77707 · www.spi-eng.com . 409.866.0341 P : 409.866.0337 F

- Possibly drill a new well, but you may have to go some distance away to find ground water without the radionuclide problem. Alternately, you may be able to find good water at a different depth from that of your existing wells. You need to review the test results from each well to see whether the radium problem comes from both wells or only one. It would also help to check with local well drillers to see how widespread the radium problem is.
  Possibly a well located a few miles away or screened at a different depth may produce water free from radioactive problems. Depending on the output and quality of water from the new well, you may wish to substitute it for an existing well or blend the water with existing water to dilute the radium concentration to an acceptable level.

- Purchase water from a neighboring system, provided they have the capacity and the necessary water quality and are willing to serve you. About three to four miles of connecting line would be required. You may wish to replace your well supplies entirely or blend your well water with purchased water to dilute the radium.

- Treat your well water with one of the various methods. Some methods may be considerably more expensive than an alternate supply. The greensand filtration will not be applicable if you do not have iron or manganese in your ground water.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering (or already implementing), as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

Appendix G

Response Letters

TEXAS PARKS & WILDLIFE

Life's better outside.™

July 25, 2008

Mr. Ricky Bourque, P.E.
Schaumburg & Polk, Inc.
8865 College Street
Beaumont TX 77707

Re; Martin Creek Lake State Park
Public Water System
Minimum Water System Capacity

Dear Mr. Bourque:

We received your letter dated July 21, 2008 regarding the Public Water System at Martin Creek Lake State Park.

The information you obtained from TCEQ's Water Utility Database is only partially correct. In 2007 we requested and were granted an Exception to the minimum capacity well production requirement permitting us 0.13 gallons per minute per connection. Therefore, we do not anticipate implementation of any of the options listed in your letter.

If you have any additional questions or concerns, you may contact me at 512/389-4665.

Thank you,

Janelle Taylor

Janelle Taylor, TCEQ Coordinator
Infrastructure Division

cc: Martin Creek Lake State Park
State Parks Region 8
File copy

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.state.tx.us

TEXAS PARKS & WILDLIFE

Life's better outside.™

July 25, 2008

Mr. Ricky Bourque, P.E.
Schaumburg & Polk, Inc.
8865 College Street
Beaumont TX 77707

Re; Martin Dies, Jr. State Park
Hen House Ridge Unit and Walnut Ridge Unit
Public Water Systems
Minimum Water System Capacity

Dear Mr. Bourque:

We received your letter dated July 21, 2008 regarding the Public Water Systems at Martin Dies, Jr. State Park, for both Hen House Ridge and Walnut Ridge Units. The information you obtained from TCEQ's Water Utility Database is only partially correct. In 2002 we requested and were granted an Exception to the minimum capacity well production requirement, at both water systems. TCEQ granted our request for an exception permitting Hen House 0.24 gallons per minute per connection, and Walnut Ridge 0.2 gallons per minute per connection. Therefore, we do not anticipate implementation any of the options listed in your letter.

If you have any additional questions or concerns, you may contact me at 512/389-4665.

Thank you,

Janelle Taylor

Janelle Taylor, TCEQ Coordinator
Infrastructure Division

cc: Martin Dies, Jr. State Park
State Parks Region 4
File copy

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.state.tx.us

8-7-08
Schaumburg & Polk,Inc
8865 College St
Beaumont, Tx 77707

Re: WUG Water Problems
Shelby County - McClelland WSC

Yes, we would confirm the stated problem exists with our not having water
Capacity required by TCEQ based on connections.

We have been in a construction project for about 4 years to take care of
This problem beginning with securing a loan.

Seems we've incurred several obstacles along the way, spring rains holding up
Drilling activities and being able to build a road into the sight

The well is now finished and we're waiting for Deep East Texas Electric Coop
To extend 3-phase electrical service to the well

The contractor has indicated he would be on sight in the next week to tie in
The well head

Thank you

Renita Hudman, Bookkeeper

McClelland Water Supply
C.R.Jones , Pres

Dear Sirs:

In response to your letter of July 21,2008 Shan-D Water Supply has solved the problem with trihalomethanes by changing its disinfection process from chlorine to chloramines resulting in a non detectable level in our quarterly water samples for the last year.

David Shivers

SouthWest Water Company

SWWC Utilities, Inc.
9511 Ranch Road 620 North
Austin, TX 78726
Phone 512.335.7580
Fax 512.335.0251
www.swwc.com

July 31, 2008

Mr. Ricky Bourque, P.E.
Vice President
Schaumburg & Polk, Inc.
8865 College Street
Beaumont, TX 77707

Re: Monarch Utilities I, L.P. (the "Utility")
Lakeway Harbor Water System

Dear Mr. Bourque:

In response to your letter dated July 21, 2008, the Utility does confirm that the above referenced facility does have a production rate of 0.244 MGD. However, it should be noted that the Utility does have an alternate capacity exception from the TCEQ of 0.42 GPM per connection versus the standard 0.6 GPM per connection. Therefore, the Utility can serve up to 402 connections. The current connection count is 355.

The Utility does have an agreement for 100 acre feet per year of raw water from the Upper Neches River Municipal Water Authority. This should cover any future needs.

If there are any questions, please contact us at (512) 219-2272.

Sincerely,

David L. Yohe
Regional Regulatory Compliance Manager
SouthWest Water Company

Cc: File

G:/DY/LakewayHarbor.Bourque.073108.gs

SCHAUMBURG & POLK, INC.
BEAUMONT * HOUSTON * TYLER

July 21, 2008

Mr. James Galloway
President
New Concord WSC
P.O. Box 115
Price, Texas 75687-0115

RE: WUG Water Problems
Cherokee County- New Concord WSC

Dear Mr. Galloway:

The East Texas Regional Water Planning Group is presently undertaking an evaluation of small water suppliers to identify where regional solutions might be a possible strategy to solve water supply problems. Your entity has been identified as having both possible water supply and water quality concerns. Specifically, the water supply concern in your system is shortage of production capacity, while your water quality concern is trihalomethanes. Data to identify these concerns was generated from the TCEQ Water Utility Database.

Trihalomethanes are disinfection byproducts resulting from reaction with halogen disinfectants (such as chorine or bromides) with any organic carbon which may be present in your water supply. These byproducts increase as the water travels through the system away from the disinfection point.

Data for water supply problems was analyzed as follows:

- *Storage: TCEQ requires a total storage capacity of 200 gallons per connection as defined by 290.45(b)). Based on 111 connections, a storage capacity of 22,200 gallons is required to meet TCEQ regulations. The database indicates you have a storage capacity of 20,000 gallons, 2200 gallons short of the requirement.*

The TCEQ database indicates that you receive your water supply from ground water and disinfect with gaseous chlorination. You are also shown to have an interconnection with another system (possibly one of the Wright City or South Rusk systems). A review of CCN boundary maps indicates that your service area is adjacent or very near to those of Stryker Lake WSC, Wright City WSC, and South Rusk WSC. (Note that the Stryker Lake WSC has a trihalomethane problem, which could aggravate your own problem if not corrected.) The Stryker Lake WSC, although presently using ground water, could potentially draw water from the adjacent Lake Stryker by arrangement with the lake's owner, Angelina-Nacogdoches WCID No. 1. Strategies for resolving the above stated problem are as follows:

8865 College Street | Beaumont, Texas 77707 | www.spi-eng.com | 409.866.0341 P | 409.866.0337 F

- Change your disinfection strategy, such as changing disinfectants or chlorination method, going to ozone disinfection, reducing disinfectant dosage while maintaining required minimum residuals, or reducing your initial dosage and applying booster dosages in more outlying portions of the system.

- Increase your storage capacity by adding another tank *(or if the existing tank needs replacement, using a size well above your minimum requirement).*
- Purchase all or part of your supply from a neighboring system, provided the other system has adequate supply and storage capacity to offset your storage deficiency and is willing to serve you. This strategy may be counterproductive with regard to your disinfectant byproduct problem, since any byproducts (trihalomethanes and haloacetic acids) in their water system will tend to increase over the additional distance to your system and to your customers.

- If your disinfectant byproduct problem is confined to parts of your system near neighboring systems, connect only those parts of your system to the other systems.

The purpose of this letter is to request your input into the following:

- confirm whether the stated problem exists,
- confirm the above strategies, or provide other strategies you may be considering, as possible solutions, and
- confirm the selected strategy for your entity.

The selected, and other alternate, strategies will be included in the East Texas Regional Water Plan. The selection of strategies is critical in planning and securing State funding for the solutions. Should you have any questions please contact the undersigned.

We request your response by August 15, 2008.

Sincerely,

Ricky J Bourque

SCHAUMBURG & POLK, INC.
Ricky Bourque, P. E.
Vice President

Rusk Rural Water

P. O. Box 606
Rusk, Texas 75785

903-683-6178 Fax 903-683-1096

August 20, 2008

Schaumburg & Polk, Inc
8865 College St.
Beaumont, Tx. 77707

Too Whom It May Concern:

This is in response to your letter dated July 21, 2008. We (Rusk Rural Water) are in the process of construction a new well. At this time we have an interconnection with the City of Rusk that will take care of the deficiency.

Sincerely,

Shad Mabry

Shad Mabry
General Manager

Quality On Tap!
Our Commitment Our Products

CROSS ROADS SUD
P.O. BOX 1001
KILGORE, TEXAS 75663-1001

To: Schaumburg & Polk
Attn: Ricky Bourque
From: Hugh Sparkman, Gen.Mgr.
Cross Roads SUD
Re: Requested Response

This letter is in response to your letter dated July 21, 2008.
1. We have received a n exception to the minimum capacities requirement from the TCEQ dated 09-06, 2008, that makes Cross roads SUD in compliance with pumping and storage capacities. We currently have four(4) producing wells with pumpages of 78gpm, 150 gpm, 70 gpm, and 160 gpm. Well # 5 has been drilled, comp[leted and should be on line in the fall with a pumpage of 100 gpm.
2. I don't have a clue why we are listed as surface water n the data base. Our system 2010058 has 100 customers in Gregg County and uses purchased water from the City of Kilgore, which is surface water.
3. Our new ozone plant is 99% complete and will come on line this fall. We will be switching from free chlorine for disinfect ion to chloramines and the ozone will be used to remove the color in our water. Our last three annual averages for THM has been .081 ppm so we are barely over the MCL of .080 ppm.

We are also planning in the near future to construct a 150,000 gallon water tower and drill at least one additional water well to provide water for the expected increase in population.

I hope this letter has been beneficial to your inquiry.

Hugh Sparkman

Hugh Sparkman, Gen. Mgr.
Cross Roads SUD

DIALVILLE-OAKLAND WATER SUPPLY CORPORATION
PO BOX 1029
RUSK, TEXAS 75785
903-683-8686
FAX: 903-683-3166

DATE: August 15, 2008

TO: Ricky Bourque, P. E.
Schaumburg & Polk, INC.
8865 College Street
Beaumont, Texas 77707

FROM: Charles Peter, President
Dialville-Oakland WSC

RE: Letter received on WUG Water Problems

I am writing in response to the letter we received on July 21, 2008 concerning the WUG Water Problems in Cherokee County.

The data you received from TCEQ must have been collected before March 2008. We are now in compliance with our water storage capacity due to adding an additional 60,000 gallon water storage tank and with our two existing 20,000 gallon water storage tanks we now have a total of 100,000 gallons of water storage capacity.

On our wells, Well #2 pumps 80 gpm and Well # 3 pumps 200 gpm.

If you have any questions please contact us at 903-683-8686.

Thank you,

Charles R. Peters
President
Dialville-Oakland WSC

Appendix H

Summary of Responses

Entity	Response
ANDERSON CO.	
Cayuga WSC	FPC David Kelly - TTHM reading was within limits last time it was measured. WSC is also in process of consolidating with BCY WSC located to SE (Tennessee Colony area), a system w/population of over 2000.
ANGELINA CO.	
Beulah WSC	PC Sandra Beauchamp - Replaced 40,000 gallon tank with 60,000 gallon.
US Army Corps of Engineers (Hanks Creek)	FPC Ed Shirley - Federal agency; waiting on funding for well upgrade (or new well if necessary
Kervins RV Park	PC Mr. Kervin: 8 to 10 gpm well in Yegua. Plans to add another well next year. Long term plan is to tie to City of Lufkin regional plant (easement to City provided on nearby property.)
Lakeview RV & Motel	FPC Mike: Well was reworked about 2 months ago to 10 gpm. FPC: Shelia Rogers - RV connections never all use water at some time, so there is no practical need for the entire 30 gpm called for by TCEQ standards. She says that they would be glad to tie onto surface water from proposed City of Lufkin plant on Sam Rayburn when it comes available. [Presumably they have same problems w/aquifer as Kervin, making it impossible to get more than 10 gpm from any one well.]
Prairie Grove WSC	FPC Eddie Courtney: 85 gpm in database appears to be current (only 198 active connections). Actual demand never exceeds supply since they reworked wells. Can get any water they need from Diboll emergency interconnect w/o getting specific permission from Diboll, TCEQ is aware although no contract for specific amount. Possibility of being taken over by Diboll after Diboll gets its new wells on line.
Walnut Ridge Estates Water System	FPC: Leo Bird - Most residents are weekenders, resulting low usage, no apparent operating problems.

US Department of Agriculture (Zavala Work Center) ***(letter sent for Shelby Co.)***	VMM - Billy Lumpkin US Forest Service - Zavalla 936-639-8561 Well in Angelina and not Shelby. FPC: Got correct well location in Angelina Co. on Hwy. 147 @ Walnut Ridge Road. Well water very high in organic content & odors, 16,000 gal. storage tank along w/low usage resulted in detention time for chlorinated water up to several months. The only two buildings on site have reverse osmosis units which remove all constutuents including chlorine residual. Workers were using water from small tanks DS from RO units until high DBP levels caused TCEQ to stop them from using water; recently they have had to buy bottled water. Recent operating practices include changing tank controls to keep low water level in tank, monitoring chlorine residuals in system & keeping only minimum required residual. They have asked TCEQ for variance to allow DBP testing @ different point. They plan to use regional solution in future, tie into water line from City of Lufkin surface water plant when available.
CHEROKEE CO.	
Dialville Oakland WSC	Letter -- Have added 60,000 gallon tank. Well 3, listed in database as zero gpm tested, actually pumps 200 gpm. Storage & capacity are adequate.
Forest WSC	FPC: Curtis Oliver - Working on changing disinfection method.
New Concord WSC	Letter - Switched to chloramine and added capacity 2 to 3 years ago.
North Cherokee WSC	FPC Scott Alexander -- Water to N. Cherokee formerly all came from Lake Palestine, but in response to DBP problem they have blended in some water from City wells and also implemented potassium permanganate @ surface water plant to cut down TOC. Water @ entry point often exceeds DBP limits already and then has as much as 3 days travel time to far reaches of system. They hope to have DBP problem within limits next quarter. They have also looked into several methods of removal of DBP including aeration by cascade & by diffused air, but are uncertain of effectiveness. They apply their own chlorination @ entry points but try to minimize dosage.
Rusk Rural WSC	In process of constructing new well; also have interconnection w/City of Rusk to take care of deficiency.
Stryker Lake WSC	FPC, PC: Micki Greenwood - Have submitted proposal to TCEQ for liquid ammonium sulfate disinfection.
HARDIN CO.	
Little Big Horn Services	FPC, PC: Dolores Luke - Trying to get funds to replace well pump to increase capacity.

Water Necessities, Inc. (Northwoods)	PC Mr. Kelley Brewer: In the process of rehabilitating well serving Northwoods; also interested in future larger system serving Northwoods and several other of his nearby systems if he could get funding.

HENDERSON CO.	
Lake Palestine Campground	FPC, PC: Larry Paxton - trying to resolve possible error in system identity -- He says that the name of his place is Lake Palestine Resort *(which is not even listed in database for Henderson County)*, but it has same phone number & mailing address as what TCEQ database calls Lake Palestine Campground. He says the owner listed in database, Donald Tolner, sold out & moved to Minnesota two years ago. He says that they have reworked well & increased capacity not reflected in database. Per his request I have been trying to fax him the letter we sent & he never got, and also faxed TCEQ database pages for illustration.
La Poynor ISD	FPC, PC: James Johnston - Most of school campus has been connected to Poynor WSC, but campus well is kept in service to supply maintenance & agriculture department *(to keep system active in case it is needed in future)*. Well is still good & producing good water, & TCEQ has indicated that they can leave it as it is for present.
HOUSTON CO.	
The Consolidated WSC	PC Craig Walker: The portion of their system with THM violation receives water from City of Crockett who receives their water from Houston County WCID No. 1. They have been unable to work with Houston County WCID No. 1 in resolution of the problem. FPC: Spoke to secretary & to an operator or supervisor *(reportedly Phillip Sanders)* & learned that DBP level is high at entry point & increases above limits because of necessary chlorination in their system. They are trying to get a grant to drill a well on Highway 7 about 5 miles E of Crockett to take place of purchased surface water w/high DBP levels. City of Crockett had drilled well with good production, but does not use it because of high H_2S problems.
JASPER CO.	
Brookeland FWSD (Forest Hills)	FPC: Jerry Shands - storage has been increased to about 64,000 gallons.
Texas Parks & Wildlife Department (Hen House Ridge and Walnut Ridge)	Letter from TPWD concerning Hen House Ridge and Walnut Ridge - TCEQ provided variance to capacity that provides compliance
Westwood WSC	FPC: Larry Shepherd,.P. E. of L & L Engineers and Planners of Jasper (409/383-0000 or 383-1577), contract operators for water system - They are working on two approaches -- seeking variance from TCEQ, and whether or not it is granted, they plan to drill new well.

JEFFERSON CO.	
Hamshire Community WSC	FPC,PC: Steve Rose - They have lost a few connections because of private wells & are just within limits for storage capacity. However, they are getting a grant for water line extensions & will again exceed connections limits for existing storage. They plan to increase storage capacity if they can get funding, including possible leftover grant funding after completing water extensions. Alternately, they would connect to West Jefferson surface water supply if they could get funding, but he says it would require 7 miles of line. Trinity Bay Conservation District is not interested in serving them. Interconnection w/West Jefferson could possibly eliminate need for additional storage provided all or part of Hamshire system is in same pressure plane as West Jefferson.
Meeker MWD	PC Terry Johnson - THM corrected with switching to LAS as disinfectant.
Total Fina Petrochemicals, Inc.	FPC, PC: David French - Also have a haloacetic acid problem which had not shown up in TCEQ database at time of printing. They are looking at well to try to decide solution, and think at this time that it will be changing to chloramines rather than changing water source (decision not finalized).
NACOGDOCHES CO.	
Libby WSC	PC - Eli Walker 936-560-5079 or cell 936-588-8633: Lower chlorine level due to natural occurrence of ammonia in water.
NEWTON CO.	
Brookeland FWSD (Toledo)	FPC: Jerry Shands - Now have total of 5 wells w/well over required 300 gpm; have replaced some of old storage w/176,000 gallon standpipe plus 44,000 gallon ground storage.
ORANGE CO.	
Evergreen Park Hickory Hills Water System	FPC: James Manchac - TCEQ has granted waiver for storage deficiency. Additionally, system has been bought by Kelley Brewer under name of Rural Water, but apparently Mr. Manchac is still operator.
City of Rose City	FPC: Veronica, City Secretary - City is somewhere in process of getting grant for plant improvements
Water Necessities, Inc. (Timer, Claire, Corbett)	PC Mr. Kelley Brewer: Purchasing water from Orange County WCID #1 for Claire and Corbett system not acceptable to District. Wells in the area have arsenic levels of 7 ppb compared to limit of 10 ppb. May drill a new well. Timer system should eventually be shutdown. Perhaps creation of a new entity to serve area north of Vidor -- drill new wells or possibility of receiving water from Mauriceville SUD.

PC - Phone Conversation
FPC - Followup Phone Call
VMM - Voice Mail Message

Information in this table was last updated September 2008.

PANOLA CO.	
A & P WSC	FPC, PC: Stacy Cransford - system divided into 2 pressure planes, 1 served by their well & other served by purchased water from Carthage. They appear to have no problems w/inadequate capacity in either pressure plane & have not had problems w/TCEQ.
Clayton WSC Plant 1 & Plant 2	FPC: Bookkeeper - The well for Plant 2 listed on database was placed in service in Dec. 2007 along w/new standpipe. FPC: Bookkeeper indicated that they have been told by TCEQ that they are now meeting requirements for both Plant 1 & Plant 2.
Gary WSC	FPC: Stacy Cransford - Have a TCEQ waiver on storage, applying for waiver on production capacity -- Have eliminated haloacetic problem, possibly by changing to liquid ammonium sulfate which combines w/chlorine to form chloramines @ one chlorination point. They are in process of changing from hypochlorite to gaseous chlorine @ other chlorination point in an effort to take care of trihalomethanes. They plan to stay on ground water.
Rock Hill WSC	PC - Debbie Allum: New well with capacity of 150 gpm completed in early 2008. Other supplies include 160 gpm well and emergency connection to City of Carthage. FPC: Debbie Allum - TTHM problem was corrected by going to chloramines.
POLK CO.	
Dallardsville Segno WSC	FPC: Sissie Hendrix - WSC has a 5-yr. waiver (issued 2008) for storage deficiency. In other business, they are trying to get grant to drill new well.
Lake Livingston Water Supply & SS Corp (Indian Springs)	FPC: Phillip - They put a new well on line about 6 mo. ago (300 gpm), screened at a depth of about 1145-1200 ft., and what testing they have done so far shows it free of radionuclides. They took one well out of service that had the problem. They are waiting on the next quarterly testing results to confirm solution of problem.
Woods Creek WSC	
RUSK CO.	
Church Hill WSC	FPC: Marion Miller - They are scheduled to begin drilling new well next week [first week of September] about a mile from old well, follow up w/new water plant & solve capacity & storage problems. Additionally, he said they are trying for grant to replace some of old lines.
Cross Roads SUD	Variance from TCEQ provides compliance for production & storage. Completed new well. About to change disinfection to chloramines along with ozone. Note: They purchase surface water from Kilgore for a separate system which they own in Gregg County.
Jacobs WSC	FPC: Lisa - Drilling a new well to increase supply & possibly remedy DBP problems.

PC - Phone Conversation
FPC - Followup Phone Call
VMM - Voice Mail Message

Information in this table was last updated September 2008.

Texas Park & Wildlife Department (Martin Creek)	Letter from TPWD concerning Martin Creek - TCEQ provided variance to capacity that provides compliance
Shan D Water Supply	Switched to chloramines to resolve water quality.
South Rusk County WSC	FPC: Danny Gibson - Recently completed a new 50,000 gallon tank which more than solves problem.
SABINE CO.	
Beechwood WSC	PC-Installed nanofiltration to provide 700 gpm. FPC, PC: Chuck (operator) - The nanofiltration mentioned in previous message refers to a proposed new surface water treatment, 700 gpm, using either nanofiltration or some alternate treatment method, with a 1 mgd raw water purchase contract for water from Toledo Bend. New plant will be adequate for considerable future growth & will take place of existing purchase from South Sabine.
El Camino Bay WSC	
Frontier Park Marina	PC: Michael O'Neil - He has disconnected a number of customers who are up to two years behind on payments and consequently reduced connections to below storage capacity.
Brookeland FWSD (Shawnee Shores)	FPC: Jerry Shands - New disinfection plant using liquid ammonium sulfate; interconnection w/South Sabine takes care of capacity problems; 24,000 gallon storage in lieu of 21,000.
Timberlane Water System, Inc.	PC with Tom Minaldi (727-8180). No. of connections actually 39-40 which make borderline. Has had discussion with SRA to takeover Lakeview Park and supply for additional 27 acres approximately 1 mile away.
SAN AUGUSTINE CO.	
Bland Lake Rural WSC	FPC: Mr. & Mrs. Buster Consford - New contract w/City shows 65 to 100 gpm @ each of 2 entry points (can be distributed between points as needed), which is more than adequate. Trihalomethane problem is being reduced at least partly by recent action on part of City (reducing initial chlorine dosage); WSC is also looking at possible treatment to reduce DBP in water, but it appears that it could be very expensive.
El Pinon Estates Water System	FPC: Curtis White - Most connections are for camps or temporary users, so usage is much lower than expected for number of connections. They have adequate water supply by operating only one of two wells. DBP problem has been helped some by reducing chlorine dosage; possibly natural ammonia in ground water has some effect. Anticipate reducing dosage further, then adding boosters in system if necessary. Last resort could be ozone or else filtration along w/hauling off filter backwash to off-site disposal to avoid need for discharge permit.

Sam Rayburn Water, Inc.	e-mail: Don Johnson - has been busy w/plant upgrades, plans to call within 2 weeks (dated 9/1/08).
Deep East Texas Electric Coop. Inc. (San Augustine Rural)	FPC: Mrs. Buster Consford - New contract is being negotiated w/City, in process of being executed, she will call back after she gets more information about contract. Trihalomethane problem similar to Bland Lake, is being reduced at least partly by recent action on part of City (reducing initial chlorine dosage). City may possibly have reduced dosage too much, but I suggested that booster chlorination for San Augustine Rural might be best way to compensate for that. WSC is also looking at possible treatment to reduce DBP in water, but it appears that it could be very expensive.
SHELBY CO.	
City of Huxley	FPC: Larry Garrett - Existing disinfection in plant altogether by gaseous chlorine; proposed change to chloramines in next few months.
McClelland WSC	Letter - Have drilled new well & waiting for electrical service.
US Department of Agriculture ***(actually in Angelina County)***	~~ See Angelina County ~~
SMITH CO.	
City of Arp	FPC: Jamie Morgan, new Mayor - Just took bids on ammonia disinfection system.
Southwest Water Company (Lakeway Harbor)	Letter from Southwest Water Company re: Monarch Utilities, Lakeway Harbor Water System: Variance from TCEQ provides compliance. Has agreement with UNRMWA for 100 ac-ft/yr for future needs.
Alpha Casco (Southpark Mobil Estates)	PC Mr. Caswell with South Park Mobil Estates: Changed pump to 60 gpm last year.
Walnut Grove WSC	FPC, PC: Dan Grimes - Production is actually adequate including purchased sources. In addition to their own wells, they have surface water purchase contracts w/North Cherokee (0.2 mgd) & City of Tyler (1.7 mgd). Water from Tyler comes mainly from Lake Tyler bur partially from Lake Palestine *(which is more distant)*. *(The 0.741 mgd of purchased capacity shown in database appears to be average usage for 2006 rather than contracted amount.)* Trihalomethane problem comes from purchased water from both sources. They are blending purchased water w/their own well water to solve problem at least partially. They are starting to check w/Tyler to find out what their disinfection practices are & how they may be modified. Purchased water from N. Cherokee is resold water from Jacksonville, which has had DBP problems even at entry point for N. Cherokee. That water had apparently been coming altogether from Lake Jacksonville. [I passed on to him what I had learned from N. Cherokee that Jacksonville had been taking some corrective action recently.]

TYLER CO.	
Lakeside Water Supply (1 ~ 5)	FPC, PC: Mrs. Charles Branch - Variances for well capacity because most connections are camps rather than full time residences..
Pure Utilities LC (White Tail Ridge)	FPC: Secretary (referred to Stonewall Jackson, operator) - They are working w/TCEQ toward drilling new well.

Appendix I

Water Management Strategies

Water for Regional Strategies

System, Strategy	Basis for Sizing	Exist. Total Water Needs (area to receive transmitted water)		Water Usage for Regional Strategy		Line Size	Velocity (ADF)	Distance	Head Loss (ADF)		Peak Factor	Velocity (Peak)	Head Loss (Peak)	
		mgd	Acre-ft./yr	Acre-ft./yr	gpm	in.	ft./sec.	LF	ft./1000 ft.	ft.		ft./sec.	ft./1000 ft.	ft.
ANGELINA CO.														
Kervins RV Park (KRV-1)	37 conn. @ 1 gpm	0.0533	59.7493	59.75	37.0	2.5	2.4	700	9.044808	6.3	1.2	2.90547052	12.67777	8.9
Lakeview RV & Motel (LKRV-1)	50 conn. @ 0.6 gpm	0.0432	48.427	48.43	30.0	2	3.1	150	18.17364	2.7	1.2	3.67953583	25.47332	3.8
US Department of Agriculture Zavalla Work Center (USDA-1)	38 persons @ 18 gpd	0.0007	0.785	0.78	0.5	1	0.2	150	0.256976	0.0	1.2	0.23848843	0.360194	0.1
HARDIN CO.														
Water Necessities, Inc. (Northwoods) (WNIH-1)	39 conn. @ 1.5 gpm = 59 gpm total *(supply 40 gpm from other system)*	0.085	95.285	64.57	40.0	3	1.8	15,300	4.296701	65.7	1.5	2.72559898	9.104501	139.3
JEFFERSON CO.														
Hamshire Community WSC (HCWSC-1)	120 conn. *(after proposed system extensions)* @ 0.6 gpm (supply 18 gpm from neighboring system)	0.1037	116.248	29.06	18.0	2.5	1.2	37,000	2.380425	88.1	1.2	1.41312071	3.336554	123.5
ORANGE CO.														
Water Necessities, Inc. (Timer, Claire, Corbett) (WNIO-1)	79 conn. *(32 Claire, 30 Corbett, 17 Timer if 6 connections recently lost are restored)* @ 1.5 gpm w/ prop. ground storage in different pressure plan	0.1714	192.1394	192.14	119.1	6	1.4	21,100	1.10655	23.3	1.5	2.02762488	2.344725	49.5
				41.35	25.6	2	2.6	500	13.56126	6.8	1.2	3.14153525	19.00832	9.5
				150.79	93.5	6	1.1	9,500	0.706439	6.7	1.5	1.59130054	1.496911	14.2
				72.96	45.2	2.5	3.0	500	13.09519	6.5	1.2	3.54808687	18.35504	9.2
				77.83	48.3	3	2.2	5,300	6.072229	32.2	1.5	3.28526562	12.86676	68.2
Water Necessities, Inc. (Timer, Claire, Corbett) (WNIO-2)	79 conn. *(32 Claire, 30 Corbett, 17 Timer if 6 connections recently lost are restored)* @ 1.5 gpm w/o ground storage	0.1714	192.1394	192.14	119.1	6	1.4	27,500	1.10655	30.4	1.5	2.02762488	2.344725	64.5
				41.35	25.6	2	2.6	500	13.56126	6.8	1.2	3.14153525	19.00832	9.5
				150.79	93.5	6	1.1	9,500	0.706439	6.7	1.5	1.59130054	1.496911	14.2
				72.96	45.2	2.5	3.0	500	13.09519	6.5	1.2	3.54808687	18.35504	9.2
				77.83	48.3	3	2.2	5,300	6.072229	32.2	1.5	3.28526562	12.86676	68.2
SABINE CO.														
Timberlane Water System, Inc. (TWS-1)	Extend service to park w/2 conn. @ 1 gpm *(but population shows 10, use 4 conn.)*	0.00576	6.45696	6.45696	4.0	2	0.4	5,300	0.43534	2.3	1.5	0.61325597	0.922464	4.9

Head loss computed by Hazen-Williams equation H = head loss in ft. per 1000 ft. = 1000 (_____V_____) exp 1.852
0.115C(d exp 0.63)

where v = velocity in fps, C = coefficient = 150 for PVC, d = pipe diameter in inches

Kervins RV Park -- Connect to future raw water transmission line for City of Lufkin from water plant on Sam Rayburn

	2010	2020	2030	2040	2050	2060
Required water, af/y	0	59.8	59.8	59.8	59.8	59.8
Distribution Design, gpm (1.2*Reqd)		44.5	44.5	44.5	44.5	44.5
Supplied water, MGD		0.053	0.053	0.053	0.053	0.053
Distribution Cost						
Length Dist. Pipe	700					
Pumping Rate	0					
Pipe Diameter, in	2.5					
Head Loss/100 feet	1.27					
Depth to Water Surface	0					
Total Head Required	8.89					
Total Horsepower	0					
Cost of Pipeline by footages:						
700 @ $25	17500					
Pump Station and Storage	150000					
Total Capital Cost	167500	$167,500	0	0	0	0
Engineering & Cont. (30%)		$50,250	$0	$0	$0	$0
Interest During Construction		$9,073	$0	$0	$0	$0
Total Cost		$226,823	$0	$0	$0	$0
Annual Cost						
New Debt Service,6%, 20yrs.		($19,775)	$0	$0	$0	$0
New Plus Existing		($19,775)	($19,775)	($19,775)		$0
O&M Cost						
Electricity		0	0	0	0	0
O&M		($3,750)	($3,750)	($3,750)	($3,750)	($3,750)
Transmission Line		($175)	($175)	($175)	($175)	($175)
Treated Water		($41,502)	($41,502)	($41,502)	($41,502)	($41,502)
Total Annual Cost		($65,203)	($65,203)	($65,203)	($45,427)	($45,427)
Unit Cost, $/1000 gallons		($3.35)	($3.35)	($3.35)	($2.33)	($2.33)

Lakeview RV & Motel -- Connect to future raw water transmission line for City of Lufkin from water plant on Sam Rayburn Reservoir

	2010	2020	2030	2040	2050	2060
Required water, af/y	0	48.4	48.4	48.4	48.4	48.4
Distribution Design, gpm (1.2*Reqd)		36.0	36.0	36.0	36.0	36.0
Supplied water, MGD		0.043	0.043	0.043	0.043	0.043
Distribution Cost						
Length Dist. Pipe	150					
Pumping Rate	0					
Pipe Diameter, in	2					
Head Loss/100 feet	2.55					
Depth to Water Surface	0					
Total Head Required	3.825					
Total Horsepower	0					
Cost of Pipeline by footages:						
150 @ $25	3750					
Pump Station and Ground Storage	150000					
Total Capital Cost	153750	$153,750	0	0	0	0
Engineering & Cont. (30%)		$46,125	$0	$0	$0	$0
Interest During Construction		$8,328	$0	$0	$0	$0
Total Cost		$208,203	$0	$0	$0	$0
Annual Cost						
New Debt Service,6%, 20yrs.		($18,152)	$0	$0	$0	$0
New Plus Existing		($18,152)	($18,152)	($18,152)		$0
O&M Cost						
Electricity		0	0	0	0	0
O&M		($3,750)	($3,750)	($3,750)	($3,750)	($3,750)
Transmission Line		($38)	($38)	($38)	($38)	($38)
Treated Water		($33,590)	($33,590)	($33,590)	($33,590)	($33,590)
Total Annual Cost		($55,530)	($55,530)	($55,530)	($37,378)	($37,378)
Unit Cost, $/1000 gallons		($3.52)	($3.52)	($3.52)	($2.37)	($2.37)

USDA Zavalla Work Center -- Connect to future raw water transmission line for City of Lufkin from water plant on Sam Rayburn Reservoir

	2010	2020	2030	2040	2050	2060
Required water, af/y	0	45	45	455	45	45
Distribution Design, gpm (1.2*Reqd)		33.5	33.5	338.2	33.5	33.5
Supplied water, MGD		0.0401	0.0401	0.4059	0.0401	0.0401
Distribution Cost						
Length Dist. Pipe	150					
Pumping Rate	0					
Pipe Diameter, in	2.5					
Head Loss/100 feet	0.8					
Depth to Water Surface	0					
Total Head Required	1.2					
Total Horsepower	0					
Cost of Pipeline by footages:						
150 @ 25	3750					
Pump Station and Ground Storage	150000					
Total Capital Cost	153750	$153,750	0	0	0	0
Engineering & Cont. (30%)		$46,125	$0	$0	$0	$0
Interest During Construction		$8,328	$0	$0	$0	$0
Total Cost		$208,203	$0	$0	$0	$0
Annual Cost						
New Debt Service,6%, 20yrs.		($18,152)	$0	$0	$0	$0
New Plus Existing		($18,152)	($18,152)	($18,152)		$0
O&M Cost						
Electricity		0	0	0	0	0
O&M		($3,750)	($3,750)	($3,750)	($3,750)	($3,750)
Transmission Line		($38)	($38)	($38)	($38)	($38)
Treated Water		($31,231)	($31,231)	($31,231)	($31,231)	($31,231)
Total Annual Cost		($53,170)	($53,170)	($53,170)	($35,018)	($35,018)
Unit Cost, $/1000 gallons		($3.63)	($3.63)	($0.36)	($2.39)	($2.39)

Water Necessities, Inc. (Northwoods) -- Connect Northwoods & New Forest with Breakaway Trails (all existing systems owned by Water Necessities, Inc.), provide for Breakaway to supply up to 40 gpm to Northwoods; New Forest located along way, no extra connection cost

	2010	2020	2030	2040	2050	2060
Required water, af/y	0	64.6	64.6	64.6	64.6	64.6
Distribution Design, gpm (1.5*Reqd)		60.0	60.0	60.0	60.0	60.0
Supplied water, MGD		0.0576	0.0576	0.0576	0.0576	0.0576
Distribution Cost						
Length Dist. Pipe	15300					
Pumping Rate	60					
Pipe Diameter, in	4					
Head Loss/100 feet	0.273					
Depth to Water Surface	10					
Total Head Required	51.769					
Total Horsepower	1					
Cost of Pipeline by footages:						
15300 @ $25	382500					
Ground Storage Tank @ Pumps (4000 gal.)	11000					
Total Capital Cost	393500	$393,500	0	0	0	0
Engineering & Cont. (30%)		$118,050	$0	$0	$0	$0
Interest During Construction		$21,315	$0	$0	$0	$0
Total Cost		$532,865	$0	$0	$0	$0
Annual Cost						
New Debt Service,6%, 20yrs.		($46,458)	$0	$0	$0	$0
New Plus Existing		($46,458)	($46,458)	($46,458)	$0	$0
O&M Cost						
Electricity		($403)	($403)	($403)	($403)	($403)
O&M		($275)	($275)	($275)	($275)	($275)
Transmission Line		($3,825)	($3,825)	($3,825)	($3,825)	($3,825)
Treated Water		($631)	($631)	($631)	($631)	($631)
Total Annual Cost		($51,593)	($51,593)	($51,593)	($5,135)	($5,135)
Unit Cost, $/1000 gallons		($2.45)	($2.45)	($2.45)	($0.24)	($0.24)

Hamshire Community WSC -- Connect Hamshire with West Jefferson MWD for up to 18 gpm of needs; assume proposed pump station located within W. Jefferson system so as to be in service area of existing ground or elevated storage. This arrangement is offered only in an effort to compensate for slightly deficient storage capacity in Hamshire system, which has more than adequate well supply. It is assumed that about 1/3 of the Hamshire system will be valved off to receive all of its water normally from W. Jefferson with provisions to open valve in emergency to supply it from the main Hamshire system.

	2010	2020	2030	2040	2050	2060
Required water, af/y	0	29.06	29.06	29.06	29.06	29.06
Distribution Design, gpm (1.2*Reqd)		21.6	21.6	21.6	21.6	21.6
Supplied water, MGD		0.0259	0.0259	0.0259	0.0259	0.0259
Distribution Cost						
Length Dist. Pipe	37000					
Pumping Rate	27					
Pipe Diameter, in	2.5					
Head Loss/100 feet	0.33					
Depth to Water Surface	10					
Total Head Required	132.1					
Total Horsepower	1					
Cost of Pipeline by footages:						
37000 @ $25	925000					
Pump Station and Storage	30000					
Total Capital Cost	955000	$955,000	0	0	0	0
Engineering & Cont. (30%)		$286,500	$0	$0	$0	$0
Interest During Construction		$51,730	$0	$0	$0	$0
Total Cost		$1,293,230	$0	$0	$0	$0
Annual Cost						
New Debt Service,6%, 20yrs.		($112,750)	$0	$0	$0	$0
New Plus Existing		($112,750)	($112,750)	($112,750)	$0	$0
O&M Cost						
Electricity		($463)	($463)	($463)	($463)	($463)
O&M		($750)	($750)	($750)	($750)	($750)
Transmission Line		($9,250)	($9,250)	($9,250)	($9,250)	($9,250)
Treated Water		($18,748)	($18,748)	($18,748)	($18,748)	($18,748)
Total Annual Cost		($141,961)	($141,961)	($141,961)	($29,211)	($29,211)
Unit Cost, $/1000 gallons		($15.00)	($15.00)	($15.00)	($3.09)	($3.09)

Water Necessities, Inc. (Timer, Claire, Corbett) -- Connect all three systems with existing Mauriceville SUD distribution system, estimated location of connection on FM 2802 4.2 miles E of FM 105. Assume need for pumping & ground storage @ connection.

	2010	2020	2030	2040	2050	2060
Well to junction w/Timer lateral						
Required water, af/y	0	192.14	192.14	192.14	192.14	192.14
Distribution Design, gpm (1.5*Reqd)		178.5	178.5	178.5	178.5	178.5
Supplied water, MGD		0.1714	0.1714	0.1714	0.1714	0.1714
Timer Lateral						
Required water, af/y	0	41.35	41.35	41.35	41.35	41.35
Distribution Design, gpm (1.2*Reqd)		30.7	30.7	30.7	30.7	30.7
Supplied water, MGD		0.0369	0.0369	0.0369	0.0369	0.0369
Timer Lateral to Corbett lateral						
Required water, af/y	0	150.79	150.79	150.79	150.79	150.79
Distribution Design, gpm (1.5*Reqd)		140.1	140.1	140.1	140.1	140.1
Supplied water, MGD		0.1345	0.1345	0.1345	0.1345	0.1345
Corbett lateral						
Required water, af/y	0	72.96	72.96	72.96	72.96	72.96
Distribution Design, gpm (1.2*Reqd)		54.2	54.2	54.2	54.2	54.2
Supplied water, MGD		0.0651	0.0651	0.0651	0.0651	0.0651
Claire lateral						
Required water, af/y	0	77.83	77.83	77.83	77.83	77.83
Distribution Design, gpm (1.5*Reqd)		72.3	72.3	72.3	72.3	72.3
Supplied water, MGD		0.0694	0.0694	0.0694	0.0694	0.0694

Distribution Cost	
Well to junction w/Timer lateral	
Length Dist. Pipe	27500
Pumping Rate	119.1
Pipe Diameter, in	6
Head Loss/100 feet	0.234
Depth to Water Surface	10
Total Head Required	74.35
Timer Lateral	
Length Dist. Pipe	500
Pumping Rate	25.6
Pipe Diameter, in	2
Head Loss/100 feet	1.9001
Depth to Water Surface	0
Total Head Required	9.5005

Water Necessities, Inc. (Timer, Claire, Corbett) -- Connect all three systems with existing Mauriceville SUD distribution system, estimated location of connection on FM 2802 4.2 miles E of FM 105. Assume need for pumping & ground storage @ connection.

Timer Lateral to Corbett lateral						
Length Dist. Pipe	9500					
Pumping Rate	93.5					
Pipe Diameter, in	6					
Head Loss/100 feet	0.15					
Depth to Water Surface	0					
Total Head Required	14.25					
Corbett lateral						
Length Dist. Pipe	500					
Pumping Rate	45.2					
Pipe Diameter, in	2.5					
Head Loss/100 feet	1.836					
Depth to Water Surface	0					
Total Head Required	9.18					
Claire lateral						
Length Dist. Pipe	5300					
Pumping Rate	48.3					
Pipe Diameter, in	3					
Head Loss/100 feet	1.287					
Depth to Water Surface	0					
Total Head Required	68.211					
Total Horsepower	4.86352289					
Cost of Pipeline by footages:						
27500 @ $30	825000					
500 @ $12	6000					
9500 @ $35	332500					
500 @ $12	6000					
5300 @ $15	79500					
Pump Station	38000					
Ground Storage Tank @ Pumps						
(16,000 gal.)	21000					
Total Capital Cost	1308000	$1,308,000	0	0	0	0
Engineering & Cont. (30%)		$392,400	$0	$0	$0	$0
Interest During Construction		$70,851	$0	$0	$0	$0
Total Cost		$1,771,251	$0	$0	$0	$0
Annual Cost						
New Debt Service,6%, 20yrs.		($154,426)	$0	$0	$0	$0
New Plus Existing		($154,426)	($154,426)	($154,426)	$0	$0
O&M Cost						
Electricity		($1,751)	($1,751)	($1,751)	($1,751)	($1,751)

Water Necessities, Inc. (Timer, Claire, Corbett) -- Connect all three systems with existing Mauriceville SUD distribution system, estimated location of connection on FM 2802 4.2 miles E of FM 105. Assume need for pumping & ground storage @ connection.

O&M	($950)	($950)	($950)	($950)	($950)
Transmission Line	($12,490)	($12,490)	($12,490)	($12,490)	($12,490)
Treated Water	($6,260)	($6,260)	($6,260)	($6,260)	($6,260)
Total Annual Cost	($175,878)	($175,878)	($175,878)	($21,452)	($21,452)
Unit Cost, $/1000 gallons	($2.81)	($2.81)	($2.81)	($0.34)	($0.34)

Timberlane Water System, Inc. -- Extend service to Lakeview Park to the east to replace existing supply for park

	2010	2020	2030	2040	2050	2060
Required water, af/y	0	6.46	6.46	6.46	6.46	6.46
Distribution Design, gpm (1.5*Reqd)		6.0	4.8	4.8	4.8	4.8
Supplied water, MGD		0.0058	0.0058	0.0058	0.0058	0.0058
Distribution Cost						
Length Dist. Pipe	5300					
Pumping Rate	0					
Pipe Diameter, in	2					
Head Loss/100 feet	0.061					
Depth to Water Surface	0					
Total Head Required	3					
Total Horsepower	0					
Cost of Pipeline by footages:						
5300 @ $25	132500					
Pump Station and Intake	0					
Total Capital Cost	132500	$132,500	0	0	0	0
Engineering & Cont. (30%)		$39,750	$0	$0	$0	$0
Interest During Construction		$7,177	$0	$0	$0	$0
Total Cost		$179,427	$0	$0	$0	$0
Annual Cost						
New Debt Service,6%, 20yrs.		($13,035)	$0	$0	$0	$0
New Plus Existing		($13,035)	($13,035)	($13,035)	$0	$0
O&M Cost						
Electricity		$0	$0	$0	$0	$0
O&M		$0	$0	$0	$0	$0
Transmission Line		($1,325)	($1,325)	($1,325)	($1,325)	($1,325)
Treated Water		($63)	($63)	($63)	($63)	($63)
Total Annual Cost		($14,423)	($14,423)	($14,423)	($1,388)	($1,388)
Unit Cost, $/1000 gallons		($6.86)	($6.86)	($6.86)	($0.66)	($0.66)

Appendix J

Response to Comments

Appendix J – Study 2

Region I-Specific Study Number 2: Regional Solutions for Small Water Suppliers

1. Page ES: The first sentence should read "…East Texas Regional Water Planning Area…". Please make this correction in the final report. ***Corrected***

2. Page 1: The TWDB requirement for providing funding to an entity is that the project be consistent with the most recently approved Regional and State Water Plans. Please correct the report. ***Corrected.***

3. Task 4: Please revise the report to provide water management strategy supply volumes and annual costs by decadal increments across the entire planning horizon.
   Data added by tables on pages 14 - 16

4. Please submit the large tables included in the report (such as tables in Appendix A - D) in MS Excel. Any GIS files used to produce the system maps should also be submitted with the final draft.
   Format will be provided in electronic copy as requested

5. The Study Deliverables as listed in the contract scope of work state that "a draft and final report will be prepared to include the following sections..." The purpose of study including how the study supports regional water planning, methodology, results, and recommendations, if applicable, do not appear in the report in any organized fashion. While some of these may be inferred from various appendices, please include these items as a section following the Task 4 information in the final report.
   Added Sections Purpose of Study, Methodology and Recommendations

Comments for consideration:

6. Including all of the summaries and recommendations in un-tabbed appendices make it difficult for the reader to understand what has been done in the report. Please consider adding appendices H and I and Tables 1-3 to the main body of the report.
   Relocated from Appendices to tables inserted 8- 13.

7. Appendix E - Following maps of the selected counties, there are four pages of "MAP REVISIONS NEEDED FOR SMALL USER GROUP REPORT" dated September 8, 2008. It is unclear who made these comments, if the revisions have been made or if they will be made in the final report. Please consider providing additional clarification and making the necessary corrections if possible.
   Revisions included in maps and comments deleted

8. Appendix E, Angelina County map - Four legends/information boxes are printed in dark blue with black characters making them unreadable. Please consider changing the background color of the boxes, perhaps similar to those on the Jefferson and Nacogdoches County maps.
   Graphics corrected

Region I-Specific Study Number 2: Regional Solutions for Small Water Suppliers

9. Appendix E, Cherokee County map - In the first plat of Cherokee County, the CCN legend table references CCNs 1 through 6, but number 2 is not shown. The second plat of Cherokee County includes a large blue block that is difficult to read. Please consider renumbering the reference rows and CCNs on plat 1 or including a note that number 2 CCN is illustrated on the second plat. Also, please consider changing the background color of the box.
   Graphics corrected

10. Appendix E, Hardin and Henderson County maps - Please consider changing the background color of the boxes, perhaps similar to those on the Jefferson and Nacogdoches County maps.
    Graphics corrected.