

# 2016 Annual Report

## Hays Trinity Groundwater Conservation District

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## 2016 ANNUAL REPORT OF HTGCD GOALS, MANAGEMENT OBJECTIVES & PERFORMANCE STANDARDS

As required in the Hays Trinity Groundwater Conservation District bylaws (4.2, a) an annual report shall be provided to the Board of Directors by District staff on the status of the District and its programs. The Groundwater Management Plan serves as a guide for the District's annual reports. The 2016 annual report follows this format. Note, a revised 2016 Management Plan was adopted by the HTGCD Board of Directors on January 21, 2016 and was submitted and approved by the TWDB on February 19, 2016. The 2016 Annual Report will track the new, 2016 Management Plan.

The Groundwater Management Plan describes a methodology for tracking progress in achieving management goals and provides for the preparation and presentation of an annual report to the Board of Directors.

### 1. **Providing the most efficient use of groundwater.**

#### 1.1. Management Objective

Each year the District will hold at least one educational event

#### Performance Standard

Each year a summary of the District educational event will be included in the Annual Report.

#### **Attended, participated, hosted, or presented in the following events:**

##### *January 2016*

*Hosted: Onion Creek Meeting*

*Presented: HTGCD Educational Video to local constituents*

*Hosted: Onion Creek Field Trip*

*Participated: Technical Workshop Meeting at BSEACD*

*Hosted: HTGCD Board meeting presentation, District Wastewater Use*

##### *February 2016*

*Attended: Austin Geological Society, Lecture*

*Attended: Wimberley Water Supply Corporation, Board Meeting*

*Presented: HTGCD Educational Video*

##### *March 2016*

*Participated: GMA9 Technical Meeting*

*Attended: BSEACD Award Ceremony*

*Attended: Austin Geological Society, Lecture*

##### *April 2016*

*Participated: GMA9 Meeting*

*Attended: Austin Geological Society, Lecture*

*Attended: Wimberley Lion's Club Meeting*

*Attended: Onion Creek Coalition Meeting*

*Attended: BSEAD Well Water Check Up*

*Hosted: Educational Workshop, Wet Ponds*

*Attended: BSEACD Board Meeting*

*May 2016*

*Attended: Austin Geological Society, Lecture*  
*Attended: Onion Creek Coalition Meeting*  
*Attended: DSWSC Board Meeting*  
*Attended: Travis County Commissioner's Court Workshop*

*June 2016*

*Attended: Travis County Commissioner's Court Meeting*  
*Attended: Water Roundtable Meeting, Capitol*  
*Participated: Multiport Well Meeting, BSEACD*  
*Attended: City of Dripping Springs Council Meeting*

*July 2016*

*Hosted: Meeting with Rene Barker, Consultant, Aquifer Analysis*  
*Attended: City of Dripping Springs Council Meeting*  
*Attended: Water Roundtable Meeting, Capitol*  
*Attended: DSWSC Board Meeting*  
*Participated: Joint Meeting with CODS, HTGCD and BSEACD*  
*Attended: Wimberley Water Supply Corp Board Meeting*  
*Hosted: Presentation to Master Naturalists*

*August 2016*

*Hosted: Meeting with local Resident, Groundwater Concerns*  
*Attended: Hays County Commissioner's Court Meeting*  
*Participated: Meeting with BSEACD and City of Austin, SW Travis County GCD*  
*Participated: Meeting with DSISD School Board*  
*Participated: Meeting with Commissioner Whisenant, Groundwater*  
*Attended: Austin Geological Society, Lecture*

*September 2016*

*Hosted: Meeting with local Resident, Groundwater Concerns*  
*Participated: Meeting at the Capitol, Groundwater*  
*Attended: Water Roundtable Meeting, Capitol*

*October 2016*

*Attended: Texas Hydrogeologic Workshop*  
*Attended: Austin Geological Society, Lecture*  
*Participated: Meeting with Commissioner Whisenant, Groundwater Concerns*  
*Attended: BSEACD Board Meeting*  
*Attended: Travis County Commissioner's Court Meeting*

*November 2016*

*Participated: Rainwater Revival Event*  
*Attended: Austin Geological Society, Lecture*  
*Attended: TCEQ Meeting*  
*Participated: Meeting with local hydrogeologist*

*December 2016*

*Attended: Onion Creek Meeting*  
*Attended: Austin Geological Society, Lecture*  
*Participated: Meeting with West Travis County PUA*  
*Participated: Onion Creek National Water Model Study*

## 2. Controlling and preventing waste of groundwater

### 2.1. Management Objectives

Each year the District will take complaints from any concerned citizen or entity in the district on cases of waste or possible waste.

#### Performance Standard

In each Annual Report, the District will include a discussion of the recent issues with waste and recommend any amendments to the rules to prevent the waste of groundwater.

*Quarterly throughout 2016, District Staff reported during public meetings, to the Board of Directors on the topic of waste. See 3-Ringed binder, Section 2 for agenda items. No complaints were submitted to the District office concerning waste or possible waste during the year. On January 18, 2017, the Board of Directors initiated a Rules Committee to review the current Rules. Any changes to the Rules will be vetted by the entire Board of Directors, a legal review and a public hearing. Once approved, the Rules will be made available to the public through the District's website under Quick Links / Regulatory.*

*The District relies on the on-line Quarterly Reporting process, see the pumpage report on the following page, that allows all HTGCD operating permit holders instant access to enter and review their own production, sales, connections and percent losses. Communication concerning loss is tied directly to each quarterly report. This gives the permit holder and the District an electronic record of reasons for loss including: line-breaks, meter replacement, fires or flushing.*

# Quarterly Pumpage Report

Forms | My Profile | Log off

## Non-Exempt Well - Quarterly Reporting - FORM #: 2009-1A

Permit Holder

Creekside Pavilion

Year 2016

Quarter 4th Qtr (October - December)

Go

Water Level Information		October		November		December	
Well Id / Name	Water Level	Water Level Date	Water Level	Water Level Date	Water Level	Water Level Date	Water Level Date
Creekside01	183	10/31/2016	182	11/30/2016	182	12/31/2016	
<input type="button" value="Add Another Well"/> <input type="button" value="Remove Well"/>							
	YTD Totals	Qtr Totals	October	November	December		
Groundwater Pumped Total	122,627	27,800	9,732	10,428	7,642		
Other Water Sources	0	0	0	0	0		
Sold / Used	122,627	27,800	9,732	10,428	7,642		
Total # Service Connections			1	1	1		
New Service Connections			0	0	0		
Notes / Comments, New Connection Addresses							
Loss	0	0	0	0	0		
Loss Percent	0 %	0 %	0 %	0 %	0 %		

### 3. Controlling and preventing subsidence.

The rigid geologic framework of the region precludes significant subsidence from occurring. Therefore, this goal is not applicable to the operations of this District.

### 4. Addressing conjunctive surface water management issues.

#### 4.1. Management Objective

To promote the use of surface water or other alternatives to groundwater in growing areas where groundwater demand is projected to lower the water tables and to reduce stream and spring flow to unacceptable levels.

#### Performance Standard

The District will strive to meet with the planning departments of major surface water providers within the District at least once per year. The District will summarize these meetings and their outcomes in the Annual Report.

## Major Surface Water Suppliers:

West Travis County Public Utility Agency (WTCPUA): A meeting was held with General Manager Robert Pugh concerning an overview, exchange of ideas and responsibilities between the two agencies. Summary of hosted meeting provided, see 3-Ringed binder, Section 2.

Dripping Springs Water Supply Corporation (DSWSC): A meeting was held with General Manager Greg Perrin concerning an overview, exchange of ideas and responsibilities between the two agencies. Summary of hosted meeting provided, see 3-Ringed binder, Section 2.

## 5. Addressing natural resource issues that impact the use and availability of groundwater or are impacted by the use of groundwater.

### 5.1. Management Objective

Each year the District will make at least one endorsement or contribution to ongoing studies of geologic, environmental, or hydrogeologic studies being performed in the district area.

### Performance Standard

Each year a summary of the District's contributions or endorsements of ongoing studies will be included in the Annual Report

*Lower Trinity Project: The Project was initiated by the District in 2012 in order to evaluate the potential for an alternative aquifer for western Hays County. Extensive work was done on the planning and evaluation of the Aqua Texas Woodcreek test well – a Lower Trinity test. The well recovered only a minor flow of water from the Sligo and Hosston formations and was eventually turned over to the District as a monitor well (Arapahoe). The Project reported on the test well results at a public workshop. The hydrogeological evaluation of the Lower Trinity Aquifer continued in 2016 with the addition and analyses of geophysical logs and cuttings samples. Focus was on northern Hays County, particularly in the rapidly developing Fitzhugh Road area, where the Middle Trinity Aquifer appears to be dewatered and new wells are finding minimal production from the Lower Trinity Hosston.*

*Publications: The District participated in the editing and publishing of two hydrogeological reports: The “Hydrogeologic Atlas of the Hill Country Trinity Aquifer” in 2010 and the “Austin Geological Society-Guidebook 33” in 2011. These technical documents were widely distributed to professionals, university libraries and the public. District staff contributed to several hydrogeological papers during 2014 and 2015 authored by BSEACD professionals on the Blanco River Watershed and groundwater flow within the Balcones Fault Zone. A 2016 publication focused on the Onion Creek Watershed is discussed below.*

*Onion Creek Project: The Onion Creek Project was initiated in December 2014. The working team included geoscientists from HTGCD, BSEACD, the City of Austin and independent consultants. The project plans were to compile, analyze and evaluate hydrogeologic data collected along the length of Onion Creek and its tributaries from headwaters in Blanco County to the eastern boundary of the HTGCD. A primary goal of the project was to provide an interpreted hydrogeological data-base that will serve the groundwater districts and the community as a technical basis for ongoing groundwater planning. Continued stream-flow*

measurements, surface geology, water sampling and chemical analyses resulted in the completion of Phase I of the Project by mid-year 2016. Several technical presentations were given during the year including to the: HTGCD & BSEACD Boards, Dripping Springs School Board, and City of Dripping Springs. A report covering Phase I was completed by the team, made available to the public online and presented at the Gulf Coast Association of Geological Societies meeting in September; “Surface-Water and Groundwater Interactions Along Onion Creek, Central Texas” was published in the 2016 GCAGS Transactions. Phase II of the Onion Creek Project was outlined by the technical team in late-2016, reviewed for the HTGCD Board and is ongoing. A primary task of the second phase will be to design and carry-out a dye-trace study along losing reaches of Onion Creek in an attempt to further define surface-water and groundwater interaction.

Upper Glen Rose, Unit 3, Mapping in the Onion Creek Watershed: One of the critical technical conclusions of the Onion Creek Project, Phase I, was the importance of the Upper Glen Rose Member, Unit 3, as a confining geologic interval. When this geologic unit is eroded by down-cutting Onion Creek and its tributaries, there appears to be a window for direct surface-water recharge to the Middle Trinity Aquifer. A field-identification and mapping project was initiated in 2016 to map Unit 3 exposures within the watershed. Measured surface- sections, field reconnaissance evaluation and subsurface data (geophysical logs and cuttings samples) were collected and analyzed in 2016. The project is ongoing in 2017.

District Hydrogeological Analyses of the Trinity Aquifer System: Hydrogeologic data from the Trinity Aquifer was collected and analyzed during 2016. This is an ongoing project designed to acquire and interpret pertinent technical data and to apply this information to district operational management. Data includes: geophysical well logs, cuttings samples, groundwater levels, groundwater samples & chemical analyses, pumping test reports, surface geology and groundwater use (pumpage). This information is maintained in the district’s growing data base and is used in conjunction with the TWDB groundwater data base. Regional projects such as the planned Hydrogeologic Atlas of the Trinity Aquifer, Volume II, will incorporate some of this data in its analyses

Well Monitor Project: This project, initiated in the 4<sup>th</sup> quarter of 2016, projects the drilling and evaluation of four district monitor wells. The wells, after extensive formation evaluation, will be equipped with transducers and monitored by the district. Well No.1 will be located in the Dripping Springs area and is funded by the DSWSC. It will be designed to monitor the Cow Creek aquifer.

## **6. Addressing drought conditions**

### **6.1 Management Objective**

The District has developed a Drought Contingency Plan to protect and conserve groundwater during critical drought conditions. The plan will be updated as additional data becomes available.

#### **Performance Standard**

The District will post a copy of the plan on the HTGCD website and will include an updated Drought Contingency plan, available to end-users, in the Annual Report.

The District continues to use the User Drought Contingency Plan (UDCP) for all of its non-exempt HTGCD operating permit holders. The UDCP is available for review on the District’s website under Forms. A copy of the UDCP is attached; see 3-Ringed binder Section 3.

The Water Conservation Plan is also part of the paperwork required by the District for an operating permit application to be administratively complete; a copy of the plan is attached; see 3-Ringed binder Section 3.

A Drought Production Cutback Curtailment Chart, see chart below, is included with each new permit and renewal permit. The cutback chart provides the exact monthly production cutback curtailment requirements in gallons so that permit holders can manage Board declared drought stage condition production cutbacks.

	A	B	C	D	F	G	H	I	J
1	<b>Center Lake Business Park</b>								
2				1.6 Acre Feet			<b>Drought Contingency Plan</b>		
3	2016 Permit						<b>Production Cutback Chart</b>		
4				521,362 Gallons					
5									
6					Stage 1	Stage 2	Stage 3	Stage 4	
7		Actual Use		Baseline	Voluntary	Alarm	Critical	Emergency	Gallons
8		Gallons		Gallons	10%	20%	30%	40%	Over
9	January		6%	31,282	28,154	25,025	21,897	18,769	
10	February		7%	36,495	32,846	29,196	25,547	21,897	
11	March		7%	36,495	32,846	29,196	25,547	21,897	
12	April		7%	36,495	32,846	29,196	25,547	21,897	
13	May		8%	41,709	37,538	33,367	29,196	25,025	
14	June		10%	52,136	46,923	41,709	36,495	31,282	
15	July		12%	62,563	56,307	50,051	43,794	37,538	
16	August		12%	62,563	56,307	50,051	43,794	37,538	
17	September		10%	52,136	46,923	41,709	36,495	31,282	
18	October		8%	41,709	37,538	33,367	29,196	25,025	
19	November		7%	36,495	32,846	29,196	25,547	21,897	
20	December		6%	31,282	28,154	25,025	21,897	18,769	
21	<b>Totals</b>		0	521,362	469,225	417,089	364,953	312,817	0

## 6.2 Management Objective

Each quarter the District will check the National Weather Service-Climate Prediction Center website

[http://www.cpc.ncep.noaa.gov/products/monitoring\\_and\\_data/drought.shtml](http://www.cpc.ncep.noaa.gov/products/monitoring_and_data/drought.shtml) for updates of the Palmer Drought Index. The District will download the updated Palmer Drought Severity Index (PDSI) map and check for periodic updates on [www.waterdatafortexas.org/drought](http://www.waterdatafortexas.org/drought)

### Performance Standard

Quarterly, the District will make an assessment of the status of drought in the District and prepare a quarterly briefing to the Board of Directors. The downloaded PDSI maps will be included with copies of the quarterly briefing in the District Annual Report to the Board of Directors.

*Quarterly, a status of the drought briefing report assessment is provided to the Board of Directors. The briefing includes: maps from the US Drought Monitor and the Palmer Drought Severity Index, an update from the Texas Drought Preparedness Council Situation Report, monitoring run well level averages, HTGCD drought trigger updates, HTGCD staff recommended drought stage, HTGCD table of water level measured, and any filed complaints of waste or possible waste. See 3-Ringed binder Section 4. It should be also noted that HTGCD staff provides a monthly review of the drought to the Board of Directors.*

*During 2016, Texas Drought Preparedness Council Situation Reports were not released online. Several communications to the TWDB concluded that no reports were available. If reports were available they would have been reviewed and printed out as part of the annual report. As no reports were available, no print outs were added to the 3-Ringed binder.*

*The HTGCD monitoring well location map has been printed and is part of the annual report, see 3-Ringed binder Section 5.*

*Hydrographs for Mount Baldy and Henly Church wells, included within Section 5, along with flow rates from the Blanco and Pedernales Rivers, indicate the present health of the aquifer currently interpreted by the HTGCD as stage 1 “No Drought, Voluntary Conservation”.*

### 6.3 Management Objective

Each year the District will collect monthly water level data from a network of monitoring wells.

#### Performance Standard

Each year a report of the District water level collection activities including a table of the water levels measured in District monitoring wells will be included in the Annual Report.

*Monthly the District staff collects and enters data during its water level Monitoring Run. The information collected is displayed on the District’s website as hydrographs, and also includes precipitation levels. The public can access the District’s website for more specific well data by scrolling over the hydrographs to see elevation above a.m.s.l. measurements and surface to top of water table measurements.*

*In addition to the Monitoring Run, District staff downloads quarterly data from 11 transducer wells within western Hays County. This information is also located on the District’s website for public use.*

*District staff updated a 2016 table that tracked monthly water level measurements taken and is included within the annual report; see 3-Ringed binder Section 5.*

#### 6.4 Management Objective

Each year the District will monitor data collected from the U.S. Geological Survey water-flow monitoring stations on the Blanco River, Pedernales River, Onion Creek and at Jacob's Well Spring.

#### Performance Standard

Each year, the District will review the prior year's monitoring data with local, state or federal organizations and prepare a summary to be included in the Annual Report.

*HTGCD staff reviewed the year-end monitoring data collected within 2016 during a public Board meeting on December 14, 2016 at Dripping Springs City Hall. The Honorable Hays County Commissioner, Ray Whisenant, was in attendance. The year-end monitoring data review is included within the annual report; see 3-Ringed binder Section 6. The review showed groundwater levels were, on average, up due to increased rainfall during 2016. Also during the year, the District remained within Drought Stage 1, No Drought Voluntary Conservation.*

### **7. Addressing conservation.**

#### 7.1 Management Objective

Each year the District will submit one article for publication regarding water conservation to at least one newspaper of general circulation in Hays County.

#### Performance Standard

Each year a copy of the article submitted for publication will be included in the Annual Report.

*The District submitted the following articles; see 3-Ringed binder Section 7. They are also available on the District's website.*

*Wimberley View: January 25, 2016 "Western Hays County: "Desired Future Conditions"*

*Wimberley View: December 19, 2016 " Hays Trinity GCD Tally Ho Ho Ho*

### **8. Addressing recharge enhancement.**

Due to the geologic and hydrostratigraphic structure of the Trinity sub-aquifers, the implementation of significantly effective recharge enhancement to the primary source aquifer may not be practical. Current interpretation of geologic data suggests that downward leakage within the Trinity Group is limited to specific reaches along the Blanco River and Onion Creek. The majority of recharge takes place west of the bounds of the HTGCD near the sedimentary wedge-edge of the water bearing rock units through diffuse infiltration. Given the location of suspected recharge and its nature, neither general land management nor focused enhancement practices may be feasible. Therefore, until additional hydrogeologic data is available, this goal is not applicable to the operations of this District.

## 9. Addressing rainwater harvesting.

### 9.1 Management Objective

Each year the District will make at least one endorsement or contribution to programs that encourage, install, educate or assist individuals in the implementation of rainwater harvesting systems in the District area.

### Performance Standard

Each year the District will provide records of contributions or promotions of rainwater harvesting events or companies in its Annual Report.

*The District staff attended and manned an event booth at the Rainwater Revival in Dripping Springs on Saturday, November 5, 2016. The booth was well visited by the public, other vendors and served as an educational service to the community. The District provided an endorsement of the Rainwater Revival via the District's website, an announcement during a Board meeting and through its email distribution lists; see 3-Ringed binder Section 7.*

*District staff reaffirms, during monthly Board meetings, that the District encourages the use of rainwater collection systems on all new homes, businesses and on existing buildings. The District promotes the use of surface water or other alternatives to groundwater in and around western Hays County; see 3-Ringed binder Section 7.*

*Additionally, District staff receives TCEQ packets concerning new business development within the HTGCD boundary. A review of the packets includes direct communication not only with the TCEQ about the project, but also with the developer and their engineer. This communication inquires about the installation of rainwater harvesting on common buildings or the ability of residents to install rainwater harvesting equipment; see 3-Ringed binder Section 7.*

## 10. Addressing precipitation enhancement.

This goal is not applicable to the operations of this District.

## 11. Addressing brush control.

### 11.1 Management Objective

The District will attend or contribute to at least one event each year that promotes and educates the public on proper land management practices.

### Performance Standard

Each year the District will provide records of contributions or promotions of land management events or companies in its Annual Report.

*District staff reaffirms during monthly Board meetings, that the District promotes recharge of the aquifer through such means as proper brush management and re-establishing deep rooted native grasses; see 3-Ringed binder Section 8.*

*District staff hosted an educational workshop video on November 2, 2016 at Dripping Springs City Hall, see 3-Ringed binder Section 8. The video shown was, "Tour of Water Management on Human Scale Part 1".*

*The District website, under Public Education Outreach, lists and promotes land management websites for the public to utilize, see 3-Ringed binder Section XXX.*

## 12. Addressing Desired Future Conditions (DFC)

### 12.1 Management Objective

The HTGCD is working within the framework of GMA9 to upgrade and maintain a well database map and files that will identify all District monitoring wells in the management area. The District will work with GMA9 and their consultants on an acceptable method to analyze and report drawdown levels relative to the DFC. Deliverables may include potentiometric surface maps of the Middle and Lower Trinity Aquifers and selected hydrographs plus other documents generated by the consultants.

#### Performance standard

Each year the District will review the average drawdown of at least two Trinity Aquifer monitor wells, one in each Planning Region, against the DFC projected average regional drawdown for western Hays County. The HTGCD shall provide a summary in its Annual Report.

Karst aquifers like the Trinity are highly responsive to surface water conditions on relatively short time scales. Within western Hays County it is not unusual for groundwater levels to fluctuate by as much as 100 ft in less than a year due to natural processes such as seasonal rainfall variation and periods of drought or unusually high rainfall. Taking this into consideration we should be cautious when attempting to identify local drawdown trends for comparison to DFC regional projected draw downs. Here we use trend lines calculated from linear regression analysis to estimate drawdown from Jan 2008 to December 2016. Trend lines are an imperfect way to estimate drawdown as they typically require a longer time series than what is available in the HTGCD monitoring database. However, trend lines provide a more robust estimate than a simple 'point-to-point' analysis because they attenuate the effect of large shorter-term fluctuations in water level.

#### **Water planning region K: Henly Church Well Hydrograph:**

The Henly Church well trend line estimates an increase in water levels of approximately 16 ft from 2008-2016 (Figure 1). Above average rainfall in 2015 and 2016 has contributed to relatively high water levels. In June 2016 the Henly Church well reached its highest water level from the 2008-2016 time period. Present water levels suggest that the aquifer is not currently in danger of dropping below the DFC projected average regional drawdown of 19ft.

#### **Water planning region L: Glenn Well Hydrograph**

The Glenn well trend line estimates an increase in water levels of approximately 50 ft from 2008-2016 (Figure 2) . In this region of the Trinity aquifer water levels show more variability over time, which is likely to influence trendline slope. Given the influence of this variability it is probable that 50 ft is an overestimation of water level increases from 2008-2016. Similar to the Henly Church well, water levels in the Glenn well were higher than average in 2016, suggesting that water levels are not currently in danger of dropping below the DFC projected average.

Measured Water Levels at Henly Church: 2008-2016

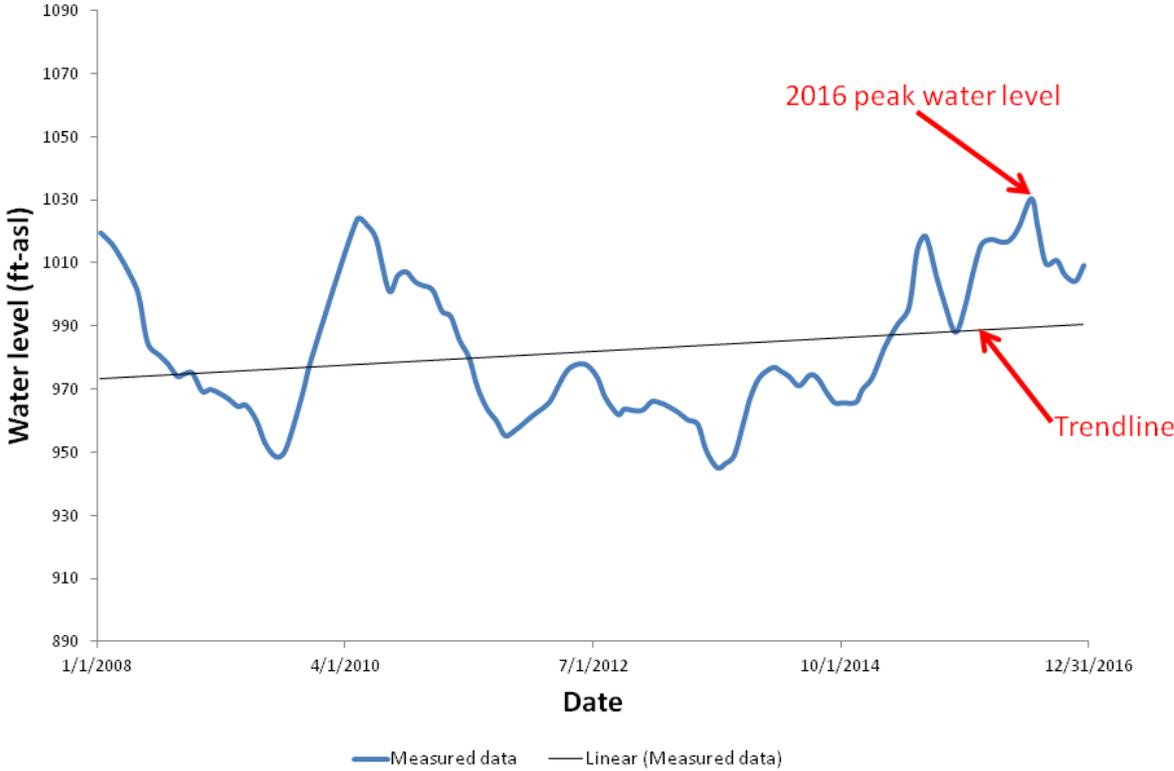
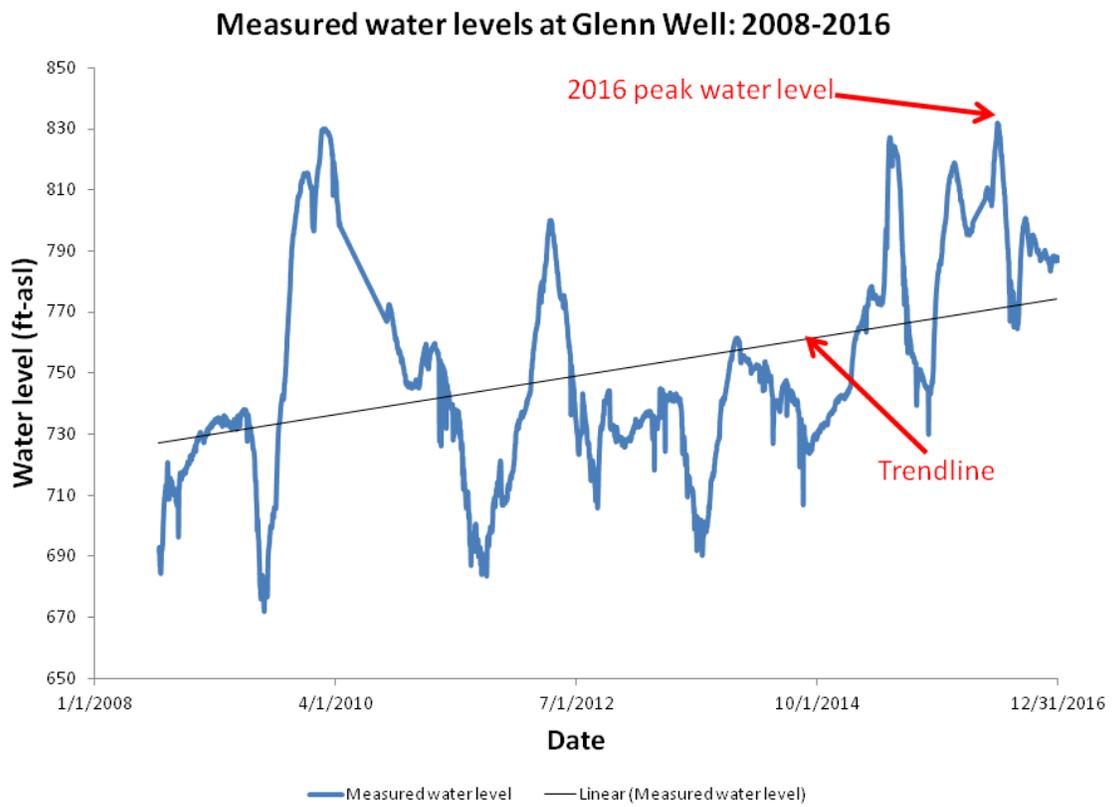


Figure 1: Hydrograph of Henly Church well from 2008-2016.



**Figure 2: Hydrograph of Glenn well from 2008-2016.**

## 12.2 Management Objective

The MAG for the Trinity Aquifer in the District is derived from the DFC and requires frequent review against estimated pumpage.

### Performance standard

The HTGCD shall prepare an annual report of MAG estimated pumpage to monitor District compliance. A summary shall be presented to the HTGCD Board and made available to the public and included in the Annual Report.

The *Available Groundwater HTGCD Trinity Aquifer System* chart, see page 16, has been updated and includes estimated exempt use production numbers and actual production reported from non-exempt permit holders from 2009 through 2016. A summary shall be provided to the HTGCD Board of Directors during the annual report presentation. Special attention should be made to the following data:

During 2016, 95 new exempt wells were drilled within the District boundary. Using 330 gallons per day, we can calculate that 35 acre feet will be produced on average. The total exempt use for domestic and agriculture use through 2016 is shown on the chart as 3,577 acre feet.

The sum of “non-exempt use” through 2016 is 3,430 acre feet. Adding “non-exempt use” and “exempt use” (3,577 and 3,430) the District is committed to 7,007 acre feet.

The HTGCD total MAG (Modeled Available Groundwater) is 9,100 acre feet. Subtracting committed number (7,007) from the MAG (9,100) equals 2,093 acre feet available for both permitting and exempt use combined.

Actual non-exempt production reported to HTGCD for 2016 totaled 1,586 acre feet. This amount is less than half of the total of committed non-exempt permitted number of 3,430 acre feet.