

COMAL SPRINGFLOW TRIGGER FOR STAGE V CRITICAL PERIOD MANAGEMENT
Stage V Workgroup Majority Position
September 1, 2011

The existing Critical Period Management used by the Edwards Aquifer Authority (“EAA”) to regulate groundwater withdrawals during periods of drought provide for reductions in groundwater withdrawals from two portions of the Edwards Aquifer denoted as the San Antonio Pool and the Uvalde Pool. The San Antonio Pool consists of that portion of the Edwards Aquifer under EAA’s jurisdictional area in all or part of 8 counties excluding Uvalde County. The Uvalde Pool consists of the portion of the Edwards Aquifer under EAA’s jurisdiction in Uvalde County.

The existing Critical Period Management prescribed in the EAA Act for the San Antonio Pool is as follows:¹

TABLE 1				
CRITICAL PERIOD WITHDRAWAL REDUCTION STAGES FOR THE SAN ANTONIO POOL				
COMAL SPRINGS FLOW CFS	SAN MARCOS SPRINGS FLOW CFS	INDEX WELL J-17 LEVEL, MSL	CRITICAL PERIOD STAGE	WITHDRAWAL REDUCTION – SAN ANTONIO POOL
<225	<96	<660	I	20%
<200	<80	<650	II	30%
<150	N/A	<640	III	35%
<100	N/A	<630	IV	40%

Pursuant to the EAA Act, a change to a critical period stage with higher withdrawal reduction percentages is triggered if the 10-day moving average of daily springflows at the Comal Springs or the San Marcos Springs or the 10-day moving average of daily aquifer levels at the J-17 Index Well drops below the lowest number of any of the trigger levels indicated in Table 1. A change to a critical period stage with lower withdrawal reduction percentages is triggered only when the 10-day moving average of daily springflows at the Comal Springs and the San Marcos Springs and the 10-day moving average of daily aquifer levels at the J-17 Index Well are all above the trigger level for the higher (numeric) stage.

¹ § 1.26A(b).

The existing Critical Period Management prescribed in the EAA Act for the Uvalde Pool is as follows:¹

WITHDRAWAL REDUCTION- UVALDE POOL	INDEX WELL J-27 LEVEL, MSL	CRITICAL PERIOD STAGE
N/A	N/A	I
5%	<850	II
20%	<845	III
35%	<842	IV

As for the San Antonio Pool, the EAA Act provides that a change to a critical period stage is triggered using the 10-day moving average of daily aquifer levels measured at the J-27 Index Well. However, unlike the San Antonio Pool, there are no springflow triggers for the Uvalde Pool.

With the addition of Stage V, Critical Period Management is proposed to be as follows:

COMAL SPRINGS FLOW CFS	SAN MARCOS SPRINGS FLOW CFS	INDEX WELL J-17 LEVEL, MSL	CRITICAL PERIOD STAGE	WITHDRAWAL REDUCTION – SAN ANTONIO POOL
<225	<96	<660	I	20%
<200	<80	<650	II	30%
<150	N/A	<640	III	35%
<100	N/A	<630	IV	40%
< 45 ²	N/A	<625	V	44%

² Supported by all members of the Stage V Workgroup except for one, who believes the springflow trigger for Stage V should be higher.

TABLE 4 NEW CRITICAL PERIOD WITHDRAWAL REDUCTION STAGES FOR THE UVALDE POOL		
WITHDRAWAL REDUCTION- UVALDE POOL	INDEX WELL J-27 LEVEL, MSL	CRITICAL PERIOD STAGE
N/A	N/A	I
5%	<850	II
20%	<845	III
35%	<842	IV
44%	<840	V

As for the existing Critical Period Management stages I through IV, Stage V would be triggered using the 10-day moving averages of daily aquifer levels measured at the J-17 and J-27 Index wells and springflow at Comal Springs.³

Stage V Critical Period Management is intended to be implemented only if and when other springflow protection measures of the Habitat Conservation Plan (“HCP”) fail to sustain springflow at Comal Springs above the adopted minimum of about 30 cfs. Therefore, the triggers for Stage V should be set high enough to sustain springflow above the minimum, but low enough to ensure that other springflow protection measures, particularly the SAWS Aquifer Storage and Recovery (“ASR”) tradeoff, have been allowed to be effective.

Figure 1 shows the correlation between measured groundwater levels at the J-17 Index Well and springflow at Comal Springs. Based on the available J-17 measurements and when groundwater levels reach elevation 625 ft MSL, springflow at Comal Springs is about 40 cfs. Based on this correlation, a springflow trigger of 40 cfs was originally proposed for Stage V. However, some members of the Stage V Workgroup believed that given the scatter in the empirical data at the J-17 elevation of 625 ft, a higher springflow trigger would be appropriate. All but one member of the Workgroup concurred that a springflow trigger of 45 cfs at Comal Springs would be appropriate.

³ Supported by all members of the Stage V Workgroup except for one, who believes the springflow trigger for Stage V should be based on daily values, not the 10-day moving average.

Comal Springflow vs. J-17 Water Level

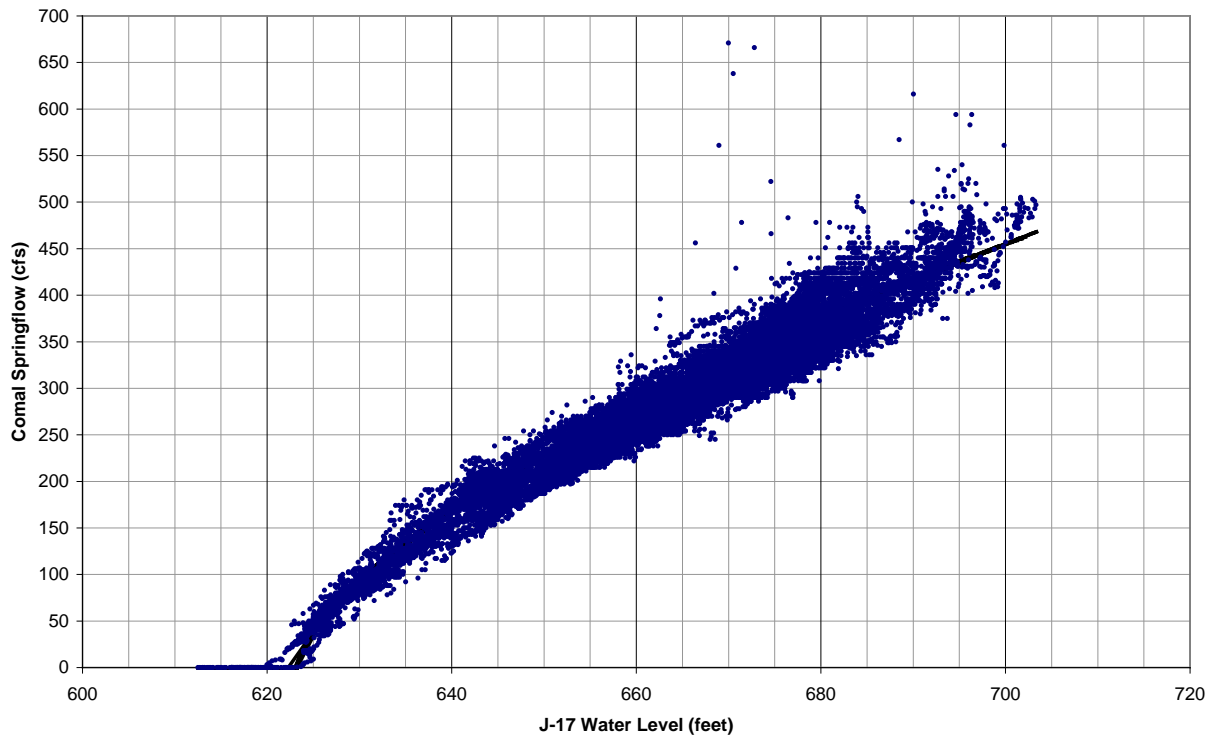


Figure 1 – Comal Springflow and J-17 Groundwater Levels

The EAA Act provides that triggers for stages I through IV are based on 10-day moving averages. While the EAA Board of Directors could adopt different averages or values for Stage V by rulemaking, all but one member of the Workgroup concurred that use of 10-day moving averages for daily aquifer levels measured at the J-17 and J-27 Index wells and daily springflow at Comal Springs would be appropriate.

EAA staff evaluated the differences between daily groundwater level measurements at the J-17 Index Well versus the calculated 10-day moving average values of those measurements, focusing in particular on periods of low springflow at Comal Springs. Figure 2 shows daily groundwater levels at J-17 compared with the 10-day moving average for those measurements during the period of the lowest springflow since 1960. Generally, the daily groundwater levels at J-17 do not fall below the 10-day moving average by more than about 5 cfs. Therefore, all but one member of the Stage V Workgroup concurred with the use of the 10-day moving average for the Comal springflow trigger for Stage V.

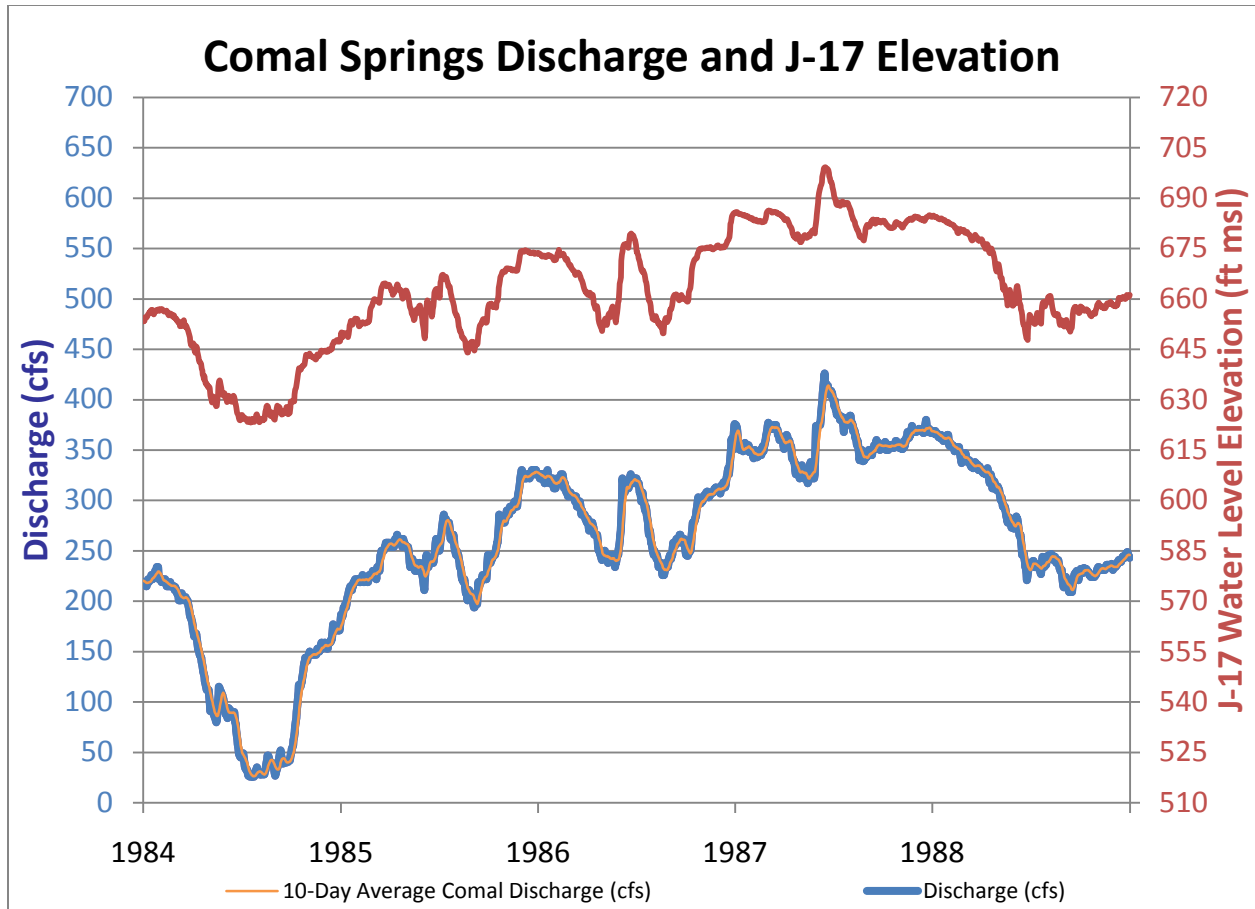


Figure 2 – Daily Comal Spingflow and 10-day Moving Average