PLUM CREEK CONSERVATION DISTRICT

Plum Creek Conservation District

NEWSLETTER

OCTOBER 28, 2019

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LATEST SITE-WORKS REACH COMPLETION; MORE ON TAP

Sites 11 and 16 are located in the Niederwald area and both are listed as "high-hazard" by the TCEQ, based on potential for loss of life and or property, should the dam fail. The Sites received similar work this summer—primarily rip-rap placement along the earthen, upstream face of the dams. Funding for the Site 16 work came from a federal program, while Site 11 work was financed predominately by state and federal sources.

The factors necessitating the work differed. Site 11 suffered wave-action erosion during Hurricane Harvey and thus received partial funding through a National Resources Conservation Service Program as well as state aid from the Texas State Soil and Water Conservation Board (TSSWCB) covered the majority of the bill, and the District was left to match just 0.5% of the total project cost. Meanwhile, Site 16 work was a Remediation Project—different from both EWP work and Rehabilitation (such as Site 6 underwent in 2018).

Neatly laid rip-rap extends the length of the berm at Site 16 and will prevent wave erosion from future Harvey-like storms.

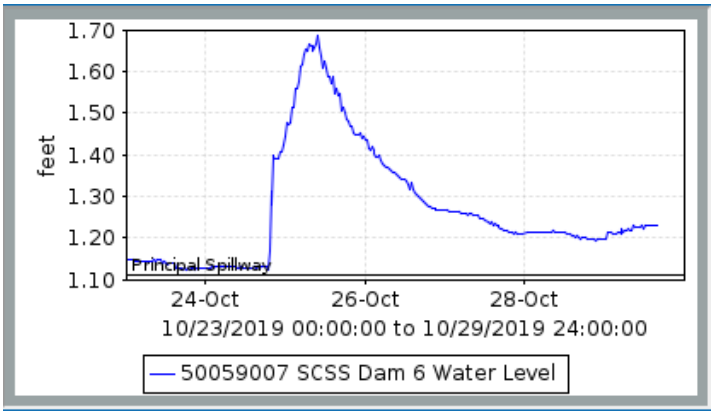
The District anticipates only a brief reprieve before solicitation for bids begins on the next tandem of site-works, which will both be Rehabilitations. Site 10 is set to become only the second PCCD dam to utilize a concrete spillway. Dual-auxiliary Site 28 will receive a second riser, an increase in the diameter of the primary spillway pipe, and the widening of one of the auxiliary spillways. Sites 12 and 21 are other high-hazard dams which have been prioritized for Rehab. At present, no definitive dates have been set for these projects.

HAYS COUNTY DAMS RECEIVE FLOOD GUAGES

The District will now be able to remotely track stage levels in real-time for five of its Hays County flood control structures. PCCD was approached by Hays County Emergency Services (HCES) with the idea to place flood gauges (left) on high-hazard PCCD dams in the Kyle area. Hays County had already secured grants to pay for the installation of the gauges at the time they approached PCCD. Additionally, HCES agreed to cover any future Operations and Maintenance costs.

The flood gauges will allow District Staff to know how full dams are, even during the most intense precipitation events. In times past, flooded roads prevented Staff from being able to physically get to the sites to see the water levels. Furthermore, data can be viewed at intervals ranging from three days to three months (right). This allows the District to detect inflow patterns, which is becoming increasingly important with increasing development near these dams.

HCES Interim Director, Justin McInnis, delivered an informational presentation regarding the flood gauges to the District Board of Directors at the October Board Meeting.



DISTRICTS, PERMITEES WORK TOGETHER TO LEARN ABOUT CARRIZO

A multi-entity monitor well drilling project is underway in the Carrizo Aquifer. Spearheaded by Gonzalez UWCD and funded by their major water supply permit holders (one of which also holds permits with PCCD), PCCD and Guadalupe County GCD were invited to play a role in the project which will ultimately see up to 19 monitoring wells implemented in all three involved districts' boundaries.

The end goal of the project is to better understand the characteristics of the Carrizo Aquifer (namely estimating the saturated thickness) in the northern extent of GMA 13 and to monitor the Desired Future Condition (DFC) for the Carrizo, which is maintaining 75% of the aquifer's saturated thickness.

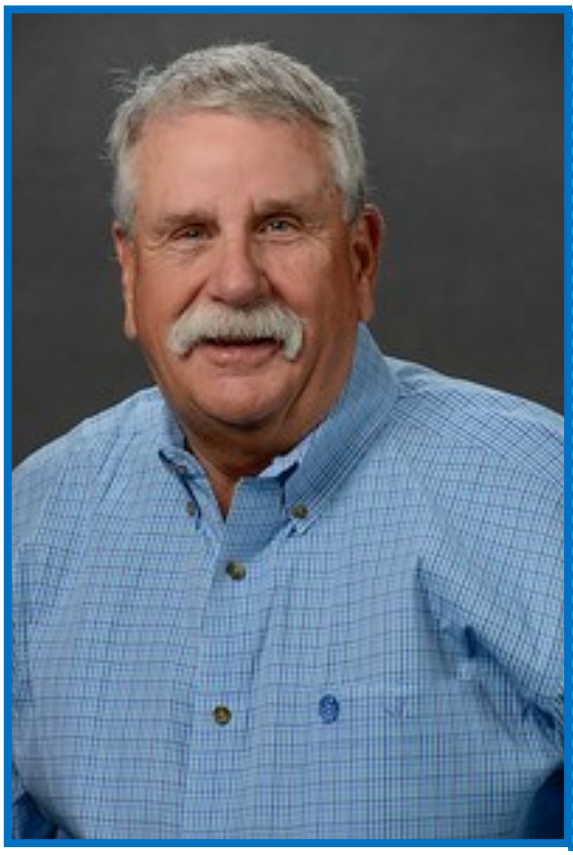
PCCD opted not to enter contractually into the project, but did agree to provide geologic consulting services. The District's geologist, William Feathergail Wilson, has preformed lithology analysis on each of the wells completed to date.

PCCD WELCOMES TWO NEW STAFF

Alan Burklund is a native of Lockhart. Alan is mechanically inclined and has a strong background in range management. Alan earned his bachelors degree in Agriculture from Tarleton State University.

After serving in the Marine Corps, Matt Shaw and family relocated to the Kyle area where Matt completed his Geography-Water Resources Management degree at Texas State University.

Alan and Matt will be handling field work and technical duties. Matt and Alan bring different, but valuable skillsets and experiences to the District. Matt and Alan have enjoyed working with one another and for PCCD. They look forward to continuing to serve the residents of Plum Creek Conservation District.



WELCOME NEW DIRECTOR— TOM OWEN

On January 15th , 2019, Mr. Tom Owen, was sworn in as member of the Board of Directors. Mr. Owen will be representing the rural Lockhart area for Plum Creek Conservation District.

Mr. Owen has been a lifelong resident of Caldwell County, a graduate of Texas A&M, and is currently employed in the agricultural industry as an Area Business manager for Bayer Crop Science, representing the Dekalb and Deltapine brands in Texas and Oklahoma. Mr. Owen also owns, operates and manages a family farm in the McMahan area. In his spare time Mr. Owen enjoys time working with his cattle and Sacred Harp Singing.

The District welcomes Mr. Owen and looks forward to his service as a Board member.

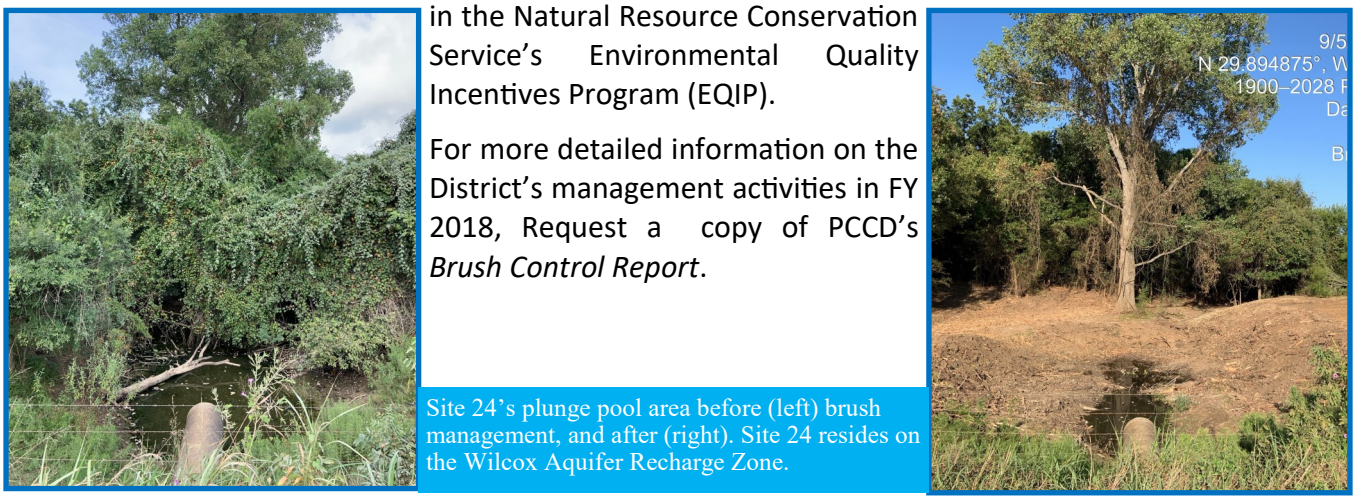
WATER CONSERVATION TIP

While the need to subdue unruly brush may not be anything new to landowners in Central Texas, potential impacts to water resources from brush removal may be something that has been largely unconsidered. Water–loving plants, or *phreatophytes*, can consume substantial quantities of groundwater, thanks to long tap roots. Mesquite, huisache, salt cedar, cottonwoods, and willows are common Central Texas phreatophytes. Though not considered a phreatophyte, invasive ashe juniper thickets consume far more water than the native grasses they choke out.

On the heels of a 2015 Texas State Soil and Water Conservation Board (TSSWCB) study regarding impacts of brush removal on recharge rates over the Carrizo-Wilcox Aquifer Outcrop, PCCD undertook several major brush clearing projects in Fiscal year 2018. Although the District's primary purpose in the removals was to ensure proper functioning of flood control structures, several of the cleared areas overlaid aquifer recharge zones, and thus may have a beneficial secondary purpose.

While the District funded removal projects via grants from TSSWCB's Flood Control Operation & Maintenance Grant Program, financial assistance is available for private property owners through TSSWCB's Water Supply Enhancement Program (WSEP). A similar initiative exists at the federal level in the Natural Resource Conservation Service's Environmental Quality Incentives Program (EQIP).

For more detailed information on the District's management activities in FY 2018, Request a copy of PCCD's *Brush Control Report*.



Site 24's plunge pool area before (left) brush management, and after (right). Site 24 resides on the Wilcox Aquifer Recharge Zone.

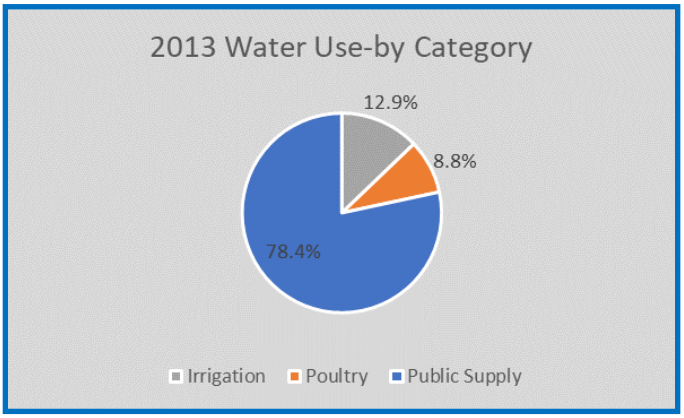
2019 WATER LEVELS

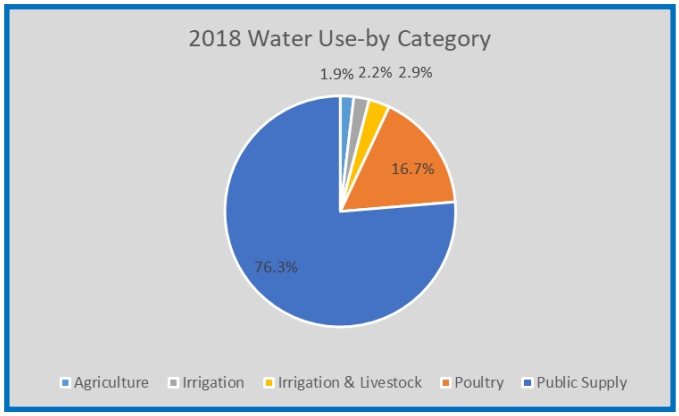
The table below shows water levels for 8 wells that were measured between July 18, 2019 and August 1, 2019, respectively, along with their corresponding lowest recorded water level. If you are interested in finding out the water level in your well and how it compares to other wells in the area, contact us to schedule a time to measure your well. A complete listing of PCCD water levels can be found on our website at www.pccd.org

Well	2019 Levels	Lowest Recorded Level
Kosarek	- 46.5	- 50.8
Larsen	- 18.8	- 22.8
Lipscomb	- 88.1	- 93.9
Lockhart #8	- 95.1	- 108.0
McCormick #2	- 66.0	- 71.00
McCormick #1	- 69.8	- 71.75
Collier	- 64.4	- 70.6
Wells	- 82.65	- 90.35

2018 PCCD GROUNDWATER USE

PCCD permit holders used 1,706.1 acre-feet, or approximately 10%, of the 17,504 acre-feet of permitted groundwater in 2018. This year saw the District expanded permit use categories to include *Agriculture* as well as *Irrigation & Livestock*, as reflected in the 2018 Water Use-by Category pie graph (below, right). Comparing 2018 water use to use five years prior, we see that livestock, agriculture, and irrigation percentage decreased, likely due in part to 2018 being a relatively wet year. Poultry operations seem to be expanding within the district, or at least relying more on groundwater to meet their needs. Finally, the charts show a slight decrease in the proportion of permitted water being utilized for Public Supply. This trend may be come to abrupt end, as large-scale production has been permitted in the Carrizo Aquifer in the southeast extent of the District. The water produced from these new wells, which are scheduled to come online in 2021, will be exported to communities along the I-35 corridor. For more information, you can request a copy of PCCD's *2018 Water Use Report*.





WELL MONITORING PROGRAM GOES TECHY

In order to 1) increase data regarding water level fluctuations throughout the District and 2)reduce manhours and expenses associated with manual well monitoring, the District increased its inventory of Eno Scientific Well Watch 660 Sonic Water Level Meters ("Enos"; right, top) in summer 2019. Having purchased an initial acoustic-sounding device in 2018; taking time to familiarize Staff with operation; and being satisfied with the monitor's accuracy compared to manual e-line well readings, PCCD invested in three additional units. While these meters can be used for a one-time level reading, the greater use is to leave them in place to log at specified intervals. The Eno also gives the District an alternative to its HOBO system, which, though available conveniently as a Bluetooth cellphone app, can only be used on an open well. The only limiting factor to the Eno's logging capability is battery life. With this in mind, District Staff designed and fabricated weather-proof, solar-powered battery cases (right, bottom). Contact the District office if you are interested in having one of these technologies applied to your well.