



2022

# ANNUAL REPORT

**PANHANDLE GROUNDWATER  
CONSERVATION DISTRICT**

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**"Conserving Water For Future Generations"**

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# WHO ARE WE?



PANHANDLE GROUNDWATER  
CONSERVATION DISTRICT

## Mission

The Panhandle Groundwater Conservation District will strive to develop, promote and implement water conservation, augmentation and management strategies, to protect water resources for the citizens, economy and environment of the District.

## 50/50 Standard: Our Motto

We want to preserve at least 50 percent of current water supplies for 50 years from now.



Created in 1955  
by Texas  
Legislature.

Derives its  
authority from  
Chapter 36, Texas  
Water Code.

Funded by ad  
valorem taxes.

# MANAGER'S ADDRESS

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This fiscal year for Panhandle GCD was quite busy! Beginning in November of each year our Field Technicians and Hydrogeologist work on winter water level measurements. They measure around 800 wells each year to monitor the health of our District's aquifers. Typically, the demand for groundwater is less in the winter months, which is why we utilize this time for this program. The winter water level data is evaluated and mapped, and the District publishes this information each July in our July Newsletter. Also, during this time, our Field Technicians read close to 1,400 meters District-wide. It was really challenging for our staff to complete both of these programs last winter because a majority of the District was experiencing a severe drought. Many operators were watering their winter crops in December and January, due to the lack of precipitation.

In February, we hosted our 6th biennial water conservation symposium. This year we were blessed with fair weather and had around 150 attendees from all over the Texas Panhandle join us for a full day of speaker sessions. Some of the topics included the 2022 State Water Plan, Rural Land Trends and Investing in the Next Generation of Water Leaders.

In April, we kicked off our 22nd season of precipitation enhancement. Even though the drought continued most of the year, the program had a successful season completing 31 seeding missions. The precipitation enhancement program received a lot of attention this year from various media outlets and even a special visit from Texas Comptroller Glenn Hager. Comptroller Hager visited the District in September to talk about our water conservation efforts accomplished through this program.

During the summer, the District worked with a software developer to build a new database. This turned out to be no easy feat, as the District has data going back to the 1950s. But by the end of September, we had a new, user-friendly database. Our permitting department stayed very busy and processed 281 well registrations, which are for wells that pump less than 17.5 gallons per minute. We processed 42 permitted wells or wells that pump more than 17.5 gallons per minute. As of September 2022, the District had 650 operating permits on file.

The Board of Directors met eight times during the 2021-2022 year. Topics of discussions and meetings ranged from enforcement rule implementations, meter discussions, and the rainwater harvesting program. All of the minutes from board meetings can be found on the District's website at [www.pgcd.us/board-agendas](http://www.pgcd.us/board-agendas).

As always, the District welcomes you to contact us with any questions or concerns. We look forward to continue serving our area and working with you all next year!



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Reflections of  
productivity  
in 2021-2022

*Britney Butten*

# BOARD OF DIRECTORS



**Jim Thompson**  
*President*  
*Serving since 1994*



**Chancy Cruse**  
*Vice President*  
*Serving since 2013*



**David Hodges**  
*Secretary*  
*Serving since 2020*



**Charles Bowers**  
*Director*  
*Serving since 1990*



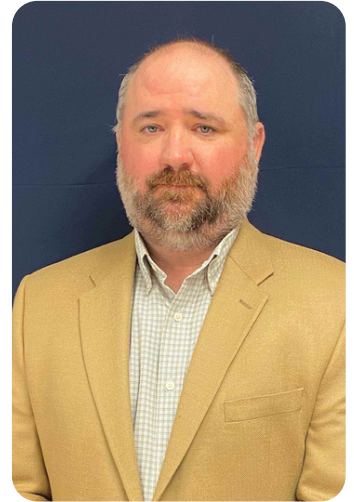
**Danny Hardcastle**  
*Director*  
*Serving since 1997*



**Bill Breeding**  
*Director*  
*Serving since 2013*



**John R. Spearman Jr.**  
*Director*  
*Serving since 2000*



**Devin Sinclair**  
*Director*  
*Serving since 2021*



**Lee Peterson**  
*Director*  
*Serving since 2021*



# DESIRED FUTURE CONDITIONS

The main purpose of a management plan is to develop goals, management objectives, and performance standards that, when successfully implemented, will work together to achieve the adopted DFCs. Goals 2 through 10 directly and/or indirectly support Goal 1. DFCs adopted for the Ogallala and Dockum aquifers by GMA 1 on November 1, 2016, and subsequently adopted by the Panhandle GCD Board of Directors on July 14, 2016, for the District are described below (note, the Blaine Aquifer in Wheeler County is now classified by GMA 1 as non-relevant for joint planning). A 50-year planning horizon was used in setting the DFCs. Throughout the joint planning process, the District actively worked with the other District Representatives and stakeholders within GMA 1 to determine the DFCs for each relevant aquifer located within each district.

## Management Objective 1.1

The cornerstone of the many programs and activities of the District is the 50/50 management Standard which drives its Rules and this Management Plan. The 50/50 Management Standard states that 50 percent of the current volume within the Ogallala Aquifer will remain in 50 years. This 50/50 Management Standard is the tool by which the District will ensure that it meets or exceeds the 50/50 DFC outlined in Rule 1, 3, and 4, which states the maximum allowable volume of pumping from the Ogallala Aquifer is 1-acre foot per acre per year. In order to ensure that the 50/50 Management Standard is being met, the District goes through an annual review process to identify and act upon Contiguous Acreage Tracts exceeding the maximum allowable volume of pumping from the Ogallala Aquifer utilizing flow meter data.

In order to complete Management Objective 1.1, the following Performance Standards will be met. Actions by the District Board of Directors that may result from this review include the enforcement actions stipulated in Rule 3.3, as required.

## Performance Standard

1.1A	Quantify all permitted pumping volumes for individual Contiguous Acreage Tracts based on flow meter readings and report to Board in Annual Report	December 1st	Presented at the July 28, 2022 Board Meeting	Completed
1.1B	Evaluate all Ogallala Aquifer measurements collected during the Water level Monitoring Program and report to the Board	August 31st	Presented at the July 28, 2022 Board Meeting	Completed
1.1C	The Board will conduct a Sunset Review to evaluate the effectiveness of the maximum allowable volume of production	Must be conducted by 01/1/25 and every 5 years after that	In Progress	To be Completed in 2025

Ogallala						
County	2020	2030	2040	2050	2060	2062
Armstrong	57,984	53,414	48,170	43,462	38,860	38,080
Carson	192,135	184,263	169,931	153,767	137,215	134,055
Donley	74,808	76,289	72,962	67,873	62,058	60,901
Gray	181,105	175,267	162,653	148,713	134,431	131,744
Hutchinson	15,734	16,740	15,156	13,324	11,742	11,455
Potter	16,969	15,820	14,442	13,162	11,836	11,609
Roberts	430,618	455,129	427,218	390,247	350,459	342,748
Wheeler	130,425	138,810	137,385	132,312	124,778	123,309
<b>District Total</b>	<b>1,099,778</b>	<b>1,115,732</b>	<b>1,047,917</b>	<b>962,860</b>	<b>871,379</b>	<b>853,901</b>

## Management Objective 1.1

The District maintains an integrated geodatabase system based on the District's Observation Well Network and computer mapping programs to annually track and evaluate current supplies by a baseline (1998) Ogallala Aquifer saturated thickness dataset in the District. This analysis is utilized to track and review changes in water supplies.

### Performance Standard

1.2A	Update Ogallala Aquifer Saturated Thickness Map on District's Website	Every 5 years	Maps were updated, sealed and approved on 2/23/21 <a href="https://www.pgcd.us/mapping">https://www.pgcd.us/mapping</a>	Completed
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## Dockum Aquifer DFCs

The Dockum Aquifer is classified by the TWDB as a minor aquifer that is present primarily in the western portions of the District and is generally under confined (artesian) conditions. Based on our current understanding of water resources in the Dockum Aquifer, DFCs have been adopted for Armstrong, Carson, and Potter counties within the District. Due to the predominantly confined nature of the Dockum Aquifer, a different approach was taken in adopting DFCs for the Dockum Aquifer. The DFCs adopted for the Dockum Aquifer in GMA 1 are that the average decline in water levels will be no more than 30 feet within the District over the next 50 years. The maximum allowable volume of pumping from the Dockum Aquifer is 1-acre foot per acre per year.

The estimates of modeled available groundwater for the Dockum Aquifer were extracted from predictive simulations performed for GMA 1 using the updated High Plains Aquifer System.

Dockum						
County	2020	2030	2040	2050	2060	2062
Armstrong	7,131	9,024	9,588	9,704	9,535	9,494
Carson	68	108	140	169	198	204
Potter	38,803	39,113	36,937	34,505	32,008	31,558
District Total	46,002	48,245	46,665	44,378	41,741	41,256

## Management Objective 1.3

While there are tens of thousands of data points collected over time relative to the Ogallala Aquifer, the opposite is the case for the Dockum Aquifer. This can primarily be attributed to dominance of the Ogallala Aquifer in the region and the general prevalence of poor water quality and yields from the Dockum Aquifer. Due to declining water levels in the Ogallala Aquifer, there are areas where the Dockum Aquifer is becoming a more important water resource. There are localized areas of good water quality and where technological advances are being made using brackish groundwater desalination. Due to the scarcity of data regarding the Dockum Aquifer, the District is primarily focused on data collection and trend analysis on wells completed in the Dockum Aquifer currently included in the District's Observation Well Network. This management objective is to monitor and report on Dockum Aquifer wells in the District's Observation Well Network that are experiencing declines for which the trend is in excess of the DFC of 30 feet.

### Performance Standard

1.3A	Report data collection and trend analysis to the Board concerning Dockum Aquifer wells within the District's Observation Well Network.	August 31st	Presented at the July 28, 2022 Board Meeting	Completed
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# MANAGEMENT OF GROUNDWATER

Throughout its history, the District has operated on the core principle (or goal) that groundwater should be used as efficiently as possible for beneficial purposes. In order to achieve this goal, the District maintains a qualified staff to assist water users in protecting, managing, and conserving groundwater resources. The Board of Directors has in the past and continues today to base its decisions on the best data available to treat all water users as equitably as possible. Once data is collected, the District utilizes a wide variety of forums to provide important information to water users throughout the District so that sound decisions regarding the efficient use of groundwater can be made. The District's Observation Well Network will continuously be reviewed and maintained in order to monitor changing storage conditions of groundwater supplies within the District. The District will continue to undertake and cooperate with technical investigations of groundwater resources within the District. The following management objectives and performance standards have been developed and adopted to collect needed information, disseminate information, and provide opportunities through the District's Agricultural Water Conservation Equipment Loan Program to ensure the efficient use of groundwater.

## Management Objective 2.1

The Observation Well Network, with approximately 850 water wells located throughout the District is continuously maintained and monitored. Wells in the Observation Well Network produce groundwater from the Ogallala Aquifer, the Dockum Aquifer, and also other minor aquifers in the area. Water levels are measured by District staff in as many wells as possible, with the management objective being to measure water levels in at least 90 percent of the wells in the Observation Well Network each year. This data is then processed for quality assurance/quality control, entered into the District's geodatabase, analyzed, mapped, and used to make decline calculations and update historic trend lines (hydrographs). Water level measurements from wells in the District's Observation Well Network are used to generate annual decline maps. The District will strive to install additional monitoring wells in locations when necessary in order to evaluate the effects of high-impact pumping operations as necessary.

## Performance Standard

2.1 A	Measure Water Levels in at least 90% of the Wells in the District's Network	April 1st	Measured 98.6% by March 29, 2022	Completed
2.1B	Prepare Annual Depletion Map and publish it in the Panhandle Water News.	July 31st	Map was prepared and published in the July 2022 Newsletter	Completed
2.1C	Prepare Ogallala Aquifer water table decline map for use in the IRS annual depletion program, provide results to participating producers.	January 31st	Map was sealed on January 24, 2022, Decline letters were mailed January 26, 2022	Completed

## Management Objective 2.2

The District encourages efficient groundwater use by continued promotion of low pressure and other efficient sprinkler systems, drip irrigation systems, and other recognized water conservation measures, which will decrease the utilization of less efficient row irrigation techniques. This will be accomplished by increasing the use of the District's Agricultural Water Conservation Equipment Loan Program, as long as TWDB Agricultural Loan Program funds are available and economically competitive. The District will enhance awareness of the loan program by utilizing local newspapers and the PWN. The District website will have information on availability of funds and guidelines for applicants. The District will strive to provide timely responses to loan applicants.

## Performance Standard

2.2A	Agricultural Loan Reminder in the Panhandle Water News	Twice a year	October 2021, January and April 2022	Completed
2.2B	Review Agricultural Loan Applications	Within 60 days	All applications were reviewed and approved by the Board within the specified timeframe.	Completed

## Management Objective 2.3

The District encourages the efficient use of groundwater by disseminating educational information regarding current best management practices and trends in water conservation for agricultural, municipal, and industrial applications. The District publishes a newsletter quarterly that contains resources for water users interested in water conservation. In addition, the District also attends and participates in public events throughout the District including the annual Amarillo Farm and Ranch Show as often as possible.

## Performance Standard

2.3A	Publish Panhandle Water News	Quarterly	October 2021, January, April, June and July 2022	Completed
2.3B	Attend the Farm & Ranch Show	Annually	November 30- December 2, 2021	Completed

## Management Objective 2.4

In order to ensure that the Board of Directors and District constituents are aware of and informed on the most current information on water conservation, groundwater management, and emerging policy issues related to groundwater resources, District staff actively participate in a broad grouping of professional associations that focus on water resource issues. District staff will report at the next available regularly scheduled Board of Directors meeting in the General Manager's Report on any activities resulting from participation with the following active affiliations:

- Texas Alliance of Groundwater Districts (TAGD)
- Texas Water Conservation Association (TWCA)
- Groundwater Management Districts Association (GMDA)

## Performance Standard

2.4A	Attend and participate in 75% of TAGD, TWCA and GMDA meetings	Annually	Attended and participated in 6 out of 8 TAGD, TWCA and GMDA meetings- 75%	Completed
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## Sod Poodles Water Conservation Night

PGCD hosted a water conservation night at Hodgetown on Sunday, July 17, 2022.

The evening started off with a ceremonial first pitch thrown by General Manager, Britney Britten. Staff members then handed out giveaways with the District's new logo and enjoyed visiting with the Sod Poodles' crowd.

At the top of the 4th inning, PGCD Board of Directors President, Jim Thompson (pictured left) participated in a radio interview focusing on the importance of water conservation and various programs that the District offers.

# MANAGEMENT OF GROUNDWATER CONTINUED

## Management Objective 2.5

The District has adopted rules that require an approved metering method on all wells producing more than 35 gallons per minute. The District believes that when a water user understands the volume of groundwater being used, they are better able to adopt best management practices that result in the efficient use of groundwater. Therefore, the District is committed to continuing the program focused on requiring a metering method for wells pumping more than 35 gallons per minute, flow meter monitoring, and data collection and analysis of water use by cop and irrigation type. To achieve this objective the District will read and record meter data from installed, registered, and accessible meters in the District annually. The information from the District's metering program will be published in the District's Annual Report. Additionally, the District will provide water-users with meter data production reports. Finally, the Board will consider meter data with respect to individual Contiguous Acreage Tracts in order to document compliance with the District maximum allowable production rate.

## Performance Standard

2.5A	Read and record flow meter data for 90 percent of installed flow meters	Annually	100% of the meters read	Completed
2.5B	Production Reports sent to water-users	September 1st (Starting in 2020)	All production reports were sent to operators by April 12, 2022	Completed
2.5C	Review and prepare revised estimates to TWDB annual agriculture water estimates	Within timeframe requested by TWDB	Requested by TWDB to be returned on August 24, 2022- re-turned to TWDB on August 24, 2022	Completed

# GROUNDWATER WASTE PREVENTION

## Management Objective 3.1

The District is continuously working to take positive and prompt action to identify and address all reported wasteful practices and instances of waste located by District Staff within the District. This effort involves the following actions to be taken by the District.

- Report each complaint to the landowner and/or operator within five working days
- Resolve the complaint and note the corrective action taken
- Report resolution of each complaint to the landowner/operator and to the Board at the next regularly scheduled meeting during the General Manager's Report

## Performance Standard

3.1A	All complaints of waste will be recorded, investigated and reported to land owner	Within 5 working days	There were no official complaints of waste this year.	Completed
3.1B	Report each complaint to board with staff recommendation & resolution	As necessary	There were no official complaints of waste this year.	Completed

# DROUGHT PLANNING

## Management Objective 4.1

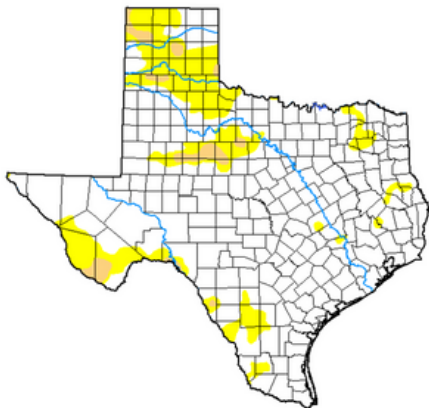
In order to provide ongoing information regarding water conditions in the District, establish and maintain links to National Oceanic and Atmospheric Administration Drought Monitor indices are on the District website.

## Performance Standard

4.1A	Update links to the NOAA Drought Monitor indices on the District's Website	Annually	<a href="http://www.pgcd.us/links">http://www.pgcd.us/links</a>	Completed
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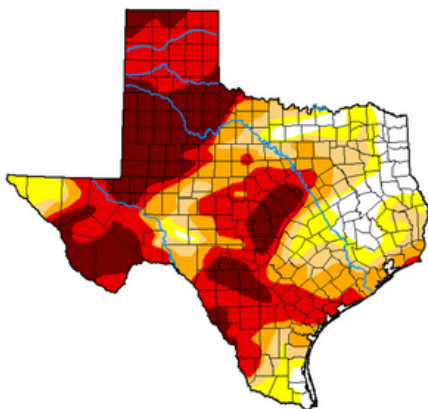
## 2022 TEXAS DROUGHT MONITOR MAPS

U.S. Drought Monitor  
Texas



September 14, 2021

U.S. Drought Monitor  
Texas



May 3, 2022

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	81.07	18.93	2.63	0.00	0.00	0.00
<b>Last Week</b> 09-07-2021	89.25	10.75	0.48	0.00	0.00	0.00
<b>3 Months Ago</b> 06-15-2021	78.04	21.96	12.44	7.64	4.47	1.16
<b>Start of Calendar Year</b> 12-29-2020	8.80	91.20	81.11	50.33	30.09	13.03
<b>Start of Water Year</b> 09-29-2020	57.35	42.65	31.96	20.91	12.02	3.29
<b>One Year Ago</b> 09-15-2020	48.79	51.21	34.16	21.75	9.88	0.78

### Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

### Author:

Brad Rippey  
U.S. Department of Agriculture



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

# JOINT MANAGEMENT EFFORTS

The Canadian River Municipal Water Authority (CRMWA) supplements member city allocations of groundwater with supplies from Lake Meredith. The CRMWA system is the largest conjunctive use water provider in the State of Texas, providing a combination of groundwater and surface water to 11 member cities. All current CRMWA groundwater supplies are produced within the boundaries of the District.

The Greenbelt Water Authority (GWA) is the second surface water user with supplies inside the boundaries of the District. GWA is now also utilizing groundwater resources from the Ogallala Aquifer. The District will communicate with regard to rules and technical data as it applies to conjunctive use within the District.

## Management Objective 5.1

In order to continually monitor the impact of declining surface-water availability on groundwater resources within the District, the General Manager or designee will participate in the Panhandle Water Planning Group (PWPG) with the two surface-water entities currently operating within the District. This activity helps facilitate regular communication and cooperation with regards to conjunctive use issues in the District.

### Performance Standard

5.1A	The district manager or designee will participate in 75% of PWPG meetings and activities	2019-2024	Participated in 100% of all meetings either virtually or in person.	Completed
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# NATURAL RESOURCE ISSUES

As part of the umbrella goal of achieving the adopted DFCs, the District recognizes that the protection of water quality is equally as important as working to ensure adequate water quantity. In order to protect the District's most important natural resource, the abundant, high quality groundwater resources, the District has for many years maintained and operated a water quality sampling program sampling different areas each summer which yields a complete set of data biennially.

## Management Objective 6.1

In order to control and prevent the contamination of groundwater, the District maintains and works to expand the groundwater quality monitoring. As part of this effort, an annual sampling program will be conducted within the District's Water Quality Network. The objective will be to sample at least 80 percent of the wells in the District's Water Quality Network on a biennial basis. Also, upon request the District will conduct analysis of water within current District sampling capabilities, including sites near oil and gas industry injection well sites.

### Performance Standard

6.1A	Sample 80% of the Water Quality Network report program status to the Board by September 1st	Biennially (spans over 2 years)	WQ 1 Management Plan Statue- 168 of 185 wells tested (90.8%), WQ2- 156 of 178 wells tested (87.6%), Total WQ 324 of 363 wells tested (89.3%).	Completed
6.1B	Record water quality data in database	Within 30 days	All data was recorded within 30 days and can be viewed in the District's database.	Completed

# CUSTOMER SERVICE

## Management Objective 7.1

Customer service is of great importance to the Board of Directors and Staff of the District. As detailed in the corresponding performance standards, the District will continue to provide timely response to customer assistance requests in the following areas:

- Pump flow tests
- Processing of well drilling permits
- Review and revision of District Rules, as necessary, to incorporate revisions required by new legislation and as necessary to achieve adopted Desired Future Conditions
- Well camera recordings

## Performance Standard

7.1A	Provide requested flow tests and enter into database	Within 5 working days	District staff work with Operators to provide flow tests in a timely and convenient manner.	Completed
7.1B	Managers action on well drilling permits	Within 10 working days after approval	All permits were reviewed and either approved, amended or denied within 10 working days	Completed
7.1C	Provide well camera service and return information to landowner within 5 working days then archive DVD to library	Provide service within 5 days of request and get info back to landowner within 5 working days	District notes the well camera equipment is not functioning correctly and has implemented new recording procedures.	Completed

# 6TH BIENNIAL WATER CONSERVATION SYMPOSIUM



Panhandle Groundwater Conservation District (PGCD), along with 23 sponsors, hosted the 6th Biennial Water Conservation Symposium on February 16, 2022. It was a beautiful day with a high number of attendees.

The District hosted 16 speakers from all over the state of Texas and one speaker from Maryland. A pertinent topic of the day was Rural Land Trends, which featured Dr. Roel Lopez, Director of Texas A&M Natural Resources Institute and Dr. Robert Mace, Executive Director of Meadows Center for Water & the Environment. Lopez and Mace explained the current rural land trends and the impact they have on groundwater and will continue to have in the future.

# 6TH BIENNIAL WATER CONSERVATION SYMPOSIUM CONTINUED

More presentations included: Brooke Paup, Chairwoman of the Texas Water Development Board, who gave an update on the 2022 State Water Plan. Randall County Master Gardener, Roger Gloe, informed attendees of the efficient irrigation practices for lawns and gardens. Floyd Hartman, Assistant City Manager and Jonathan Gresham, Director of Utilities with the City of Amarillo explained the benefits of Amarillo's Smart Meter Technology. In addition to the speaker sessions, 14 of 23 sponsors had booths with special giveaways and provided networking and educational opportunities for the attendees.

The District has been hosting a Symposium biennially since 2012. In the summer of 2011, Texas residential and agricultural water consumption increased dramatically. Watching the trend of water use rise, the need and awareness for water conservation became apparent very quickly. Now, the District continues to host a symposium every two years whether the area is under drought conditions or not. The reality is that water conservation should always be at the forefront of our minds, so it becomes second nature and not just a necessity during times of drought.

The presentations from February were recorded and are now available to view on PGCD's website and YouTube Channel.

The District hosted a speaker's dinner the night before which included the speaker's respectable guests, PGCD staff and the PGCD Board of Directors.



# PRECIPITATION ENHANCEMENT

Texas Water Code Section 36.1071(a)(7) required groundwater conservation districts to include in the management plan a goal addressing precipitation enhancement. The District has one of the longest continuous precipitation enhancement programs in the state of Texas.

## Management Objective 8.1

The District will continue to operate its Precipitation Enhancement Program throughout the planning horizon of this management plan. The program will operate within budget. A rain gauge network will be maintained and monitored to confirm precipitation enhancement results. Flight records will be collected and archived.

The program will abide by Texas Department of Licensing and Regulation requirements for testing, monitoring, and reporting in order to ensure compliance with permit guidelines. Results of the District's Precipitation Enhancement Program will be presented to the Board of Directors.

## Performance Standard

8.1A	Conduct program from April to September 30	Annually	April 1 - September 30	Completed
8.1B	Calculate the baseline costs for the program	Annually	\$0.04 per acre	Completed
8.1C	Collect and record rain gauge reading	At least quarterly	Collected in April, May, June, July, August and September 2022	Completed
8.1D	Maintain all flight records on all precipitation enhancement operations and make available for review upon request	Annually	Current Flight Tracks on our website - <a href="https://pgcd.us/flight-tracks">https://pgcd.us/flight-tracks</a>	Completed
8.1E	Provide precipitation enhancement annual report to Texas Department of Licensing and Regulation	Annually	Provided to TDLR on 12/15/2022	Completed

The PGCD Weather Enhancement Program completed its 22nd year of consecutive cloud seeding operations this past September. The 2022 campaign had a total of 24 cloud seeding days, with 31 total seeding missions. Recon flights totaled in 14, with 744 flares used.



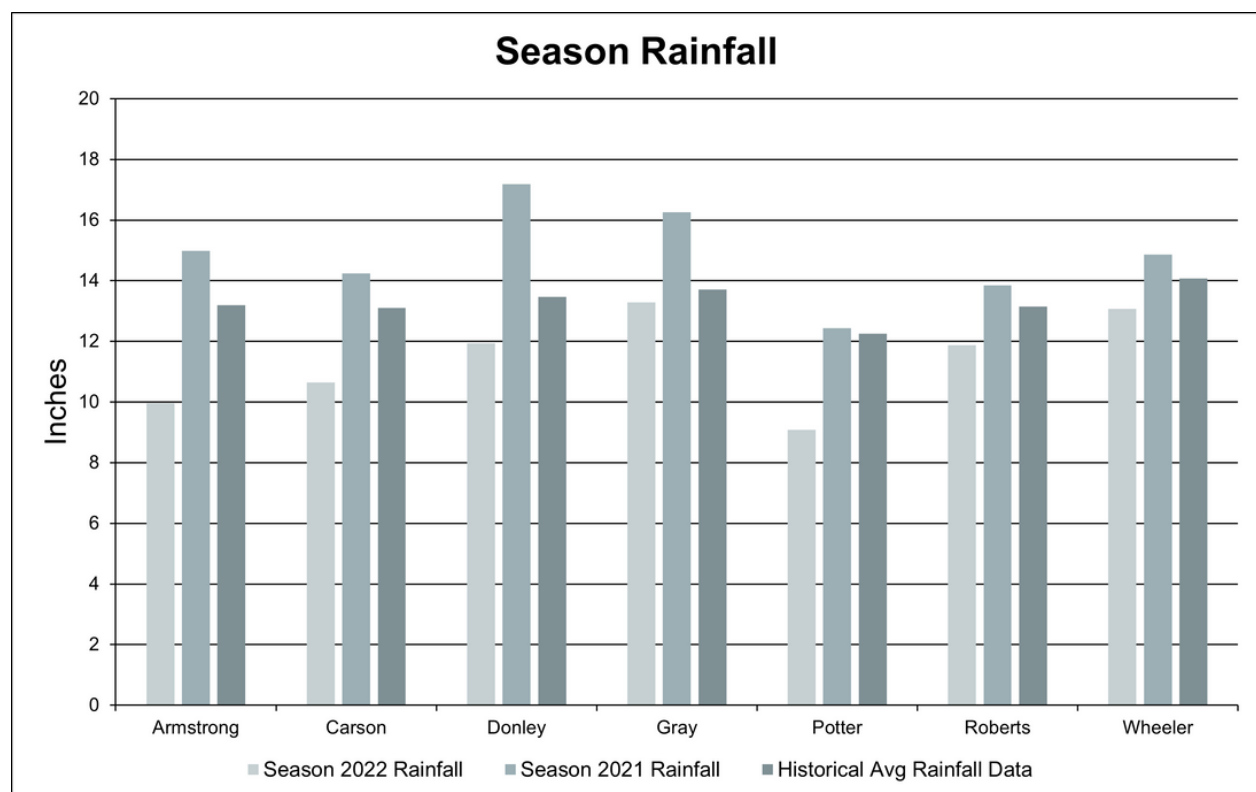
## Management Objective 8.2

Educate the public with regards to the benefits of the District's Precipitation Enhancement Program through informational articles in the PWN and local newspapers, public presentations, and program summaries in the District's Annual Report each year.

### Performance Standard

8.2A	Publish an article about precipitation enhancement in at least 2 of the quarterly issues of PWN.	Twice a year	Articles were published in the June, July and October 2022 Newsletters.	Completed
8.2B	Provide at least 1 article about the program to all local newspapers	Annually	Corey Clay provided weekend forecast to the Groom news on September 27, 2022	Completed
8.2C	At least 2 presentations to a public or civic group	Annually	Corey presented to WMA on April 27, 2022, at PGCD Kids Kamp on August 4, 2022 and to the Amarillo West Rotary on August 12, 2022	Completed
8.2D	Complete the Program Summary Report and include in District's Annual Report each year	Annually	See Table Below	Completed

2022 Program Summary	
Number of Seeding Days	24
Number of Seeding Missions	31
Number of Recon Flights	14
Total Flares Used	744
Total Program Cost per Acre	\$0.04



# CONSERVATION EDUCATION

Texas Water Code Section 36.0015 states, in part, that, "In order to provide for the conservation, preservation, protection, recharging, and prevention of waste of groundwater... Groundwater conservation districts may be created... are the state's preferred method of groundwater management through rules developed, adopted, and promulgated by a district in accordance with the provisions of this chapter." It is noteworthy that in this overview section of Texas water law addressing groundwater management that "conservation" is the first action groundwater conservation districts are to pursue. The 50/50 Management Standard can only be achieved if our groundwater resources are conserved in a manner that ensures adequate water resources will be available for future generations. While water District's programs, the following represent management objectives most focused on water conservation.

## Management Objective 9.1

Continue and expand, when possible, the District's Groundwater Conservation Education program. District staff will make presentations on the importance of water conservation to at least 5 civic organizations and in at least 30 educational settings. Annually, the District will award at least three college scholarships to students in the District based on participation in a water conservation essay competition. The District will maintain an Internet information page and launch an aggressive conservation education initiative called "Water Warriors", as well as work with other entities to present an ongoing Panhandle area water conservation symposium.

## Performance Standard

9.1A	Make at least 5 civic education presentations	Annually	Playa Festival, WISE 2021, Amarillo Farm & Ranch Show, 6th Biennial Water Conservation Symposium, Retired Teacher's Association, White Deer Home Economics Group	Completed
9.1B	Present water conservation presentation in 30 educational settings	Annually	Total for the fiscal year: 37 Schools	Completed
9.1C	Provide at least 3 scholarships (student essay competition)	Annually	Scholarships awarded to: Kollier Miller, Anthony Haiduk and Keeley Harding	Completed
9.1D	Water Warrior Presentation to at least 3 public school settings outside of school	Annually	Science Collaborative at the Discovery Center, WISE 2021, Playa Festival, Education programs at the District	Completed

# CONSERVATION EDUCATION 2021/2022



The District had a great year visiting over 35 schools, and presenting to multiple civic groups. They partnered with Texas Runs on Water and The City of Amarillo to create a mural as part of The Panhandle Runs on Water campaign. The mural, painted by Blank Spaces, depicts the story of the Panhandle's relationship with water. The mural can be seen on the Amarillo Facilities building located at 8th and Johnson.

# RAINWATER HARVESTING

Rainwater harvesting is becoming an increasingly important strategy for meeting water supply needs, especially in the more rural areas of Texas. While rainwater harvesting is one of the many topics included in the District's water conservation education programs, the following management objective and performance standards are specifically focused on rainwater harvesting.

## Management Objective 10.1

The District has established and maintains a rainwater harvesting system and provides educational tours to the public regarding the many benefits of the system. Tours of the District office rainwater harvesting system are provided upon request. A link to an informational page highlighting the rainwater harvesting system will be maintained and updated as necessary on the District's website. In addition, a link to the TWDB website on rainwater harvesting will also be maintained on the District's website.

## Performance Standard

10.1A	Webpage Highlighting the district's rainwater harvesting system and information about tours	Update annually	<a href="https://www.pgcd.us/rainwater-harvesting">https://www.pgcd.us/rainwater-harvesting</a>	Completed
10.1B	Provide a link to TWDB rainwater harvesting webpage	Update annually	<a href="https://www.pgcd.us/links">https://www.pgcd.us/links</a>	Completed



Texas Comptroller, Glenn Hegar, visited Tradewind Airport on September 20, 2022.

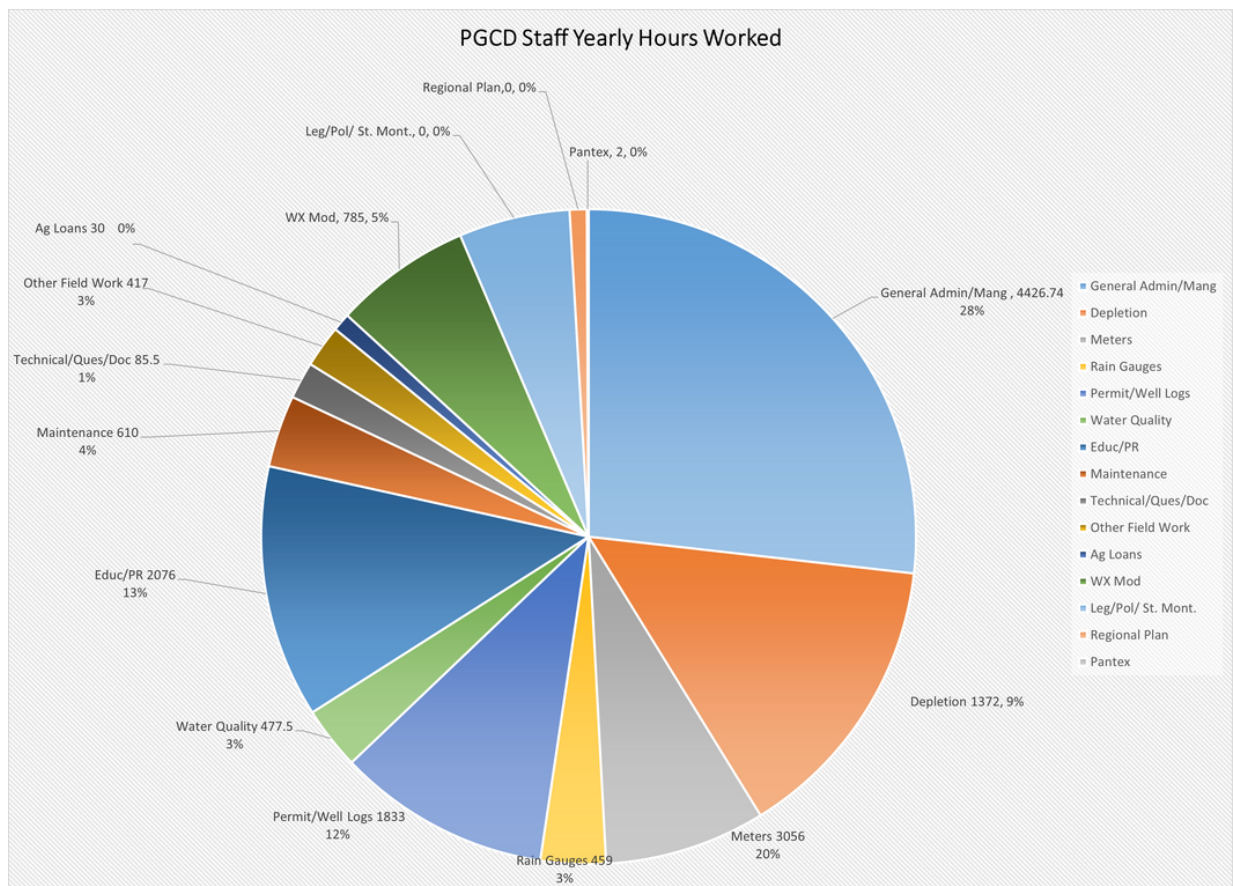
The Comptroller's visit was one of many as part of his Good for Texas Tour with a focus on maintaining and investing in Texas' water management infrastructure. The tour included visiting with the PGCD staff to talk about the various water management strategies they are implementing.

# 2021-2022 EXPENDITURES

1653 • TWDB Grant Funds	0.00
1651 • TWDB Grants Education	0.00
Merchant deposit fees	633.20
Rainwater Harvesting Rebate	72,390.00
GMDA Annual Conference Exp	0.00
1740 • Capital Operating Improvements	31,148.90
1755 • Symposium Expenses	17,079.36
AL Filing Fees	210.00
1610 • App. Districts	34,563.89
1615 • Board Expense	13,681.82
1620 • Capitol Exp. A	0.00
1625 • Car Expense	32,830.44
1630 • Dues	9,212.78
1635 • Election Exp.	0.00
1640 • Field Equipment Asset	0.00
1645 • Field Supplies	6,915.84
1655 • Insurance	123,266.81
160 • Labor	596,521.10

1665 • Meter Expense	15,445.16
1735 • Miscellaneous	125,854.00
1675 • Office	19,574.49
1670 • Postage	4,969.18
1685 • PR	
Total 1685 • PR	43,974.55
1680 • Prof. Services	72,273.94
1690 • Regional Planning	12,937.00
1695 • Repairs	10,925.67
1700 • Scholarship	6,750.00
1750 • Service Charges	344.38
1705 • Tax Increment Payment	13,457.00
1710 • Special Studies	93,417.00
1715 • Travel & Training	28,500.21
1720 • Utilities	20,868.19
1725 • Water Quality	13,851.20
1730 • Weather Modification	178,674.87
	1,600,270.98

## TIME TRACKING



# PERMITTING AND REGISTRATION

## Well Permits Approved

	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018
Armstrong	5	6	0	3	8
Carson	14	12	14	13	20
Donley	7	16	5	7	8
Gray	8	5	5	7	12
Hutchinson	0	0	0	0	0
Potter	1	1	0	5	21
Roberts	1	2	2	1	2
Wheeler	6	5	5	9	9
<b>Total</b>	<b>42</b>	<b>47</b>	<b>31</b>	<b>45</b>	<b>80</b>

## Domestic, Stock and Rig Supply Well Registrations Received

	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018
Armstrong	20	16	14	22	28
Carson	48	50	18	22	33
Donley	62	33	19	37	22
Gray	42	36	30	32	19
Hutchinson	0	1	0	1	0
Potter	56	25	60	65	12
Roberts	21	13	9	5	12
Wheeler	32	30	26	22	23
<b>Total</b>	<b>281</b>	<b>204</b>	<b>176</b>	<b>206</b>	<b>149</b>

## Observation, Monitoring and Remediation Well Registrations Received

	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018
Armstrong	0	0	0	0	0
Carson	26	23	45	8	31
Donley	0	0	0	0	0
Gray	0	0	0	0	1
Hutchinson	0	0	0	0	0
Potter	11	0	6	7	30
Roberts	0	0	0	0	0
Wheeler	0	0	0	4	4
<b>Total</b>	<b>37</b>	<b>23</b>	<b>54</b>	<b>19</b>	<b>66</b>

## Operating Permits Approved

	2021-2022
Armstrong	6
Carson	38
Donley	13
Gray	20
Hutchinson	0
Potter	0
Roberts	4
Wheeler	9
<b>Total</b>	<b>90</b>

It is important to remember that all water wells drilled to the water table must have a completed application, signed by the landowner, before it is drilled. This statement is made every year, but is important because without the application prior to drilling, a fine will be assessed to the driller and the landowner. It is as simple as giving the District a call before drilling. "Spacing and Placing" the blue PGCD Logo Flag is has worked out extremely well. There is no mistaking if that blue PGCD Logo Flag is on the location where the water well is to be drilled.

Currently, wells drilled pumping 17.5 gallons per minute or less, which are most commonly domestic and stock wells, is considered an exempt well and is required to be registered with the District prior to drilling, and may require being spaced from property lines and other wells. Rig supply wells generally produce more than 17.5 gallons per minute, but they are defined as an exempt use in Chapter 26 of the Texas Water Code.

Any well that produces more than 17.5 gallons per minute must be permitted. This requires being spaced both from property lines and other water wells. Once the proposed well location meets these requirements and is approved by our field technicians, by placing a blue PGCD flag with latitude, longitude, date spaced and initials, the well may be drilled at the landowner's risk. The application must be approved by the Board of Directors.

# YEAR AT A GLANCE

## October 2021

10.07- 10.08

10.10- 10.13

10.26

Texas Water Leaders Program

Geological Society of America Annual Meeting

PGCD Board Meeting & GMDA Board Meeting

## November 2021

11.11

Driller's Meeting

## December 2021

12.07

12.07-12.10

PGCD Board Meeting

NGWA Groundwater Summit

## January 2022

1.18-01.21

GMDA 2022 Conference

## February 2022

2.16

6th Biennial Water Conservation Symposium

## March 2022

3.09

3.09-3.11

3.24

Carson County Ag Day

TWCA- Fort Worth

PGCD Board Meeting

## April 2022

4.21

4.27

White Deer Home Economics Presentation

Meteorologist, Corey Clay presented at WMA

## May 2022

5.16-18

5.26

TAGD in Dallas

PGCD Board Meeting

## June 2022

6.1-6.2

6.14- 6.16

6.20-22

American Groundwater Trust TX Conference

TWCA Summer Conference

GMDA Summer Conference

## July 2022

7.17

7.28

Sod Poodles Promo Night

PGCD Board Meeting

## August 2022

8.19

8.30-8.31

PGCD Board Meeting

TAGD Groundwater Summit

## September 2022

9.01

9.15

9.20

TAGD Groundwater Summit

PGCD Board Meeting

Comptroller Hegar Visit



# PGCD STAFF MEMBERS AND JOB TITLES

- Britney Britten, General Manager
- Julie Bennett, Permitting Administrator
- Jake Robinson, Meter Compliance Officer
- Katie Hodges, Office Manager
- Richard Dills, Field Technician
- Ashley Ausbrooks, Hydrogeologist/ Program Manager
- Aspen Edgar, PR/Education Director
- Rita Poor, Administrative Assistant
- Shawn Craig, Field Technician



PANHANDLE GROUNDWATER  
CONSERVATION DISTRICT