

## **Item 5 – Use of a 2000-2070 Timeline for DFC Expressions (2021)**

Since the end of the last GMA 12 Desired Future Condition (DFC) Planning Cycle in 2016, GMA 12 developed an updated groundwater availability model (GAM2018) for use in subsequent planning efforts. The updated model was released for use in late 2018 and has been extensively employed during the GMA 12 2021 planning cycle.

Because of the improvements to the previous model, results of artesian head reduction or drawdown differed moderately to significantly when calculated using GAM2018 compared to the previous GAM. With GAM2018, the drawdown that is calculated to occur in the Simsboro Aquifer over a planning period from 2000-2070 is significantly less than the drawdown calculated with the previous model when the same pumping scenario is inputted to both models.

When using GAM2018 and a Simsboro pumping reaching 147,235 acre feet per year by 2070, the average drawdown reaches 257 feet by 2070 for the pumping period from 2000-2070. For a pumping period from 2010-2070 and reaching the same 147,235 acre feet of pumping by 2070, the average drawdown is 214 feet..

It is important that we keep a consistent year starting point, planning cycle to cycle so that we keep the same beginning aquifer artesian head level values. Failure to incorporate the basal year 2000 will reduce the proper prospective of pumping effects. Other districts are moving their starting point to 2010 and thereby dismissing the effect of pumping on the aquifers for a ten (10) year period. A district can chose the starting point year, it is logical to use a 2000-2070 timeline to express our DFCs both for continuity and clarity. The Brazos River Alluvium and Yegua-Jackson aquifers use a different GAM and will continue to follow the previous timeline methodology.

John Seifert has spoken with Larry French and others at the Texas Water Development Board (TWDB) asking if a 2000-2070 timeline method of DFC expression is permissible. Their answer was “yes” and asked that the GMA provide the well files used in the GAM run which created the final DFCs.

**It is the recommendation of the General Manager that the Board approve the use of a 2000-2070 timeline for expressing the DFCs in the Sparta, Queen City, Carrizo, Calvert Bluff, Simsboro, and Hooper aquifers for the current GMA 12 Planning Cycle.**

# Brazos Valley GCD

BVGCD Aquifers	Current DFC (ft) (2000 to 2070)	PS - 7 Scenario (Drawdown [ft] from 2011 to 2070)			<u>S-7 GAM 2018 Drawdown ,ft 1999-2010</u>	S-7 GAM 2018 Drawdown, ft 1999-2070
		GAM2018	GAM2020	GAM2018 - GAM2020		
Sparta	12	47	46	0.9		
Queen City	12	41	39	1.2	<u>3</u>	50
Carrizo	61	76	76	-0.2	<u>2</u>	43
Calvert Bluff	125	95	97	-1.9	<u>7</u>	83-84
Simsboro	295	214	217	-2.7	<u>15</u>	110-112
Hooper	207	151	153	-2.8	<u>43</u>	257
					<u>23</u>	174-176

# Brazos Valley

	Current DFC 2000-2070 (feet)	Current MAG in 2070	S-7 Drawdown from 2010 to 2070 (feet) Red 2000-2070 Dd,ft		S-7 Pumpage in 2070 (acre-feet)
Sparta	12	9,019	47	50	13,161
Queen City	12	1,200	41	43	1,269
Carrizo	61	5,494	76	83-84	5,498
Calvert Bluff	125	1,757	95	110-112	1,726
Simsboro	295	96,198	214	257	147,235
Hooper	207	2,000	153	174-176	2,139