

**North Plains Groundwater  
Conservation District No. Two  
Management  
and  
Conservation Plan**

**Adopted August 18, 1998**

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## SECTION I INTRODUCTION

### A. DEFINITIONS

- **“Abandoned well or deteriorated well”** shall mean a well or borehole the condition of which is causing, or is likely to cause, pollution of groundwater in the District and includes a well which is or is not in use or which contains no pumping equipment (open or uncovered well). A well or borehole which is not in compliance with applicable law, including the Rules and Regulations of the District, the Texas Water Well Driller's Act, Texas Natural Resources Conservation Commission, or any other state or federal agency or political subdivision having jurisdiction, is presumed to be an abandoned or deteriorated well.
- **“Acceptable decline rate”** is a percentage of the saturated thickness which may be removed from the groundwater reservoir annually and will encourage conservation and extend its longevity.
- **“Allowable decline”** is an amount of water, expressed in acre feet. It is calculated by multiplying the net saturated thickness of the previous year by the acceptable decline rate set by the Board. It is assigned at the center of each section of land.
- **“Annual”** shall mean recurring or done every year. The use within this document, unless otherwise stated, is based on the fiscal year of the District which is a twelve (12) month period from October 1 of one calendar year through September 30 of the following calendar year.
- **“Aquifer”** shall mean a formation or group of saturated geologic formations capable of storing and yielding fresh water in usable quantities.
- **“Beneficial use”** shall be any use which is advantageous and does not constitute waste.
- **“Board”** shall mean the governing body of the District, which shall consist of not fewer than five and not more than 11 Directors elected for four-year terms. “The number of Directors may be changed as determined by the Board when territory is annexed by the District.” (§36.051 (a) Texas Water Code)
- **“Chapter 35”** refers to Sections 35.001 through 35.019 of the Texas Water Code, which authorize the Texas Natural Resource Conservation Commission (TNRCC) to designate groundwater management areas and create groundwater conservation districts. This Chapter also outlines the Priority Groundwater Management Area (PGMA) process. A reference to a specific section or subsection may be identified using the symbol “§” or using the abbreviation of “Sec.”
- **“Chapter 36”** refers to Sections 36.001 through 36.374 of the Texas Water Code, which

authorize creation of groundwater conservation districts and outline the powers and duties of a groundwater conservation district. A reference to a specific section or subsection may be identified using the symbol "§" or using the abbreviation of "Sec."

- **"Coliform bacteria"** is bacteria that are used to indicate the presence of pathogens. Coliform bacteria may not be pathogens but usually are present when pathogens are present and are more resistant to environmental stresses than pathogens.
- **"County Committee"** shall mean a committee of five persons appointed in each county of the District which will perform such duties as the Board may require.
- **"District"** shall mean North Plains Ground Water Conservation District No. Two, maintaining its principal office in Moore County, Dumas, Texas. Where applications, reports and other papers are required to be filed with or sent to "the District", this means the District's headquarters at 603 East First, P. O. Box 795, Dumas, Moore County, Texas 79029-0795, Phone: 806-935-6401, Facsimile: 806-935-6633. The District shall also be known as "North Plains Ground Water Conservation District", "North Plains Water District" and the acronym "NPWD" shall also refer to the North Plains Ground Water Conservation District No. Two.
- **"Each year"** shall mean recurring or done every calendar year.
- **"Groundwater"** shall mean water percolating below the surface of the earth.
- **"Groundwater reservoir"** shall mean a specific subsurface water-bearing reservoir having ascertainable boundaries containing groundwater.
- **"Hydraulic conductivity"** is a measurement of the capacity of a porous medium to transmit water. It is expressed as the volume of water at the kinematic viscosity that will move in a unit time under a unit hydraulic gradient through a unit area measured at right angles to the direction of flow.
- **"Irrigation distribution system or irrigation system"** shall mean a device or combination of devices having a hose, pipe or other conduit which connects directly to any water well through which water or a mixture of water and chemicals is drawn and applied to land. The term does not include any hand held-hose sprayer or other similar device which is constructed so that an interruption in water flow automatically prevents any backflow to the water source.
- **"Management plan"** is the groundwater management plan required pursuant to Texas Water Code §36.1071.
- **"Monitoring well or observation well"** shall mean an artificial excavation constructed to measure or monitor the quality or quantity or movement of substances, elements, chemicals, or fluids beneath the surface of the ground. The term shall not include any monitoring well which

is used in conjunction with the production of oil, gas, or any other minerals.

- **“Natural resource”** is a material source of wealth, such as timber or a mineral deposit, that occurs in a natural state. (*The American Heritage Dictionary, Third Edition*)
- **“Owner”** shall mean and include any person or other entity, public or private, that has the right to produce water from the land either by ownership, contract, lease, easement or any other estate in the land or water.
- **“Person”** shall mean any individual, partnership, firm or corporation.
- **“Pollution”** shall mean the alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, water in the District that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or which impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.
- **“Porosity”** is a measurement of the voids or openings in a medium. It may be expressed quantitatively as the ratio of the volume of openings to the total volume.
- **“Saturated thickness”** is the vertical distance between the water table and the base of the groundwater reservoir, and the pores between the solid particles are filled with water.
- **“Specific yield”** is the ratio of the volume of water that will drain under the influence of gravity to the total volume.
- **“Texas Water Code (TWC)”** shall refer to the laws which govern the use and disposition of water in the state of Texas.
- **“Underground water”** is used synonymous with groundwater.
- **“Waste”** as used herein shall have the same meaning as defined by Chapter 36 of the Texas Water Code as now or hereafter amended as follows:  
“Waste means any one or more of the following:
  1. Withdrawal of groundwater from a groundwater reservoir at a rate and in an amount that causes or threatens to cause intrusion into the reservoir of water unsuitable for agricultural, gardening, domestic, or stock-raising purposes;
  2. The flowing or producing of wells from a groundwater reservoir if the water produced is not used for a beneficial purpose;
  3. Escape of groundwater from a groundwater reservoir to any other reservoir or geologic strata that does not contain groundwater;
  4. Pollution or harmful alteration of groundwater in a groundwater reservoir by saltwater

or by other deleterious matter admitted from another stratum or from the surface of the ground;

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

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

7. For water produced from an artesian well, "waste" has the meaning assigned by Section 11.205."

- "Water" is used synonymous with groundwater and underground water.
- "Water rights" shall mean a defined number of surface acres, within each section of land which a person has acquired the right to capture the groundwater from beneath, subject to the Rules of this District.
- "Water well" shall mean any artificial excavation constructed for the purpose of exploring for or producing groundwater. The term, however, shall not include any test or blast holes in quarries or mines, or any well or excavation for the purpose of exploring for, or producing oil, gas, or any other minerals unless the holes are used to produce groundwater. The term shall not include any injection water source well regulated by the Railroad Commission of Texas.
- "Well" shall mean a water well, injection well, recharge well, dewatering well, or monitoring well and is in compliance with the District Rules.

## **B. PURPOSE OF THE DISTRICT**

The purpose of the District is to provide for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence within the defined boundary of the District. The purpose of the District is achieved through rules, education programs, District-provided services, and through mutual cooperation of local, state, and federal agencies. The District issues water well permits, collects groundwater information, performs water quality analyses, provides a number of well system tests and other services. Extensive databases are used to store, retrieve, and analyze the groundwater information for the District. It is the belief of the District's residents and the Board of Directors that groundwater is best managed locally through a groundwater conservation district. This belief is realized by the adoption and implementation of a management plan outlining the goals, methods, and procedures to be utilized in the management of the groundwater resources of the District. This management plan will provide a better understanding of the goals and objectives of the District by the residents and promote cooperation in its implementation.



This document has been developed in accordance with the requirements of Chapter 36 of the Texas Water Code, and the provisions of Texas Administrative Code Title 31, Chapter 356 Groundwater Management Plan Certification.

## **C. HISTORY AND STATUTES**

The Texas State Legislature in 1949 authorized the creation of Underground Water Conservation Districts to perform certain prescribed duties, functions, and hold specific powers as set forth in Article 7880-3c, Texas Civil Statutes, changed to Chapter 52 of the Texas Water Code, currently Chapter 36 of the Texas Water Code.

A confirmation election was held in 1955 and the vote to create a water district dedicated to protect and conserve groundwater resources was affirmed. The counties of Sherman, Hansford, Ochiltree, and the area north of the Canadian River in Hartley, Moore, and Hutchinson counties comprised the original area of the District. In 1973 the people of Lipscomb County voted to annex into the District and in 1993 a portion of Dallam County was annexed into the District.  
(See Appendix D for a map for the current boundary of the District.)

Throughout the history of the District, the Directors, County Committees, and staff have used their best effort to identify future concerns which could reasonably arise and find solutions which will prevent these concerns from becoming problems. The District continues to be aware of regulations of other local, state, and federal agencies which affect groundwater and acts as a buffer between these agencies and the residents of the District. It is the goal of the District to provide the best management of groundwater resources and make every effort to insure that an abundant supply of potable water will be available for many future generations.

In the District's effort to fulfill its purpose, provisions contained in Chapter 36 of the Texas Water Code have been used as an outline for the development and adoption of rules, programs, policies, and activities. The District continues to remain aware of changes in the Water Code as they occur and if appropriate, will adopt rules and modify or update the old rules or Management Plan.

## **D. THE GOVERNING BODY**

The District is currently governed by a seven-member elected Board of Directors. Each Director is elected from a defined area within the District for a four-year term. The elections are held on the first Saturday in May each even-numbered year in accordance with Chapter 36 of the Texas Water Code and Texas Election Code. The Board elects officers after each director election and these officers serve for two-year terms. This Board develops and adopts the rules, programs and practices of the District. The Board hires the staff, sets the annual budget, and determines the tax rate needed to carry out the operations of the District. When the District was organized, the Board of Directors felt that it was necessary to have a close working relationship with the people in all the counties of the District. To achieve this, the Board appoints local County Committees composed of five people from each of the eight counties within the District. The people who serve on these Committees meet regularly with

the Director representing their county, the General Manager, and/or staff members of the District. The County Committees review water well permit applications for their county and discuss water-related issues that may affect the area. During these meetings, local water-related concerns may be discussed and possible remedies suggested. The committees also may suggest new programs or policies the Directors should consider. The concerns and comments of the committees will be brought before the Board through the Director or the Manager.

## **E. ADMINISTRATIVE**

It is the goal of the District that its activities be consistent with sound business practices; that the interest of the public shall always be considered in conducting District business; that impropriety or the appearance of impropriety shall be avoided to ensure and maintain public confidence in the District; and that the Board shall control and manage the affairs of the District lawfully, fairly, impartially, and in accordance with the stated purposes of the District. Documents have been developed and approved by the Board to assist the staff in performing their duties and meeting their responsibilities.

The District employs a General Manager to manage the administrative affairs of the District and provides for additional staff to assist in these duties. The General Manager is responsible for ensuring that the rules, regulations, policies, and procedures adopted by the Board are followed. The General Manager is held responsible by the Board and is required to provide timely reports about the administrative affairs of the District. These reports include but are not limited to:

- Financial- Provide current year budget updates at least quarterly; monthly financial reports of all accounts; provide any information needed for the annual financial audit of the District and identify future needs for budget planning.
- Rules- Manage the implementation of the rules of the District in accordance with procedures set forth in the District Rules and/or Policies. Schedule requests for exceptions to the Rules for a hearing before the Board in accordance with proper procedure. Bring before the Board any problem with any of the activities of the District.
- Information- At each regular board meeting the Manager will report on the activities of the Manager and/or staff in carrying out their duties. These activities may include meetings and/or seminars attended, upcoming meetings and seminars, legislative activities, new program development, and updates on programs being developed.
- Personnel- Annually, the Manager will provide an evaluation of the district staff and make recommendations about personnel needs or adjustments needed to continue to meet the goals and objectives of the District.

**Management Goal:** It is the goal of the District that its activities be consistent with sound business practices; that the interest of the public shall always be considered in conducting District business; that impropriety or the appearance of impropriety shall be avoided to ensure and maintain public confidence in the District; and that the Board shall control and manage the affairs of the District lawfully, fairly, impartially, and in accordance with the stated purposes of the District.

**Management Objective:** Adopt rules, regulations, policies, and procedures as needed and insure that the Management and staff have a clear understanding of their duties in accordance with the administrative goals of the District.

**Performance Standard:** Annually verify that the Administrative duties as set forth are carried out as stated.

(A list of the current Directors, Officers, Staff, and County Committee Members is included in Appendix A.)

## SECTION II PLANNING PERIOD

Within three months of the creation of the District, the Board of Directors adopted a set of rules that went into effect March 14, 1955. Many of these rules remain in effect today. The rules and orders adopted addressed four fundamental requirements: 1) A permit was required before drilling a well capable of producing water in excess of 100,000 gallons per day. 2) Wells were required to be separated based upon the size of the wells. 3) A completed driller's log and registration of well was required to be filed with the District. 4) Procedures of compliance with the rules and hearings before the Board were required.

At the time the District was created in January of 1955, the applicable water law, Art. 7880-3c, Texas Civil Statutes required neither a management plan nor any formal document addressing management of groundwater. However, during the time the rules were being considered and adopted the Directors' goal was to formulate rules and procedures that would be effective in managing groundwater resources far into the future. With the exception of changes to the Water Code and the necessity to adopt rules to address groundwater contamination issues, the basic set of rules remained effective throughout a forty year period. Between 1955 and 1995, the District adopted policies, developed programs, collected both quantity and quality data, and participated in groundwater studies in an effort to better manage the groundwater resources of the District.

In 1994 the Board embarked on a comprehensive review and analysis of its existing rules. The Board adopted the following statement of purpose and mission for the District:

“The purpose of this District is to provide for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence within the defined boundary of the District. To carry out this purpose, these rules and regulations are passed, adopted and will be enforced to: minimize as far as practicable: draw down of the water table, depletion of the groundwater reservoirs and aquifers, interference between wells, reduction of artesian pressure; and to prevent waste of groundwater, pollution or harmful alteration of the character of the groundwater resource, and to manage the groundwater effectivity based upon ecological and socio-economic systems unique to the area of the North Plains Groundwater Conservation District No. Two.”

The rules became effective October 1, 1995 and reflect the traditional long-term perspective which has historically guided the thinking of the Board.

It is the belief of the Board that these rules reflect and are consistent with their thinking in the past although they realize that as in the past additional policies, programs, concepts, technology, data collections and studies will be needed to maintain the effective and progressive nature of the District.

Senate Bill 1, adopted by the 75<sup>th</sup> Texas Legislature and became effective September 1, 1997, is a massive piece of legislation which directly impacted groundwater conservation districts in many ways.

The Act is significant in that it states the following:

1. A new Section 36.0015 was added to the Texas Water Code reading in part as follows:  
"Groundwater conservation districts created as provided by this chapter are the state's preferred method of groundwater management."
2. The legislation did not change the private ownership or "right of capture" law under which Texas groundwater has historically been governed since the Texas Supreme Court handed down its opinion in *East v. H&TC Ry. Co.* in 1904.

It is not the intent of the District to write a management plan lasting forever. Rather the management plan is intended to remain unchanged indefinitely but the District will modify, change and/or amend the plan as needed in accordance with Chapter 36, §36.1072(e), Texas Water Code. The Board may review the management plan annually and must review and readopt the plan, with or without revisions, at least once every five years. For the purpose of 31 TAC §356.5(a) this management plan uses a planning period of at least ten (10) years.

## SECTION III GROUNDWATER SUPPLY

### A. GENERAL GEOLOGY, STRATIGRAPHY, AND HYDROLOGY

The Ogallala Formation in Texas is the southernmost extension of the major water-bearing unit underlying the physiographic province of North America. It was named by Darton (1898) for the town of Ogallala, Nebraska, near the type locality.

Following the Laramide revolution in which the southern Rocky Mountains were uplifted and the Cretaceous seas retreated, rivers flowing east and southeastward cut valleys into the pre-Ogallala surface. The deposition of the Ogallala Formation began in late Miocene to early Pliocene age and continued until late Pliocene time when the climate became more arid and upwarping of the High Plains area caused deposition to cease and erosion to begin. During Pliocene time, large quantities of eroded material from the Rocky Mountain region were transported by wind and water southeastward and deposited on the then existing surface of primarily Triassic and Permian age rocks. In certain areas, the depositional surface was composed of Cretaceous and Jurassic age sediments. The low valley areas were usually filled first by coarser materials such as gravels and coarse sand. As the valleys and basins filled, sediments overflowed to form coalescing aprons fed by braided streams that spread across a generally level plain. Eventually, the entire area was covered by Ogallala sediments until a maximum thickness of almost 900 feet (274 m) was attained in southwestern Ochiltree County (Muller and Price, 1979; Bell and Morrison, 1978).

Throughout the time when the Ogallala sediments were being deposited, the Southern Rocky Mountains remained tectonically active, providing source material for the Ogallala Formation (Knowles and others 1984).

The Ogallala Formation unconformably overlies Permian, Triassic, Jurassic, and Cretaceous strata and consists primarily of heterogeneous sequences of coarse-grained sand and gravel in the lower part grading upward into fine clay, silt, and sand. Gravel commonly occurs in layers in the basal section and ranges in size from boulders to pea size. In places, the Ogallala Formation contains some quartz gravel and caliche with pebbles and cobbles of quartz, quartzite, and chert being common. In the Northern High Plains the formation has been divided into three subdivisions: the Valentine, Ash Hollow, and Kimball, based on fossil vertebrates and flora. The subdivisions, often referred to as floral zones, are less distinguishable in the Southern High Plains.

The sands are generally tan, yellow, or reddish brown, medium to coarse-grained, moderately to well sorted, unconsolidated quartz grains, interbedded with thin layers of clay and occasionally sandstone. The sand is generally poorly consolidated to unconsolidated, although local cementation by calcium carbonate and silica occurs. Grain size and condition of sorting is an indication of the high energy involved in the depositional process of these sediments. As expected, sand grain and gravel size decreases and sorting improves eastward.

The gravel is usually associated with sand, silt, and clay and is occasionally cemented. Quartzite is generally the predominant rock type in the gravel, although a high percentage of limestone boulders and cobbles occur in the southern area along with weathered Cretaceous invertebrate fossils. The occurrence of limestone gravel and Cretaceous fossils indicate that a local source possibly contributed to the Ogallala sediments in the southern third of the area.

Near the surface of much of the Texas High Plains are layers of resistant caliche known as "caprock". Caliche occurs in both Ogallala and post-Ogallala sediments and is formed by the leaching of carbonate and silica from surface soils and the redeposition of the dissolved mineral layers below the surface. Although caliche layers occur primarily near the surface, deeper zones of caliche are also present. These deeper layers represent older soil horizons. The caliche ranges from crumbly to very hard and is almost impermeable although secondary porosity has been observed in many samples.

Previously, the Ogallala was described as fluvial sediments deposited as a series of coalescing alluvial fans or plains with only minor amounts of eolian sediments (Seni, 1980). However, Reeves (1972), Hawley and others (1976), and Hawley (1984) recognize the Ogallala as predominately eolian sediments in parts of Texas and southeastern New Mexico. Outcrop and core studies by Gustavson and Winkler (1987) indicate the Ogallala in Texas and New Mexico consists of alluvial sediments that partly fill paleovalleys and widespread thick eolian sediments capping paleouplands and most fluvial sections. Calcic paleosoils and fossil evidence suggest a depositional environment in a mostly semiarid to subhumid climate (Winkler, 1990; Scholiast 1990; and Thomasson, 1990).

Water-bearing areas of the Ogallala Formation are hydraulically connected except where the Canadian River has partially or totally eroded through the formation to separate the North and South Plains. Water-bearing units of Cretaceous and Jurassic ages combine to form the Rita Blanca aquifer in the western part of Dallam and Hartley counties (Christian, 1983). Lower Cretaceous units form two separate subcrops within the Texas High Plains, the Edwards-Trinity (High Plains) and the Edwards-Trinity (Plateau). Underlying these three aquifers and much of the Ogallala are Triassic (Dockum aquifer) and Permian formations.

Thickness of the Ogallala Formation is primarily controlled by the morphology of the eroded pre-Ogallala surface. The greatest thickness occurs where sediments have filled previously eroded drainage channels. These channels generally trend east or southeast. Other areas of large Ogallala thickness occur in the northeast quadrant of the Texas High Plains where sediments have filled collapsed basins formed by dissolution of Permian evaporites.

The saturated thickness of the Ogallala Formation ranges from a few feet to more than 525 feet (160 m). In general, the areas of greatest saturated thickness occur in the North Plains. In the South Plains, between Lubbock and Midland, the saturated zone varies from less than 50 feet (15 m) to 200 feet (61 m). Depth to water below the land surface can range from almost 400 feet (122 m) in parts of the North Plains to between 100 to 200 feet (30 to 61 m) throughout much of the South Plains.

Ogallala groundwater is generally fresh, containing between 300 and 1,000 milligrams per liter (mg/l) of dissolved solids of which calcium, magnesium, and bicarbonate are the principal constituents. Some hydraulic continuity occurs between the Ogallala Formation and the underlying Cretaceous, Triassic, and Permian formations in many areas of the High Plains. For the purposes of this document, the Ogallala Aquifer will be considered to consist of the saturated sediments of the Ogallala Formation and any underlying, potable water-bearing units hydraulically connected with it.

### **Post-Ogallala Depositions**

Post-Ogallala sediments consist of windblown sand and silt, alluvium, and playa lake deposits. Windblown sands occupy the largest surface area of the High Plains of Texas and are of both Pleistocene and Recent (Holocene) age. They are primarily fine-grained to silty, sometimes calcareous, and are derived from lacustrine, fluvial, and eolian deposits. These sands and soils form sheet or cover sand, dunes, and dune ridges with thicknesses generally ranging from 0 to 10 feet (0 to 3 m).

Alluvium is present as fluvial flood plain and terraced sediments along the more active streams and rivers. The deposits consist of poorly sorted, often cross-bedded, gravel sand, and silt.

Lacustrine deposits, consisting primarily of clay and silt, line the bottom of the many playa lakes on the High Plains. The sediments are virtually impermeable, thus restricting natural recharge to the underlying formation.

(Selected references are included in Appendix C)

## **B. CURRENT VOLUME IN STORAGE:**

**Scope:** In the counties of Dallam, Hartley, Hutchinson, and Moore the area of investigation was limited to that part of the counties that are within the defined Boundaries of the North Plains Groundwater Conservation District Number Two. (See District Map in Appendix D)

**Methodology:** A Water Level Elevation Map was created using winter water level measurements measured during the winter of 1996-97. The Water Level Elevation map was superimposed upon a Historical Base of the Aquifer Elevation Map (Red Bed) and data points calculated at the intersections of the contours. In areas where these intersections were scarce, values were interpolated from the nearest redbed and contour points. From these data points a current Saturated Material Map was created. A value of saturated material (to the nearest 10 foot interval) was assigned from the Saturated Material Map at the center of each section, 3/4 -, 1/2-, and 1/4 section of land. That value of saturated material was multiplied by the appropriate number of acres and a storage value of .15 and the resulting values were then totaled. Corrections were made to account for any discrepancies in area calculations.



County	Area of County	Area calculated in District	Percent calculated	Total correction
Dallam	1494 mi sq	741 mi sq	49.60%	none
Hansford	907 mi sq	917 mi sq	101.1%	.9890
Hartley	1489 mi sq	1192.75 mi sq	80.10%	none
Hutchinson	911 mi sq	241.5 mi sq	26.51%	none
Lipscomb	934 mi sq	914 mi sq	97.86%	none
Moore	914 mi sq	677.75 mi sq	74.15%	none
Ochiltree	907 mi sq	907 mi sq	100%	none
Sherman	916 mi sq	904.5 mi sq	98.74%	none
<b>Total</b>	<b>8472 mi sq</b>	<b>6495 mi sq</b>	<b>with error corrected</b>	<b>6485 mi sq</b>

**Results:**

County	Acre-feet
Dallam County Water in Storage:	9,748,800 acre-feet not a recoverable volume
Hartley County Water in Storage:	20,175,840 acre-feet not a recoverable volume
Hansford County Water in Storage:	18,399,207 acre-feet not a recoverable volume
Hutchinson County Water in Storage:	4,021,920 acre-feet not a recoverable volume
Lipscomb County Water in Storage:	19,140,480 acre-feet not a recoverable volume
Moore County Water in Storage:	11,242,320 acre-feet not a recoverable volume
Ochiltree County Water in Storage:	16,177,440 acre-feet not a recoverable volume
Sherman County Water in Storage:	17,749,920 acre-feet not a recoverable volume
<b>Total</b>	<b>116,655,927 acre-feet not a recoverable volume</b>

Omitting the bottom ten feet leaves a recoverable volume of **110,430,327 acre-feet**

Average Saturated Material 187.38 Ft

## C. ESTIMATED ANNUAL DECLINE (USAGE)

### Scope:

In the counties of Dallam, Hartley, Hutchinson, and Moore the area of investigation was limited to that part of the county that is within the defined Boundaries of the North Plains Groundwater Conservation District Number Two. In the counties of Sherman, Hansford, Ochiltree, and Lipscomb the area of investigation includes the entire county. The area of investigation is estimated to be 6485 square miles while the counties in their entirety are 8472 square miles. The District includes 76.55 % of the area of the counties. (See District Map in Appendix D)

**Methodology:** Water levels are measured annually between December and March in approximately 630 observation wells located throughout the District. A database with historical water-level measurements (630 observation wells) was used to calculate yearly (since 1981) average decline in the water-level of the Ogallala Aquifer throughout the District. From these, averages were calculated for 1982 thru 1986, 1987 thru 1992, and 1993 thru 1997. The third five-year average (1993 thru 1997) decline was selected to represent the present decline rate.

**Results:** The Ogallala Aquifer within the boundaries of the North Plains Groundwater Conservation District is declining at an average of 1.74 feet per year (1,082,631 acre ft).

## D. PROJECTED DECLINE (USE)

**Scope:** In the counties of Dallam, Hartley, Hutchinson, and Moore the area of investigation was limited to that part of the county that is within the defined Boundaries of the North Plains Groundwater Conservation District Number Two. In the counties of Sherman, Hansford, Ochiltree, and Lipscomb the area of investigation includes the entire county. The area of investigation is estimated to be 6485 square miles while the counties in their entirety are 8472 square miles. The District includes 76.55 % of the area of the counties. (See District Map in Appendix D)

**Methodology:** Water levels are measured annually between December and March in approximately 630 observation wells located throughout the District. A database with historical water-level measurements (630 observation wells) was used to calculate yearly (since 1981) average decline in the water-level of the Ogallala Aquifer throughout the District. From these, averages were calculated for 1982 thru 1986, 1987 thru 1992, and 1993 thru 1997. The third five-year average (1993 thru 1997) decline was selected to represent the present decline rate and was projected into the future. The rate of decline has increased over the years as many new wells have come into use. Presently there continues to be many new wells drilled predominantly in Dallam and Hartley Counties. This rate of drilling is expected to continue throughout the year and then decline. This should result in a more stable decline rate.

**Results:** The Ogallala Aquifer within the boundaries of the North Plains Groundwater Conservation District is declining at an average of 1.74 feet per year (1,082,631 acre ft) and is currently expected to continue at this rate.

## **E. RECHARGE**

Report *LP-173, Evaluating the Ground-Water Resources of the High Plains of Texas Final Report Volume 1* states:

“Recharge to the High Plains aquifer occurs principally by infiltration of precipitation on the outcrop. Only a small percentage of water from precipitation actually reaches the water table due to a combination of small annual precipitation, high evaporation rate, and low infiltration rate.”

Using the information contained in the report, it is estimated that approximately 3/16 inch or .0156 feet of recharge occurs annually throughout the District. This amount would be approximately equal to 84,720 acre feet of recharge.

## SECTION IV COLLECTION OF DATA

Throughout the history of the District, data collection and distribution has been an important part of operations. Data collection may begin with an initial application for a water well permit or a question concerning quantity or quality of water from someone within the District. From this point data collection may involve various programs of the District. This section outlines major programs of the District and how they relate to the data collection.

### A. WATER QUANTITY

The estimated usable quantity of groundwater within the District is in excess of 110 million acre feet. The saturated thickness is from 10 feet to 460 feet for an estimated District average of around 187 feet. The depth from land surface to the base of the aquifer is from 30 feet to as much as 800 feet. The depth to static water level from land surface is from 10 feet to 480 feet. The estimated annual use of groundwater within the District is 1.08 million acre feet.

The following subsections describe the data collection programs of the District used to generate reports of specific water quantity information.

#### **Water Well Permit Application:**

The Rules require an application be made to the District for a water well permit prior to drilling a well capable of producing groundwater in excess of 25,000 gallons per day. The first step in this process is to provide certain basic data to the District. The application requires the owner's name, address, legal description of the land, location of the well on the property, estimated amount of production, proposed use, distance from other wells on the property as well as adjoining property, the name of the driller, and the date drilling is planned. The staff will assist in determining some of this information as well as determining if the proposed location will meet the Rules of the District. After an application is completed and the deposit has been paid, the staff will then verify the information and schedule it for review by the appropriate County Committee and Board consideration in accordance with District Rules. If at anytime during this process a discrepancy is found which would invalidate the application, the applicant is notified and a correction may be made. After Board approval, the permit is then placed in a pending file until the well log and registration form is received from the applicant or driller. Well drilling may be started as soon as the application is completed by the applicant; however, until it has been reviewed by the County Committee and approved by the Board, drilling is at the risk of the applicant. A water well permit is in effect for 120 days from the time the application is made. An applicant may apply for one extension for an additional 120 days. After the expiration date of the original application or extension, the permit expires and a 10-day waiting period is required before the applicant may apply for a permit within the required spacing distance of the original application.

**Management Goal:** Provide prompt and timely processing of all applications for water well permits.

**Management Objective:** Complete administrative review process, including County Committee review and schedule for Board consideration within 60 days of application date.

**Performance Standard:** Annually compare all water well permit applications with the Board Meeting Minutes to determine if they were considered by the Board within 60 days of application date, provided they were administratively complete and had been recommended for approval by the appropriate County Committee.

**Well Log and Registration:**

The Rules require that the District be provided a well drilling log and completion report within 30 days after completion of the well and before production begins. In some cases a well may be completed but not equipped. In this case, the available well completion information is submitted to the District and will remain incomplete until the pump has been installed and that information provided to the District. The deposit is not returned until required information has been received by the District in accordance with District policy.

Shortly after the district was formed, the Board of Directors authorized the purchase of a small, hand-cranked, electric logging machine. This logging machine was one of the first in the Panhandle and was used to gather more definitive information on wells being drilled. The district logging equipment was utilized many times within the District and was capable of producing only electric logs showing spontaneous potential (S.P.) and resistivity curves. In 1980, in conjunction with the State and "USGS Six State Study", the Board authorized the purchase of a more sophisticated geophysical logging machine with the capability to run neutron logs, natural gamma radiation logs, and standard electric logs. This gamma logging module is used for water well and test hole logging. The District staff has been called upon to run natural gamma radiation logs for municipalities and industries that are required by the Health Department to furnish this type of geophysical information when drilling water supply wells. Currently many of the water well drillers have electric logging equipment and provide logs to their customers and the District. This has reduced the use of the District's logging equipment. An electric log is not required by the District but is additional data for use when it is provided.

The information required on the well log and registration form adds needed data about the well and includes: a location of the well using longitude and latitude measurements, a descriptive log of the formation from the surface to the bottom of the well, the total depth of the well and casing, zone or zones of perforation, and size and depth of the pump. After this information is received by the District it is reviewed for accuracy in relation to the well permit application and field-verified. Information is then entered into the well log database. Additional requested information includes discharge in gallons per minute, and any other production tests that may have been made (such as pumping level and production under pressure).

The District has over 7700 well logs on file. Information included in databases of the District provides a more efficient way to sort and retrieve information. In addition to the information in the database and on the well registration and log form, the location of each well as identified on the permit is also located on maps of the respective counties within the District.

**Management Goal:** Maintain a well completion/equipment information database to include each permitted well completed.

**Management Objective:** Review Well Log and Registration information for accuracy and enter information into databases within 5 working days of receipt.

**Performance Standard:** Annually compare the number of Well Log and Registration entries in the well log database with the total number of well permit applications less any well permit applications pending, canceled or voided for each county. These numbers should balance.

#### **Water Level Observation Wells:**

A continuing water level observation program has been in operation since the creation of the District. This program currently consists of annual static water levels measurements in approximately 630 wells across the District. A staff member will make a field visit to each of the observation wells and attempt to obtain a static water level measurement. The data is recorded in a field book. These measurements are corrected to land surface elevation and tabulated to reflect the change in water level elevations between the current year and the previous year. During these field visits observations are made about the condition of the well, the accuracy of the data obtained from the well and whether the well is still a satisfactory representative of the wells within the area it represents. In some cases a well may no longer be considered useful to the program or equipment in the well may have been replaced which closed or blocked access to the annular space between the well casing and the pump column. In these cases, staff will need to locate a replacement well for the program and obtain a static reading which will be used as a beginning record for the replacement well. A replacement well may be measured for as many as 3 years before it is used in the observation well program. There must be confidence in the data collected from a well before using it in the observation well program.

After the staff have completed the field visits, the measurements are tabulated and checked for discrepancies. It is the responsibility of the employee who made the static water level measurement to determine its accuracy. In some cases a well must be revisited and re-measured to verify or correct the original measurement. After this task is complete the information for the year is entered into the District's annual water level database. Annually a tabulation sheet showing all measurements is forwarded to the Ground Water Division of the Water Development Board in Austin.

**Management Goal:** Maintain the most accurate and representative database of water level elevation information possible within the equipment, staff and financial capabilities of the District.

**Management Objective:** Annually field visit each observation well of the District and obtain a static water level measurement from at least eighty percent of the wells, review static water level tabulations for accuracy (revisit observation wells if necessary to resolve any inaccuracy) and enter observation well tabulations in the water level database.

**Performance Standard:** Annually compare the number of water level observation well measurements obtained, tabulated, and entered into the database with the total number of water level observation wells.

#### **District Aquifer Study:**

The District began a four-section groundwater study located in Moore County in April of 1998. The purpose of the study is to analyze well production, well draw-down, aquifer depletion, aquifer

characterization, and their interrelationships to further refine the knowledge of the possible impacts, restrictions, or benefits the District-wide acceptable decline rate may impose upon landowners or producers utilizing ground water from the Ogallala Aquifer exhibiting widely varied aquifer characteristics. A cost analysis of such a study as it relates to equipment, personnel, methodology, data quality, time duration and areal extent will also be one of the major goals.

Major activities or goals of the study are as follows:

1. Delineate a study area and buffer zone.
2. Create a map from a GPS survey locating by latitude, longitude, and altitude all producing and abandoned wells, landmarks, and other identifiable features.
3. Acquire accurate water level measurements throughout the study area and buffer zone.
4. Install flow meters with GPM and totalizers.
5. Monitor the study area for water usage and yearly decline.
5. Monitor the buffer zone for pumping and draw-down to identify potential interferences and impacts upon the study area.
6. Document and analyze cost in equipment, personnel, methodology, data quality, time duration and areal extent.
7. Document any real or potential limiting factors encountered or identified.
8. Compare and contrast methodologies to create a generic methodology for future study areas, irrespective of size or location within the legal jurisdiction of the NPWD.

After the first year the amount of water used will be compared with the decline to establish or gain confidence in aquifer parameters such as specific yield, hydraulic conductivity, and porosity. This data will also be used to create a map showing decline as a percent of the saturated material which can be used to predict the useful life of the aquifer. Throughout the study, consideration will be given to methods, techniques, and technologies which may extend the useful life of the aquifer and any methods, techniques, and technologies which may not be beneficial. The study may be extended additional years to take into account climatic variables.

## **B. USE OF WATER QUANTITY DATA**

Well permitting, registration, and the water level observation program provide the District with baseline information. The following programs use part or all of the information

### **Internal Revenue Service Depletion Program:**

In 1983 the Internal Revenue Service (IRS) issued a Revenue ruling for the District and the Northern High Plains of the United States. This ruling allows landowners to claim a water depletion on their tax returns based on the annual amount of depletion and the cost of groundwater at the time of acquisition.

The District prepares saturated thickness maps of the District on approximately ten-year intervals. These maps are developed from the base of the aquifer information obtained from the well logs and the current water level elevations from the observation wells. Well log information received by the

District after the previous saturated thickness map was constructed are considered and used in developing the new saturated thickness map.

Annually the District develops a water table decline map of the District. In conjunction with the decline map, hydrographs for each of the observation wells are also developed each year. Water level measurements for the current year are tabulated to reflect a one-year change for each observation well. The one-year change, five-year average change, ten-year average change and the current hydrographs are analyzed to make the assigned depletion amount for each observation well. After the depletion amount has been assigned a decline map is constructed. The decline map must be approved by an IRS engineer prior to use by the District.

In addition to the maps used in this program, a survey is conducted each year to determine the value attributed to water in land sales. This survey is based on actual sales of dryland and irrigated land. From this survey, the District and IRS develops a "cost of water guideline" for each county of the District each year. This guideline is used by landowners when setting up a water depletion claim. Once the cost of water is established, the claimant will calculate the value for each foot of water. This value will remain the same for this claim until the ownership of the land changes or the depletion allowance is exhausted.

All maps, hydrographs and cost of water guideline data is approved by Internal Revenue Service engineers prior to use by the District. A close working relationship is maintained between the District and the IRS.

After the depletion map and the hydrographs have been approved by the IRS, the decline information is sent each year to requesting landowners. Currently, there are over 600 parcels of land included in the District database of requests for depletion information. Landowners who acquired land during the calendar year may request depletion information. These landowners will need the information included in the "cost of water guideline" for their county as well as a saturated thickness amount for the newly acquired land. The District furnishes this information to the landowner. Each year the District updates the database to reflect change in ownership and the addition of new depletion claims. In addition to mailing the information to the landowner, the same information may be sent to their accountant (if requested). The information required to file an IRS depletion deduction is furnished to the landowners of the District at no cost to them.

**Management Goal:** Provide accurate and timely depletion information to the landowners of the District for use in filing their Internal Revenue Service tax returns.

**Management Objective:** Prepare necessary information, receive IRS approval and mail depletion information by December 31 each year.

**Performance Standard:** See that depletion information needed by landowners of the District for filing their Internal Revenue Service returns is sent by December 31 of each year.



### **Information Reports:**

The data generated from the programs outlined above provides the District with the capability to develop various informational reports in regard to the quantity of water within the District. These reports are available to the general public upon request in addition to summary reports published in certain editions of the District newsletter (*North Plains Water News*). One issue of the newsletter carries a summary of recent water level changes, plus a five-year and ten-year average change for each county of the District. Each edition of the newsletter includes a report of the number of well permit applications and the number of new wells completed for each county for the previous quarter.

The District has available the following reports:

- The existing total usable amount of groundwater,
- Estimates of the amount of groundwater being used on an annual basis,
- Projected groundwater supply,
- Activity of well permitting/well drilling per year by county and District-wide, and
- Annual water level changes for current year, five-year and ten-year average change by county and District-wide.

**Management Goal:** Develop readily available up-to-date water quantity reports to the general public.

**Management Objective:** Update current water quantity reports within thirty days after new data is tabulated.

**Performance Standard:** Annually check to see if water quantity reports are updated and readily available to the general public.

### **Responding to Other Requests:**

The District works with prospective landowners and lending agencies seeking information on water conditions for tentative loan and property evaluations. Many times the District receives requests from individuals and organizations within the District as well as outside the District and Texas in regard to the groundwater supply, depletion, saturated thickness, expected yield and projected life of the aquifer. Some of these requests are general in nature or are considered routine operations; for some, a pre-prepared report may meet the request. Other-times, the information must be generated for a specific area or areas of the District and may require considerable time to prepare, and an estimated time of delivery may be required.

**Management Goal:** Respond to all requests for information.

**Management Objective:** Within 5 days from the time a specific request is made, provide the requested information or provide an estimate of time needed to develop the information.

**Performance Standard:** Annually compare date of request with date information or estimate of time to develop information is provided.

## **C. WATER QUALITY**

The quality of the groundwater within the District is considered very good. With a few exceptions,

the total dissolved solids (TDS) average less than 500 mg/L. The areas of higher TDS are generally considered naturally occurring and include higher concentrations of chloride and/or sulfate. The water quality information collected and analyzed by the District agrees with the information contained in *Report 89-01, Groundwater Quality of Texas*, published by the Texas Water Commission.

#### **D. COLLECTION OF WATER QUALITY DATA**

The District operates two water quality laboratories, one in Dumas the other in Spearman Texas. Water quality laboratory services are available to all residents of the District. Both labs can analyze for the following constituents: Nitrate, Sulfate, Bromine, Fluoride, Chloride, Potassium, Phosphorous Reactive, Iron, Manganese, Alkalinity, Nitrogen Ammonia, Copper, Salinity, Suspended Solids, Total Solids, Turbidity, Hardness, pH, Conductivity, Color, Acidity, and Coliform Bacteria. In addition, the Dumas lab can conduct analysis for Nitrite, Kjeldahl Nitrogen, Sulfite, Silica, Sulfate Reducing Bacteria, Nitrifying Bacteria, De-Nitrifying Bacteria, Slime-Forming Bacteria, Total Aerobic Bacteria, Heterotrophic Plate Count, Total Coliform Bacteria, Chemical Oxygen Demand, Biochemical Oxygen Demand, and Dissolved Oxygen. While our laboratories utilize EPA-approved methods, the labs are not EPA-certified and the information is presented "as is". This can be a good first step in determining a water quality change or detecting a possible problem.

#### **Water Quality Observation Wells:**

The District's water quality program includes 550 water quality observation wells. A mineral analysis for the constituents listed under the capabilities of both labs is performed for each well. The observation wells are set up on five-year intervals. Annually the District collects and analyses one-fifth of the wells or approximately 110 water samples across the District. The results of the analyzes are recorded in the water quality database. The database is organized so analyses from previous years are easily compared for the same well. Through the use of the database we are able to determine if a significant change has occurred over time. The database includes analyses from 1955 through the current year. Information in the database can be displayed on a map showing various levels of mineral content in milligrams per liter (mg/L) across the District. In some cases a well may no longer be considered useful to the water quality program as an observation well. The equipment in the well may have been removed or is inoperative. In these cases the staff will need to locate a replacement well for the program and obtain a water sample which will be used as a beginning record for the replacement well. The staff visit each of the water quality observation wells scheduled for the current year. The samples are collected, preserved and analyzed in accordance with established District procedures. In some cases a second sample collection and analysis may be required to verify the original analysis. After this task is complete the information is entered into the District water quality database. The analysis for this program are performed in the District labs located in Dumas and Spearman. The water quality database contains the results from the District analyses as well as analyses which have been done by the Texas Water Development Board and/or outside commercial labs.

**Management Goal:** Maintain a water quality observation well network to provide adequate information to determine any change in the water quality within the District in time to seek remedial or corrective action.

**Management Objective:** Collect, analyze, verify, and enter results in the District water quality database from 110 or one-fifth (whichever is greater) of the water quality observation wells annually.

**Performance Standard:** Annually check the number of water quality well samples collected, analyzed, verified, and entered in the database.

**Management Objective:** Annually review current water well analysis with previous analyses to determine any significant change, make additional field visits to all wells which indicate a significant change, prepare a remediation plan for wells if a source of contamination is identified and present it to the Board for consideration.

**Performance Standard:** Annually determine if any significant change was detected from comparison of analyses from current year to previous years' analysis.

1. If changes were observed, check the report and remediation proposal.
2. If proposal was presented to Board, review action taken.

### **Requested and Random Analysis:**

In addition to the mineral analysis equipment in both labs, the lab in Dumas has equipment to perform some additional analysis on water and waste water for the constituents listed. Both labs are able to test for the presence or absence of coliform bacteria. Residents of the District may request a mineral or bacteria analysis of their water. This request involves an employee of the District collecting one or more samples of water from the system and taking it to one of the two labs for analysis. This service is provided to the residents of the District at no cost to them unless a more in-depth analysis is requested or required. In this case a charge to recover cost may be required.

Requested and random samples and spot checks in areas where possible deleterious material may have an adverse effect on water quality conditions are analyzed and the information retained in a database for future reference. Special emphasis has been placed in areas where saltwater may be a problem within the District. Prevention of saltwater contamination is of high priority. Working closely with the local Texas Railroad Commission (TRC) office, the District has stressed the importance of proper saltwater disposal and transport out of the oil field areas of the District.

It is the District's charge to protect the quality of the groundwater. Monitoring is on a continuing basis through the water quality observation well program. As stated, the District has the equipment and staff available to conduct mineral and some bacterial analysis. If anyone within the district suspects contaminated water and contacts the District, staff will investigate the complaint, run water analysis and if a contaminate is found, will try to locate the source and offer suggestions for remedial action.

**Management Goal:** Provide water quality analysis within the equipment, staff, and financial capabilities of the District.

**Management Objective:** Respond to all water quality requests for analysis within the equipment, staff, and financial capabilities of the District.

**Performance Standard:** Annually compare the number of requests with the number of analyses performed.

**Management Objective:** Conduct a field visit and collect a water sample or samples for analysis within twenty-four hours of the request or at the time agreeable to the person making the request.

**Performance Standard:** Annually compare the date of the request with the date the analysis was conducted

**Management Objective:** Provide the results of the analysis to the person who made the request within three days after the results are known.

**Performance Standard:** Annually compare the date the analysis was conducted with the date the report was provided to the person who made the request.

**Management Objective:** When an analysis result indicates possible contamination, contact the person who made the request within twenty-four hours of the analysis. Within three days of the analysis, make an additional field visit to survey the area around the well or water system in an effort to locate the source of contamination and possibly suggest remedial action.

**Performance Standard:** Annually compare the number of analyzes showing possible contamination with the number of additional field visits, surveys and suggested remedial action.

## SECTION V MANAGEMENT AND PROTECTION OF THE GROUNDWATER SUPPLY

### A. RULES

The Powers and Duties of Chapter 36 (Subchapter D) and the Rules of the District provide an outline for many of the items contained within this Management Plan. In addition to the Rules, the Board, County Committees, landowners, residents, and the staff of the District have developed programs, policies and services which are put into practice and in accordance with other provisions of Chapter 36 of the Water Code. As changes are made in the Water Code and other state or federal laws that relate to a district as defined in §35.002 and in respect to the Texas Water Code, §36.052, the District will update its rules, policies, procedures and management plan accordingly.

The Board adopted Rules for the District on March 14, 1955. Since that time the Rules have been amended on May 4, 1964; May 23, 1985; and on August 28, 1995. The Rules of the District are in compliance with Chapter 36, Texas Water Code. The following is the Table of Contents of the current Rules of the District:

Rule 1	Definitions
Rule 2	Waste or Pollution
Rule 3	Radioactive Wastes, Toxic and Hazardous Substances, and Polychlorinated Biphenyls
Rule 4	Enforcement of Rule 3
Rule 5	Permit Required
Rule 6	County Committees
Rule 7	Deposits and Administrative Fees
Rule 8	Issuance of Permits
Rule 9	Requirements for Drilling, Completing, Equipping and Reworking Wells
Rule 10	Classification, Spacing and Production Provisions
Rule 11	Depletion
Rule 12	Location of Well
Rule 13	Reworking or Replacing a Well
Rule 14	Time During Which a Permit Shall Remain Valid
Rule 15	Required Equipment on Wells for the Protection of Groundwater Quality
Rule 16	Covering of Wells
Rule 17	Right to Inspect and Test Wells
Rule 18	Exception to District Rules and Final Orders of the Board
Rule 19	Rules Governing Protests
Rule 20	Rehearing
Rule 21	Changed Conditions
Rule 22	General Rules of Procedure for Hearings
Rule 23	General Rules
Rule 24	Enforcement of Rules
Rule 25	Effective Date of These Rules

(A copy of the Rules is included in Appendix B)

The Rules of the District are considered to be the most important tool available to the District to manage the groundwater supply. As stated earlier, new rules were adopted in 1995. The major changes to the rules adopted in 1955 are as follows:

**Classification of Wells:** Prior to October 1, 1995, wells were spaced according to the discharge pipe size. In the current rules, Rule 10 - Classification, Spacing and Production Provisions, all wells capable of producing in excess of 25 gallons per minute are spaced according to pumping capacity. Well spacing distances were increased in most cases. Smaller class wells are required to be spaced further away from larger wells than they were under the old rules. Rule 10 also limits production to a maximum of five gallons per minute per acre (gpm/acre).

**Depletion:** Although Rule 10 places a maximum production limit of 5 gpm/acre, using this rule alone would allow a depletion of 8 acre feet per acre per year. This is far in excess of what should be allowed or what the aquifer could yield over a sustained period of time. Realizing this, the Board adopted Rule 11 - Depletion. This rule requires the Board to set an acceptable decline rate (expressed as a percent) for the District. Water users are allowed to produce water at a rate that does not exceed the acceptable decline rate. If the acceptable decline rate is exceeded within an area of the District (the area shall not contain less than ten contiguous sections) the Board may limit production within that area. This one rule is considered to be the District's long-range management tool. The current acceptable decline rate is 1.25% of the saturated thickness per year.

**Water Quality Protection:** It is the District's belief that the number one avenue for contaminants to enter our groundwater is through a well or well bore. This includes active as well as abandoned wells. To help prevent contamination the District requires wells to be completed in accordance with the Texas Water Well Drillers Act. Abandoned wells are required to be capped or plugged. If the District is informed of an abandoned well which is not capped or plugged the District will place a cap on the well. In the event this well is located where contaminants could enter the well, the District will require a sanitary cap to be placed on the well.

The use of chemicals and other liquids or gases used throughout the District which come in contact with the water delivery system or the well discharge point were of concern to the Board. Rule 15 - Required Equipment of Wells for the Protection of Groundwater Quality requires the installation of equipment on wells to prevent the back flow of water into the well.

The new rules were adopted by the Board and became effective October 1, 1995. The "Acceptable Decline Rate" was set by the Board on November 12, 1996 at 1.25% and became effective January 1, 1997. All wells are required to meet the requirements of Rule 15 -Required Equipment of Wells for the Protection of Groundwater Quality by January 1, 2000.

**Management Goal:** Enforce the Rules of the District to conserve and protect the quantity and quality of the resource to the best of the District's ability through the powers and duties provided in Chapter 36 of the Texas Water Code.

**Management Objective:** Ensure that all rules of the District are enforced fairly and equitably within the District, through the use of hearings before the Board of Directors and/or any other measures available to the District in rendering a decision if a dispute arises in regard to rules,

procedures, policies, services, and any other activity of carrying out the purpose of the District.

**Performance Standard:** Annually review the Minutes of Board Meetings to determine if decisions in regard to the enforcement of, or exceptions to, the Rules of the District were rendered in accordance with the provisions of the Rules of the District and Chapter 36 of the Texas Water Code.

## **B. GROUNDWATER QUALITY PROTECTION MEASURES:**

In fulfilling water quality protection responsibilities the District has become involved in several activities which, in the District's opinion, may pose a threat to water quality. All of the issues below have the same common reasoning behind the District's action. In each case the state or federal agency or agencies did not, in the opinion of the District, have sufficient rules to protect groundwater quality. The District actions include:

### **Board Resolution Concerning Water Quality:**

To address the concerns and to better explain the position of the District in regard to ANY activity which could threaten the quality of groundwater in the District, the Board adopted the following resolution on May 13, 1997:

- I. When the District becomes aware of an existing or proposed activity or condition which has the potential for pollution or is the cause of pollution of groundwater, the District will:
  1. Contact the responsible person or entity and investigate the activity or condition, and
  2. Make a determination as to the impact the activity or condition has or could have in regard to the pollution of groundwater, and
  3. Determine if the activity or condition is, or should be regulated by a local, state or federal agency.
  4. If it is a regulated activity or condition the District will:
    - a. Notify the responsible agency or agencies and report the findings, and
    - b. Work with the agency or agencies in an effort to protect the groundwater from pollution.
  5. If the activity or condition is not regulated by another agency, the District will:
    - a. Work with the person or entity responsible for the activity or condition which has caused or may cause pollution of the groundwater in an effort to reach an acceptable agreement to protect the groundwater from pollution.
    - b. If the District and the person or entity are not able to reach an acceptable agreement the District will use whatever legal remedy is available as provided in Chapter 36 of the Texas Water Code and any other laws of this state or the Federal Government to protect the groundwater from pollution.
- II. At an appropriate time this District will consider amending Rule 2 - Waste or Pollution or adopt a new rule to provide further protection of the groundwater from pollution.

### **Oil Field Activities:**

The District was instrumental in pointing out to the Texas Railroad Commission (TRC) the need to

require the lining of saltwater pits used in mineral production. The District works with the TRC, identifying questionable operations that may be a violation of their rules. Other activities are monitored and water quality samples are taken around certain oil field operations.

**Improper Storage, Transportation, and Disposal of Radioactive, Toxic and Hazardous Substances:**

In 1986, the District was informed of a entity planning to dispose of Polychlorinated Biphenyls (PCB's) in Hansford County. At that time, Texas did not have any rules which would allow for, or regulate the proper disposal or storage of this substance or other hazardous or toxic substances, nor did any federal agency. In an effort to protect the groundwater, the District adopted Rules to address this issue (Rule 3 and 4).

**Imported Municipal Sludge Disposal:**

In 1991 the District was informed that an out-of state firm was planning to transport municipal sludge from New York to dispose of in Ochiltree County. The District spent several months researching this issue and met with various state and local agencies and officials in an effort to address the issue. On July 6, 1992 the District adopted a resolution addressing the disposal of municipal sludge. Consequently the firm moved to another location within Texas for the disposal operation.

**Concentrated Animal Feeding Operations:**

Since 1993, the Directors have acquired an increased concern in regard to Concentrated Animal Feeding Operations (CAFOs) which have been developed or are proposed for development throughout the District. The District does not have any official duty in regard to the permitting of the Concentrated Animal Feeding Operations (CAFOs) permits issued by the Texas Natural Resources Conservation Commission (TNRCC). The District receives notice of permit applications and reviews them to determine if the location of the facility could impact groundwater. The details of the permit application may be discussed with the engineer for the project. If it is determined that the facility is likely to impact groundwater, the District would at that time enter an objection to the permit and recommend additional protection measures to be included in the construction of the facility. If the protection measures could not or would not be included to protect the groundwater, the District would oppose the permit application for that particular location.

**Board Directive:**

On November 21, 1997 the Board issued a directive to the management of the District. The action of the Board was taken because, in the opinion of the Board, the TNRCC Subchapter K (CAFO) Rules did not properly address recharge features. The Directive is as follows:

After notification by the Texas Natural Resource Conservation Commission (TNRCC) of a Waste Disposal or Treatment application within the District, the Applicant is to be contacted by the Management requesting copies of the application. This request will include an offer to pay the expense of copying and postage. The Management will review the application, make a site inspection of the area the operation is to be located and check available information within the files of the District to determine the accuracy of the permit application in regard to all recharge features. Review shall also include any man-made features such as



water wells and wells, as defined in NPWD Rules, and other activity or facilities which may be a threat to the groundwater of the District. The Management shall notify the applicant as well as TNRCC of any discrepancy between the review by the District and the information contained in the application.

Currently the TNRCC is in the process of amending Chapter 321-Control of Certain Activities by Rule (CAFO permits). The District reviewed the proposed changes and on April 7, 1998 submitted written comments on the proposed changes to TNRCC. The District will continue to stay informed and involved in the adoption of the amendments to and implementation of Chapter 321 rules. As in the past, if the Board determines that the rules are not protective enough of the groundwater within the District they will consider adoption of a rule, resolution, order or directive to further address this issue.

Our objection or recommendation to any CAFO permit or any other waste disposal permit, including city, industry, or agricultural waste water treatment permits must be related to a technical flaw in the permit, and related to the protection of the groundwater. The District has made recommendations in the past to the TNRCC and changes have been made or included in the construction or expansion of a facility or rule.

**Management Goal:** Take appropriate action within the powers of the District to protect the quality of the groundwater.

**Management Objective:** Maintain a constant awareness of activities which may be or become a threat to the quality of groundwater and be prepared to adopt rules, resolutions, orders and/or directives to address the issue.

**Performance Standard:** Annually review the Minutes of Board Meetings to determine if all water quality issues considered by the Board were addressed.

## C. WASTE OF WATER

It is difficult to understand why anyone would allow water to escape their property or control. Each year the District receives at least one complaint involving "tailwater". Tailwater is water leaving the lower end of a field during irrigation. It may also be water from an end-gun or nozzle of a sprinkler system. In both cases the water must be leaving a person's property to constitute waste.

In May of 1958, the definition of waste was added to the Rules of the District and stated: "Willfully causing, suffering, or permitting underground water produced for irrigation or agricultural purposes to escape into any river, creek, or other natural watercourse, depression, or lake, ditch, or upon the land of any other person than the owner of such well, or upon such public land." This language was included to address the issue of tailwater.

Currently, both the Rules of the District and Chapter 36 of the Texas Water Code include in the definition of waste the following language:

"Willfully or negligently causing, suffering, or allowing groundwater to escape into

any river, creek, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road, or road ditch, or onto any land other than that of the owner of the well unless such discharge is authorized by permit, rule, or order issued by the Commission under Chapter 26;" or

"Groundwater pumped for irrigation that escapes as irrigation tailwater onto land other than that of the owner of the well unless permission has been granted by the occupant of the land receiving the discharge".

The issues of rain water, neighbors who want and use a neighbor's tailwater, and water running out of a field onto or along someone else's property and the third party reports waste must be considered by the District. All these situations have been brought to the attention of the District at one time or another.

When the District becomes involved in disputes or complaints about tailwater and/or waste of water, one or more of the following approaches are ordinarily used to address the issue: First the complaint is investigated to determine the origin of the water--groundwater or rainfall. District staff will contact the person responsible for the water leaving the property to see why it is not being contained. Staff will usually visit both parties to see if an agreeable solution can be reached. In some cases, District staff may measure the amount of water leaving the property to determine if the volume of water constitutes significant waste. The staff will attempt to determine the best practical solution. As a final course of action, the District can request an injunction from a court against the party wasting water.

The District investigates all tailwater complaints and considers information provided by all parties involved. The District has ordinarily been able to negotiate an acceptable agreement between the parties involved without having to resort to court action. Many of the justifiable reasons for tailwater are:

- Excessive rainfall,
- Irrigation system is being temporarily operated by someone other than the normal operator due to business or personal absence,
- Tailwater pump or engine failure, flow line or gated pipe separation at upper end of field, sabotage or vandalism,
- End gun or nozzle improperly adjusted,
- Additional water coming onto property from adjoining land (unexpected tailwater from a neighbor),
- Unexpected change in climatic conditions (temperature lowers more than normal which may cause the water to reach the end of the rows several hours before expected), and
- Other conditions beyond the control of the owner or operator.

In most of the cases investigated by the District, the operator usually knew about the tailwater and may have had plans to contain the water or correct the problem. There have been cases where tailwater is in excess of what the District would consider acceptable. In these cases, changes must be made to the irrigation practices and may include:

- Construction of a berm at the lower end of the field to contain or channel the water run-off,
- Construction of a tailwater return system,
- Upgrade or repair existing tailwater system,
- Reschedule irrigation practices (change water more often or at different times),
- Change existing drainage area,
- Other options such as converting to a center pivot system.

Many times a third party complaint is resolved when the District personnel investigates the complaint and discovers that water is running from one farm onto another or along a road but is beneficially used. If this is the case and the water is not causing harm to the property of others, the District ordinarily does not pursue the complaint further other than notifying the parties involved. The District generally recognizes agreements between neighbors, such as when neighbors agree to allow tailwater to leave one farm and onto another, to be used beneficially, and all parties affected agree to the arrangement. An exception would be where water is damaging a public road or causing a hazardous situation. In this case, the District will ordinarily work with the county commissioner and the property owner(s) to work out a solution such as deepening the ditch or installing culverts to handle the water.

**Management Goal:** Reduce the waste of water as far as is reasonably and economically viable.

**Management Objective:** Begin investigation of all complaints involving waste of water within three days of receiving the complaint.

**Performance Standard:** Annually, verify that investigations were started within three days of receiving the complaint.

**Management Objective:** During an investigation:

1. Meet with all parties involved in the complaint during the time of investigation and qualify germane issues.
2. Determine if there is significant waste of water.
  - A. If after the investigation it is determined that there is significant waste of water, suggest reasonable and economically viable solutions.
  - B. Provide the solutions to the parties involved in an effort to reach an agreement.
    - i. If an agreement is reached, encourage its implementation.
    - ii. If an agreement is not reached between the parties involved, place the waste of water complaint on the agenda of the next board meeting for consideration by the Board.
  - C. See that the decision of the Board is implemented.
3. If significant waste of water continues after Board consideration and decision, the District may request that an injunction to stop the waste of water or seek civil (monetary) damages.

**Performance Standard:** Annually determine if the District followed the proper management objectives to the point in time when it was determined that there was no waste of water, the waste of water ended or an injunction or civil penalty was requested.

## **D. NATURAL RESOURCE ISSUES**

At the current time the District knows of no natural resource issue which would have an impact on the use or availability of groundwater that is not addressed in the Rules of the District as outlined in Subsection A of this Section or identified in Subsection B of this Section. However, should the District become aware of any activity that could have an impact on the availability of groundwater within the District, that issue will be addressed at that time in accordance with the powers and duties of the District through one or all of the methods outlined in Subsections A and B of this Section.

**Management Goal:** Take appropriate action within the powers of the District to address any natural resource issue which would have an impact on the use or availability of groundwater within the District.

**Management Objective:** Maintain a constant awareness of natural resource issues which would have an impact on the use or availability of groundwater within the District.

**Performance Standard:** Annually review the Minutes of Board Meetings to determine if natural resource issues which would have an impact on the use or availability of groundwater within the District were identified and addressed.

## SECTION VI WATER CONSERVATION AND PROTECTION PROGRAMS

A continuing practice, through the years, has been working with water users within the district and showing them the value and savings gained by adapting to more water conserving methods of applying, using and re-using water. The District has used various methods to encourage more efficient use of water. The following provides a brief outline of some of these programs.

### A. RESEARCH AND DEMONSTRATION

Since 1961, the Water District and Texas A&M Experiment Station have worked very closely in an effort to provide the producers of the region with the best research in water conservation methods. In the latter part of 1985, the District was informed that land leased for the North Plains Research Field (NPRF) was for sale and the lease would be terminated. In the summer of 1987, the District purchased a half section of land (316 acres) for the new location of the North Plains Research Field. This new location provided additional land and satisfactory water. With the increase in acreage, the District felt that the time had come for many of the water conservation and water quality protection practices to be demonstrated as well as conduct additional research.

Water conservation research and demonstration programs include: application rates, crop adaptation, conservation tillage, various sprinkler system demonstrations and evaluations, and better water use through the development of new technology. The NPRF has conducted extensive research in the use of herbicides, insecticides, and pesticides for use in irrigated as well as dryland agriculture. The District provided a weather station located at the Research Field which is used in the "PET" (Potential Evapo Transpiration) network for the Texas Panhandle. The Research Field has conducted research with experiments in range land as well as livestock production.

The District requested that one area of the Research Field be used to demonstrate urban water conservation landscape. A number of varieties of trees as well as grasses are grown in this area of the Field. Visitors may view the different varieties and discuss the care and water requirements for each with Research Field representatives.

Each year the Research Station conducts field days to demonstrate various water saving methods that research has developed. In addition the field days allow the producers of the area to gain first-hand knowledge of new research being conducted as well as the opportunity to suggest additional research needed. The Research Field is operated by Texas A & M Experiment Station. Visitors are welcome during regular business hours to view the demonstrations and discuss the new research being conducted.

#### **Water Quality Research and Demonstration:**

In conjunction with the NPRF, and a grant from the Texas Water Development Board, a demonstration showing the proper storage, rinsing of equipment and containers, and disposal of agricultural chemicals is provided at the North Plains Research Field. In addition the Research Field

provides a demonstration on the proper equipment needed for groundwater quality protection for chemigation of crops through an irrigation system:

**Management Goal:** Support research and demonstration projects which will help protect the groundwater quality, reduce waste, and promote efficient use of water.

**Management Objective:** Annually the Board will consider all research and demonstration projects presented and will make decisions in regard to the District's participation in research and demonstration projects based on cost vs. benefit ratio.

**Performance Standard:** Annually compare number of research and demonstration projects presented to the Board to the action taken on each proposal.

### **State and Federal Encouraged Water Quality Programs:**

The District is very supportive of the Well Head Protection Program for Public Supply wells. The cities of Dumas and Perryton have adopted Well Head Protection programs with encouragement and help from the District. Future plans include working with the remaining cities within the District.

**Management Goal:** Encourage all cities in the District to develop a Well Head Protection Plan for their public water supply wells.

**Management Objective:** Annually contact at least two cities within the District to encourage and help develop a Well Head Protection Plan for their public water supply wells.

**Performance Standard:** Annually check the number of cities contacted each year in regard to the Well Head Protection Program.

## **B. ENCOURAGED CONSERVATION MEASURES**

### **Underground Pipe and Gated Pipe:**

When irrigated agriculture began on the North Plains, open, unlined ditches were used to divert and deliver water to crops. This method allowed for deep percolation beneath these ditches and a loss of the use of the water for crops. The District staff began a program to educate irrigators about the amount of water which could be saved by converting to underground pipe and using gated pipe above ground. This also allowed wells to be drilled in locations other than the highest elevation on the property.

### **Reuse:**

**Tailwater Return Systems** - Throughout this area there are dirt pits on many of the farms called tailwater pits. These pits capture water from irrigated fields and return the water back to an irrigation system and the water is re-used. In settling disputes over tailwater, the District has been instrumental in educating irrigators about the value of this water. With the increasing cost of pumping groundwater and the low cost of moving water from one end of the field to the other, these pits are a very beneficial management and conservation tool.

In some areas, irrigators may have farmed a quarter section or less and it was hard to justify the construction of a tailwater pit and the cost of an additional flow line back to the upper end of the field which may require a half-mile of pipe or more. In these cases, neighbors may agree to allow water

to come onto their property and would capture it for reuse in their system. Other times this tailwater may be flowing in a draw or ditch and cross through or along several farms but is finally captured and put to beneficial use.

The district field representatives, using V-notch weirs, measured tailwater run-off and translated this run-off into potential acres of irrigated crop. Articles were published in the District Newsletter as well as local newspapers publicizing the results and benefits of using tailwater return systems. Using this method to stress the importance of tailwater re-use, many farmers were influenced and installed return systems which are still in operation.

**Use of Wastewater** - Currently there are several irrigation operations which use wastewater from cities and/or industry. Examples of this include agricultural use for irrigation from municipal wastewater treatment facility and reuse of both the liquid and solids from confined feeding operations (CAFO's). Although there is some additional management required to use the wastewater for irrigation, the producers benefit from this water source.

There is the possibility of industries reusing municipal wastewater as well as one industry reusing another industry's wastewater. Due to the limited number of industries within the District and their lack of proximity to the wastewater source, reuse has not been extensive.

#### **Sprinkler System Irrigation:**

When sprinkler systems began to be used throughout the area, the District staff worked with the Extension Service, the Research Field and with various manufacturers of center pivot systems to educate and inform the people about the latest in technology being developed in nozzle design and system design to improve the water application efficiency to the crops. Today many sprinkler systems are low energy precision application (LEPA) systems. These systems are as high as 90% efficient in delivering water to the crop. The new water efficient sprinkler systems now being used are replacing row watering and less efficient sprinkler systems.

#### **Water Application Efficiency Tests:**

During the fall of 1980, and with an exchange of information agreement, the District Board of Directors authorized the purchasing and equipping of seven trailers for use by the Natural Resource Conservation Service (NRCS). These trailers were placed with the NRCS offices in the counties of the District to be used as mobile water conservation field laboratories. The trailers were equipped with the necessary tools, fittings, flow meters, and instruments needed to make the measurements for irrigation water application efficiency tests for both row irrigation and sprinkler irrigation systems.

#### **Crop Conversion:**

Certain irrigated crops require less water than others, such as grain sorghum vs. corn. Due to the difference between the market values and demand of these two crops, corn is preferred by many producers. However, if the market demand for grain sorghum increased, considerable change in total water usage could occur. Currently swine operations are expanding into Texas and this District. These operations feed more grain sorghum than corn. The conversion from corn to grain sorghum

may become a viable alternative for area producers.

**Management Goal:** Continue to encourage water conservation through the use of or adaptation to more efficient application methods and/or conversion to crops that use less water.

**Management Objective:** Encourage the use of or conversion to more efficient application methods such as underground and gated pipe, tailwater return systems, LEPA systems, testing of application efficiency, reuse, and crop conversion through articles in the *North Plains Water News*.

**Performance Standard:** Annually verify that articles are published in the *North Plains Water News* that encourage more efficient methods of water application reuse and crop conversion.



## SECTION VII PUBLIC RELATIONS & EDUCATION

One of our goals is that the activities of the District be consistent with sound business practices, insure that the public interest is always considered and make every effort possible to maintain public confidence. It is the District's opinion that public relations and education is a necessity to achieve this goal. The District has developed various activities which provide information and education opportunities to the public and has a Public Relations and Education Coordinator to implement and expand these activities.

### A. INFORMATION

#### **Quarterly Newsletter:**

Soon after the establishment of the District, it began the publication of a quarterly newsletter. This newsletter, *North Plains Water News*, provides information concerning the activities and programs of the North Plains Water District. Currently the newsletter is disseminated to over 2000 people, mostly agricultural landowners and operators, water well drillers, agribusinesses, county and city officials, educators, and county extension agents throughout the District, as well as local, state, and federal agencies having an interest in water quality and water quantity issues. The winning essays from the District Essay Contest is published in the *North Plains Water News*. In addition, information concerning the number of well permits issued for that calendar quarter is included. The District's water level measurements are published in one issue of the newsletter. Clarification of District rules, notices of public meetings, other District activities, and additional information pertinent to the area is also included in the publications.

#### **News Articles and News Releases:**

On several occasions throughout the year, the District will send out news releases to the various newspapers in the area. The district is called upon many times to write articles for various publications distributed throughout the District. District staff have appeared on television and radio programs to discuss water issues.

#### **Other Publications and Reports:**

Throughout the history of the District, many publications have been prepared by the staff. Copies of these publications are available upon request, and in most cases, when visitors to the area come by the office, copies are given to them. The District has published six progress reports, each covering programs and development of the water resource over approximately a five-year period. Also have information is available for use within the District office concerning other areas of the state and nation. Publications by state and national agencies and associations are likewise regularly received by the District.

With an extensive computer database, the District is able to disseminate information to the public upon request. We have over 35 years of water quantity and quality information on this area and are able to process general information requests in an expedient manner.

**Management Goal:** Provide current information to the residents of the District about water conservation and protection.

**Management Objective:** Publish current information and or reports in the quarterly editions of the *North Plains Water News* and/or other local news media as they become available.

**Performance Objective:** Annually verify that each quarterly edition of the *North Plains Water News* contains current information and or reports about water conservation and protection.

## **B. EDUCATION**

### **Public Education Programs:**

The district staff is called upon many times to provide programs for civic clubs, chambers of commerce, women's organizations, 4-H clubs, scouting groups, irrigation seminars, and other meetings. This is done as a District service to promote good public relations and to disseminate any information relevant to water conservation to the general public. The District has also developed a slide presentation which describes the history and programs of the District. Likewise, use is made of an informational display which is set up for North Plains Research Field Ag Days and at other conservation demonstration programs as needed.

In a continuing education effort, the District has hosted several programs and tours of the District's operations. Those who have participated include state Legislators, Agency Representatives and other people who are involved in the law-making process. These programs have also been attended by other groundwater districts throughout Texas and other states. This is done to try to develop a better understanding of the operations of the District in the management of groundwater. The District staff has worked diligently through the years to further this effort and to gain and keep the respect and support of the people who attend the tours and increase their knowledge of local groundwater management.

The District's staff and directors have traditionally used their best efforts to avoid litigation. This has been accomplished by the dissemination of reliable, usable information and an ongoing process of educating the public. The District's efforts are not limited to any specific age group or groups. The District has consistently advocated information, negotiation, and persuasion to avoid litigation.

Through the years, the District staff, in an effort to keep abreast of the latest information and related progress in the field of water conservation, has joined associations and professional organizations dedicated toward that goal. District employees' names appear on the general rosters, or as officers, or members of boards of directors, for the Texas Water Conservation Association, Soil Conservation Society of America, National Water Resources Association, National Groundwater Association, Professional Agricultural Workers of Texas, Texas Alliance of Groundwater Districts, Texas Groundwater Association, American Institute of Hydrology, Tarleton Hydrology Advisory Committee Panhandle Water Planning Group (SB1 regional planning group) and local Chambers of Commerce.

**Management Goal:** Inform people within the District and outside the District about the

goals, programs, duties and responsibilities of the District.

**Management Objective:** Provide, sponsor and/or co-sponsor programs and tours and participate in organizations to inform people about the goals, programs, duties and responsibilities of the District.

**Performance Standard:** Annually document the number of programs the District has provided or helped to provide which inform people about the goals, programs, duties and responsibilities of the District.

#### **Public School Education Programs:**

Several programs have been used in the public schools throughout the District. These programs are designed in an effort to educate the younger generation of the need for water conservation and protection. District staff feel it is important to teach younger children the need for water conservation at an early and impressionable age. As a result, many of the students who have participated in these programs have gone on to become involved in the area of water use, conservation, and protection.

Each year, the Water District conducts an essay contest for high school students who reside within the boundaries of the District. The topic of the essays is "Why is Water Conservation Important?"

Four winning essays are chosen by a panel of judges. Currently the winners are awarded scholarships in the amounts of \$1000 for 1st; \$750 for 2nd; \$500 for 3rd; and \$250 for 4th. When the essay winners prepare to enter college, the District forwards the money to the college designated by each of the students. The District's Board of Directors is considering changing the scholarships to make them more of a benefit to the students and especially those who enter a water-related field of study.

Also at the high school level, the District has distributed soil and water test kits to vocational agriculture classes. These materials were provided at no cost to the schools through a grant obtained by the District from the Texas Water Development Board in hopes that each school would develop an agricultural water quality program in its Vo-Ag curriculum. We also provide book covers which advertise the District and the need for water conservation to schools in our District.

Textbooks and teachers' materials are also provided to junior high and elementary schools throughout the District. Currently we are providing curricular materials entitled "Major Rivers" to fourth grade classes throughout the District. We also have educational coloring books and informational pamphlets for younger ages as well as many types of brochures for junior high and high school students. All of this information is provided free of charge to the schools, and the District staff will present a program to any of the classes concerning the operations of the District upon request.

**Management Goal:** Continue to provide public school education material to the schools of the District.

**Management Objective:** Contact the schools of the District and inform them of the information the District will provide on water conservation.

**Performance Standard:** Annually ensure that all schools have been contacted in regard to the information available from the District.

## SECTION VIII

### FIELD SERVICES

The District has always taken pride in all services and programs supported and offered to the residents of the District including water quality, depletion program, research and demonstration and education and public relations. Field services is no exception. This section outlines two field services which may be used in a variety of ways to provide the water user with needed information to better manage their water. As with other services of the District, there is no charge for these services to the residents of the District. These services are provided for the benefit of the user. The District makes no claim as to the accuracy of the information but does try to provide accurate measurements using modern equipment and trained personnel.

#### **Well Tests:**

District field representatives carry in their vehicles the necessary equipment to perform measurements and tests on water wells. This equipment includes: electronic flow meters that will accurately measure the gallons per minute of water moving through a sprinkler system or other pipe systems, electric line (E-Line) water level indicators to measure the pumping level, a tachometer for measuring pump speed and a pressure valve to check water produced under pressure for system tests. The wells can be tested for total production of water in gallons per minute, pump speed, and pumping levels. If the producer is planning to convert to a center pivot system, the same tests can be run at varying system pressures. Usually tests can be made without shutting the system down to install the equipment. Irrigators considering purchasing center pivot systems have called on the District to make these measurements. Others who have center pivot systems request this service to see how much water they are delivering to the crops and to check for any change in the system. Cities and industries throughout the District have also used this service to determine well production and other water related tests on their water system.

#### **Pump Plant Efficiency Tests:**

In 1980 District field representatives assisted the Extension Service irrigation specialists in the efficiency testing of a number of wells within the District. The Board of Directors, after hearing a report on this work and the information that could be gained by these tests, felt the District should have the capability to perform this service for area water users. The necessary equipment was purchased and put into operation the next year. With this equipment field personnel are able to test the operation of the engine and pump and direct the operator's attention toward any inefficiencies that are encountered and the direct cost of operation and repair. These tests give information such as the total production of the well in gallons per minute, draw down or pumping level, any discharge pressure, R.P.M. of the pump, fuel consumption of the engine, torque developed, and horsepower output of the engine. The District field staff have tested several hundred wells with this equipment at the request of owners and operators since 1981. In many cases where operators were having problems with inefficient operations, corrections could be made to improve efficiency and save many thousands of dollars.

**Management Goal:** Provide prompt field service to all water users of the District.

**Management Objective:** Field operation personnel will schedule and conduct all field services within three days of the request.

**Performance Measure:** Annually compare the date of the request with the date the field service was conducted.

## **SECTION IX OTHER ISSUES**

### **A. SURFACE WATER**

The only surface water supply that will in the future provide water to supplement the groundwater supplies for cities within the District is Lake Palo Duro located in Hansford County and operated by the Palo Duro River Authority. Lake Palo Duro will be a future water supply for the cities in Hansford and Moore counties and the city of Stinnett in Hutchinson County.

It is the opinion of the District that at this time, conjunctive surface water management issues as specified in 31TAC§356.5(a)(1) are not applicable to the operations of the District.

### **B. SUBSIDENCE**

It is the opinion of the District that subsidence is not an issue within the District as specified in 31TAC§356.5(a)(1).

### **C. RECHARGE**

Information from *LP-173, Evaluating the Ground-Water Resources of the High Plains of Texas Final Report Volume 1* states: "Recharge to the High Plains aquifer occurs principally by infiltration of precipitation on the outcrop. Only a small percentage of water from precipitation actually reaches the water table due to a combination of small annual precipitation, high evaporation rate, and low infiltration rate."

From the information contained in the above report, the District has determined that for the reasons listed, recharge, natural or artificial is not a feasible management goal of the District at this time.

### **D. REGIONAL PLAN**

The Panhandle Water Planning Group (PWPG) was established on March 13, 1998 in accordance with Senate Bill 1, Regional Water Planning Area A. The District is represented on the PWPG in the water district category of membership. The District will participate in the efforts of the PWPG in the development of a regional plan for the area.

At this time there is not a regional plan in effect within the boundaries of the District.

## SECTION X FUTURE ACTIVITIES, PLANS AND PROGRAMS

The District is always open for suggestions which will help in the conservation and protection of water. Many of the programs and services currently being provided began as suggestions from residents within the District. Other programs have been developed through the Board and staff of the District working together. This section of the Management Plan is provided to identify plans, programs, services, and activities the District may develop in the future. Some of the items included in this list may be in some stage of development only through the association it may have with current activities of the District. Other items may only be suggestions and never be developed. All activities, plans and programs of the District have been developed after consideration and approval of the Board based on the benefit to the residents and the financial and staff capabilities of the District. The items listed below are not in any particular order of preference or need.

- Enhance and/or develop additional mapping and Geographic Information System (GIS) capabilities,
- Develop additional groundwater modeling capabilities,
- Develop additional display of water quality and quantity information,
- Expand or enhance water level and water quality observation well program as needed,
- Develop data logging capabilities for time draw down aquifer tests,
- Upgrade logging capabilities to digital system,
- Develop additional public education programs,
- Develop employee education allowance program,
- Develop additional public school education programs,
- Develop client/server environment to enhance employee data exchange, efficiency, productivity and currentness or completeness,
- Develop electronic information accessibility (homepage on internet),
- Develop more extensive library of groundwater data,
- Global Positioning System (GPS) survey of all existing and new wells within the District,
- Develop additional exchange of information between the District and water well drillers and pump installers,
- Develop or upgrade to a full service certified laboratory,
- Development of geophysical subsurface investigation capabilities to track contamination (i.e. electric resistivity),
- Hazmat training and certification,
- Develop or acquire new or revised pamphlets, publications or brochures for distribution.

**SECTION XI  
DOCUMENTATION**

**A. CERTIFICATION OF ISSUES NOT APPLICABLE**

**Conjunctive Surface Water Management Issues:**

**I do hereby affirm and attest, that the Management Goal of addressing conjunctive surface water management issues as specified in 31TAC§356.5(a)(1), is not specifically applicable to the operations of North Plains Ground Water Conservation District No. Two.**

\_\_\_\_\_  
**David Moore, President**

\_\_\_\_\_  
**Date**

**Attest:** \_\_\_\_\_  
**Thane McCloy, Secretary**

\_\_\_\_\_  
**Date**

**Subsidence:**

**I do hereby affirm and attest, that the Management Goal of controlling and preventing subsidence, as specified in 31TAC§356.5(a)(1), is not specifically applicable to the operations of North Plains Ground Water Conservation District No. Two.**

\_\_\_\_\_  
**David Moore, President**

\_\_\_\_\_  
**Date**

**Attest:** \_\_\_\_\_  
**Thane McCloy, Secretary**

\_\_\_\_\_  
**Date**



**Recharge:**

**I do hereby affirm and attest, that the Management Goal of recharge, natural or artificial, as specified in 31TAC§356.5(a)(4)(C), is not specifically applicable to the operations of North Plains Ground Water Conservation District No. Two.**

\_\_\_\_\_  
**David Moore, President**

\_\_\_\_\_  
**Date**

**Attest:** \_\_\_\_\_  
**Thane McCloy, Secretary**

\_\_\_\_\_  
**Date**

**Regional Water Plan:**

**I do hereby affirm and attest, that the Management Goal of consistency with a regional water plan within any area of the District as specified in 31TAC§356.5(a)(5), is not specifically applicable to the operations of North Plains Ground Water Conservation District No. Two.**

\_\_\_\_\_  
**David Moore, President**

\_\_\_\_\_  
**Date**

**Attest:** \_\_\_\_\_  
**Thane McCloy, Secretary**

\_\_\_\_\_  
**Date**

## B. COPIES OF LETTERS TO SURFACE WATER ENTITIES

August 5, 1998

James Derrington, Manager  
Palo Duro River Authority  
P.O. Box 1046  
Spearman, Texas 79081

Dear Jim,

Enclosed is a copy of the proposed North Plains Water District Management Plan as required by Senate Bill 1.

Included in the requirements of SB 1, we are required to develop this plan in coordination with surface water management entities on a regional bases. I have addressed the issue of conjunctive use of surface water and groundwater within the Management Plan on page 40.

I ask that you review the plan and if you want to, provide copies to your Board. After your review and/or PDRA Board review, let me know if you have any comments in regard to the Plan. SB 1 did not require any formal documentation from the surface water entities; however, I would appreciate a written response from you and/or PDRA Board if possible.

We have scheduled a Public Hearing on the Management Plan for 9:00 a.m. on Tuesday, August 18, 1998 at the District office in Dumas. Certainly you are welcome to attend the hearing and make comments at that time.

Please feel free to contact me if you have any questions or comments in regard to the Management Plan.

Sincerely,

Richard S. Bowers  
Enclosure: Proposed NPWD Management Plan

August 5, 1998

John C. Williams, General Manager  
Canadian River Municipal Water Authority  
P.O. Box 99  
Stanford, Texas 79078

Dear John,

Enclosed is a copy of the proposed North Plains Water District Management Plan as required by Senate Bill 1.

Included in the requirements of SB 1, we are required to develop this plan in coordination with surface water management entities on a regional bases. I have addressed the issue of conjunctive use of surface water and groundwater within the Management Plan on page 40.

I ask that you review the plan and if you want to, provide copies to your Board. After your review and/or CRMWD Board review, let me know if you have any comments in regard to the Plan. SB 1 did not require any formal documentation from the surface water entities; however, I would appreciate a written response from you and/or CRMWD Board if possible.

We have scheduled a Public Hearing on the Management Plan for 9:00 a.m. on Tuesday, August 18, 1998 at the District office in Dumas. Certainly you are welcome to attend the hearing and make comments at that time.

Please feel free to contact me if you have any questions or comments in regard to the Management Plan.

Sincerely,

Richard S. Bowers  
Enclosure: Proposed NPWD Management Plan

## C. PUBLIC NOTICE OF HEARING

### PUBLIC HEARING

THE NORTH PLAINS GROUND WATER CONSERVATION DISTRICT No. TWO will hold a Public Hearing at 9:00 a.m. on Tuesday, August 18, 1998 at the District Office located at 603 East First, Dumas, Texas.

The purpose of the hearing is to receive comments and/or discuss the 1998 District Management Plan prior to Board adoption and submittal to the Texas Water Development Board for certification. Anyone wishing to receive copies of the proposed Management Plan may contact the District at P.O. Box 795, Dumas, Texas 79029-0795 or phone 806-935-6401.

Published in the Sunday, August 2, 1998 Edition of the *Amarillo Daily News*

## **D. BOARD RESOLUTION**

### **RESOLUTION NORTH PLAINS GROUND WATER CONSERVATION DISTRICT No. TWO 1998 MANAGEMENT PLAN**

**WHEREAS**, Texas Water Code, Chapter 36, §36.1071 required the District to develop a comprehensive management plan to address the following management goals as applicable: (1) providing the most efficient use of groundwater; (2) Controlling and preventing waste of groundwater; (3) controlling and preventing subsidence; (4) addressing conjunctive surface water management issues; and (5) addressing natural resource issues. and

**WHEREAS**, The Texas Water Development Board has adopted rules under Title 31. Natural Resource and Conservation Part X. Texas Water Development Board, Chapter 356. Groundwater Management Plan Certification. and

**WHEREAS**, The North Plains Ground Water Conservation District No Two was created in 1955 and has operated under the requirements of Chapter 36 of the Texas Water Code or other chapters of the Texas Water Code or sections of the Texas Administrative Code since creation. and

**WHEREAS**, The North Plains Ground Water Conservation District No. Two intends to continue to carry out the purpose for which the people created the District. and

**WHEREAS**, The Texas Water Code, §36.1071 requires the District to identify the performance standards and management objectives under which the District will operate to achieve the management goals. and

**WHEREAS**, The Board of Directors of the North Plains Ground Water Conservation District No. Two believes that the 1998 Management Plan of the District reflects the best management of the groundwater for the District and meets the requirements of §36.1071 as applicable. and

**WHEREAS**, The Board further believes that the description of activities, programs, procedures and Rules of the District included in the Plan provide performance standards and management objectives necessary to effect the Plan in accordance with §36.1071. and

**WHEREAS**, The Plan includes estimates of the usable amount of groundwater, the amount of groundwater being used, projected groundwater supply and demand within the District as well as addresses recharge. and

**WHEREAS**, The District has adopted rules, resolutions, and directives to implement this plan. and

**WHEREAS,** The District is fully prepared to amend and or adopt additional rules or adopt resolutions or issue directives in the future as determined by the Board of Directors to address issues identified in the future . and

**WHEREAS,** The District is fully prepared to amend this Plan as determined by the Board of Directors as necessary and in accordance with applicable laws of this state.

**NOW THEREFORE BE IT RESOLVED:**

The Board of Directors of the NORTH PLAINS GROUND WATER CONSERVATION DISTRICT NO. TWO does hereby adopt the 1998 North Plains Ground Water Conservation District No. Two Management Plan. This the 18th day of August, 1998.

---

David Moore, President

---

Phil Haaland, Vice President

---

Thane McCloy, Secretary

---

Ted Dodd, Director

---

Neal Spurlock, Director

---

Robert Thompson, Director

---

Roland Wheat, Director

**APPENDIX A**  
**Directors, Staff and County Committee Members**

**DIRECTORS**

<b>Name</b>	<b>Office</b>	<b>Area Represented</b>	<b>Term of Office</b>
David L. Moore	President	Moore County	May 1998 - May 2002
Phil Haaland	Vice-President	Dallam County	May 1998 - May 2002
Thane McCloy	Secretary	Hutchinson & Hansford Counties	May 1996 - May 2000
Robert Thompson	Director	Hartley County	May 1998 - May 2002
Neal Spurlock	Director	Sherman County	May 1998 - May 2002
Roland Wheat	Director	Lipscomb County	May 1996 - May 2000

**STAFF**

<b>Name</b>	<b>Title</b>
Richard S. Bowers	General Manager
Dale Hallmark	Assistant Manager/ Hydrologist
Danelle Barber	Public Relations/Education
Pauletta Rhoades	Financial Secretary
Loyall Turner	Water Quality Coordinator
Sergio Rodriguez	Field Operations Coordinator
Don Piatt	Consultant
Robert D. Lemon	Legal Counsel

**COUNTY COMMITTEE MEMBERS**

<b>Name</b>	<b>County</b>	<b>Term of Office</b>
Rodney Bolender	Dallam	July 1998 - July 2000
Robert Enns	Dallam	July 1998 - July 2000
Gary Koehn	Dallam	July 1998 - July 2000
Scott Kruse	Dallam	July 1998 - July 2000
David Noble	Dallam	July 1998 - July 2000

**COUNTY COMMITTEE MEMBERS CONTINUED**

<b>Name</b>	<b>County</b>	<b>Term of Office</b>
Jim Derrington	Hansford	July 1998 - July 2000
Wayne Garrett	Hansford	July 1998 - July 2000
Joel Lee Lackey	Hansford	July 1998 - July 2000
Richard Schad	Hansford	July 1998 - July 2000
Bob Zimmer	Hansford	July 1998 - July 2000
Gene Atkinson	Hartley	July 1998 - July 2000
Lanny Bezner	Hartley	July 1998 - July 2000
Rusty Gilmore	Hartley	July 1998 - July 2000
Kurt Presley	Hartley	July 1998 - July 2000
Steve Wilson or Bill Graff		July 1998 - July 2000
Jack Crowl	Hutchinson	July 1998 - July 2000
Nolan Holt	Hutchinson	July 1998 - July 2000
Dean Lieb	Hutchinson	July 1998 - July 2000
Wade Parks	Hutchinson	July 1998 - July 2000
Jimmie Shields	Hutchinson	July 1998 - July 2000
Paul Bechthold	Lipscomb	July 1998 - July 2000
Gene Born	Lipscomb	July 1998 - July 2000
Ray Burrus	Lipscomb	July 1998 - July 2000
Melvin Miller	Lipscomb	July 1998 - July 2000
Garner Schoenhals	Lipscomb	July 1998 - July 2000
Kerry Garrison	Moore	July 1998 - July 2000
Harold Grall	Moore	July 1998 - July 2000
Darren Stallwitz	Moore	July 1998 - July 2000
Jess Starkey	Moore	July 1998 - July 2000
Berkley Stringer	Moore	July 1998 - July 2000
Danny Krienke	Ochiltree	July 1998 - July 2000
Dean Leighnor	Ochiltree	July 1998 - July 2000
Terry Simon	Ochiltree	July 1998 - July 2000
Dean Slaughter	Ochiltree	July 1998 - July 2000
Rocky Tregallas	Ochiltree	July 1998 - July 2000
Billy Bell	Sherman	July 1998 - July 2000
Greg Hudson	Sherman	July 1998 - July 2000
Walter Lasley	Sherman	July 1998 - July 2000
Duane Schafer	Sherman	July 1998 - July 2000
Willie Wieck	Sherman	July 1998 - July 2000



APPENDIX B

**Rules of North Plains  
Ground Water Conservation  
District No. Two**

**Preamble**

The purpose of this District is to provide for the conservation, preservation, protection, recharging, and prevention of waste of the groundwater, and of groundwater reservoirs or their subdivisions, and to control subsidence, within the defined boundary of the District. To carry out this purpose, these rules and regulations are passed, adopted and will be enforced to: minimize as far as practicable, draw down of the water table, depletion of the groundwater reservoirs and aquifers, interference between wells, reduction of artesian pressure; and to prevent, waste of groundwater, pollution or harmful alteration of the character of the groundwater and promote conservation to extend the longevity of groundwater resource, and to manage the groundwater effectively based upon ecological and socio-economic systems unique to the aquifers within the North Plains Ground Water Conservation District No. Two.

**Effective Date: October 1, 1995**

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## Rule 1 - Definitions

Unless the context hereof indicates a contrary meaning, the words hereinafter defined shall have the following meaning in these Rules:

- **“Abandoned Well or Deteriorated Well”** shall mean a well or borehole the condition of which is causing, or is likely to cause, pollution of groundwater in the District and includes a well which is or is not in use or which contains no pumping equipment (open or uncovered well). A well or borehole which is not in compliance with applicable law, including the Rules and Regulations of the District, the Texas Water Well Driller's Act, Texas Natural Resources Conservation Commission, or any other state or federal agency or political subdivision having jurisdiction, is presumed to be an abandoned or deteriorated well.
- **“Acceptable decline rate”** is a percentage of the saturated thickness which may be removed from the groundwater reservoir annually and will encourage conservation and extend it's longevity.
- **“Allowable decline”** an amount of water, expressed in acre feet. It is calculated by multiplying the net saturated thickness of the previous year by the acceptable decline rate set by the Board. It is assigned at the center of each section of land
- **“Authorized Well Site”** shall be:
  1. The location of a proposed well on an application duly filed until such application is denied, canceled, or expires; or
  2. The location of a proposed well on a valid permit. (an authorized well site is not a permit to drill); or
  3. A well equipped with a 4 inch or larger pump in existence at the time the District was created, or the area was annexed into the District prior to May 23, 1985; or
  4. A well which produced in excess of 25,000 gallons of water per day and which was in existence at the time the District was created or prior to May 23, 1985 or at the time the area was annexed into the District and is not considered to be an abandoned well or deteriorated well; or
  5. A well drilled after the District was created or after the area was annexed into the District and in which a properly completed Registration and Log of Well is on file in the District office and such well has not been “abandoned” by the well owner.
- **“Aquifer”** shall mean a formation or group of saturated geologic formations capable of storing and yielding fresh water in usable quantities.
- **“Board”** shall mean the governing body of the District, which shall consist of not fewer than five and not more than 11 Directors elected for four-year terms. “The number of Directors may be changed as determined by the Board when territory is annexed by the District.” (§36.051 (a) Texas Water Code)
- **“Borehole”** Shall mean a hole in the earth drilled to a depth sufficient to penetrate or endanger water-bearing sands from pollution.

- **“Chemigation”** shall mean a process whereby pesticides, fertilizers or other chemicals, or effluent from animal or human wastes are added to irrigation water applied to land or crops, or both, through an irrigation distribution system.
- **“County Committee”** shall mean a committee of five persons appointed in each county of the District which will perform such duties as it may require.
- **“County Secretary”** shall mean a person appointed by the Board in each county who may receive and file well permit applications, accept deposits, distribute information and to perform other administrative duties as directed by the Board
- **“Dam”** shall mean any barrier across the bottom chord of the pipe which is of sufficient height to back water into the low-pressure drain outlet and prevent any flow (check valve seepage) back into the water supply.
- **“Dewatering well”** shall mean an artificial excavation constructed to produce groundwater to cause a lowering of the water table or potentiometric surface. The term shall not include any dewatering well which is used for the production of, or to facilitate the production of, any mineral under a state regulatory program.
- **“District”** shall mean North Plains Ground Water Conservation District No. Two, maintaining its principal office in Moore County, Dumas, Texas. Where applications, reports and other papers are required to be filed with or sent to “the District”, this means the District’s headquarters at 603 East First, P. O. Box 795, Dumas, Moore County, Texas 79029-0795, Phone: 806-935-6401, Facsimile: 806-935-6633. The District shall also be known as “North Plains Ground Water Conservation District”, “North Plains Water District” and the acronym “NPWD” shall also refer to the North Plains Ground Water Conservation District No. Two
- **“Easy access”** shall mean access is not obstructed by other equipment and the fitting can be removed and replaced with a minimum of tools without risk of breakage of the attachment parts
- **“Exploratory Well”** shall mean any hole drilled below the top of any stratum containing the underground water for the purpose of securing geological, hydrological or other information which may be obtained by penetrating the earth with a drill bit, and includes what is commonly referred to as “water well test holes”, “slim hole test” or “seismograph test holes” and the like.
- **“Flapper”** shall mean the clapper, closing, or checking device within the body of the check valve.
- **“Foreign substance”** shall mean any element or combination of elements in excess of that naturally occurring in the groundwater including; re-used or re-claimed water, tailwater and may include instances where open-ditch water is treated when a pump discharge pipe is submerged in the ditch.
- **“Groundwater”** shall mean water percolating below the surface of the earth.
- **“Groundwater Reservoir”** shall mean a specific subsurface water-bearing reservoir having ascertainable boundaries containing groundwater.

- **“Injection well”** Includes:
  1. an air conditioning return flow well used to return water used for heating or cooling in a heat pump to the aquifer that supplied the water
  2. a cooling-water return-flow well used to inject water previously used for cooling;
  3. a drainage well used to drain surface fluid into a subsurface formation;
  4. a recharge well used to replenish the water in an aquifer;
  5. saltwater intrusion barrier well used to inject water into a freshwater aquifer to prevent the intrusion of salt water into the freshwater;
  6. a sand back-fill well used to inject a mixture of water and sand, mill tailings, or other solids into subsurface mines;
  7. a subsidence control well used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water;
  8. a closed system geothermal well used to circulate water, other fluids, or gases through the earth as a heat source or heat sink.
  
- **“Irrigation distribution system”** shall mean a device or combination of devices having a hose, pipe or other conduit which connects directly to any water well through which water or a mixture of water and chemicals is drawn and applied to land. The term does not include any hand held hose sprayer or other similar device which is constructed so that an interruption in water flow automatically prevents any backflow to the water source.
  
- **“Monitoring well”** shall mean an artificial excavation constructed to measure or monitor the quality or quantity or movement of substances, elements, chemicals, or fluids beneath the surface of the ground. The term shall not include any monitoring well which is used in conjunction with the production of oil, gas, or any other minerals
  
- **“Owner”** shall mean and include any person or other entity, public or private, that has the right to produce water from the land either by ownership, contract, lease, easement or any other estate in the land or water.
  
- **“Person”** shall mean any individual, partnership, firm or corporation.
  
- **“Pollution”** mean the alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, water in the District that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property or to public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.
  
- **“Recharge Well”** shall mean a well used to allow or cause water to flow out of the well into the aquifer either under a gravity head or a head maintained by an injection pump in order to replenish the groundwater.
  
- **“Saturated thickness”** The vertical distance between the water table and the base of the groundwater reservoir, and the pores between the solid particles are filled with water.
  
- **“Section”** shall mean a defined area of land containing 640 acres more or less as defined by the legal survey maps of the county or counties in which the land is located, provided that the distance between the

furthest diagonal corners does not exceed 11,000 feet. The fact that a tract of land, under common ownership, is divided by a boundary line shall have no bearing on the application of these Rules.

- “Specific Yield” shall mean the measurement of the water removed from the aquifer by the force of gravity to wells. It is defined as the ratio of the volume of water which an aquifer, after being saturated, will yield by gravity to the volume of the aquifer drained. The ratio is usually expressed as a percentage.
- “Underground Water” is used synonymous with groundwater
- “Waste” as used herein shall have the same meaning as defined by Chapter 36 of the Texas Water Code as now or hereafter amended as follows:
  - “Waste means any one or more of the following:
    1. Withdrawal of groundwater from a groundwater reservoir at a rate and in an amount that causes or threatens to cause intrusion into the reservoir of water unsuitable for agricultural, gardening, domestic, or stock raising purposes;
    2. The flowing or producing of wells from a groundwater reservoir if the water produced is not used for a beneficial purpose;
    3. Escape of groundwater from a groundwater reservoir to any other reservoir or geologic strata that does not contain groundwater;
    4. Pollution or harmful alteration of groundwater in a groundwater reservoir by saltwater or by other deleterious matter admitted from another stratum or from the surface of the ground
    5. Willfully or negligently causing, suffering, or allowing groundwater to escape into any river, creek, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road, or road ditch, or onto any land other than that of the owner of the well unless such discharge is authorized by permit, rule, or order issued by the Commission under Chapter 26;
    6. Groundwater pumped for irrigation that escapes as irrigation tailwater onto land other than that of the owner of the well unless permission has been granted by the occupant of the land receiving the discharge;
    7. For water produced from an artesian well, “waste” has the meaning assigned by Section 11.205.”
- “Water” is used synonymous with groundwater and underground water.
- “Water Rights” shall mean a defined number of surface acres, within each section of land, a person has acquired the right to capture the groundwater from beneath, subject to the Rules of this District
- “Water well” shall mean any artificial excavation constructed for the purpose of exploring for or producing groundwater. The term, however, shall not include any test or blast holes in quarries or mines, or any well or excavation for the purpose of exploring for, or producing oil, gas, or any other minerals unless the holes are used to produce groundwater. The term shall not include any injection water source well regulated by the Railroad Commission of Texas.
- “Well” shall mean a water well, injection well, recharge well, dewatering well, or monitoring well and is in compliance with the District Rules.

## **Rule 2 - Waste or Pollution**

- A.** Water shall not be produced or used within the District in such a manner or under such conditions as to constitute waste as defined by Rule 1 hereof. **Water shall not be produced from an abandoned or deteriorated well.**
- B.** Any person producing or using underground water shall use every possible precaution, in accordance with the most approved methods, to stop and prevent waste of such water.
- C.** A well identified as an abandoned or deteriorated well, or a borehole, must be plugged, capped or re-completed in accordance with the requirements of the District and any statewide law, agency or political subdivision having jurisdiction including, but not limited to, the Texas Water Well Drillers Act, and the Texas Natural Resources Conservation Commission.

## **Rule 3 - Radioactive Wastes, Toxic and Hazardous Substances and Polychlorinated Biphenyls**

- A.** None of the following materials or substances may be imported from outside the District to a point within the District, nor moved within the District from point to point, for the purpose of temporarily or permanently disposing of such materials or substances within the District:
1. Radioactive Wastes.
  2. Toxic Substances.
  3. Hazardous Substances.
  4. Polychlorinated Biphenyls.
  5. Soil, fluids or other materials or substances contaminated with any of the above.
- B. Exclusions:** The following are excluded from this Rule and Order: agricultural insecticides, herbicides, or other agri-chemicals.
- C. The following activities are prohibited:**
1. Construction, operation, maintenance or use of waste disposal wells for any of the materials enumerated above:
  2. Construction, operation, maintenance or use of tanks, reservoirs, pits, depressions, sites, landfills or any other manner of storage of the materials or substances enumerated above on either a temporary or a permanent basis within the District.

**D.** All persons, firms, corporations, associations of persons or other entities having in their possession or under their care, custody or control within the District any of the materials or substances enumerated above shall report by sworn inventory to the District Office in Dumas, Texas within ten (10) days of acquisition. The report shall include a description of the materials or substances possessed, amount, location, status and whether a plan or schedule has been formulated for the ultimate disposal of the materials or substances.

Within sixty (60) days after the receipt of such report, the Board of Directors shall either approve the report or set the matter down for hearing according to the notice provisions and procedure outlined in Rule 18.

## **Rule 4 - Enforcement of Rule 3**

Rule 3 will be strictly enforced in its application; however circumstances may arise that are materially different from those normally encountered in, or resulting from, any of the disposal operations or activities described or prohibited in Rules 3. A departure from Rules 3, in order to alleviate hardships when such circumstances would not constitute a threat of waste, pollution or harmful alteration of underground water within the District, may justify an exception to Rule 3 under Rule 18.

## **Rule 5 - Permit Required**

**A.** No person shall hereafter begin to drill or drill a well, or increase the size of a well or pump therein, which well could reasonably be expected to produce, or a pump designed to produce, in excess of 25,000 gallons of water per day, without having first applied to the District, and received a permit to do so, unless the drilling and operation of the well is exempt by the law or by these Rules. Provided that, as set out in Rule 6(d) hereof, and under certain conditions, an applicant may commence the drilling of a well when his application therefore has been recommended by the proper County Committee.

An application for a well permit is subject to any approved well permit and or any active test hole permit on adjacent property. However, an application for a well permit spaced at least five hundred (500) yards inside the property line for the proposed well permit application and not in conflict with any other Rules of the District may be made and will not be considered in conflict with an active test hole permit on adjacent property.

**B.** A person wishing to explore for groundwater may apply for a test hole permit. A test hole permit is not a requirement for a well permit application. The test hole permit shall be in effect for a maximum of thirty (30) days. The test hole permit may be extended, due to acts or events not reasonably within the control of the party which may occur, upon written request by the driller on forms provided by the District prior to the expiration date of the original test hole permit. The test hole permit and/or the request for the extension may be approved by the Manager of the District or a staff member designated by him. Any extension request for a time in excess of fifteen (15) days shall be acted upon by the Board. The test hole permit may be for no more than two proposed wells provided this information is made known in the application for the test hole permit and is accompanied by sufficient permit deposit. Any subsequent application for a test hole permit on the same property is subject to any other active test hole permits and/or applications for a well permit on adjacent property.

- 1.** A test hole permit entitles the applicant to make application for no more than two well permits on a single section subject to this rule, other Rules of District and any other test hole permits and/or applications for a well permit on adjacent property, so long as the application for a well permit is made prior to the final expiration date of the test hole permit. The test hole permit can be for any defined area of land within the same section. However, no more than one test hole permit may be in effect for the same owner within the same section.
- 2.** Test hole permits may be issued to adjacent property owners at anytime, however, the test hole permit which was issued first in time will have the first selection of an application for a well permit or permits along an adjacent property line. Adjacent property owners may then make application for a well permit or permits along an adjacent property line in the order of time in which their test hole permits were issued.



C. Even though exempt by law from permitting under § 36.117 of the Texas Water Code and amendments thereto all wells must be registered with the District. All such wells shall be equipped and maintained in accordance with these Rules as to drilling, installation of casing, completion, pipe and fittings to prevent the escape of groundwater from a groundwater reservoir to any reservoir not containing groundwater and to prevent the pollution or harmful alteration of the character of the water in any groundwater reservoir. Exempt wells include wells used for domestic or stock purpose, and wells permitted by the Railroad Commission of Texas.

### **Rule 6 - County Committees**

A. Each County in the District shall have a County Committee composed of five committeemen. Each portion of the County is to be represented by a County Committeeman, if practicable. These Committeemen shall be appointed by the Board and the term of office shall be four (4) years.

Any qualified voter within any Director's precinct, may have his name placed in nomination for County Committeeman by the County Committee or by petition signed by not less than five (5) qualified voters of the Director's precinct, such petition shall be filed with the District.

The County Committees are authorized to review applications for permits to drill wells and to perform such additional duties the District may require.

B. A County Secretary shall be appointed in each County by the Board to serve at the pleasure of the Board. The County Secretary or other authorized person who received an application for a permit shall note on the face of the application the date and time of day on which such application is received and shall give any application a serial number showing its relative priority as to time to applications later filed. The County Secretary or other authorized person who receives an application shall send the original and all copies of the permit and deposit to the District office in Dumas, Texas. The method of preparing and sending these documents to the District office shall be at the discretion of the Manager of the District, subject to Board approval.

C. It shall be the duty of the County Committee to recommend to the Board the granting or refusal of applications for permits to drill wells. The Committees may hold hearings or meetings for this purpose. The signature of three County Committeemen on an application shall constitute a recommendation that the permit be granted. The refusal of three or more Committeemen to sign the application shall constitute a recommendation of rejection of the application.

D. If the County Committee shall recommend the granting of the application, and if there be no contest thereon or conflicting application, such recommendation shall be noted on the application by the County Committee. The applicant may thereupon proceed at his own risk to drill such well. The application shall not, however, be officially granted until the same shall have been passed upon and granted by the Board.

E. If, before the Committee's consideration and recommendation on an application, a protest is filed, or if another applicant shall within such time file an application for a well permit within less than the minimum spacing distance for such wells, the County Committee may request the parties involved to meet with the Committee to discuss the protest or applications in an effort to determine which of the applications should, in its judgment, be granted. In the event of a contest or such a conflicting application, no well shall be commenced until the matter is passed upon by the Board. A contest shall be deemed filed when written notification is filed with the Manager, a staff member designated by him, or one of the Directors. The person who receives such applications or notices of contests shall receive the same and note thereon the date and time at which they were received.

The County Committee shall, in any event, forward both applications to the Board. Thereafter, both applicants, or the applicant and the contestant or contestants, after due notice, shall be entitled to a hearing before the Board. At such hearing, all parties may introduce pertinent evidence as to why the particular application or applications should be granted or denied, including evidence as to the effect on the water reservoir, the conservation and preservation of water, the prevention of waste, the protection of property rights and other pertinent matters, which evidence shall also be taken into consideration by the Board. The Board shall also take into consideration which of the applicants duly filed his application first.

F. The County Committee shall not be authorized to receive or pass upon such application for a permit to drill a well as an exception to the spacing Rules of the District. As herein stated in these Rules, such application shall be filed directly with the Board at its District headquarters.

G. The County Committee shall recommend to the Board the granting or refusal of applications for permits to drill injection wells, recharge wells, dewatering wells, or monitoring wells. If such applications are filed with the District, the same shall be acted upon by the County Committee in the same manner as set out above for a well application and its recommendations shall be forwarded to the Board with the application. Provided, however, that if the Committee recommends that the application be granted, the drilling of recharge wells shall not be commenced until the application shall have been granted by the Board under such directions and regulations as it may provide.

H. If any application is not favorably recommended by the County Committee, the applicant shall have the right to appeal to the Board. Such appeal must be filed, with a member of the Board, the Manager of the District or written notice by registered mail to the District, within fifteen (15) days from the time that the action of the County Committee denied the application. Such time shall begin to run from the date of the meeting of the County Committee at which such action is announced. If there be no meeting of the Committee but three members thereof decline to sign the application, then the time shall begin to run from the date on which the third member refuses to sign the application. If no such appeal is taken, the application shall be deemed to have been abandoned by the applicant, and the action of the Committee shall be final. Upon receipt of such appeal, the Board shall fix a time and place for such hearing and notify the necessary parties thereof.

I. If any County Committeeman shall resign, become incapacitated or in the judgment of the Board has failed to fulfill the duties of his office, the Board may declare a vacancy and appoint a successor to complete the unexpired term.

J. The County Committee:

1. Shall hold meetings as needed to carry on the Committee business. The meetings may be held at the office of the County Secretary or other designated location.
2. May nominate candidates for the office of Director for the District.
3. May nominate appointees for the office of County Committeemen.
4. Shall communicate to the District any information concerning the wishes of the people of the county.
5. Shall report to the District any violations of the District Rules with the Committee's recommendations.

## **Rule 7 - Deposits and Administrative Fees**

**A.** Each application for a permit to drill a well shall be accompanied by a deposit and any administrative fee delivered to the County Secretary or other authorized person of the County in which the well or test hole is to be drilled. Said deposit and/or administrative fee shall be sent to the District office in Dumas, Texas. All or part of the deposit may be returned to the applicant by the District if:

1. The application is denied,
2. The application is granted, upon receipt of correctly completed registration and log of the well, or
3. Said permit location is abandoned without having been drilled and the applicant notifies the District requesting cancellation of the permit.

In the event neither the registration and log of the well or notification by the applicant canceling the permit is received by the District within one year after the date of application, the said deposit shall become property of the District.

**B.** Each application for a test hole permit shall be accompanied by a deposit which shall be delivered to the County Secretary or other authorized person of the County in which the application is for. Said deposit shall be sent to the District office in Dumas, Texas. The test hole permit deposit may be applied to the deposit required for a well permit application made prior to the final expiration date of the test hole permit. If an application for a well permit or permits is not applied for prior to the final expiration date of the test hole permit, the test hole deposit will be refunded subject to; the District receiving a copy of one or more well plugging reports filed with the state agency requiring this report on a test hole or test holes drilled and plugged during the time the permit was valid. The applicant or the driller has up to a maximum of thirty (30) days after the expiration of the test hole permit to file the required copies of the plugging reports with the District. If copies of the plugging reports are not received by the District, within thirty (30) days following the date the test hole permit has expired, the deposit will not be refunded.

**C.** The Board may set the amount of deposits, initiate refund policies for deposits, and set administrative fees from time to time, upon giving proper public notice.

## **Rule 8 - Issuance of Permits**

**A.** The Board shall issue, or cause to be issued, a test hole permit to explore for underground water or a drilling permit for a well, upon proper application executed and filed by the owner or his authorized agent, with the proper County Secretary, Manager of the District or other person designated by the Manager to receive same. The application shall promptly be given a number as provided in Rule 6 (b) and shall contain the following information:

1. The exact location of the well to be drilled, including the section, block, survey, or league and exact number of yards to the two nearest sections lines, property lines or other legal description, and the county in which the land is located, and statement as to the proposed use of the well to be drilled (domestic, municipal, industrial, irrigation, injection, dewatering, monitoring, or recharge).

2. The name and address of the driller or contractor and the date drilling operations are to begin.
3. A statement as to the exact location of the three closest wells and permits within one half (1/2) mile of the proposed well location, together with the names and addresses of the owners and the legal description of each location, or permit application number or District well numbers.
4. An agreement by the applicant that required information will be furnished to the District by the applicant upon completion of the well and prior to production of water therefrom.
5. If a test hole is planned, the legal description of the tract on which the test holes are to be drilled shall be stated along with the proposed date operations are to begin, the name and address of the driller or contractor, along with an agreement by the applicant that logs or plugging reports will be furnished to the District upon completion of the test hole operation if no application for a well permit or permits is filed.
6. Any other information deemed necessary by the Manager subject to the approval of the Board.

**B.** Applications shall be made to and permits must be obtained from the Board to drill and complete recharge wells, injection wells, dewatering wells, or monitoring wells. Applications therefore shall state that it is an application for a recharge well, injection well, dewatering well, or monitoring well. It shall be filed in accordance with provisions of this Rule and shall contain the information required herein for new wells insofar as is applicable. After the well has been drilled, the owner shall promptly furnish the District with a completion report.

**C.** Recharge wells shall be completed and equipped in such a manner as to protect human life and prevent pollution. The owner of such wells shall assume and shall be charged with full responsibility for the prevention of personal injury or pollution from such wells or activities.

### **Rule 9 - Requirements for Drilling, Completing, Equipping and Reworking Wells**

**A.** Complete records shall be kept and reports thereof made to the District concerning the drilling, equipping and completion of all wells drilled or reworked. Such records shall include an accurate driller's log, any electric log that has been made and such additional data concerning the description and completion of the well, its pumping capacity, and its equipment as may be required by the Board. Such records shall be filed with the District, on forms furnished by this District, within thirty (30) days after completion of the well.

**B.** No person shall produce water from any well hereafter drilled and equipped within the District, except that necessary for the testing and equipping of such well and equipment, unless or until the District has been furnished the information required by the Board on the forms furnished by the District.

**C.** No person shall drill, complete, equip or rework a well or borehole without having a current Texas Water Well Driller's license, Texas Pump Installer's license, or who fails to comply with the Rules and Regulations of the District, state or federal agencies or political subdivisions having jurisdiction, including but not limited

to the Texas Water Well Driller's Act, and the statutes creating the Texas Natural Resources Conservation Commission, all of which are incorporated herein by reference for all purposes.

### **Rule 10 - Classification, Spacing and Production Provisions**

**A.** Wells will be subject to the following classification, spacing and production provisions. All wells will be classified according to actual pumping capacity in gallons per minute (GPM) under normal operating conditions; pump column size, bowl size or casing size is not considered.

**B.** If a proposed well is of the same or larger classification as the nearest existing well, or authorized well site, the proposed well shall be located according to its actual pumping capacity:

<b>Actual Pumping Capacity Of Proposed Well (GPM)</b>	<b>Classification of Proposed Well</b>	<b>Minimum Distance From Nearest Existing Well or Authorized Well Site</b>
Less than 25 GPM	Domestic	None
25-100 GPM	A	150 Yards
Up to 400 GPM	B	250 Yards
Up to 800 GPM	C	400 Yards
Above 800 GPM	D	500 Yards

**C.** If the proposed well is of a smaller classification than the classification of the nearest existing well, authorized well site, or active test hole permit, it shall not be drilled closer than the average distance ascertained by combining the minimum distance specified for each classification and dividing the sum by 2. For example, a proposed class A well could not be placed within 275 yards of an existing class C well or authorized well site.

**D. Production Provisions:**

The maximum pumping capacity for a tract of land shall not exceed five (5) Gallons Per Minute (GPM) per acre.

1. The determination for the approval of a well permit application will be calculated based on the number of acres of water rights a person has ownership of within each individual section of land.
2. A person's ability to apply for and receive a permit to drill and produce a well is dependent upon the total gallons per minute per acre currently being produced or proposed to be produced from wells or authorized well sites in existence on each section of land at that time.
3. A person's right to continue to produce a well or wells under this rule is dependent upon maintaining the ownership of water rights sufficient to produce the volume of groundwater specified in the permit or permits and other Rules of the District. A conveyance of any portion of the water rights could result in non-compliance with Rules of the District.

**E.** It shall be considered to be a fraud upon the District and on the adjacent landowners and or owners of water rights for any person to willfully give erroneous information on a well permit application. If any operator willfully produces a well at a higher rate than represented in the well permit application and/or approved in a permit, such action may be enjoined by the Board.

## **Rule 11 - Depletion**

### **Section I. Acceptable Decline Rate**

**A.** The District may restrict the production from any well or wells within the District, that are depleting the groundwater at a rate greater than an amount determined to be an allowable decline, as determined by the Board.

**B.** The Board shall determine the acceptable decline rate (expressed as a percent) for the District.

1. The acceptable decline rate shall be set by the Board and become effective January 1, 1997.
2. The acceptable decline rate shall be set by the Board at a regular or special meeting of the Board and shall be an item on the posted agenda.
3. The Board may not change the acceptable decline rate for a period of ten (10) years after the rate has been set unless the following conditions are met:
  - a. Petitions are presented to the Board from each county within the boundaries of the District signed by at least fifty (50) owners within each county or 300 owners within the District requesting a change in the acceptable decline rate and a public hearing is held to receive comment concerning the changing of the acceptable decline rate; or
  - b. The Board determines on its own motion that a change in the acceptable decline rate should be considered and holds one or more public hearings within the District to receive comment concerning the changing of the acceptable decline rate; and
  - c. The Board finds that a change in the acceptable decline rate is feasible and practicable, that it would benefit the owners within the District, and that it would be a public benefit to change the rate for the remaining time of the ten (10) year period.
4. On or before the end of the ten year period following the setting of the acceptable decline rate the Board shall review groundwater information within the District and consider changing the acceptable decline rate for the District which will become effective at the end of the current ten (10) year period and will remain in effect for the next ten (10) year period, subject to provisions in Section I. B. 3.

**C.** The Board, in setting the Acceptable Decline Rate, shall review information concerning the groundwater information throughout the District. This information shall be available for public review and shall include the following:

1. Depletion maps for the previous year.
2. The current saturated thickness map of the District.
3. The actual water level measurements and the actual average water level decline for the District for the previous year.
4. The previous five and ten year actual average water level decline for the District.
5. Any additional information the Board may require, due to new technology or procedures.

## **Section II. Depletion Study Area**

**A.** Annually the Board shall review the information described in Section I. C. If the Board determines that an area or areas have exceeded the acceptable decline rate for the District it may delineate a proposed study area or areas. The area delineated shall be called a "Depletion Study Area"(DSA).

1. A DSA shall contain not less than 10 contiguous sections.
2. The DSA will be delineated based on the following determinations using the current saturated thickness map of the District, the actual water level decline information for the previous year, the five and ten year average actual water level decline for the proposed DSA and any additional information made available due to new technology or procedures:
  - a. The assigned saturated thickness and water level declines for each section within the proposed DSA shall be determined at the center of the section.
  - b. The assigned depletion rate will be determined for each section within the proposed DSA at the center of the section using the information in Section II. A. 2. a.

**B.** If the Board delineates a proposed "Depletion Study Area"(DSA) or expansion of a DSA it shall notify the well owners, land owners, and owners of water rights within the proposed delineated area or areas of the intent to delineate the area as a DSA and the time and place a public hearing is to be held to receive comment concerning the intent to delineate an area as a DSA. After the Public Hearing the Board shall within 30 days take action concerning the delineation of a DSA.

**C.** If the Board delineates a "Depletion Study Area"(DSA) the following information will be collected by the District from as many additional wells located within the DSA as required by the Board and the results reviewed by the Board annually:

1. Water level measurements and production records. These measurements shall be made as soon as possible to establish a static base for water level elevation and production volumes from within the DSA. Water level measurements from these same wells shall be taken the following year and compared to the production records to establish a relationship between the rate of decline for each well in relation to the volume of water produced.
  - a. Water level measurements shall be a measurement from the land surface to the water level within active wells, abandoned wells and monitor wells within the DSA.
  - b. Production records shall be the amount of groundwater produced from active water wells capable of producing 25,000 gallons or more per day within the DSA. The production records shall be the total water produced for a period of not less than 12 consecutive months. The production records may come from:
    - (1) Equipment installed by the District which will record gallons produced per minute and also total gallons produced,
    - (2) Equipment installed by the District which will record hours of operation and gallons per minute measurements recorded for not less than one hour each month of operation for not less than 12 consecutive months and calculated to total water produced, or

(3) Production records recorded by the entity operating the well provided the equipment used is approved by the District and may be one of the two methods listed above.

c. Determine specific yield of the aquifer using water level measurements, production records, and other hydrologic information from within the DSA.

2. Environmental events which have occurred or are occurring within the DSA.
3. Additional wells drilled within the DSA prior to the delineation or wells drilled after the delineation.
4. Change in water use practices or programs.
5. Any other information which may relate to the cause for the DSA delineation.

D. Each succeeding year after the Board has delineated one or more "Depletion Study Areas"(DSA's) it shall continue to collect and review information identified in Section II. C. concerning each DSA and shall make one of the following determinations:

1. Continue to monitor the area.
2. Determine the area should not be identified as a DSA and additional monitoring is terminated.
3. Propose an expansion of the DSA to include an additional area or areas adjacent to the DSA. In which case the Board is required to follow the provisions of Section II. B.
4. All or part of the area is exceeding the acceptable decline rate for the District.

The Board shall notify the well owners, land owners, and owners of water rights within the DSA of their decision.

### **Section III. Strategic Conservation Depletion Area (SCDA)**

A. If the Board determines that part or all of the area within a "Depletion Study Area"(DSA) is exceeding the acceptable decline rate for the District it may delineate a proposed "Strategic Conservation Depletion Area"(SCDA). This determination shall be based upon the information collected from within the DSA under Section II. C.

B. If the Board delineates a proposed "Strategic Conservation Depletion Area"(SCDA) it shall notify the well owners, land owners, and owners of water rights within the proposed delineated area or areas of the intent to delineate the area as a SCDA and the time and place a public hearing is to be held to receive comment concerning the intent to delineate an area as a SCDA. After the public hearing the Board shall within 30 days take action concerning the delineation of a SCDA.

C. When the Board delineates a "Strategic Conservation Depletion Area"(SCDA) the Board may require:

1. All wells located within a SCDA, capable of producing 25,000 gallons or more per day, to be equipped with a District approved meter or measuring device.
2. Production limits on the well or wells located within the SCDA to an assigned volume of water produced based on the acres of water rights owned by each individual entity within each defined



section, calculated on the Boards acceptable decline rate, the average saturated thickness, and the average specific yield of the aquifer within the SCDA.

- a. The volume of water which may be produced shall be set by the Board.
- b. The volume allowed shall be an amount which will, in the Boards opinion, bring the area within the acceptable decline rate. However, the annual maximum amount allowed shall not be reduced below a calculated volume equal to one and one half (1 1/2) acre feet per acre of water rights owned within each defined section of the SCDA
- c. The Board may increase the volume of water which may be produced within the SCDA annually; however, it may not lower the limit set for a period of five years from the date the limit was set or changed. The Board may increase the production allocation on a temporary basis due to conditions the Board feels is beyond the control of the water users. This temporary change in production allocation is for a period of one year or less and can be extended by the Board annually.
- d. The Board shall consider each owners special or unusual water needs when setting production limits.

3. Limitation of additional water well drilling within the SCDA.

**D.** If the Board identifies and delineates an area as a "Strategic Conservation Depletion Area"(SCDA) it shall within 60 days determine the volume of water each section within the SCDA may produce and notify the well owners, land owners, and owners of water rights within SCDA of their annual production allocation.

**E.** Within 120 days after the Board has delineated a SCDA all owners or operators of wells within the SCDA install a District approved meter or measuring device.

**F.** Owners or operators of wells within an "Strategic Conservation Depletion Area" (SCDA) shall provide the District with reports of the amount of water produced from each well they own or operate on forms provided by the District and on timing intervals as required by the Board.

**G.** Owners or operators of wells within a "Strategic Conservation Depletion Area" (SCDA) may request a temporary change in the annual water allocation through a petition to the Board. The Board may grant a change in the annual water allocation on a temporary basis for an individual or for the entire SCDA should it determine the need for the change is justified and is in prudent management practices of the District. Any increase in the production allocation will be for a period of one year or less, after which time the production allocation will revert back to the original allocation.

**H.** When a "Strategic Conservation Depletion Area"(SCDA) has been identified and delineated, the Board shall annually review pertinent data and may take one or more of the following actions:

1. Make no change.
2. Change all or some of the production limits
3. Identify sections within the SCDA which may be exceeding the annual water allocation.
4. Dissolve the SCDA partially or totally.

The Board shall notify the well owners, land owners, and owners of water rights within the SCDA of their decision.

I. If within five (5) years after production limits have been removed from an area, such area is included within a Depletion Study Area (DSA), or found to be exceeding the acceptable decline rate, the Board may impose production limits without following the provisions of Section II.

### **Rule 12 - Location of Well**

After the application for a well permit has been granted, the well if drilled, must be drilled within ten (10) yards of the location specified in the permit, and not elsewhere. If the well should be commenced or drilled at a different location, the drilling or operation of such well may be enjoined by the Board pursuant to § 36.102 Texas Water Code, as now or hereafter amended.

### **Rule 13 - Reworking or Replacing a Well**

A. No person shall rework, re-drill or re-equip a well in such a manner that would increase the rate of production from such well which would raise the well classification without first having made an application to the District, and having been granted a permit by the Board, to do so. Nor shall any person replace a well without a permit from the Board. A replacement well, in order to be considered as such must be drilled within fifty (50) yards of the old well and not elsewhere. It must not be located toward any other well or authorized well site unless the new location complies with the spacing requirements set out in Rule 10; otherwise, the replacement well shall be considered to be a new well for which application must be made under Rule 5.

Immediately upon completion of a replacement well, the old well shall be:

1. Plugged and abandoned; or
2. Properly equipped in such a manner that it cannot produce more than 25,000 gallons of water per day;  
or
3. Closed in accordance with District Rule 16.

An application to rework, re-equip, re-drill or replace an existing well may be granted by the Board without notice or hearing.

B. The size or actual pumping capacity of a well shall not be hereafter changed to a larger capacity so as to increase the rate of production of a well above the maximum pumping capacity for which the well was permitted without a permit from the Board. (For example, changed from a "C" classification to a "D" classification as set out in Rule 10 B.) Such permit may be granted only after written notice to adjacent owners and owners of a well or wells within a quarter-of-a-mile from such well and public hearing, as provided in Rule 18, and after a decision by the Board that such a change will not cause unreasonable interference between wells, waste, or confiscation of property; provided that if the adjacent owners and owners of a well within a quarter-of-a-mile indicate to the Board in writing that they have no objection to the proposed change, then the Board may proceed to act on the application without a hearing; and provided that if the well is a sufficient distance from other wells to comply with spacing regulations for new wells of the desired capacity, and meets other Rules of the District the Board may proceed to act on the application without a hearing.

C. In the event the application meets all spacing requirements and other Rules of the District and no contest is filed, the Board may grant such application without a hearing.

## **Rule 14 - Time During Which a Permit Shall Remain Valid**

Any permit granted hereunder shall remain valid if the work permitted shall have been completed within one-hundred-twenty (120) days from the filing date of the application. It shall thereafter be void. Provided, however, that the Board, for good cause, may extend the life of such permit for an additional one-hundred-twenty (120) days from the termination date if an application for such extension shall have been presented to the County Committee for consideration and recommendation during the first one-hundred-twenty (120) day period. Provided, further, that when it is made known to the Board that a proposed project will take more time to complete, the Board upon receiving written application may grant such time as is reasonably necessary to complete such project. The applicant may not apply for a subsequent application for a well permit located within the minimum spacing distance of wells in Rule 10 B. until after the expiration of ten (10) days from the date on which permit expired at the end of the first one-hundred-twenty (120) day period, or if extended by the Board, at the end of the second one-hundred-twenty (120) day period, or as extended by further action of the Board. However, if the original application or a subsequent application for a well location is proposed to be located at least one-half the minimum spacing distance for the classification of the well to be drilled specified in Rule 10 B. away from the property line or section line of the adjoining property owner and meets all the other Rules of the District, the original permit may be canceled and the ten (10) day waiting period may be waived.

## **Rule 15 - Required Equipment on Wells for the Protection of Groundwater Quality**

**A.** The following equipment must be installed forthwith when a pump is installed or repaired on existing wells or when a new well is drilled, and on all wells having a chemical injection, chemigation or foreign substance unit in the water delivery system: an in-line, automatic quick-closing check valve capable of preventing pollution or harmful alteration of the groundwater. Such equipment must be installed on all other wells by January 1, 2000.

**B.** The type of check valve installed shall meet the following specifications:

1. The body of the check valve shall be constructed of cast iron, stainless steel, cast aluminum, cast steel, steel or of a material and design that provides a sturdy integrity to the unit and is resistant to the foreign substance being injected. All materials shall be corrosion resistant or coated to prevent corrosion. The valve working pressure rating shall exceed the highest pressure to which the valve will be subjected.
2. The check valve shall contain a suitable automatic, quick-closing and tight-sealing mechanism designed to close at the moment water ceases to flow in the downstream direction. The device shall, by a mechanical force greater than the weight of the closing device, provide drip-tight closure against reverse flow. Hydraulic back pressure from the system does not satisfy this requirement.
3. The check valve construction should allow for easy access for internal and external inspection and maintenance. All internal parts shall be corrosion resistant. All moving parts shall be designed to operate without binding, distortion, or misalignment.
4. The check valve shall be installed in accordance with the manufacturer's specifications and maintained in a working condition during all times in which any fertilizer, pesticide, chemical,

animal or human waste or other foreign substance is injected into the water system. The check valve shall be installed between the pump discharge and the point of chemical or foreign substance injection.

5. A vacuum-relief device shall be installed between the pump discharge and the check valve in such a position and in such a manner that insects, animals, floodwater, or other pollutants cannot enter the well through the vacuum-relief device. The vacuum-relief device may be mounted on the inspection port as long as it does not interfere with the inspection of other anti-pollution devices.
6. An automatic low pressure drain shall also be installed between the pump discharge and the check valve in such a position and in such a manner that any fluid which may seep toward the well around the flapper will automatically drain out of the pipe. The drain must discharge away from rather than flow toward the water supply. The drain must not collect on the ground surface or seep into the soil around the well casing.
  - a. The drain shall be at least three-quarter inch in diameter and shall be located on the bottom of the horizontal pipe between the pump discharge and the check valve.
  - b. The drain must not extend beyond the inside surface of the bottom of the pipe unless special provisions, such as a dam made upstream of the drain, forces seepage to flow into the drain.
  - c. The outside opening of the drain shall be at least two inches above the grade.
7. An easily-accessible inspection port shall be located between the pump discharge and the check valve, and situated so the automatic low pressure drain can be observed through the port and the flapper can be physically manipulated.
8. The port shall allow for visual inspection to determine if leakage occurs past the flapper, seal, seat, and/or any other components of the checking device.
9. The port shall have a minimum four-inch diameter orifice or viewing area. For irrigation distribution systems with pipe lines too small to install a four-inch diameter inspection port, the check valve and other anti-pollution devices shall be mounted with quick disconnects, flange fittings, dresser couplings, or other fittings that allow for easy removal of these devices.

## **Rule 16 - Covering of Wells**

Every owner or operator of any land within the District, upon which is located any open or uncovered well is, and shall be, required to close or cap the same permanently or temporarily as set forth below and in accordance with Chapter 36, Texas Water Code and subsequent changes thereto.

**A.** The District may require the owner or lessee of land on which an open or uncovered well is located to keep the well permanently closed or capped with a covering capable of sustaining weight of at least 400 pounds, except when the well is in actual use.

**B.** As used in this section, "open or uncovered well" means an artificial excavation that is dug or drilled for the purpose of exploring for or producing water from the underground water reservoir and is not capped or covered as required.

**C.** If the owner or lessee fails or refuses to close or cap the well in compliance with this Rule within 10 days after being requested to do so in writing by an officer, agent, or employee of the District; any person, firm, or corporation employed by the District may go on the land and close or cap the well safely and securely.

**D.** Reasonable expenses incurred by the District in closing or capping a well constitute a lien on the land on which the well is located.

**E.** The lien is perfected by filing in the deed records of the county where the well is located an affidavit, executed by any person conversant with the facts, stating the following:

1. the existence of the well;
2. the legal description of the property on which the well is located;
3. the approximate location of the well on the property;
4. the failure or refusal of the owner or lessee, after notification, to close the well within 10 days after the notification;
5. the closing of the well by the District, or by an authorized agent, representative, or employee of the District; and
6. the expense incurred by the District in closing the well.

Nothing in this Rule affects the enforcement of Subchapter A, Chapter 756, Health and Safety Code.

### **Rule 17 - Right to Inspect and Test Wells**

**A.** Any authorized officer, employee, agent or representative of the District shall have the right at all reasonable times to enter lands upon which a well or wells may be located within the District for the purpose of:

1. Inspecting a well or wells;
2. Determining the pumping capacity of said well or wells;
3. Read or interpret any meter, weir box or other instrument for the purpose of measuring production of water from said well or wells;
4. Collecting samples to be used in regard to groundwater quality programs;
5. Testing the pump and the power unit of the well or wells; and
6. Making any other reasonable and necessary inspections and/or tests that may be required for the formulation of groundwater information or the enforcement of the District Rules.

**B.** The operation of any well may be enjoined by the District immediately upon refusal to permit the gathering of information as provided above.

## **Rule 18 - Exception to District Rules and Final Orders of the Board**

**A.** In order to accomplish the purpose set forth in the preamble to these Rules, the Board may grant exceptions to Rules of the District. This Rule, and all other Rules of the District, shall not be construed so as to limit the power of the Board, and the powers stated are cumulative of all other powers possessed by the Board.

**B. Procedure:**

1. Any person, firm, corporation, association of persons, or other entity desiring an exception to any Rule shall file a written, sworn application with the District office in Dumas, Texas stating:
  - a. The nature of the exception requested;
  - b. The justification for granting the exception; and
  - c. Any information that the applicant deems appropriate in support of the application
2. Ten copies of any application for an exception shall be submitted to the District at its general office:  
**NORTH PLAINS GROUND WATER  
CONSERVATION DISTRICT NO. TWO**  
603 East First Street  
P.O. Box 795  
Dumas, Texas 79029-0795  
Phone (806) 935-6401  
Facsimile: 806-935-6633
3. All applications for exceptions shall be heard and considered by the Board meeting in regular or special session, within ninety (90) days after submittal. At least thirty (30) days notice of the hearing shall be given to the applicant, to known interested parties, including all governmental agencies having potential concurrent jurisdiction, and notice shall also be given to the public by appropriate notice published in a newspaper in general circulation within the District at least thirty (30) days before the date of the hearing.
4. The Board shall enter an order granting or denying an application for exception, with such conditions as it shall deem proper within sixty days (60) after such hearing.
5. Any hearing held hereunder shall be open to the public.
6. At the hearing the applicant and other interested parties, state or federal agencies or officials, will be given the opportunity to present evidence.
7. The decision of the Board shall be based upon the evidence submitted at the hearing, facts of which the Board may take judicial notice, statements and arguments.

**C.** Such exception may be granted ten (10) days after written notice has been given to the applicant and all interested parties and after a public hearing at which all interested parties may appear and be heard, and after the Board has decided that an exception should be granted. Provided, however, that if all such interested parties execute a waiver in writing stating that they do not object to the granting of such exception, the Board may thereupon proceed to decide upon the granting or refusing of such application without notice or hearing except to the applicant. The applicant may also waive notice or hearing, or both.

**D.** The orders of the Board in any non-contested application or proceeding shall become the final Order of the Board. All Orders of the Board in contested applications, appeals or other proceedings shall contain a statement that same was contested. In such event, the Order will become final after fifteen (15) days from the entry thereof and be binding on the parties thereto unless a motion for rehearing is filed under Rule 19 hereof.

## **Rule 19 - Rules Governing Protests**

**A. NOTICE OF PROTEST:** In the event anyone should desire to protest or oppose any pending matter before the Board, or desires to prosecute his appeal from the action of a County Committee, a written notice of protest or opposition shall be filed with the Board on or before the date on which such application or matter has been set for hearing, or the protestant may appear in person before the Board. For the convenience of the Board, it is urged that protests be filed at least five (5) days before the hearing date.

**B. PROTEST REQUIREMENTS:** Protests shall be submitted in writing with a duplicate copy to opposite party or parties and shall comply in substance with the following requirements:

1. Each protest shall show the name and address of the protestant and show that protestant has read either the application or a notice relative thereto published by the Board.
2. There shall be an allegation of injury to protestant which will result from the proposed action or matter to be considered by the Board.
3. If the protest is based upon a claim of interference with some present right of protestant, it shall include a statement of the basis of protestant's claim.
4. Protestant should call attention to any amendment of the application or adjustment which, if made, would result in withdrawal of the protest.

**C. CONTESTED APPLICATIONS OR PROCEEDINGS DEFINED:** An application, appeal, motion or proceeding pending before the Board is considered as contested when either protestants or intervenors, or both, files notice of protest as above set out and appears at the hearing held on the application, appeal from a County Committee motion, or proceeding and present testimony or evidence in support of their contentions or present a question or questions of the law with regard to the application, motion, or proceeding. Where neither protestants nor intervenors so appear and offer testimony or evidence in support of their contentions, or raise a question of law with reference to any pending application, motion or proceeding, the same shall be considered as noncontested.

**D.** In the event of a contested hearing each party shall furnish other parties to the proceeding with a copy of all motions, amendments or briefs filed by him with the Board.

## **Rule 20 - Rehearing**

**A.** Any person whose application is denied, whose contest is overruled or who is not granted the relief desired, may file with the Board a motion for rehearing within fifteen (15) days from the announcement by the Board

of its decision or action. The Board shall act thereon within a reasonable time. If such a motion for rehearing is final and is overruled, the order of the Board shall be final on the date the motion is overruled.

**B.** The Board may, in a proper case, find that an emergency exists and that substantial injustice will result from delay. In that event, and upon the recitation of such finding, the Order of the Board will become final on the date of the announcement of the Order by the Board, and no motion for rehearing will be considered thereon.

**C.** If an application or a contest is denied by the Board or adverse recommendations made by the County Committee, and if the applicant or contestant shall not have had and shall not have been afforded an opportunity for a hearing before the County Committee or the Board, as elsewhere provided by these Rules, the applicant or contestant shall be entitled to a hearing before the County Committee or the Board, as elsewhere provided by the Rules, an applicant or contestant shall be entitled to a hearing before the Board. A written request to the Board for such a hearing, stating such facts must be filed with the Board within the above fifteen (15) day period. If such motion is in order and is duly filed, the Board shall give notice to the applicant and all proper and necessary parties of the time and place of such hearing, and shall proceed to conduct such a hearing.

### **Rule 21 - Changed Conditions**

The decision of the Board on any matter contained herein may be reconsidered by it on its own motion or upon motion showing changed conditions, or upon the discovery of new or different conditions or facts after the hearing or decision on such matter. If the Board should decide to reconsider a matter after having announced a ruling or decision, or after having finally granted or denied the application, it shall give notice to persons who were proper parties to the original action, and such persons shall be entitled to a hearing thereon if they file a request therefore within fifteen (15) days from the date of the mailing of such notice.

### **Rule 22 - General Rules of Procedure for Hearings**

**A.** Hearings will be conducted with such notice and in such manner as the Board deems most suitable and technical rules of legal and court procedure need not be applied. It is the purpose of the Board to obtain all the relevant information and testimony pertaining to the issue before it as conveniently, inexpensively and expeditiously as possible without prejudicing the rights of applicants, protestants or other interested party.

**B. WHO MAY APPEAR:** Any interested party may appear either in person or by attorney or both in such proceeding.

**C. ADMISSIBILITY:** Evidence will be admitted if it is of that quality upon which reasonable persons are accustomed to rely in the conduct of serious affairs. It is intended that needful and proper evidence shall be conveniently, inexpensively and promptly produced while preserving the substantial rights of the parties to the proceeding.

**D. TESTIMONY SHALL BE PERTINENT:** The testimony shall be confined to the subject matter contained in the application or contest. In the event that any party at a hearing shall pursue a line of testimony or interrogation of a witness that is clearly irrelevant, incompetent or immaterial, the person conducting the hearing may forthwith terminate such line of interrogation.



**E. A STIPULATION:** Evidence may be stipulated by agreement of all parties at interest.

**F. LIMITING NUMBER OF WITNESSES:** The right is reserved to the Board in any proceeding to limit the number of witnesses appearing whose testimony may be merely cumulative.

### **Rule 23 - General Rules**

**A. COMPUTING TIME:** In computing any period of time prescribed or allowed by these Rules, by Order of the Board, or by any applicable statute, the day of the act, event of default from which the designated period of time begins to run, is not to be included, but the last day of the period so computed is to be included, unless it be a Saturday, Sunday or legal holiday, in which event the period runs until the end of the next day which is neither a Saturday, Sunday, nor a legal holiday.

**B. TIME LIMIT:** Applications, requests, or other papers or documents required or permitted to be filed under these Rules or by law must be received for filing at the District Office at Dumas, Texas, or other location or locations within the District as determined by the Board, within the time limit, if any, for such filing. The date of receipt and not the date of posting is determinative.

**C. SHOW CAUSE ORDERS AND COMPLAINTS:** The Board, either on its own motion or upon receipt of sufficient written protest or complaint, may at any time, after due notice to all interested parties, cite any person operating within the District to appear before it and require him to show cause why his operating authority or permit should not be suspended, canceled or otherwise restricted and limited, for failure to comply with the Rules, Orders or regulations of the Board or the relevant statutes of the State. The matter of evidence and all other matters of procedure at any such hearing will be conducted in accordance with these Rules of procedure and practice.

**D. REPEAL OF PRIOR RULES:** Except as they are herein republished, all of the previous Rules of the District are repealed. Any previous rule which conflicts with or is contrary to these Rules is hereby repealed.

**E. SAVINGS CLAUSE:** If any section, sentence, paragraph, clause, or part of these Rules, and Orders should be held or declared invalid for any reason by a final judgment of the courts of this state or of the United States, such decision or holding shall not affect the validity of the remaining portions of these Rules; and the Board does hereby declare that it would have adopted and promulgated such remaining portions of such Rules irrespective of the fact that any other sentence, section, paragraph, clause, or part thereof may be declared invalid.

### **Rule 24 - Enforcement of Rules**

All Rules duly adopted, promulgated and published by this District shall be enforced as provided for under Chapter 36, Texas Water Code and subsequent changes thereto.

**A.** The District may enforce this chapter and its Rules by injunction, mandatory injunction, or other appropriate remedy in a court of competent jurisdiction.

**B.** The Board may set reasonable civil penalties for breach of any rule of the District that shall not exceed the jurisdiction of a justice court as provided by Section 27.031, Government Code.

**C.** A penalty under this section is in addition to any other penalty provided by the law of this state and may be enforced by complaints filed in a court of competent jurisdiction in Moore County, Texas.

**D.** If the District prevails in any suit to enforce its Rules, it may, in the same action, recover reasonable fees for attorneys, expert witnesses, and other costs incurred by the District before the court. The amount of the attorney's fees shall be fixed by the court.

### **Rule 25 - Effective Date of These Rules**

These Rules shall become effective on October 1, 1995 at 12:01 a.m.

North Plains Ground Water Conservation District No. Two

Board of Directors

Neal Spurlock, President and Chairman

ATTEST:

Thane McCloy, Vice President and Vice Chairman

Robert Thompson, Secretary

Phil Haaland, Director

David Moore, Director

Roy Stollings, Director

Roland Wheat, Director

## APPENDIX C

### Selected References

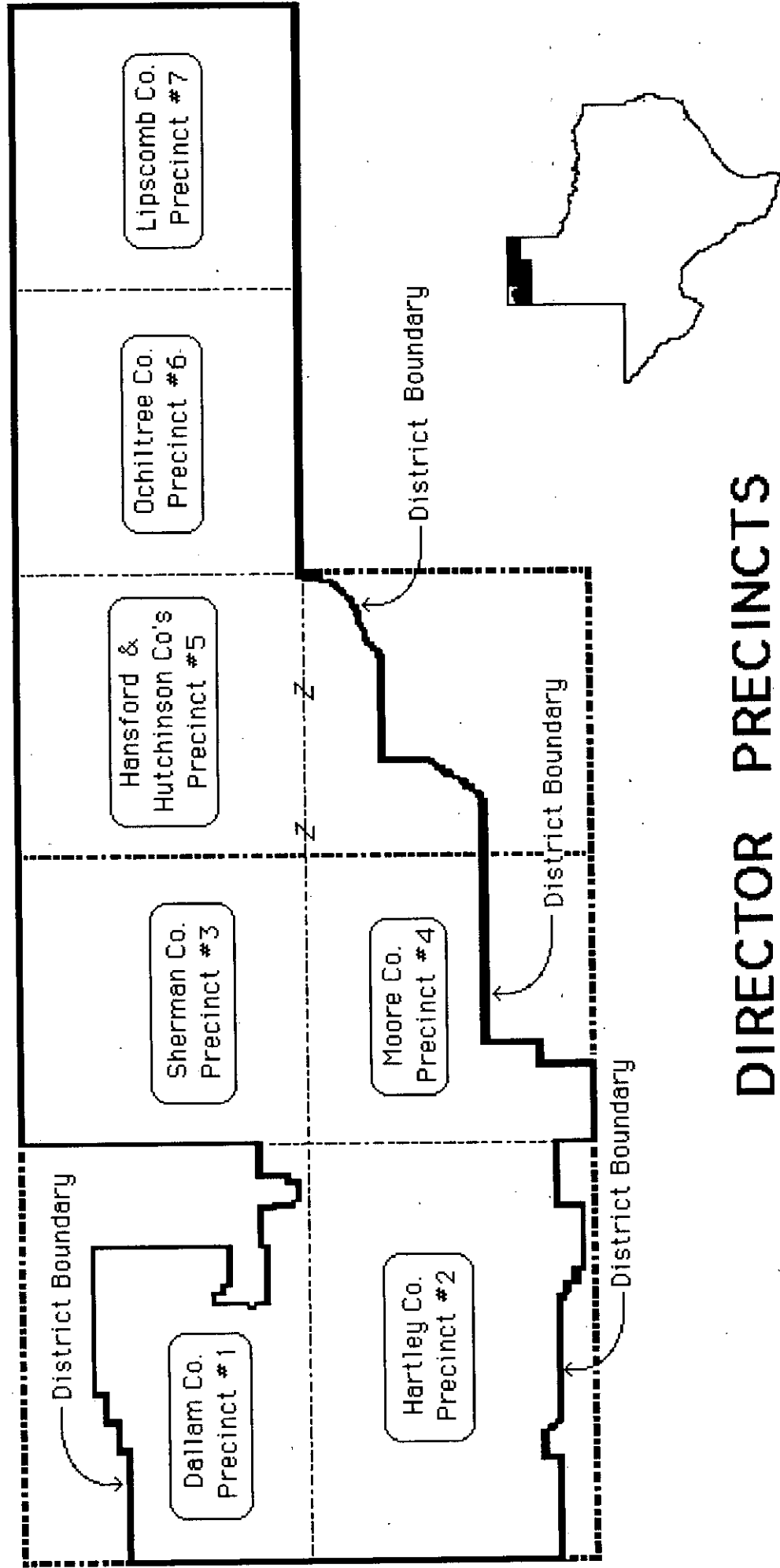
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**APPENDIX D**  
**MAPS OF THE DISTRICT**

**Director Precincts**

**District Boundary**

# NORTH PLAINS GROUND WATER CONSERVATION DISTRICT No. TWO



DIRECTOR PRECINCTS

# NORTH PLAINS GROUNDWATER CONSERVATION DISTRICT

## NO. TWO

