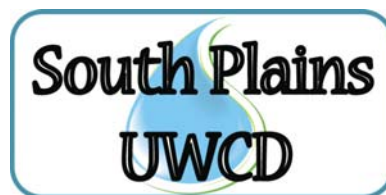


**Annual Report
to the
Board of Directors
on
Attainment of Management Plan Goals
and
Selected Activities
of the

South Plains Underground
Water Conservation District**



Fiscal Year 2008

September 1, 2007 through August 31, 2008

**PO Box 986
Brownfield, TX 79316
806-637-7467**

South Plains Underground Water Conservation District

Board of Directors

<u>Name</u>	<u>Representing</u>	<u>Term Ends</u>
Doyle Moss, President	Precinct 1	May 2012
Scott Hamm, Vice-president	Precinct 4	May 2008
Matt Hogue, Secretary	Precinct 2	May 2008
Larry Yowell, Member	Director-at-Large	May 2012
Dan A. Day, Jr., Member	Precinct 3	May 2012

Report Prepared By

Jason Coleman
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District Mission Statement

The South Plains Underground Water Conservation District will develop, promote, and implement management strategies to provide for the conservation, preservation, recharging, and prevention of waste of the groundwater resources, over which it has jurisdictional authority, for the benefit of the people that the District serves.

Introduction and Overview

SB 1, 75th Texas Legislature (1997), requires groundwater conservation districts governed by Chapter 36, Texas Water Code, to submit management plans for certification by the Texas Water Development Board. The management plans must specifically address the following management goals as applicable:

1. provision for the most efficient use of groundwater
2. control and prevention of the waste of groundwater
3. control and prevention of subsidence
4. conjunctive surface water management issues
5. natural resource issues
6. drought conditions; and
7. conservation

The management plans must also identify the performance standards and management objectives under which each district will operate to achieve their management goals.

The current Management Plan of the District was developed during the spring and summer of 2003. After notice and hearing, the Board of Directors officially adopted the plan on September 9, 2003. The plan became effective on September 9, 2003 and was certified by the Texas Water Development Board on November 7, 2003.

This annual report is a review of the District's activities for fiscal year 2008 and an evaluation of the District's performance in meeting its goals and objectives.

Report on Attainment of Goals

Goal 1.0 Encouraging the most efficient use of groundwater

Management Objective 1.01—Water Level Monitoring

During the winter of 2008, a total of 144 wells were measured (138 Ogallala and 6 Edwards-Trinity (High Plains)). Of this total, 143 of the 144 wells from 2007 were measured. One of the wells measured in 2007 was not accessible this year due to being destroyed or plugged. However, 1 new well was added to the network

Performance Standards

1.01a—99% of measurement wells from the previous year were again measured (143 of 144). 1 of the wells had been destroyed.

1.01b—100% of wells had field notes written

1.01c—144 water level measurements entered into database

1.01d—144 wells in network

1.01e—1 replacement Ogallala well added

Management Objective 1.02—Technical Field Services

79 requests for Technical Field Services were fulfilled in 2008. This is 2 more than the 77 requests in 2007. April was the busiest month for flow tests, when 28 tests were performed.

A number of tests were made for prospective land buyers.

Performance Standards

1.02a—79 field service requests were fulfilled

1.02b—95 tests were entered in database. Some of the results were from previous years.

Management Objective 1.03—Laboratory Services

The total number of lab tests performed for producers in 2008 was 61. This is higher than the 50 tests run in 2007. These requests concern the suitability of irrigation water for certain crops.

Also, 31 bacteria tests were run in 2008, compared to 16 in 2007. Sixteen of the tests were positive for either coliform or e-coli bacteria.

Performance Standards

1.03a—92 lab service requests were fulfilled

1.03b—92 records entered in database. Some of the results were from previous years.

1.03c—92 results were reported to constituents. There were two tests performed for wells not located in the district.

Management Objective 1.04—Research and Demonstration

The District participated in four research/demonstration studies during FY 2008.

1. The first research opportunity was conducted with the Bureau of Economic Geology. The Bureau drilled bore holes to study recharge at 3 sites in the District. The District selected the sites based on criteria established by the BEG, and also assisted the researchers by gathering water samples from the corresponding irrigation systems.

2. The District cooperated with the High Plains UWCD in the trial of new furrow imprinters (or dikers). The main objective concerned an analysis of the furrow imprinter performance in sandy soil types. Although the dry weather conditions limited opportunities for trials, a few fields were available during the testing period. Photos of the units and their performance are included in Appendix A.
3. For the second year, the District cooperated with three producers who installed irrigation metering telemetry. A number of improvements were observed during the second year of evaluation. The reliability of the reports and alerts increased this season. Also, a huge improvement was observed concerning the calculated distribution of irrigation where multiple crops are grown. Two such reports are included in Appendix B.
4. Two water level recorders were installed in the District with the cooperation of the landowners. One of the wells is Ogallala, and the other is Edwards-Trinity (High Plains). District staff have acquired the data each month and presented it at Board meetings.

Performance Standards

1.04a—The District participated in 100% of the research and demonstration project opportunities

1.04b—A record of these opportunities is noted in the Board’s minutes

Management Objective 1.05—Center Pivot Inventory

A center pivot inventory was conducted during 2008. During this process, 1,392 pivots were counted. Approximately 681 of these have LEPA spaced outlets. The last time the physical inventory was performed in 2003, there were 1,404 pivots, and approximately 650 of them had LEPA spaced outlets.

Performance Standards

1.05a—Approximately 1,392 pivot systems counted

1.05b—Approximately 49% of pivots inventoried had LEPA spaced outlets

1.05c—1,392 pivots, 35 side rolls, 2 row water, and 15 drip type irrigation systems are entered in District’s database

Goal 2.0

Controlling and Preventing Waste of Groundwater

Management Objective 2.01—Well Permitting and Completion

Since March 1993, the District has issued over 1,940 permits. The number of permits issued during 2008 was 101. This is higher than the 72 issued in 2007. February had the highest number of permits issued, which was 28.

Also, 106 wells were inspected during 2008 to insure proper completion and spacing.

Performance Standards

2.01a—101 permits issued

2.01b—106 well sites inspected

2.01c—12 well sites failed to meet completion standards

Management Objective 2.02—Open, Deteriorated or Uncovered Wells

Open or uncovered wells are discovered in one of two ways:

1. a person reports it to the District office, or
2. District staff discovers the well during a field visit

No open, deteriorated or uncovered wells were reported to or discovered by District staff during 2008.

Performance Standards

2.02a—0 open, deteriorated or uncovered wells reported to the District

2.02b—N/A

2.02c—N/A

2.02d—N/A

2.02e—N/A

Management Objective 2.03—Maximum Allowable Production

No instances of a maximum production violation were discovered this year

Performance Standards

2.03a—N/A

2.03b—N/A

2.03c—N/A

Management Objective 2.04—Water Quality Monitoring

Water quality samples were taken from 90 wells during the summer of 2008. The samples were tested for conductivity, total dissolved solids, chlorides and nitrates. The 2007 water quality map was posted for viewing and printing on the District’s web site.

Performance Standards

2.04a—91 samples collected and analyzed

2.04b—87% of wells sampled in 2006 were sampled in 2008

2.04c—Water quality maps were made available to the public

2.04d—91 test results were entered in database.

Goal 3.0

Public Education and Information

Management Objective 3.01—Classroom Education

During 2008, book covers were distributed to all schools in the District. Presentations on water conservation were given to all 4th and 5th graders in the District.

Performance Standards

3.01a—N/A

3.01b—4,500 book covers distributed

Management Objective 3.02—Newsletter

Four editions of the District’s newsletter, *South Plains Groundwater News*, were published during 2008. The May edition of the newsletter contained a history of water level measurements from the District’s network of water level measurement wells. Also included was a map of the District showing all of the measurement well locations.

Performance Standards

3.02a—Four newsletter editions were published

3.02b—3,782 newsletters were distributed

3.02c—Six articles addressed methods of enhancing and protecting the quantity of useable quality groundwater

Management Objective 3.03—News Releases

Eleven news articles were published in the *Brownfield News* during 2008. These articles addressed the District's cost-in-water depletion program, the District's flow meter program, the Ogallala Aquifer, and articles prepared by the Education Coordinator. The District's web site was also utilized to post news releases.

Performance Standard

3.03—Eleven news releases were prepared for publication in the local newspaper

Management Objective 3.04—Public Speaking Engagements

The District fulfilled 6 public speaking engagements during 2008. These included:

- Update on water levels and water quality at the 2008 South Plains Ag Conference
- One presentation was made to approximately 180 4th and 5th graders at Kids, Kows & More in October.
- Presentations were given at all three schools in May regarding the Conservation Calendar Art Contest
- A report on the Education Cooperative was given to the Texas Water Conservation Advisory Council in Austin

Performance Standard

3.04—Six programs were presented to protect and enhance our groundwater

Management Objective 3.05—Printed Material Resource Center and Technical File

Forty-two (42) different publications are displayed in the reception area of the office. These publications are obtained from various sources, including the TWDB, the USGS and the Texas Ag Extension Service. District staff have developed five of the brochures.

121 items were distributed from the resources center. 7 of these items were related to irrigation water quality.

Performance Standards

3.05a—There were 21 items on conservation, 26 on rules, 18 on permitting, 7 on water quality and 34 on general information procured by the public from the resource center

3.05b—No items were requested from the District's technical file

Goal 4.0

Drought Condition Information

Management Objective 4.01—Rain Gages

The District maintains a network of 33 rain gages. The readings from the rain gages are gathered monthly and rainfall maps are published on the District's web site. District staff notifies the local newspaper when new rainfall maps are published.

Performance Standards

4.01a—33 rain gages in District network

4.01b—393 monthly rain gage readings of 396 possible

Goal 5.0

Conservation Techniques and Remaining Useable Groundwater

Management Objective 5.01—Saturated Thickness Maps

The most recent saturated thickness map is from 2005. No additional saturated thickness map is required until 2010.

Performance Standards

5.01a—There are currently 3 saturated thickness maps displayed in the District office. The maps are also available on the District's web site. Real estate agents and prospective land buyers frequently request this document.

Management Objective 5.02—Conservation Literature

Seventeen publications displayed in the reception area of the office are devoted to water conservation for the home and the farm.

Performance Standards

5.02a—17 publications are dedicated to water conservation

5.02b—21 items were obtained by the public in 2008

SPUWCD WEATHER MODIFICATION PROGRAM

The District participated in the Southern Ogallala Aquifer Rainfall Enhancement (SOAR) program during 2008. This was the eleventh year the District has participated in weather modification. The target area contains 3 groundwater districts in Yoakum, Gaines and Terry Counties. The Sandy Land UWCD administered the program operations, and the South Plains UWCD recorded rainfall data and supplied the monthly rainfall contours for the program.

The program started May 1 and ended August 31. The District's network of rain gages averaged 10.04 inches May through August, compared to 12.11 inches for the same period last year. The cost of the 2008 program was about \$18,200.

IRS COST-IN-WATER DEPLETION PROGRAM

2008 was the ninth year the South Plains Underground Water Conservation District participated in the IRS cost-in-water depletion program. This program benefits irrigated landowners who have experienced a cash loss due to declining water levels. The program was considered a success, as 77 landowner requests were processed, including 7 new requests.

SPUWCD.ORG

The District has developed and maintains a web site. The site provides education and information for District constituents, as well as people state-wide. The web site can be accessed from the Texas Alliance of Groundwater District's web site and is linked from various water district web sites. General information, hydrologic maps, rainfall information, newsletters, rules, management plan and district program descriptions are available on the site. In 2008, there were a total of 16,780 visitors to the web site.

FLOWMETER PROGRAM

2008 marks the seventh year for the District's Flowmeter Program. With the help of approximately 50 cooperators, the District reads flow meters each month during the growing season to determine water usage on various crops. Water usage for 2008 will be calculated at the end of the growing season. The following table contains a summary of irrigation water applied during previous years. The data received from the flow meter readings also helps the District calculate water efficiency in crop production.

	<u>Cotton</u>	<u>Peanuts</u>	<u>Grain</u>	<u>Wheat</u>
2002	8.44 in.	19.35 in.	6.0 in.	7.0 in.
2003	10.79 in.	19.85 in.	5.3 in.	5.87 in.
2004	7.99 in.	14.46 in.	0.49 in.	6.25 in.
2005	9.86 in.	16.59 in.	0.50 in.	3.42 in.
2006	14.09 in.	20.51 in.	7.03 in.	5.71 in.
2007	6.52 in.	13.36 in.	9.16 in.	3.34 in.
Average	9.62 in.	17.35 in.	4.75 in.	5.26 in.

JOINT PLANNING

As required by the Legislature, the members of GMA #2 met during 2007 and discussed several issues, including delineation of aquifer subdivisions, differing uses and supplies of groundwater across the management area, and minor aquifer GAMs. District staff is continuing several studies to help the Board with the goal of defining a desired future condition for the applicable aquifer(s). These studies include analysis of water level changes and historic water usage. Currently, the GMA has pending model requests with the TWDB. The GMA #2 members hope to have a DFC adopted for the Ogallala during the early part of 2009.

PUBLIC EDUCATION

In 2007, the District joined Llano Estacado UWCD, Permian Basin UWCD and Sandy Land UWCD and hired an Education Coordinator to serve the education needs of all four districts. Through the Education Coordinator, more emphasis has been placed on education to students in the three school districts in the SPUWCD.

This year, the second annual “Water Conservation Art Contest” was conducted. Students submitted water conservation art work after hearing a presentation concerning water usage and conservation. The winning art works will be featured in a 2009 calendar to be published and distributed by the District. Approximately one hundred of the 2008 Water Conservation calendars were distributed throughout the District.

The Education Coordinator also joined with Kendrick Memorial Library to provide a learning activity during the summer. A program on the Ogallala Aquifer was presented. One hundred-fifty activity bags containing various games and coloring sheets on water conservation were presented to the children attending the library activity day.

The District presented each elementary school with a water conservation story book and gave two different books to the Kendrick Memorial Library. A water conservation website, [www.savingH₂O.org](http://www.savingH2O.org), was launched as part of the District’s public education outreach. The District also donated computer monitors and lab supplies to the Meadow School District.

The District developed an Aquifer Display to create awareness of the District’s aquifers. The display includes illustrations of the extent of the aquifers, descriptions of the formations, and cuttings samples from a water well within the District. The unit has been on display at various locations throughout the District.

OTHER ACTIVITIES

The District, as requested by TAGD, continues to serve as a representative on the USDA-NRCS State Technical Committee. The use of Farm Bill funds for conservation programs is helpful for groundwater conservation, and having representation at this level should benefit groundwater conservation districts throughout the State. In 2008, Jason Coleman attended the annual NRCS State Technical Committee meeting and gave a report to the membership of TAGD.

SUMMARY

The original legislative intent of groundwater district performance evaluations through management plan certification and auditing was to answer two main questions:

1. Is the district operational, and
2. Is the district actively engaged in achieving stated goals, objectives, and performance standards?

Without a doubt, the South Plains Underground Water Conservation District is operational and is achieving its stated goals, objectives, and standards. That is not to say, however, that there is no room for improvement.

The following are recommendations where the District could improve its service:

Management Objective	Recommendation
1.01—Water Level Monitoring	Consider expanding the number of automatic water level recorders. Evaluate the need for additional monitoring of Edwards-Trinity (High Plains) water levels.
1.02—Technical Field Services	N/A
1.03—Laboratory Services	N/A
1.04—Research and Demonstration	Investigate the feasibility of installing/cost sharing a rainwater harvesting system for a cooperator in the District.
1.05—Center Pivot Inventories	N/A
2.01—Well Permitting and Completion	N/A
2.02—Open or Uncovered Wells	N/A
2.03—Maximum Allowable Production	N/A
2.04—Water Quality Monitoring	N/A
3.01—Classroom Education	N/A
3.02—Newsletter	N/A
3.03—News Releases	N/A
3.04—Public Speaking Engagements	N/A
3.05—Resource Center/Technical File	N/A
4.01—Rain Gages	Evaluate the possibility of including a rain gage recorder at sites where a water level recorder or flow meter is installed.

5.01—Saturated thickness Maps

N/A

5.02—Conservation Literature

Work with the communities in the District and consider placing conservation literature at city offices.

Appendix A



Figure 1—Photo of the imprinter unit installed behind busters



Figure 2—Three imprinters were mounted on this lister bar



Figure 3—Impressions left by furrow imprinter run behind lister bar



Figure 4—The imprinter markings were nicely visible behind busters used during pitch out.



Figure 5—A 9-inch screwdriver is shown as a reference for the site of the furrow imprint markings



Figure 6—Photo of the imprinter markings when used on a rod weeder.

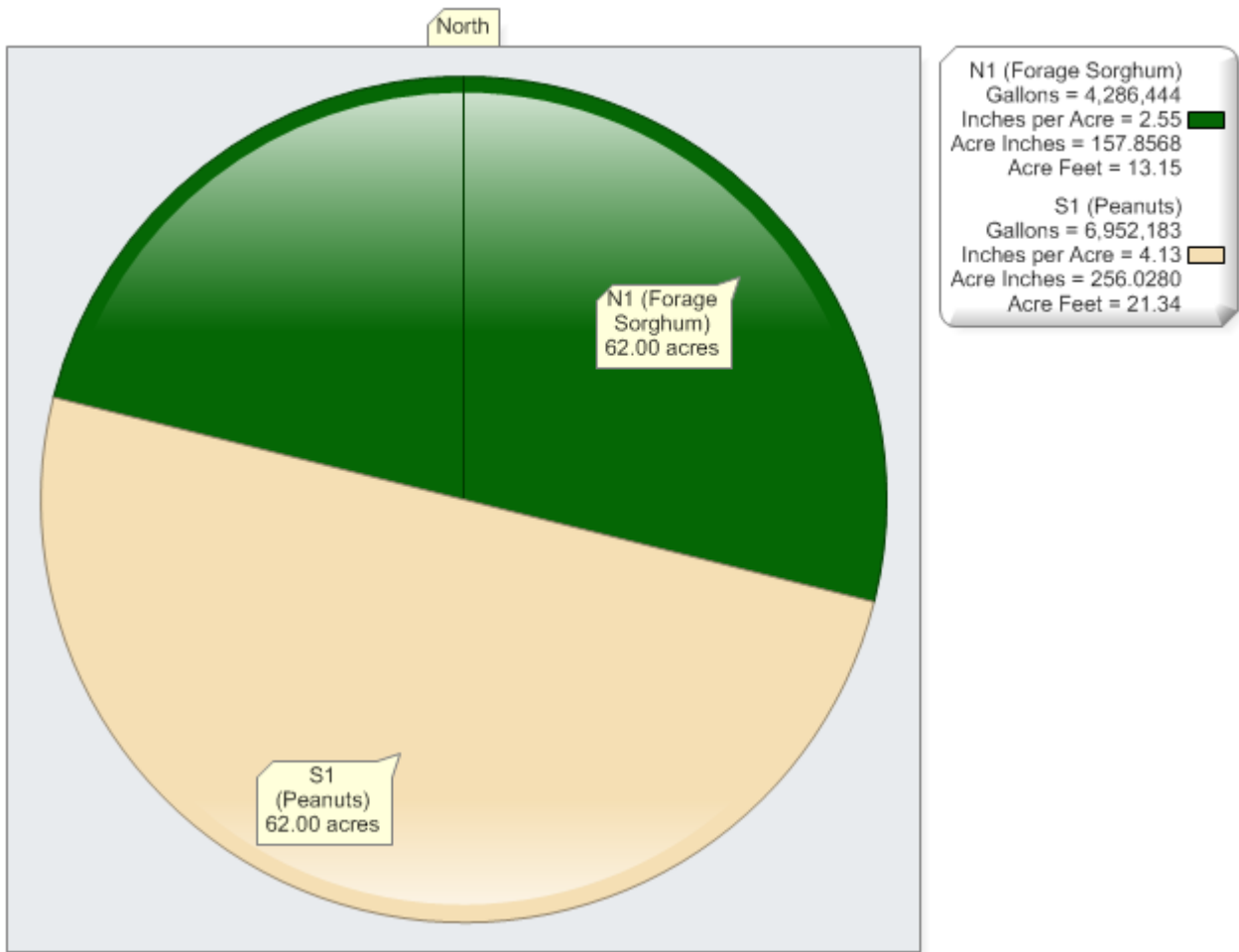


Figure 7—This is the same field shown in Figure 6, only after an irrigation application at 1 inch

Appendix B

Water Use for "Cabbiness"

Month: August Year: 2008 Avg GPM: 402 Inches per Acre: 3.3649
 Total Gallons: 11,238,628 Total Acre Inches: 413.88 Total Acre Feet: 34.49



Time Interval	Start Deg	Gallons	Acre Inches	Acre Feet	Inches
Fri, August 01, 2008	160.00	572,660	21.09	1.76	0.1715
Sat, August 02, 2008	102.00	572,698	21.09	1.76	0.1715
Sun, August 03, 2008	43.00	565,887	20.84	1.74	0.1694
Mon, August 04, 2008	343.00	561,747	20.69	1.72	0.1682
Tue, August 05, 2008	293.00	560,429	20.64	1.72	0.1678
Wed, August 06, 2008	238.00	572,790	21.09	1.76	0.1715
Thu, August 07, 2008	184.00	561,793	20.69	1.72	0.1682
Fri, August 08, 2008	128.00	392,912	14.47	1.21	0.1176
Wed, August 13, 2008	105.00	113,399	4.18	0.35	0.0340
Thu, August 14, 2008	119.00	238,924	8.80	0.73	0.0715
Fri, August 15, 2008	157.00	277,406	10.22	0.85	0.0831
Sat, August 16, 2008	186.00	190,654	7.02	0.59	0.0571
Tue, August 19, 2008	284.00	250,543	9.23	0.77	0.0750
Thu, August 21, 2008	106.00	236,184	8.70	0.72	0.0707
Fri, August 22, 2008	129.00	592,976	21.84	1.82	0.1775
Sat, August 23, 2008	185.00	596,508	21.97	1.83	0.1786

Sun, August 24, 2008	239.00	580,936	21.39	1.78	0.1739
Mon, August 25, 2008	294.00	597,994	22.02	1.84	0.1790
Tue, August 26, 2008	353.00	596,703	21.97	1.83	0.1787
Wed, August 27, 2008	54.00	592,290	21.81	1.82	0.1773
Thu, August 28, 2008	118.00	593,235	21.85	1.82	0.1776
Fri, August 29, 2008	180.00	599,985	22.10	1.84	0.1796
Sat, August 30, 2008	239.00	580,823	21.39	1.78	0.1739
Sun, August 31, 2008	291.00	234,287	8.63	0.72	0.0701

Water Use for "East Simms"

Month: August Year: 2008

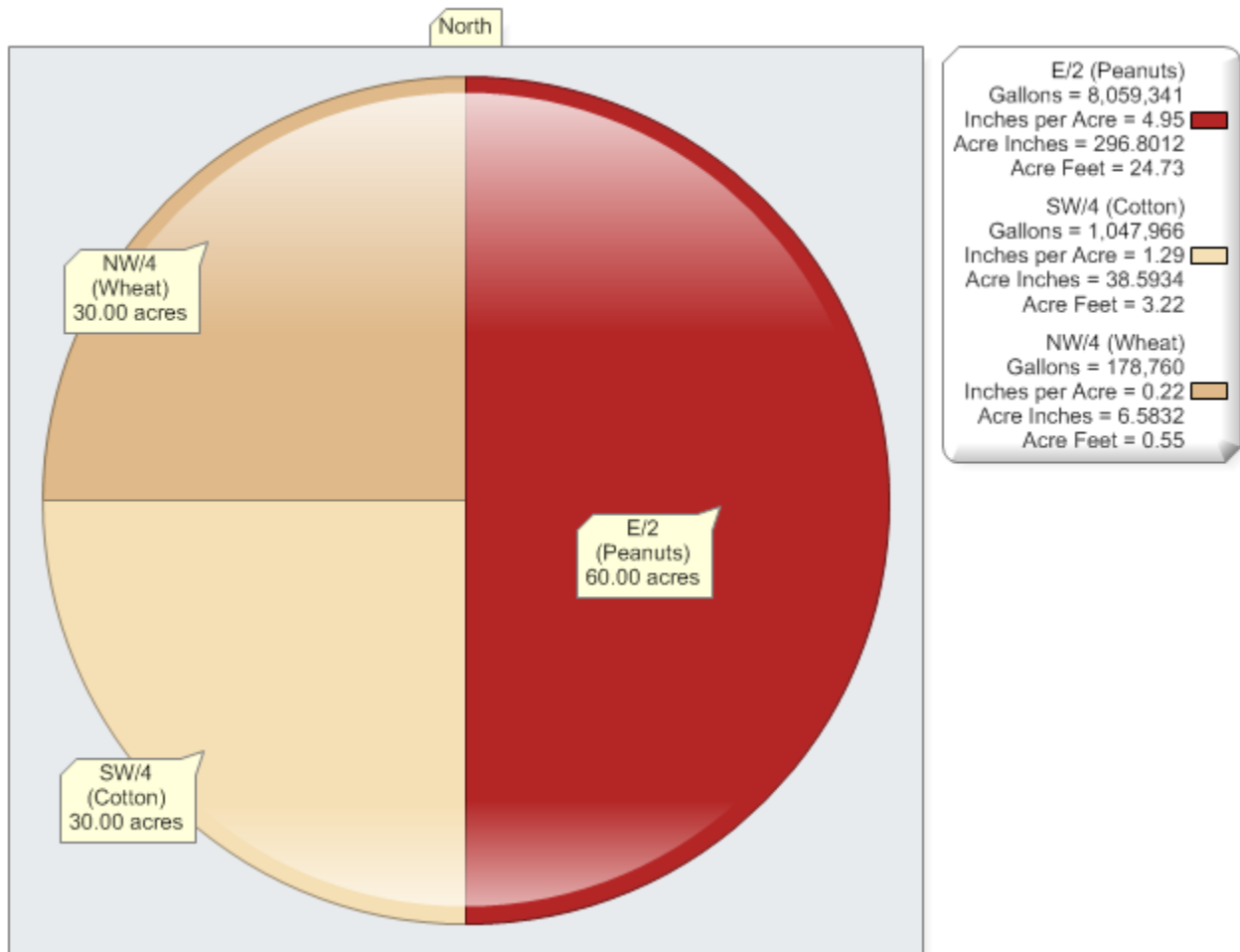
Avg GPM: 321

Inches per Acre: 2.8498

Total Gallons: 9,286,067

Total Acre Inches: 341.98

Total Acre Feet: 28.50

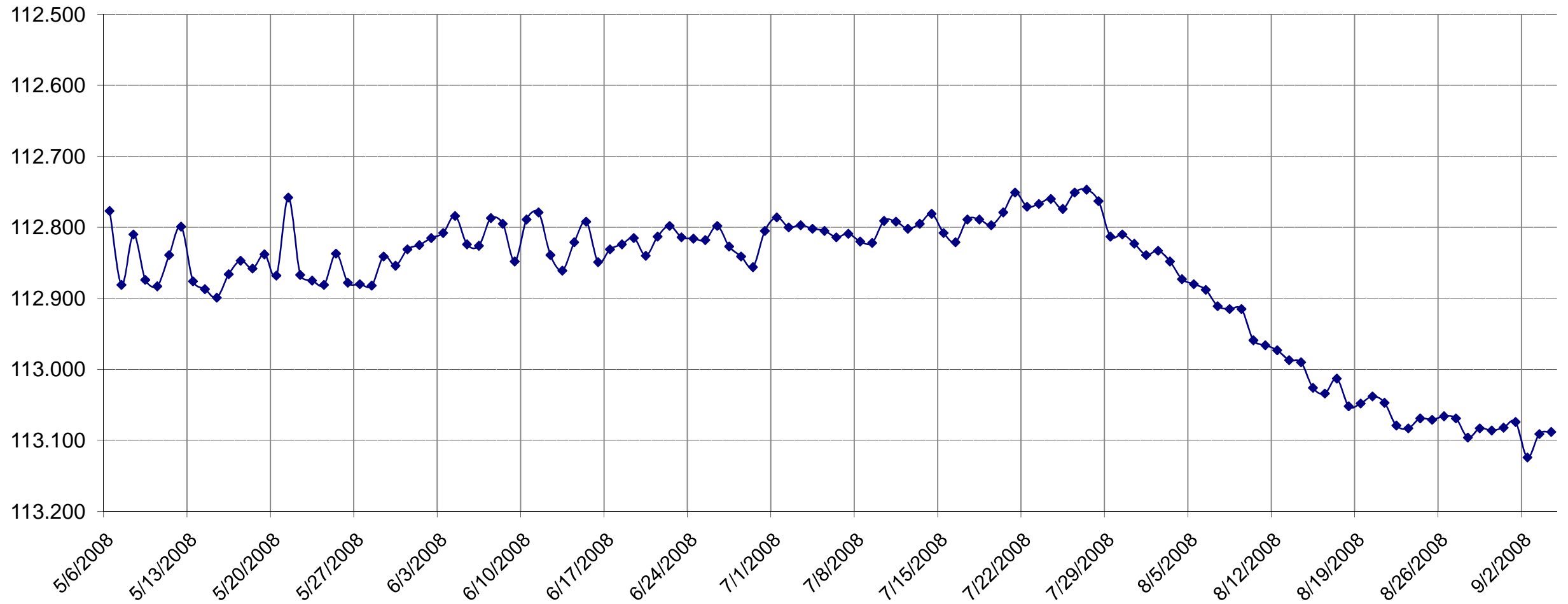


Time Interval	Start Deg	Gallons	Acre Inches	Acre Feet	Inches
Fri, August 01, 2008	165.00	197,393	7.27	0.61	0.0606
Sat, August 02, 2008	349.00	314,552	11.58	0.97	0.0965
Sun, August 03, 2008	21.00	467,870	17.23	1.44	0.1436
Mon, August 04, 2008	61.00	404,214	14.89	1.24	0.1240
Tue, August 05, 2008	91.00	491,181	18.09	1.51	0.1507
Wed, August 06, 2008	129.00	488,890	18.00	1.50	0.1500
Thu, August 07, 2008	167.00	255,747	9.42	0.78	0.0785
Fri, August 08, 2008	347.00	166,608	6.14	0.51	0.0511
Sat, August 09, 2008	15.00	498,412	18.36	1.53	0.1530
Sun, August 10, 2008	50.00	495,195	18.24	1.52	0.1520
Mon, August 11, 2008	89.00	491,653	18.11	1.51	0.1509
Tue, August 12, 2008	135.00	497,748	18.33	1.53	0.1528
Wed, August 13, 2008	179.00	490,430	18.06	1.51	0.1505
Thu, August 14, 2008	231.00	295,099	10.87	0.91	0.0906
Fri, August 15, 2008	340.00	116,978	4.31	0.36	0.0359
Sat, August 16, 2008	7.00	201,305	7.41	0.62	0.0618

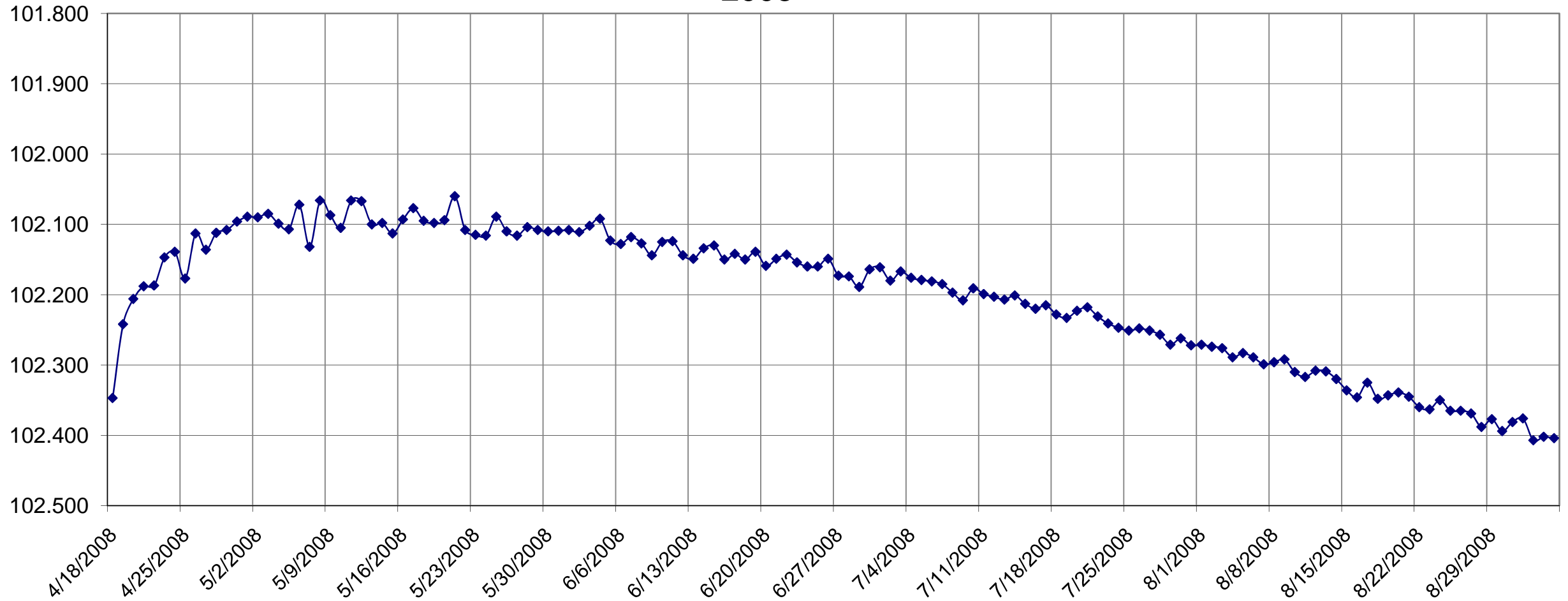
Mon, August 18, 2008	24.00	31	0.00	0.00	0.0000
Tue, August 19, 2008	24.00	150,846	5.56	0.46	0.0463
Wed, August 20, 2008	38.00	494,079	18.20	1.52	0.1516
Thu, August 21, 2008	83.00	485,665	17.89	1.49	0.1490
Fri, August 22, 2008	130.00	486,151	17.90	1.49	0.1492
Sat, August 23, 2008	176.00	174,690	6.43	0.54	0.0536
Mon, August 25, 2008	344.00	3,481	0.13	0.01	0.0011
Tue, August 26, 2008	347.00	254,661	9.38	0.78	0.0782
Wed, August 27, 2008	11.00	491,750	18.11	1.51	0.1509
Thu, August 28, 2008	68.00	495,497	18.25	1.52	0.1521
Fri, August 29, 2008	129.00	372,668	13.72	1.14	0.1144

Appendix C

24-54-3581
Depth to Water (ft)
2008



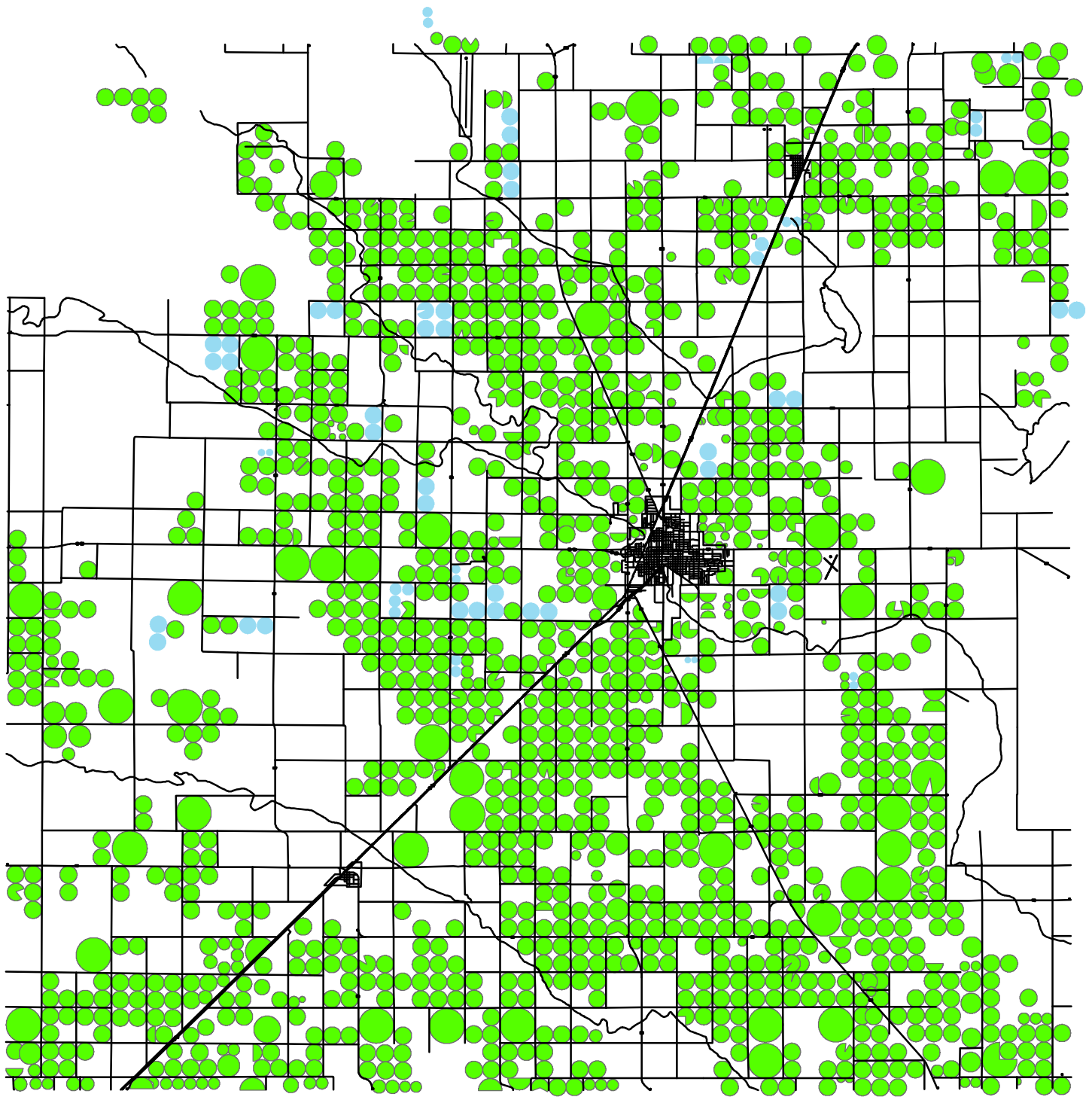
27-05-3851
Depth to Water (ft)
2008



Appendix D

South Plains Underground Water Conservation District

The 2008 survey was performed during the fall months of 2007. The final inventory shows 1392 active center pivot irrigation systems within the District, of which 31 are towable.



Legend

- Terry County Roads
- 2008 Survey Towable Center Pivots
- 2008 Survey Center Pivots

0 2.5 5 10 Miles

