NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

PERMIT HEARING AND BOARD MEETING

Pilot Point ISD Administration Office
829 S. Harrison St.
Pilot Point, TX 76258

TUESDAY
FEBRUARY 11, 2025
10:00 AM

NOTICE OF PUBLIC MEETING

OF THE
BOARD OF DIRECTORS
of the

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT
Tuesday, February 11, 2025, at 10:00 a.m.

MEETING LOCATION:
Pilot Point ISD Administration Office
829 S. Harrison St.
Pilot Point, TX 76258

Permit Hearing

The Permit Hearing will begin at 10:00 a.m.

Notice is hereby given that the Board of Directors of the North Texas Groundwater Conservation District ("District") will conduct a permit hearing on the following Production Permit Applications:

Agenda:

1. Call to Order; establish quorum; declare hearing open to the public; introduction of Board.

2. Public Comment on the Production Permit Applications (verbal comments limited to three (3) minutes each).

3. Review the Production Permit Applications of:

New Production Permits

a. **Applicant:** 1876 Country Club LLC; 7809 Kentmere, Ste 200, The Colony, TX 75056
Location of Well: 3500 N Legacy Dr., Celina, TX 75009; Latitude: 33.373239°N, Longitude: 96.819069°W; About 1,930 feet east of Eagle Mountain Way and about 3,700 feet north of Gary Autry Moore Pkwy in Collin County.
Purpose of Use: Golf Course Irrigation
Requested Amount of Use: 105,000,000 gallons per year
Production Capacity of Well: 400 gallons/minute
Aquifer: Trinity (Antlers)

b. **Applicant:** City of Aubrey; 107 S. Main Street, Aubrey, TX 76227
Location of Well: 933 Rockhill Rd, Aubrey, TX 76227; Latitude: 33.292944 °N, Longitude: 96.992883°W; About 880 feet east of Rock Hill Rd and about 440 feet north of Highmeadow Dr in Denton County.
Purpose of Use: Municipal/Public Water System
Requested Amount of Use: 201,006,260 gallons per year
Production Capacity of Well: 500 gallons/minute
Aquifer: Trinity (Antlers)

c. **Applicant:** Denton ISD; 230 N Mayhill Road, Denton, TX 76208
Location of Well: 2500 Naylor Rd, Crossroads, TX 76227; Latitude: 33.216402°N,

Longitude: 96.985681°W; About 1260 feet east of Naylor Rd and about 500 feet north of Cedar Creek Dr in Denton County.
Purpose of Use: Landscape Irrigation
Requested Amount of Use: 23,122,042 gallons per year
Production Capacity of Well: 120 gallons/minute
Aquifer: Trinity (Antlers)

d. **Applicant:** Rob Knight; 3451 Serendipity Hills Trail, Corinth, TX 76210
Location of Well: 799 E. Jeter Road, Bartonville, TX 76226; Latitude: 33.078909°N, Longitude: 97.142229°W; About 1,800 feet north of Jeter Rd and about 3,378 feet west of FM 407E in Denton County.
Purpose of Use: Agriculture; Irrigation (Hay); Filling Pond; Livestock
Requested Amount of Use: 30,000,000 gallons per year
Production Capacity of Well: 150 gallons/minute
Aquifer: Trinity (Antlers)

e. **Applicant:** TCCI Range-MEAD 2021 LLC; 14675 Dallas Pkwy Ste 5, Dallas, TX 75254
Location of Wells:
- **Range Creek No. 1**: Latitude: 33.065630°N, Longitude: 97.335534°W; About 1,650 feet south of Range Rd and about 3,520 feet west of Mary Polk Rd in Denton County.
- **Range Creek No. 2**: Latitude: 33.075283°N, Longitude: 97.331357°W; About 660 feet south of Winged Elm Way and about 1,400 feet east of Range Rd in Denton County.

Purpose of Use: Municipal/Public Water System
Requested Amount of Use: 65,745,000 gallons per year
Production Capacity of Wells:
- **Range Creek No. 1**: 250 gallons/minute
- **Range Creek No. 2**: 250 gallons/minute

Aquifer: Trinity (Antlers)

f. **Applicant:** Undine Texas LLC; 17681 Telge Rd, Cypress, TX 77429
Location of Wells:
- **Lonesome Dove Well #2(Existing)**: Lonesome Dove Dr, Little Elm, TX 75068; Latitude: 33.161128 °N, Longitude: -96.982943 °W; About 73 feet south of Lonesome Dove Rd and about 410 feet east of Steller Ln in Denton County.
- **Greenwood Well #1(Existing)**: Hilltown 1 Block J Lot 6, Little Elm, TX 75068; Latitude: 33.167510°N, Longitude: 96.966396°W; About 30 feet east of Greenwood Dr and about 265 feet south of Mulberry Dr in Denton County.
- **Greenwood Well #2(Existing):** Hilltown 1 Block J Lot 6, Little Elm, TX 75068; Latitude: 33.167624°N, Longitude: 96.966311°W; About 50 feet east of Greenwood Dr and about 225 feet south of Mulberry Dr in Denton County.
- **Wellington Well #2(Existing):** Tempest Lane, Little Elm, TX 75068 Latitude: 33.166090°N, Longitude: 96.981295°W; About 40 feet south of Wellington Dr and about 190 feet west of Roxie Dr in Denton County.

Purpose of Use: Municipal/Public Water System
Requested Amount of Use: 42,900,000 gallons per year
Production Capacity of Wells:
- **Lonesome Dove Well #2**: 46 gallons/minute

- **Greenwood Well #1**: 96 gallons/minute
- **Greenwood Well #2**: 43 gallons/minute
- **Wellington Well #2**: 26 gallons/minute

Aquifer: Woodbine

g. **Applicant:** Undine Texas LLC; 17681 Telge Rd, Cypress, TX 77429
Location of Well:
- **Lonesome Dove Well #1(Existing):** Lonesome Dove Dr, Little Elm, TX 75068; Latitude: 33.161134°N, Longitude: 96.983169°W; About 62 feet south of Lonesome Dove Rd and about 350 feet east of Steller Ln in Denton County.

Purpose of Use: Municipal/Public Water System
Requested Amount of Use: 21,600,000 gallons per year
Production Capacity of Well: 106 gallons/minute
Aquifer: Trinity (Twin Mountains)

h. **Applicant:** Undine Texas LLC; 17681 Telge Rd, Cypress, TX 77429
Location of Wells:
- **Wellington Well #1(Existing)**: Tempest Lane, Little Elm, TX 75068; Latitude: 33.166131 °N, Longitude: 96.981295 °W; About 25 feet south of Wellington Dr and about 185 feet west of Roxie Dr in Denton County.
- **Greenwood Paluxy(New)**: 5941 Greenwood Drive, Little Elm, TX 75068; Latitude: 33.167574°N, Longitude: 96.966353°W; About 40 feet east of Greenwood Dr and about 240 feet south of Mulberry Dr in Denton County.

Purpose of Use: Municipal/Public Water System
Requested Amount of Use: 77,300,000 gallons per year
Production Capacity of Wells:
- **Wellington Well #1**: 140 gallons/minute
- **Greenwood Paluxy**: 240 gallons/minute

Aquifer: Trinity (Paluxy)

4. Consider and act upon the Production Permit Applications, including designation of parties and/or granting or denying the Production Permit Applications in whole or in part, as applicable.

5. Adjourn or continue permit hearing.

Board Meeting

The regular Board Meeting will begin upon adjournment of the above noticed Permit Hearing.

Notice is hereby given that the Board of Directors of the North Texas Groundwater Conservation District ("District") may discuss, consider, and take all necessary action, including expenditure of funds, regarding each of the agenda items below:

Agenda:

1. Pledge of Allegiance and Invocation.

2. Call to order, establish quorum, declare the meeting open to the public.

3. Public comment.

4. Consider and act upon approval of the minutes from the January 14, 2025, Board meeting.

5. Consider and act upon approval of invoices and reimbursements, Resolution No. 2025-02-11-01.

6. Receive reports from the following Committees*:
    a. Budget and Finance Committee
        1. Receive Monthly Financial Information

7. Update and possible action regarding the process for the development of Desired Future Conditions (DFCs).

8. Discussion and possible action regarding the District's well spacing requirements.

9. Consider and act upon proposal to develop a District Groundwater Management Model for North Texas GCD.

10. Discussion and possible action related to 89th Texas Legislative Session and Issues.

11. Consider and act upon compliance and enforcement activities for violations of District rules.

12. General Manager's Report: The General Manager will update the board on operational, educational and other activities of the District.
    a. District's Disposal/Injection Well Program
    b. Well Registration Summary

13. Open forum / discussion of new business for future meeting agendas.

14. Adjourn public meeting.

* Reports from District standing committees will include a briefing by each committee for the Board on the activities of the committee, if any, since the last regular Board meeting.

The above agenda schedule represents an estimate of the order for the indicated items and is subject to change at any time.

These public meetings are available to all persons regardless of disability. If you require special assistance to attend the meeting, please call (855) 426-4433 at least 24 hours in advance of the meeting to coordinate any special physical access arrangements.

For questions regarding this notice, please contact Velma Starks at (855) 426-4433, at ntgcd@northtexasgcd.org, or at 5100 Airport Drive, Denison, TX 75020.

At any time during the meeting or work session and in compliance with the Texas Open Meetings Act, Chapter 551, Government Code, Vernon's Texas Codes, Annotated, the North Texas Groundwater Conservation District Board may meet in executive session on any of the above agenda items or other lawful items for consultation concerning attorney-client matters (§551.071); deliberation regarding real property (§551.072); deliberation regarding prospective gifts (§551.073); deliberation regarding personnel matters (§551.074); deliberation regarding security devices (§551.076); and deliberation regarding cybersecurity (§551.089). Any subject discussed in executive session may be subject to action.

ATTACHMENT 4

MINUTES OF THE BOARD OF DIRECTORS' BOARD MEETING
NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT

Tuesday, January 14, 2025, at 10:00 a.m.

Pilot Point ISD Administration Office
829 S. Harrison St.
Pilot Point, TX 76258

Please note for in-person attendance that the Board meeting location can only accommodate a limited number of attendees to comply with state requirements related to in-person gatherings. In the event in-person attendance exceeds any state or local requirements, the District may provide an option for virtual participation for any overflow attendees as necessary and authorized by law.

Members Present:	Jimmy Arthur, Robert Todd, Leon Klement, Ronny Young, Allen Knight, Everette Newland, and Greg Peters
Members Absent:	Allen McDonald and Thomas Smith
Staff:	Paul Sigle, Allen Burks, Kristi Krider, and Velma Starks
Visitors:	Kristen Fancher, Law Offices of Kristen Fancher, PLLC

Permit Hearing

Permit Hearing will begin at 10:00 a.m.

Agenda:

1. Call to Order; establish quorum; declare hearing open to the public; introduction of Board.

   Board President Ronny Young called the Permit Hearing to order at 10:00 a.m.

2. Public Comment on the Production Permit Applications (verbal comments limited to three (3) minutes each).

   No public comments.

3. Review the Production Permit Applications of:

Permit Amendments

a. **Applicant:** Hunter Ranch Water Well, LLC; 3000 Turtle Creek Blvd., Dallas, TX 75219
Location of Well: 9001 Landmark Trail, TX 76207; Latitude: 33.140100°N, Longitude: 97.220700°W; About 3,290 feet north of Robson Ranch Rd and about 5,940 feet west of IH 35W in Denton County.
Purpose of Use: Irrigation/Landscape; Filling of Pond or Surface Impoundment

Requested Amount of Use: 86,456,987 gallons through 2026; 45,970,000 gallons per year after 2026
Production Capacity of Well: 190 gallons/minute
Aquifer: Trinity (Antlers)
Amendment: Change the period to establish landscaping from 2025 to "through 2026". Add the amount of 40,486,987 gallons to production amount to establish the landscaping through 2026—totaling 86,456,987 gallons through 2026.

General Manager Paul Sigle reviewed amended permit.

b. **Applicant:** Lilyana Water Well, LLC; 3000 Turtle Creek Blvd., Dallas, TX 75219
Location of Well (Lilyana #2): 4038 Yellow Bells Way, Celina, TX 75078; Latitude: 33.269849 °N, Longitude: 96.765503 °W; About 2,655 feet north of FM 1461 and about 560 feet east of County Road 83 in Collin County.
Purpose of Use: Irrigation/Landscape; Filling of Pond or Surface Impoundment
Requested Amount of Use: 1,000,000 gal/year
Production Capacity of Well: 10 gallons/minute
Aquifer: Woodbine
Amendment: Reduce permit amount from 14,240,000 gal/year to 1,000,000 gal/year. Reduce capacity from 165 gpm to 10 gpm.

General Manager Paul Sigle reviewed b. Permit Amendments and a New Production Permit together.

New Production Permits

a. **Applicant:** Lilyana Water Well, LLC; 3000 Turtle Creek Blvd., Dallas, TX 75219
Location of Well (Lilyana #3): 4038 Yellow Bells Way, Celina, TX 75078; Latitude: 33.269531 °N, Longitude: 96.766567 °W; About 2,540 feet north of FM 1461 and about 236 feet east of County Road 83 in Collin County.
Purpose of Use: Irrigation/Landscape; Filling of Pond or Surface Impoundment
Requested Amount of Use: 13,240,000 gal/year
Production Capacity of Well: 180 gallons/minute
Aquifer: Trinity (Paluxy)

General Manager Paul Sigle reviewed a. New Production Permit and b. Permit Amendments together.

b. **Applicant:** Kirk Boyd; PO Box 606, Lewisville, TX 75067
Location of Wells:
- **Well #1 (Existing):** 12484 Strittmatter Rd, Pilot Point, TX 76258; Latitude: 33.373333°N, Longitude: 96.923056°W; About 6,330 feet west of FM 1385 and about 2,615 feet south of Strittmatter Rd in Denton County.
- **Well #2 (New):** 12484 Strittmatter Rd, Pilot Point, TX 76258; Latitude: 33.373333°N, Longitude: 96.921944°W; About 5,975 feet west of FM 1385 and about 2,615 feet south of Strittmatter Rd in Denton County.

Purpose of Use: Irrigation (Hay); Filling of Surface Impoundment(s); Livestock/Poultry t
Requested Amount of Use: 800,000 gallons per year
Production Capacity of Wells:
- **Well #1:** 42 gallons/minute

- **Well #2:** 100 gallons/minute

Aquifer: Trinity (Antlers)

General Manager Paul Sigle reviewed the permit with the Board. Discussion was held.

4. Consider and act upon the Production Permit Applications, including designation of parties and/or granting or denying the Production Permit Applications in whole or in part, as applicable.

   All permits were voted on together. Board Member Allen Knight made a motion to approve all permits. Board Member Everette Newland seconded the motion. Motion passed unanimously.

5. Adjourn or continue permit hearing.

   Board Vice President Thomas Smith adjourned the permit hearing at 10:07 a.m.

Board Meeting

Agenda:

1. Pledge of Allegiance and Invocation

   Board President Ronny Young led the Pledge of Allegiance and provided the invocation.

2. Call to order, establish quorum; declare meeting open to the public.

   Board President Ronny Young called the meeting to order at 10:10 a.m.

3. Public Comment

   There were no public comments at this time.

4. Consider and act upon approval of the minutes from December 10, 2024, Board meeting.

   Board President Ronny Young asked for approval of the minutes from the December 10, 2024, meeting. Board Member Robert Todd made a motion to approve the minutes. Board Member Jimmy Arthur seconded the motion. Motion passed unanimously.

5. Consider and act upon approval of invoices and reimbursements, Resolution No. 2025-01-14-01.

   General Manager Paul Sigle reviewed the liabilities with the Board. Board Member Allen Knight made the motion to approve Resolution No. 2025-01-14-01. Board Member Greg Peters seconded the motion. Motion passed unanimously.

6. Receive reports from the following Committees*:
   a. Budget and Finance Committee
      1. Receive Monthly Financial Information

         General Manager Paul Sigle reviewed the Financial Report with the Board.

   b. Investment Committee
      1. Receive Quarterly Investment Report

General Manager Paul Sigle reviewed the Quarterly Investment Report with the Board. Discussion was held.

c. Management Plan Committee
   1. Receive Quarterly Report

General Manager Paul Sigle reviewed the Quarterly Report with the Board.

7. Receive presentation on production and permitting data related to landscaping irrigation and surface impoundments.

General Manager Paul Sigle provided presentation for the Board. Discussion was held.

8. Update and possible action regarding the process for the development of Desired Future Conditions (DFCs).

General Manager Paul Sigle informed the Board that GMA 8 is planning to schedule a meeting in February.

9. Consider and act upon compliance and enforcement activities for violations of District rules.

No issues at this time.

10. General Manager's Report: The General Manager will update the board on operational, educational and other activities of the District.

a. District's Disposal/Injection Well Program

General Manager Paul Sigle informed the Board that we are protesting two injection wells south of Muenster.

b. Well Registration Summary

General Manager Paul Sigle reviewed the well registration summary with the Board. Eleven wells were registered in December.

11. Open forum/discussion of new business for future meeting agendas.

Due to Pilot Point's Spring Break on March 11th, the March Board Meeting is scheduled for March 18th at 10 a.m.

. Legislative update

12. Adjourn public meeting

Board President Ronny Young declared the meeting adjourned at 10:39 a.m.

##

Recording Secretary

Secretary-Treasurer

ATTACHMENT 5

RESOLUTION NO. 2025-02-11-01

A RESOLUTION BY THE BOARD OF DIRECTORS OF THE NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT AUTHORIZING PAYMENT OF ACCRUED LIABILITIES FOR THE MONTH OF JANUARY

The following liabilities are hereby presented for payment:

Administrative Services	**Amount**
GTUA - January 2025	41,629.09
Consultant	
Advanced Groundwater Solutions - Hydrogeo consulting as of 1/31/25	19,731.75
Leonard Rice Consulting Water Engi. - Drip Drop System iitial review and upgrades	5,879.62
Intera - Tech support for Drip Drop management System for 3/31/24	199.07
Direct Costs	
Ronnie Young - reimbursement for mileage	30.80
Insurance	
Bayless-Hall Blanton Insurance - BOD Dishonesty bond renewal 25-26	219.00
Legal	
Kristen Fancher PLLC - services through 1/31/25	5,124.00
Legal- Injection	
Sledge Law - 12/31/24	780.00
Sledge Law - 12/6/24	120.00
Meetings & Conferences	
Pilot Point ISD - Meeting Room	75.00
Refunds	
Hydro Resources - Driller Deposit	100.00
Dunaway Associates - overpayment refund	54.00
Tex Mix Concrete - overpayment refund	6,296.22
M5 Drilling - Driller Deposit	100.00
Sherwood MHP - Overpayment refund	53.48
Denton County MUD #5	100.00
Well Injection Monitoring	
Statewide Plat Services - Nov-Dec 2024	124.90
GRAND TOTAL:	$ **80,616.93**

On motion of _____ and seconded by _____ the foregoing Resolution was passed and approved on this, the 11th day of February, 2025 by the following vote:

AYE:
NAY:

_____
President

_____
Secretary/Treasurer

ATTACHMENT 6 a. – i.

NORTH TEXAS GROUNDWATER
Balance Sheet
As of January 31, 2025

ASSETS	
Current Assets	
Checking/Savings	
10001 Checking Account	931,321.21
10005 Cash-Index Account	20,210.51
10008 Cash - Tex Star	1,446,292.25
10010 Investment	2,477,821.81
10025 Accounts Receivable	22,368.66
10030 A/R Well Applications	-4,053.70
10033 A/R Penalties	300.00
10035 A/R GMA8 Members	4,907.00
10070 A/R Liens	14,000.00
10026 Allowance for Uncollectib	
12001 Prepaid Expenses	2,393.75
TOTAL ASSETS	**4,915,561.49**
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
23100 Accounts Payable	73,673.23
23150 Well Drillers Deposits	27,300.00
Total Liabilities	100,973.23
Equity	
35100 Retained Earnings	4,877,762.70
Net Income	-63,174.44
Total Equity	4,814,588.26
TOTAL LIABILITIES & EQUITY	**4,915,561.49**

NORTH TEXAS GROUNDWATER
Profit Loss Budget vs. Actual
January 31, 2025

		TOTAL			
	Jan 2025	1 mo. Budget	YTD Actual	Total Budget	% of Budget remaining
Ordinary Income/Expense					
Income					
46003 - Registration Fees	6,000.00	3,333.33	6,000.00	40,000.00	85.0%
46004 - Well Driller Fees	0.00	0.00	0.00	0.00	0.0%
46005 - PRODUCTION FEES	0.00	0.00	0.00	980,000.00	100.0%
46006 Income GMA8	5,000.00	0.00	5,000.00	90,909.00	94.5%
46007 - Penalties	0.00	0.00	0.00	0.00	0.0%
46008 - Online Pay Fees	151.80	83.33	151.80	1,000.00	84.82%
46015 Late Fees	0.00	0.00	0.00	0.00	0.0%
Total Income	11,151.80	3,416.67	11,151.80	1,111,909.00	99.0%
Gross Profit	11,151.80	3,416.67	11,151.80	1,111,909.00	99.0%
Expense					
77010 ADMINISTRATIVE					
77013 Admin-Secretarial	1,008.25	916.67	1,008.25	11,000.00	90.83%
77014 Admin-Project Coordinator	78.00	0.00	78.00	0.00	0.0%
77015 Admin-GM	7,250.00	5,000.00	7,250.00	60,000.00	87.92%
77016 Admin-Clerical	3,488.00	2,500.00	3,488.00	30,000.00	88.37%
77040 ADMIN-MILEAGE	258.26	250.00	258.26	3,000.00	91.39%
77025 ACCOUNTING	6,630.50	2,750.00	6,630.50	33,000.00	79.91%
77027 AUDITING	0.00	0.00	0.00	10,450.00	100.0%
77030 ADVERTISING	0.00	333.33	0.00	4,000.00	100.0%
77035 BAD DEBT	0.00	0.00	0.00	0.00	0.0%
77050 BANKING FEES	73.77	166.67	73.77	2,000.00	96.31%
77100 GMA8 MODELING	0.00	8,333.33	0.00	100,000.00	100.0%
77150 CONSULTING-HYDROGEO SVC	19,731.75	16,666.67	19,731.75	200,000.00	90.13%
77325 DIRECT COSTS-REIMB	313.39	500.00	313.39	6,000.00	94.78%
77450 DUES & SUBSCRIPTION	0.00	650.00	0.00	7,800.00	100.0%
77480 EQUIPMENT	0.00	166.67	6,078.69	2,000.00	-203.93%
77485 Equipment Database	6,078.69	4,166.67	0.00	50,000.00	100.0%
77500 FEES-GMA8	9.00	166.67	9.00	2,000.00	99.55%
77550 FIELD TECH	14,551.00	10,416.67	14,551.00	125,000.00	88.36%
77560 Field Permitting/Geologis	6,578.00	5,416.67	6,578.00	65,000.00	89.88%
77650 FUEL/MAINTENANCE	201.14	416.67	201.14	5,000.00	95.98%
77800 INJECTION WELL MONITORING	0.00	58.33	0.00	700.00	100.0%
77810 INSURANCE & BONDING	697.75	583.33	697.75	7,000.00	90.03%
77970 LEGAL					
77975 Legal-Injection	780.00	833.33	780.00	10,000.00	92.2%
77980 Legal-Legislation	0.00	3,000.00	0.00	36,000.00	100.0%
77970 LEGAL - Other	5,124.00	2,500.00	5,124.00	30,000.00	82.92%
78010 MEETINGS & CONFERENCES	370.20	625.00	370.20	7,500.00	95.06%
78310 Rent	430.00	430.00	430.00	5,160.00	91.67%
78600-SOFTWARE MAINT	206.36	250.00	206.36	3,000.00	93.12%
78610 TELEPHONE	468.18	316.67	468.18	3,800.00	87.68%
78780 Well Monitoring/Testing	0.00	6,666.67	0.00	80,000.00	100.0%
Total Expense	74,326.24	74,080.00	74,326.24	899,410.00	91.74%
Other Income/Expense					
Other Income					
46100 INTEREST INC	0.00	6,250.00		75,000.00	100.0%
Total Other Income	0.00	6,250.00	0.00	75,000.00	
Net Other Income	0.00	6,250.00	0.00	75,000.00	
Net Income	**-63,174.44**	**-64,413.33**	**-63,174.44**	**287,499.00**	

ATTACHMENT 9

AGS
Advanced Groundwater Solutions, LLC
www.advancedgw.com

October 29, 2024

Mr. Paul Sigle
General Manager
North Texas and Red River Groundwater Conservation Districts
PO Box 508
Gainesville, TX 76241
p.sigle @northtexasgcd.org

Re: Proposal to Develop a District Groundwater Management Model for Red River and North Texas Groundwater Conservation Districts

Dear Paul,

As requested by North Texas and Red River Groundwater Conservation Districts (Districts), Advanced Groundwater Solutions, LLC (AGS) has developed a proposal to develop a groundwater management model for the Districts. Please find our proposal, schedule and cost estimate enclosed.

We are excited about the project and appreciate the opportunity to work with you and the Districts. Please contact me at (512) 796-8636 if you have any questions.

Sincerely,

James Beach

James A. Beach, PG
Principal

Enclosures

AGS
Advanced Groundwater Solutions, LLC
www.advancedgw.com

Proposal to Develop

Groundwater Management Model for North Texas and Red River Groundwater Conservation Districts

October 29, 2024

The Texas Water Development Board (TWDB) North Trinity-Woodbine Groundwater Availability Model (NTWGAM) is a regional model designed to meet the objectives of the TWDB for Joint Groundwater planning (DFCs and MAGs) and Regional Water Planning. Due to its scale, it is less suitable for local assessments and requires significant time and resources to modify and use. The NTWGAM is currently being updated by Groundwater Management Area 8 using the USGS MODFLOW6 code. The goal of this project is to develop a localized and refined sub-model of the updated NTWGAM for the North Texas and Red River Groundwater Conservation Districts (the Districts) for use in groundwater management and permitting efforts. The sub-model will focus on the five counties that constitute the Districts, including Collin, Cooke, and Denton counties in NTGCD and Grayson and Fannin counties in Red River GCD.

The goals of the new model include:

1. Refining the hydrogeology and developing a more localized conceptual model and boundary conditions of District aquifers.
2. Refining the grid in critical areas to better define hydraulic communication between aquifers and streams.
3. Updating all the MODFLOW packages.
4. Re-calibrating to District data.
5. Creating a multi-model simulation that allows exchange between the sub-model and the TWDB NTWGAM.
6. Documenting the localized model in a report.

The proposed scope of work is based on the assumption that construction and calibration of the updated NTWGAM is complete, and data files are available

Scope of Work

Task 1 – Review and Update Conceptual Model

This task involves reviewing and updating the conceptual model for the Districts and will include:

- A review of the most recent data pertaining to aquifers, including formation structure, pumping tests, pumping data, recharge, hydraulic properties, and water levels.
- Assess whether the extent of the Glen Rose formation should be modified based on recent geophysical logs and wells.
- Review recent changes to the NTWGAM by GMA 8.
- Assess the available data for the shallow alluvium associated with the Red River and determine if refined vertical or lateral discretization is justified.
- Developing an updated conceptual model focused on hydrogeologic conditions in District aquifers.
- Complete draft report sections to document work completed in task.

Task 2 – Review NTWGAM and Develop Sub-Model

This task involves creating a sub-model from the updated NTWGAM for the area spanning the Districts:

- Perform simulations with the NTWGAM to establish a modeling baseline.
- Identifying an appropriate extent for the District sub-model and extracting model properties from the NTWGAM for the new extent.
- Performing simulations with the District sub-model to verify results are consistent with the NTWGAM.

Task 3 – Refine Grid and Update Hydrogeologic Structure

The NTWGAM grid uses a uniform rectilinear grid with each cell spanning a one-quarter mile by one-quarter mile area. Updates to the District sub-model grid may include:

- Conversion from a structured rectilinear grid to an unstructured grid to allow for efficient mesh refinement to accommodate complex geological features as appropriate.
- Local refinement to improve the numerical representation of local conditions where appropriate, such as along rivers.
- Assess the need for more vertical discretization in the shallow aquifer system to better simulate groundwater-surface water interaction as appropriate.

Some stratigraphic layer elevations were revised in the recent NTWGAM update. Additional updates to this dataset will be based on:

- Availability new geophysical log data to provide additional structural control.

- Notable discrepancies between existing structural control and layer elevations, especially in regard to the Glen Rose Formation and the location of Hydrogeologic region 1 and 2 as identified by Bureau of Economic Geology in the NTWGAM.

Task 4 – Update MODFLOW Datasets

Several MODFLOW datasets were updated for the NTWGAM, including structure, pumping, recharge, and hydraulic properties. In addition, the end of the calibration period was extended from 2012 to 2020. The following revisions will be considered for the District sub-model:

- Extending the calibration period of the District sub-model if more recent data are available.
- General head or time-vary constant head packages will be employed to reflect observed water levels or hydraulic gradients at the sub-model boundaries.
- Revise sub-model pumping volumes and pumping well locations as needed to better represent District data.
- As appropriate, integrate well construction and completion in the MODFLOW6 Multi-Aquifer Well (MAW) package to represent wells screened across multiple formations.
- Review transmissivity, hydraulic conductivity, and storativity values in the NTWGAM and update where more recent aquifer test data are available.

Task 5 – District Model Calibration

Model calibration will involve conducting multiple simulations and reasonably adjusting model parameters iteratively (e.g., hydraulic properties and boundary conditions) to minimize the difference between simulation results and historical observations.

- Establish calibration datasets using available and District water level and reported pumping estimates for the Trinity and Woodbine Aquifers.
- Use Parameter Estimation (PEST) code support model calibration and estimate potential spatial distribution of aquifer properties. PEST may also be used to assess how potential uncertainty in recharge and pumping affect calibration.
- Conduct sensitivity analysis on model parameters to explore parameter uncertainty.
- Document model calibration process, performance measures, parameter estimation, assumptions, and limitations with relevant tables and figures similar to the requirements for a TWDB GAM.
- Integrate the calibrated sub-model with the NTWGAM using the appropriate exchange packages and subpackages in MODFLOW.

Task 6 – Predictive Simulations

- The calibrated District sub-model will be extended to include a predictive period through 2080.
- Develop a predictive model based on the calibrated model using predictive boundary conditions developed for the updated NTWGAM.
- Using the distribution of pumping in the Modeled Available Groundwater (MAG) adopted in 2021, assess the variation in predicted water level decline (drawdown) for comparison to the adopted DFCs associated with the MAGs.
- Document and present the assumptions and results of predictive simulations.

Task 7 – Documentation and Model Report

AGS will document the work completed in each task and include the appropriate figures and discussion model assumptions and results. The Districts will be provided with a draft final report for internal and stakeholder review. AGS will incorporate revisions into the final document. Model files will be made available as part of the review and final deliverable.

Task 8 – Progress Meetings and Project Management

AGS will provide a monthly progress report with the invoice to the Districts. We anticipate three in-person meetings with the Districts to provide project updates at appropriate project milestones, including at the end of Task 3 and 5, and after the model and report have been finalized.

Schedule

The anticipated schedule is shown below. Some variation in the schedule may occur based on the availability of final NTWGAM model files.

	2025												2026					
Task	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**
Task 1 – Review and Update Conceptual Model				*														
Task 2 – Review NTWGAM and Develop Sub-Model																		
Task 3 – Refine Grid and Update Hydrogeologic Structure						*												
Task 4 – Update MODFLOW Datasets										*								
Task 5 – District Model Calibration														*				
Task 6 – Predictive Simulations																*		
Task 7 – Documentation and Model Report																		*
Task 8 – Progress Meetings and Project Management																		

* denotes milestone for internal draft report sections

Budget

AGS proposes to perform the work on a time and materials basis for a not-to-exceed budget of $431,460.00. The details of our budget are provided below.

Advanced Groundwater Solutions, LLC
North Texas and Red River GCDs
District Management Model from NTWGAM

Personnel	James Beach, PG	Bill Stein, PG	Ye Hong Chen, Ph.D.	Meghan Fuentes	Isaac Johnson		
Personnel Rate ($/hr)	$ 290	$ 260	$ 170	$ 155	$ 170		
Project Budget							
Task	**Description**	**Hours**	**Hours**	**Hours**	**Hours**	**Hours**	**Expenses**	**Total**
1	Review and Update Conceptual Model	16	20	40	80	80		$ 42,640.00
2	Review NTWGAM and Develop Sub-Model	16		120		100		$ 42,040.00
3	Refine Grid and Update Hydrogeologic Structure	16	80	80		120	$ 1,000.00	$ 60,440.00
4	Update MODFLOW Datasets	24		120	88	200		$ 75,000.00
5	District Model Calibration	24		240		60		$ 57,960.00
6	Predictive Simulations	40		120	40	100		$ 55,200.00
7	Documentation and Model Report	60	20	120	40	120		$ 69,600.00
8	Progress Meetings and Project Management	48		24		24	$ 6,500.00	$ 28,580.00
	Total Hours	244	120	864	248	804		
	Total Fee	$ 70,760.00	$ 31,200.00	$ 146,880.00	$ 38,440.00	$ 136,680.00	$ 7,500.00	$ 431,460.00

ATTACHMENT 12 b.

NORTH TEXAS GROUNDWATER CONSERVATION DISTRICT
Well Registration Summary
(as of 1/31/2025)

Well Type	Collin	Cooke	Denton	Total NTGCD	New Registrations January 2025
Domestic	99	787	1194	2080	6
Public Water System	41	76	249	367	0
Irrigation	106	8	239	353	3
Surface Impoundment	67	22	151	241	1
Livestock	7	97	74	178	0
Oil / Gas	1	5	64	70	0
Agriculture	11	18	55	84	1
Commercial	7	9	56	72	0
Golf Course Irrigation	15	2	21	38	0
Industrial / Manufacturing	11	11	9	31	0
***Other**	6	5	8	19	0
Monitoring	0	1	6	7	0

TOTALS	**371**	**1041**	**2126**	**3540**	**11**

NOTE: Plugged wells have been excluded

***Examples of "Other" uses: Closed Loop Geothermal, Construction, and Fire Suppression**

ADJOURN