MINUTES OF THE FEBRUARY 8, 2016
BOARD OF DIRECTORS MEETING OF
NORTH PLAINS GROUNDWATER CONSERVATION DISTRICT

The Board of Directors of North Plains Groundwater Conservation District met in regular session February 8, 2016 at 9:00 a.m. in the Conference Room of the North Plains Water Conservation Center, 6045 County Road E., Etter, Texas. The following persons were present:

Members Present at 9:09 a.m.:

Bob B. Zimmer, President;
Danny Krienke, Secretary;
Gene Born, Director;
Harold Grall, Vice-President;
Justin Crownover, Director;
Mark Howard, Director; and
Zac Yoder, Director.

Staff Present during part or all of the meeting:

Steve Walthour, General Manager;
Dale Hallmark, Assistant General Manager/Hydrologist;
Kirk Welch, Assistant General Manager/Outreach;
Pauletta Rhoades; Finance and Administration Coordinator;
Kristen Lane, Executive Assistant;
Casey Tice, Compliance Coordinator;
Odell Ward, GIS and Natural Resources Tech Lead; and
Laura West, Production Monitoring Coordinator;
Paul Sigle, Agricultural Engineer;
Karen Mannis, Natural Resource Specialist;
Jerry Green, Natural Resource Specialist
Curtis Schwertner, Natural Resource Specialist;
Patsy Long, Part-time Receptionist;
Shari Stanford, Natural Resource Specialist;
Mike Pitts, Monitor Well Coordinator; and,
Lynsey McAnally, Conservation Outreach Assistant.

Others present during part or all of the meeting:

Louis Leven;
F. Keith Good, Attorney; and,
Ellen Orr, Paralegal.

President Zimmer declared a quorum present and called the meeting to order at 9:09 a.m. Director Zac Yoder gave the invocation. Mark Howard led the pledge.

1 – Public Comment

President Zimmer asked if there were persons present who desired to make public comments. No public comments were received.

2 – Consent Agenda

The Consent Agenda, was discussed by the Board and consisted of: the review and approval of the Minutes of the regular January 12, 2016 Board Meeting; the review and approval of District expenditures for January 1, 2016 through January 31, 2016, including the General Manager's expense and activity report; the review and approval of payment to Lemon, Shearer, Phillips & Good, P.C. for professional services and out-of-

pocket expenses from January 1, 2016 through January 31, 2016 in the amount of $5,710.70; review and adoption of a resolution to exempt personal property taxes on personal boats, personal vehicles, airplanes, motor homes and trailers for calendar year 2015 in Dallam, Sherman, Hansford, Ochiltree, Lipscomb, Hartley, Moore and Hutchinson Counties, Texas; consider and approve homestead exemptions for 2016 of 10% or $10,000 – Homestead; $100,000 - Over 65; $100,000 - Disability SS; the maximum percentage for Disabled Veterans; and review and consider accepting a $2,300.00 bid offer from Jonathan R. Sharp for property struck off of the tax rolls at 110 Mackenzie Avenue N., Stinnett, Texas. Justin Crownover moved to approve the Consent Agenda. Zac Yoder seconded the motion and it was unanimously approved by the Board.

Troy Dale Hallmark, Assistant General Manager/Hydrologist of the District, was recognized by the Board and honored for twenty years of service.

The Board recessed at 9:14 a.m. (for refreshments and celebration with Dale) and reconvened at 9:31 a.m.

Action Agenda 3d - Receive report and consider action regarding GMA-1.

Steve Walthour presented the following report:

2015 Possible Production
For Discussion Purposes Only
2/2/2016

District Production Average

County	Average Annual Production 2010-2015	Estimated MAG Average 2010-2015	Annual Average DFC Available Reserve	MAG Percent Above or Below Production
Dallam	354,388	395,607.75	41,220	10%
Hansford	191,811	279,008.75	87,198	31%
Hartley	436,018	414,284.25	-21,734	-5%
Hutchinson	64,434	60,575.25	-3,859	-6%
Lipscomb	44,253	288,831.00	244,578	85%
Moore	212,316	196,684.25	-15,632	-8%
Ochiltree	94,810	263,716.00	168,906	64%
Sherman	332,220	317,880.25	-14,390	-5%
Total	1,730,251	2,212,555	482,303	22%

2015 District Production Comparison

2015 Production	2015 Estimated MAG	2015 DFC Available Reserve	MAG Percent Above or Below Production
284,174	378,541	94,367	25%
153,699	273,490	119,790	44%
395,166	396,622	61,455	15%
54,897	59,845	4,948	8%
82,807	287,152	254,345	89%
150,987	189,578	38,591	20%
78,430	257,969	179,539	70%
268,414	311,796	43,382	14%
1,458,519	2,154,930	796,417	37%

MAG From Proposed DFC

County	2015	2016	2020	2030	2040	2050	2060	2070
Dallam	381,900	402,300	368,570	296,055	232,405	172,031	116,499	73,850
Hansford	237,633	265,814	265,814	265,814	265,814	265,814	265,814	265,814
Hartley	513,944	493,485	426,894	352,668	288,203	225,129	166,516	120,905
Hutchinson	65,963	58,756	60,763	62,418	63,505	63,913	63,867	62,677
Lipscomb	54,556	252,671	252,671	252,671	252,671	252,671	252,671	252,671
Moore	273,874	222,548	216,254	189,793	154,418	117,625	83,597	55,652
Ochiltree	113,834	231,480	231,432	231,432	231,432	231,432	231,437	231,753
Sherman	404,616	406,849	407,166	355,248	285,336	213,577	146,933	90,391
Total	2,046,320	2,359,903	2,229,564	2,006,099	1,773,784	1,542,190	1,327,334	1,153,718

West - Production Average

County	Average Annual Production 2010-2015	Estimated MAG Average 2010-2015	Annual Average DFC Available Reserve	MAG Percent Above or Below Production
Dallam	354,388	395,608	41,220	10%
Hartley	436,018	414,284	-21,734	-5%
Moore	212,316	196,684	-15,632	-8%
Sherman	332,220	317,890	-14,390	-5%
Total	1,334,943	1,891,390	-8,552	0%

2015 West Production Comparison

2015 Production	2015 Estimated MAG	2015 DFC Available Reserve	MAG Percent Above or Below Production
284,174	378,541	94,367	25%
395,166	396,622	61,455	15%
150,987	189,578	38,591	20%
268,414	311,796	43,382	14%
1,038,740	1,276,535	237,795	19%

MAG From Proposed DFC

County	2015	2016	2020	2030	2040	2050	2060	2070
Dallam	381,900	402,300	368,570	296,055	232,405	172,031	116,499	73,850
Hartley	513,944	493,485	426,894	352,668	288,203	225,129	166,516	120,905
Moore	273,874	222,548	216,254	189,793	154,418	117,625	83,597	55,652
Sherman	404,616	406,849	407,166	355,248	285,336	213,577	146,933	90,391
Total	1,574,334	1,525,182	1,418,884	1,193,764	960,362	728,360	513,545	340,798

East - Production Average

County	Average Annual Production 2010-2015	Estimated MAG Average 2010-2015	Annual Average DFC Available Reserve	MAG Percent Above or Below Production
Hansford	191,811	279,009	87,198	31%
Hutchinson	64,434	60,575	-3,859	-6%
Lipscomb	44,253	288,831	244,578	85%
Ochiltree	94,810	263,716	168,906	64%
Total	395,309	892,131	496,822	56%

2015 East Production Comparison

2015 Production	2015 Estimated MAG	2015 DFC Available Reserve	MAG Percent Above or Below Production
153,699	271,198	117,558	43%
54,897	59,552	4,655	8%
82,807	286,480	253,673	89%
78,430	255,670	177,240	69%
319,773	872,901	553,127	63%

MAG From Proposed DFC

County	2015	2016	2020	2030	2040	2050	2060	2070
Hansford	237,633	265,814	265,814	265,814	265,814	265,814	265,814	265,814
Hutchinson	65,963	58,756	60,763	62,418	63,505	63,913	63,867	62,677
Lipscomb	54,556	252,671	252,671	252,671	252,671	252,671	252,671	252,671
Ochiltree	113,834	231,480	231,432	231,432	231,432	231,432	231,437	231,753
Total	471,986	808,721	810,680	812,335	813,422	813,830	813,789	812,915

Achieving the DFC

The District has tools for achieving DFCs provided through the District's Management Plan and the District's Rules. District Rules 8.4 and 8.5 provide the formula for review and calculation of allowable annual production. Rule 8.4 sets the conditions for the District to consider a reduction of allowable annual production, if production exceeds the MAG during the first three years of the 5-year cycle. Rule 8.5 provides the method of calculating a reduction in the allowable annual production limit. However, District Rule 8.7 (Board Variance) provides that the Board may set an allowable annual production limit for a Management Zone that varies from the calculations, if a review of all of the aquifer characteristics and conditions warrants such a variance. For example, an aquifer condition of heavy pumping caused by an exceptional drought year, or years, could be a valid reason for granting a variance.

Essentially, reductions under Rules 8.4 and 8.5 do not occur unless the Board so chooses.

It was reported that a second tool that the District may incorporate more into its Management Plan as a method of achieving DFCs is the conservation education program. Under the District's conservation education program: the on-farm demonstration projects; the meter reimbursement program; the Water Conservation Center conservation outreach; and the Master Irrigator Program, all have significant import in achieving the District's DFCs.

Current Desired Future Conditions

In 2005, the Texas Legislature required groundwater conservation districts across the state to conduct joint planning with the other districts in management areas established by the Texas Water Development Board. The GCDs in each GMA were required to review the management plans, the accomplishments of the management area, and proposals to adopt new or amend existing desired future conditions. North Plains GCD is located in Groundwater Management Area 1 which encompasses eighteen counties and all, or part of, four groundwater conservation districts in the Texas Panhandle. The districts in GMA-1 adopted desired future conditions (DFCs) in 2009 and 2010 for the Blaine, Dockum and Ogallala/Rita Blanca Aquifers. Those DFCs are summarized in the table below.

Aquifer	Desired Future Condition Summary	Desired Future Condition Date Adopted
Blaine	Fifty percent of the volume in storage remaining in 50 years in Wheeler County.	6/3/2010
Dockum	Average decline in water levels will decline no more than 30 feet over the next 50 years.	6/3/2010
Ogallala and Rita Blanca	Forty percent of volume in storage remaining in 50 years in Dallam, Hartley, Moore, and Sherman counties; Fifty percent of volume remaining in 50 years in Armstrong, Potter, Randall, Hansford, Hutchinson, Lipscomb, Ochiltree, Carson, Donley, Gray, Roberts, Wheeler, and Oldham counties; and 80 percent of volume in storage remaining in 50 years in Hemphill County.	7/7/2009

The Blaine Aquifer is not located in the District. During the first round of planning, the District requested GMA-1 combine the Rita Blanca and Ogallala aquifers in proposing DFCs because the data for the Rita Blanca Aquifer was not delineated well enough from the Ogallala Aquifer. The District selected the same 30-foot draw-down amount as the other counties for the Dockum in GMA-1.

Once the DFCs were finally adopted, the TWDB returned GAM runs to the districts to be used to gage the districts' achievement of the DFC goals. GAM Run 12-005 MAG provides the modeled available groundwater (MAG) for the Ogallala and Rita Blanca Aquifers; GAM Run 10-019 MAG provides the modeled available groundwater for the Dockum aquifer. The reports provide MAG amounts by county, management zone, groundwater conservation district, and river basin. The MAG based on the DFCs is summarized in the table above.

Modeled Available Groundwater

The District currently uses groundwater amounts extracted from GAM Run 12-005. The table below shows the MAG amounts from that table. At the time the GAM Run was completed, the PGMA area in Dallam County had not been added to the District so the "No District" amount for Dallam County represents that area. North Plains GCD Ogallala and Rita Blanca Aquifers MAG by Decade from TWDB GAM Run 12-005 (in acre-feet) is:

County	District	Year					
		2010	2020	2030	2040	2050	2060

Dallam	North Plains	314,814	277,174	245,338	216,215	188,745	163,943
	No Dist.*	89,793	75,300	63,738	54,102	46,068	39,548
Hansford	North Plains	284,588	262,271	240,502	218,405	197,454	177,536
Hartley	North Plains	424,813	368,430	319,149	276,075	238,186	205,137
Hutchison	North Plains	61,306	58,383	50,723	44,360	39,048	34,580
Lipscomb	North Plains	290,510	283,794	273,836	256,406	237,765	219,100
Moore	North Plains	193,001	186,154	162,142	137,321	114,658	95,490
Ochiltree	North Plains	269,463	246,475	224,578	203,704	183,227	164,265
Sherman	North Plains	322,683	300,908	263,747	229,122	197,480	169,172
Total		**2,250,971**	**2,058,889**	**1,843,753**	**1,635,710**	**1,442,631**	**1,268,771**

*Dallam County Priority Groundwater Management Area (PGMA) not in District during GAM Run 12-005.

For the Dockum Aquifer, the District currently uses amounts interpreted from TWDB GAM Run10-019 MAG version 2 Table 1(Estimated total annual pumping for the Dockum Aquifer in Groundwater Management Area 1). In August 2011, all of Dallam County was not in the District yet, and the report did not provide a breakdown in MAG amounts by county and district as was later done for the Ogallala and Rita Blanca Aquifers. North Plains GCD Dockum Aquifer MAG by Decade from TWDB GAM Run10-019 Version 2 (in acre-feet) is shown in the table below.

County	Year					
	2010	**2020**	**2030**	**2040**	**2050**	**2060**
Dallam	4,034	4,034	4,034	4,034	4,034	4,034
Hartley	3,567	3,567	3,567	3,567	3,567	3,567
Moore	5,395	5,395	5,395	5,395	5,395	5,395
Sherman	591	591	591	591	591	591
Total	**13,587**	**13,587**	**13,587**	**13,587**	**13,587**	**13,587**

The District combines Dockum and Ogallala/Rita Blanca MAG amounts in acre-feet for application of the District Rules as shown below:

County	Year					
	2010	**2020**	**2030**	**2040**	**2050**	**2060**
Dallam, Hartley, Moore, Sherman	1,358,691	1,221,553	1,067,701	926,422	798,724	686,877
Hansford, Hutchison, Ochiltree, Lipscomb	905,867	850,923	789,639	722,875	657,494	595,481
Total	**2,264,558**	**2,072,476**	**1,857,340**	**1,649,297**	**1,456,218**	**1,282,358**

The General Manager reported that he used an average decline rate from the beginning of the decade to the start of the next decade to compare the MAG to groundwater production.

The High Plains Aquifer System (HPAS) in Texas consists of the southern and northern portions of the Ogallala Aquifer, the Rita Blanca Aquifer, the Edwards-Trinity (High Plains) Aquifer, and the Dockum Aquifer. In 2015, the TWDB accepted the HPAS Groundwater Availability Model that characterizes groundwater flow in the Dockum, Ogallala, and Rita Blanca Aquifers in the District to use to calculate MAG. For the previous models and the current HPAS model, the District can pick a starting point for groundwater pumping and the model can adjust pumping of a period to meet the MAG required to achieve a DFC. The TWDB's contractor prepared a preliminary draft MAG from the HPAS model based on a combination of production from 2011- 2013 and preliminary estimates of 2014 production. Additionally, the District staff asked the contractor to run HPAS with 40% left in storage in 50 years for the Dockum Aquifer in Dallam, Hartley, Moore and Sherman Counties. The table below represents a summary of the preliminary MAG for the Dockum, Ogallala and Rita Blanca Aquifers for the counties located in the District.

All Aquifers	Available Groundwater(afy)

County	2015	2016	2020	2030	2040	2050	2060	2070
Dallam, Hartley, Moore, Sherman	1,572,370	1,427,841	1,354,378	1,130,379	900,868	673,672	463,636	295,381
Hansford, Hutchison, Ochiltree, Lipscomb	471,986	808,721	810,680	812,335	813,422	813,830	813,789	812,915

Groundwater Availability Models

Groundwater scientists construct GAMs using a variety of formats. For example, during the first round of planning the District used its own pumping data compared to aquifer storage amount estimates to preliminarily determine reasonable DFCs before presenting the same to the joint planning committee. The spreadsheet model was a conservative approach to predicting aquifer conditions because it assumed all groundwater pumped came from aquifer storage and did not take into account other parameters. On the other end of the spectrum, groundwater availability models can be based on MODFLOW. MODFLOW is the U.S. Geological Survey modular finite-difference flow model, which is a computer code that solves the groundwater flow equation. The program is used by hydrogeologists to simulate the flow of groundwater through aquifers. Since MODFLOW's original development in the early 1980s the USGS have released multiple upgrades, and is now considered to be the de facto standard code for aquifer simulation. There are several actively developed commercial and non-commercial graphical user interfaces for MODFLOW. MODFLOW is the basis for the groundwater models used during the last round of GMA-1 joint planning and the new HPAS model.

The HPAS model consists of four layers, and the model grid is composed of uniformly spaced half-mile square grid cells. The model incorporates parameters such as well discharge; aquifer storage; recharge; evapotranspiration; spring discharge; flow into rivers, draws and escarpments later flow through the aquifer; and cross-formational flow from one aquifer to another in each cell. The new model (as well as the older models) uses a concept of creating a balanced water budget by modeling steady-state aquifer conditions compared to modeling transient aquifer conditions. The model simulates the time period from 1930 to 2012, with an initial steady-state stress period that represents pre-development conditions beginning in 1930. To make the HPAS model work, modelers reviewed and modified reported historical groundwater pumping located in HPAS GAM Appendix C, water level information provided by observed and simulated hydrographs in Appendix B, and other hydrologic data from across the High Plains region in an effort to estimate aquifer conditions before and during pumping. All groundwater models have limitations with respect to data support, scale, and the assumptions used in their development. The more accurate the data incorporated into the model the more usable the result.

The table below shows HPAS stead-state model for the Ogallala Aquifer for the counties in the District. This table was extracted from the Final Numerical Model Report for the HPAS GAM Appendix A.

The water budget for the Ogallala Aquifer by county for the steady-state model (from Table A.1.1) is shown below. Negative values are extractions, and positive values are injections.

County	Recharge	ET	Springs	Rivers	Draws	Escarpments	Lateral	Cross-Formational
Dallam	24,489	-2,416	0	11,778	-389	0	-33,912	451
Hansford	11,525	-4,540	0	-13,446	-133	0	6,594	0
Hartley	29,125	-7,346	-69	-14,320	0	-1,825	-4,325	-1,240
Hutchinson	6,962	-5,977	-426	-18,842	-3,728	-12,165	34,176	0
Lipscomb	29,600	-8,292	0	-3,849	0	0	-17,459	0
Moore	17,353	-1,054	0	-3,600	-1,056	-3,809	-7,535	-298

Ochiltree	12,379	-487	0	1,938	0	0	-13,830	0
Sherman	17,547	-406	0	5,975	0	0	-23,170	54

The HPAS GAM Numerical Report shows the water budget of the transient model for the Ogallala Aquifer by County for 1980 and 2012. The water budget for 2012 of the transient model (from Table A.3.1) is shown below. Negative values are extractions, and positive values are injections.

County	Recharge	ET	Springs	Rivers	Draws	Escarpments	Reservoirs	Wells	Storage	Lateral	Cross-Formational
Dallam	24,600	-61	0	19,836	0	0	0	-429,574	379,136	7,428	-1,365
Hansford	11,531	-483	0	10,052	0	0	419	-242,130	217,629	2,981	0
Hartley	29,186	-3,213	-2	-5,377	0	-1,636	42	-488,903	486,978	-17,996	920
Hutchinson	7,082	-2,367	-185	-4,744	-798	-6,860	0	-85,118	82,617	10,373	0
Lipscomb	29,621	-5,733	0	1,567	0	0	0	-56,294	47,145	-16,307	0
Moore	17,436	0	0	5,266	-164	-1,730	0	-282,841	256,336	7,024	-1,326
Ochiltree	12,379	-170	0	3,738	0	0	126	-113,704	100,672	-3,040	0
Sherman	17,550	0	0	9,682	0	0	0	-397,598	370,112	246	9

In the HPAS model, recharge remains essentially the same between the steady-state model and the transient model. However, as groundwater is pumped the other modeled parameters must be changed and water taken from storage to balance the water budget. The water budget for the stead-state model and the two transient models from the HPAS GMA Report are included in the *HPAS GAM Numerical Report Water Balance Excel workbook* attach in this file.

Total Estimated Recoverable Storage.

In 2011, the Texas Legislature amended the Texas Water Code, §36.108(d) which provides that, before voting on proposed desired future conditions for a relevant aquifer within a groundwater management area, the groundwater conservation districts shall consider the total estimated recoverable storage as provided by the executive administrator of the TWDB, along with other factors listed in §36.108(d). Texas Administrative Code Rule §356.10 defines the total estimated recoverable storage as the estimated amount of groundwater within an aquifer that accounts for recovery scenarios that range between 25 percent and 75 percent of the porosity-adjusted aquifer volume.

Total estimated recoverable storage (TERS) is the amount that can **ever** be recovered from an aquifer regardless of economics. When compared to a 50-year planning period, **ever** is a long time. For example when the DFC is 50 percent of the storage left in 50 years, this means that the remaining 50 percent in storage minus the part in storage that is not recoverable is available forever after 50 years. So if the high point of TERS for an aquifer such as the Ogallala aquifer is 75 percent, the total actual storage remaining available after 50 years is 25 percent of the current storage. For confined aquifers such as the Dockum aquifer within the District, groundwater extraction is extremely difficult. The likelihood that 25 percent of the total storage can ever be recovered is remote. A true recoverable percentage could be in the five percent to less than five percent range regardless of what the TWDB adopted by rule. The Rita Blanca aquifer is another confined aquifer in the District. TERS does not account for water quality, so water that is recoverable in storage may not be of sufficient quality to beneficially use without treatment.

In January, the General Manager forwarded to the Board, TWDB GAM Task Run 15-006 Total Estimated Recoverable Storage (TERS) for Aquifer in GMA-1. The tables below are extracted from TWDB GAM Task Run 15-006.

Total estimated recoverable storage by county for the Dockum Aquifer included in District. (TWDB GAM Task Run 15-006).

County	*Total Storage (acre-feet)*	*25 percent of Total Storage (acre-feet)*	*75 percent of Total Storage (acre-feet)*
Dallam	80,000,000	20,000,000	60,000,000
Hartley*	96,000,000	24,000,000	72,000,000
Moore*	7,400,000	1,850,000	5,550,000
Sherman	540,000	135,000	405,000
Total	183,940,000	45,985,000	137,955,000
Total	**183,940,000**	**45,985,000**	**137,955,000**

* Includes the entire county.

Total estimated recoverable storage by Groundwater Conservation District for the Dockum Aquifer within GMA 1. (TWDB GAM Task Run15-006).

Groundwater Conservation District	*Total Storage (acre-feet)*	*25 percent of Total Storage (acre-feet)*	*75 percent of Total Storage (acre-feet)*
High Plains UWCD[2]	28,000,000	7,000,000	21,000,000
North Plains GCD	170,000,000	42,500,000	127,500,000
Panhandle GCD	15,000,000	3,750,000	11,250,000
No District	77,000,000	19,250,000	57,750,000
Total	**290,000,000**	**72,500,000**	**217,500,000**

Total estimated recoverable storage by county for the Ogallala aquifer within GMA -1. (TWDB GAM Task Run 15-006).

County	*Total Storage (acre-feet)*	*25 percent of Total Storage (acre-feet)*	*75 percent of Total Storage (acre-feet)*
Dallam	15,000,000	3,750,000	11,250,000
Hansford	24,000,000	6,000,000	18,000,000
Hartley*	17,000,000	4,250,000	12,750,000
Hutchinson*	11,000,000	2,750,000	8,250,000
Lipscomb	18,000,000	4,500,000	13,500,000
Moore*	10,000,000	2,500,000	7,500,000
Ochiltree	21,000,000	5,250,000	15,750,000
Sherman	18,000,000	4,500,000	13,500,000
Total	**134,000,000**	**33,500,000**	**100,500,000**

* Includes the entire county.

Total estimated recoverable storage by groundwater conservation District for the Ogallala Aquifer within GMA - 1. (TWDB GAM Task Run 15-006).

County	*Total Storage (acre-feet)*	*25 percent of Total Storage (acre-feet)*	*75 percent of Total Storage (acre-feet)*
Hemphill County UWCD	15,000,000	3,750,000	11,250,000
High Plains UWCD	3,100,000	775,000	2,325,000
North Plains GCD	130,000,000	32,500,000	97,500,000
Panhandle GCD	77,000,000	19,250,000	57,750,000
No District	9,600,000	2,400,000	7,200,000
Total	**234,700,000**	**58,675,000**	**176,025,000**

Total estimated recoverable storage by county for the Rita Blanca aquifer within GMA-1. (TWDB GAM Task Run 15-006).

County	*Total Storage (acre-feet)*	*25 percent of Total Storage (acre-feet)*	*75 percent of Total Storage (acre-feet)*
Dallam	9,800,000	2,450,000	7,350,000
Hartley	1,300,000	325,000	975,000
Total	**11,100,000**	**2,775,000**	**8,325,000**

Total estimated recoverable storage by GCD for the Rita Blanca Aquifer within GMA-1. (TWDB GAM Task Run 15-006).

Groundwater Conservation District	*Total Storage (acre-feet)*	*25% of Total Storage (acre-feet)*	*75% of Total Storage (acre-feet)*
North Plains GCD	11,000,000	2,750,000	8,250,000
No District	5,500	1,375	4,125
Total	**11,005,500**	**2,751,375**	**8,254,125**

So what does TERS provided by the TWDB mean?

The TWDB set a universal TERS range of 25 percent to 75 percent recoverable for all aquifers by rule. Total recoverable storage in the Ogallala Aquifer may actually be more than the 75 percent recoverable, but it also could be less than 75%. Remember, TERS is a range provided by the TWDB as a blanket definition for all aquifers in the state. Approaching the upper end of the TERS estimate will be exceedingly difficult, if not impossible, in a 50-year timeframe. For the Dockum and Rita Blanca aquifers, probably less than 25 percent of total storage is actually recoverable. Approaching 25% may be exceedingly difficult, but based on the TWDB TERS, not impossible. In all three aquifers, TERS is not limited by time. Approaching either TERS limit provided by the TWDB can create challenges to a 50-year planning horizon.

So what does the MAG mean?

Chapter 36 of the Texas Water Code defines "modeled available groundwater" as the amount of water that the executive administrator determines may be produced on an average annual basis to achieve a desired future condition established under Section 36.108 of the Texas Water Code. So if significantly more pumping is present during the early years of a 50-year cycle than the MAG, then there will be less pumping at the end of the cycle to achieve the average. The District, through joint planning, can set the beginning pumping amounts.

The Board recessed at 10:39 a.m. and reconvened at 10:51 a.m.

Action Agenda 3b - Receive report from Agriculture Committee regarding agriculture water conservation demonstration programs.

3-4-5 Project

3-4-5 Project preliminary results were presented at the annual Pioneer Crop Production Clinics on January 11-13, 2016. The final published report will be completed following an opportunity for the Board to have input, probably in March.

WCC Update

Weather and scheduling conflicts continue to delay the installation of the drip tape for the new sub-surface drip irrigation field. Staff members continue to monitor field conditions to allow for installation as soon as possible. Curtis Schwertner continues to perform winter maintenance throughout the season.

Master Irrigator Program Update

Paul Sigle contacted the candidates for the Program Advisory Committee regarding their interest in serving on the committee. The current committee list is set forth below:

Master Irrigator Project Advisory Committee

Danny Krienke, North Plains Groundwater Conservation District; Leon New, Irrigation Engineer; Steve Amosson, Texas A&M AgriLife; Charles Hillyer, Texas A&M AgriLife; Scott Strawn, Texas A&M AgriLife; Shawn Carter. Crop Production Services; Cameron Turner, Texas Water Development Board; Keith Sides, USDA NRCS; David Reinart, Better Harvest; Stan Spain, Spain Farms; Bryce Howard, Farmer.

At the first meeting of the Project Advisory Committee on January 18, 2016, Steve Amosson led the committee through a strategic planning process to design the curriculum and schedule for the Master Irrigator Program. Surveys were administered at the Pioneer Crop Production Clinics to collect feedback from producers and to establish a baseline for particular practices. This information was used as a guide for the program development process. Topics and speakers were discussed and a schedule was determined. These tentative meeting dates were set for the first season of the Master Irrigator Program:

April 13, 2016;
April 20, 2016;
July 13 and 14, 2016; and,
July 20, 2016.

The list of people attending the January 18th meeting is as follows:

Committee members: Danny Krienke, Leon New, Cameron Turner (via phone), Scott Strawn, Keith Sides, Charles Hillyer, Stan Spain, Bryce Howard, David Reinart

Others: Steve Walthour, Steve Amosson, Kirk Welch, Paul Sigle.

Action Agenda 3b - Receive report regarding groundwater production reporting for 2015.

Laura West reported that 2015 Annual Production Reporting is in full swing. To date District staff has processed and entered 1,100 production reports. In the near future District staff will begin QA/QC of production reports entered, so that District staff will have a better idea of how the production numbers compare to 2014 production numbers. Everything is running smoothly so far, and producers seem to be pleased with the new inventory system. Many of them are pleased to be receiving an email instead of an orange card in the mail. If the District does not have an email address on file, District staff is making a copy of the signature page of the production report and mailing it to that producer.

Action Agenda 3c - Consider approval of Water Well Permits as active and complete.

The General Manager reported that the District staff had processed 39 Water Well permits which are ready for Board consideration and approval. These permits, listed in the table below, represent completed Wells that have been inspected and are in compliance with District Rules. The inspections verify that the Wells were completed as required by their permits, including proper Well location, Well classification, maximum yield, and proper installations of check valves and flow meters. The yellow highlighted permit is a Well which was permitted prior to January 15, 2013, and unless it was drilled on breakout ground, may be metered at the well, or at the pivot. Copies of the individual permits were presented to the Board.

Well	Class	Sec	Blk	Sur	NS	EW

DA-8291	C	8	JLDallas	NONE	102N	113E
DA-8881	B	327	1-T	T&NO	442S	407W
DA-8906	D	27	48	H&TC	858S	799E
HA-8350	C	128	44	H&TC	114N	448W
HA-8498	C	MWhitley	NONE	NONE	1384N	1755E
HA-8795	C	169	44	H&TC	304N	768E
HN-8513	D	4	1	CIF	133S	112E
HN-8514	D	4	1	CIF	189N	101E
HU-4909	D	2	J	TWNG	103S	106E
LI-4847	D	967	43	H&TC	875N	363E
MO-6029	D	368	44	H&TC	91N	27W
MO-6199	B	232	3-T	T&NO	634N	101W
MO-6459	B	152	3-T	T&NO	327N	241W
MO-7793	C	355	44	H&TC	837N	860E
MO-7833	B	202	3-T	T&NO	145N	880W
MO-7893	C	26	2-T	T&NO	522N	375W
MO-8205	C	76	44	H&TC	633S	868E
MO-8639	C	17	Q	H&GN	240S	454E
MO-8897	D	372	44	H&TC	134N	21W
OC-7234	D	120	13	T&NO	871S	10E
SH-5694	D	31	2-B	GH&H	836S	59W
SH-5754	C	411	1-T	T&NO	835S	455E
SH-6061	C	8	2-T	T&NO	174N	268W
SH-7885	B	411	1-T	T&NO	481N	402E
SH-7929	C	250	1-T	T&NO	55N	100W
SH-8381	B	309	1-T	T&NO	452N	113E
SH-8382	B	309	1-T	T&NO	158N	270E
SH-8383	B	309	1-T	T&NO	534S	633E
SH-8392	B	310	1-T	T&NO	370N	106W
SH-8393	B	310	1-T	T&NO	157N	375E
SH-8800	B	44	3-T	T&NO	782S	619E
SH-8955	C	309	1-T	T&NO	120N	114W
SH-8956	C	309	1-T	T&NO	687N	688W
SH-8957	C	309	1-T	T&NO	133N	679E
SH-8959	C	310	1-T	T&NO	561N	25E
SH-8972	C	177	1-C	GH&H	456N	304W
SH-8973	C	177	1-C	GH&H	418N	665E
SH-8974	B	177	1-C	GH&H	161S	103E
SH-5694	D	31	2-B	GH&H	836S	59W
SH-5754	C	411	1-T	T&NO	835S	455E
SH-6061	C	8	2-T	T&NO	174N	268W
SH-7885	B	411	1-T	T&NO	481N	402E
SH-7929	C	250	1-T	T&NO	55N	100W
SH-8381	B	309	1-T	T&NO	452N	113E
SH-8382	B	309	1-T	T&NO	158N	270E
SH-8383	B	309	1-T	T&NO	534S	633E
SH-8392	B	310	1-T	T&NO	370N	106W
SH-8393	B	310	1-T	T&NO	157N	375E
SH-8800	B	44	3-T	T&NO	782S	619E
SH-8955	C	309	1-T	T&NO	120N	114W
SH-8956	C	309	1-T	T&NO	687N	688W
SH-8957	C	309	1-T	T&NO	133N	679E
SH-8959	C	310	1-T	T&NO	561N	25E
SH-8972	C	177	1-C	GH&H	456N	304W
SH-8973	C	177	1-C	GH&H	418N	665E
SH-8974	B	177	1-C	GH&H	161S	103E

Danny Krienke moved to approve Water Well Permit SH-8800 noting that the Well is properly equipped and otherwise complies with District Rules. Zac Yoder seconded the motion and it was approved 6-0, with Justin Crownover abstaining from the vote.

Zac Yoder moved to approve the remaining Well Permits on the schedule above noting that the Wells are properly equipped and otherwise comply with District Rules. Mark Howard seconded the motion and it was unanimously approved by the Board.

Action Agenda 3e - Receive report and consider action related to Legislative Interim Charges for the 84th legislative session.

Interim Charges for the House Natural Resources Committee and the Interim Charges for the Senate Committee on Agriculture were presented to the Board.

The Speaker of the Texas House of Representatives has released his eight interim charges for the House Committee on Natural Resources to pursue during the interim before the 85th Legislative Session. All eight interim charges could affect groundwater conservation districts; however, the five interim charges listed, in part below, will affect groundwater conservation districts. They are as follows:

- Examine the regional and state water planning processes.
- Evaluate the status of water markets in Texas.
- Evaluate the legislation to encourage groundwater planning.
- Determine the sources of water used by Texas in the production of food and fiber, and examine current water delivery methods and water conservation goals for agricultural use.
- Determine if sufficient safety standards exist to protect groundwater contamination.

The Lieutenant Governor has released interim charges for the Senate Committee on Agriculture, Water & Rural Affairs. Three of the interim charges are as follows:

- Surface Water/Groundwater: Study and make recommendation regarding the ownership, production, and transfer of surface water and groundwater in the state of Texas.
- State Water Plan: Study and make recommendations on improving the process of developing and executing the State Water Plan.
- Monitor the implementation of legislation addressed by the Senate Committee on Agriculture, Water & Rural Affairs during the 84th Legislature, Regular Session, and make recommendations for any legislation needed to improve, enhance, and/or complete implementation.

District staff is working with the District's lobbyist to prepare a packet outlining our agriculture demonstration programs for the House Committee on Natural Resources regarding determining the sources of water used by Texas in the production of food and fiber, and examining current water delivery methods and water conservation goals for agricultural use. The General Manager reported that this is a good opportunity for the District to provide information regarding these programs.

Both the House and the Senate have interim charges to evaluate the state water planning and the groundwater conservation district joint management planning systems. The District has actively participated in both planning efforts that are on a

five-year-cycle. After review of the time and expense involved in the planning and the relatively little change in plans during the five-year cycle, the General Manager requested that the Board authorize him to pursue the possibility of moving to a ten-year-cycle for adoption with a review every five years to update information as needed. Currently, both the GMA Joint Planning process and the Regional Water Planning Process requires the use of each group's data. The districts are required to look at the most recent state water plan in the GMA process and the Regional Water Planning Group is required to use MAGs from the DFCs developed in Joint Planning. In 2015, the Panhandle Regional Water Planning Group adopted the 2016 Regional Plan which will be incorporated into the 2017 State Water Plan which is based in part on MAGs derived from the DFCs set in 2009 and 2010. By the time the 2017 State Water Plan is adopted, a new set of DFCs will have been adopted by GMA-1. Associated MAGs from the Joint Planning DFCs adopted in 2016 will not be incorporated into the 2022 State Water Plan. After the first couple of joint planning sessions, the DFCs for the Region are not likely to change.

Lastly, the Texas Water Development Board and the TCEQ are developing their rules based on changes in law from the 84th legislature. The General Manager requested that the Board authorize him to provide input into the above mentioned entities rule making processes.

Gene Born moved that the Board authorize the General Manager to pursue modifying the State Water Planning and Groundwater Management Area planning cycle from five years to ten years and to make recommendations to the Texas Water Development Board and TCEQ on the rule revisions which will assist all groundwater conservation districts in the state. Harold Grall seconded the motion and it was unanimously approved by the Board.

Gene Born moved that the Board authorize the District to monitor rule making processes of the Texas Water Development Board and the Texas Commission on Environmental Quality and comment as needed. Harold Grall seconded the motion and it was unanimously approved by the Board.

Action Agenda 3f - Receive report and consider action regarding Texas Senate and TWCA Resolutions for Richard Bowers.

In November, Richard Bowers passed away. Richard was the General Manager of the North Plains Groundwater Conservation District from 1987 until 2007 when he resigned and moved closer to family in central Texas. He served on several regional and state boards and associations.

The District received resolutions from the Texas Senate and from the Texas Water Conservation Association regarding his work in groundwater. The resolutions were presented to the Board.

The Board discussed a memorial or recognition that the Board may desire to extend to Richard's family. It was the consensus of the Board that it would like for the recognition to be something personal and the Board elected the Executive Committee of the Board to consider this matter and make a recommendation regarding the same to the Board.

At 11:38 a.m., Director Gene Born, departed the meeting.

Action Agenda 3g - Consider compliance matters before the District.

The General Manager reported that there were thirty-two (2014) Production Reports associated with nineteen Producers filed late last year of which thirty (2015) Production Reports belonging to eighteen Producers were filed by January 15, 2016. The General Manager also reported that the District is currently investigating a Saltwater Disposal Well surface spill through the Texas Railroad Commission. The General Manager also notified the Board that the Latigo Saltwater Disposal permit hearing with the Texas

Railroad Commission regarding the Courson family would be held on February 16, 2016, and that he planned to attend the hearing.

Discussion Agenda 4c - General Manager's Report.

Steve Walthour presented the General Manager's Report, including information concerning upcoming meetings and conferences, the General Manager's activity summary and the District activity summary.

The General Manager also requested that he be nominated by the Board to serve on the Water Conservation Advisory Council. Danny Krienke moved to nominate Steve Walthour to serve on the Water Conservation Advisory Council. Mark Howard seconded the motion at it was unanimously approved by the Board.

Discussion Agenda 4b - Committee Reports.

None.

Discussion Agenda 4a - Director Reports Regarding Meetings and/or Seminars Attended, Weather Conditions and Economic Development in Each Director's Precinct.

District Directors reported to the Board regarding meetings and/or seminars attended, weather conditions and economic development in each Director's precinct.

Agenda 5 - Discuss Items for Future Board Meeting Agendas and Set Next Meeting Date and Time.

By consensus, the Board set its next regular Board meeting on March 8, 2016 at 9:00 a.m.

Agenda 6 - Adjournment.

There being no further business to come before the meeting, President Zimmer declared the meeting adjourned at 11:55 a.m.

Bob B. Zimmer, President

Daniel L. Krienke, Secretary