

**Modoc County Superior Court Decree Number 6395, for Pit River in Big Valley, issued in 1959, describes water rights, points of diversion, places of use, purposes of use, season of use, and other aspects of water rights, including for Widow Valley Creek. Six decreed points of diversion are listed for the land along the upper creek that originally belonged to Richard & Karl Hemsted, and W. Lee Jr: Diversions 30 through 35. Diversion 30 diverts water at the west, upstream end of the valley, and Diversion 31 through 35 divert water at valley-wide dams, called the Hemstead Dams.**

**Beneficial uses include irrigation, stockwatering, and domestic use.**

**Widow Valley Creek has been under watermaster service, mostly from the State of California Department of Water Resources, since 1934. Since 2006, and in a few earlier years, the Big Valley Water Users Association has been the Watermaster. The Watermaster is critical to the equitable regulation and distribution of water in Big Valley because water rights are interrelated, as described in the decree. When a Watermaster has the time to adequately cover all diversions, plus answer diverters' questions, quell disagreements, assist in installing or replacing measurement devices, and other duties, then the accuracy of service can be +/- 5% to +/- 10%.**

**Because most of the water rights are dependent on supply, and rights share priorities throughout Big Valley, water rights cannot be determined or measured independently of the other water rights. The Watermaster has to consider all diversions in determining the percentage of water rights available in a priority, then adjust individual diversions to reflect the water supply. Widow Valley Creek's diversion amount is further complicated by the inability to measure the flow in the creek before it gets to the place of use. Therefore, no point-by-point measurement methods can accurately determine the amount of water diverted, and alternative compliance is necessary.**

**Widow Valley Creek Diversions 30 through 35 are about 7.5 miles northwest of Bieber, and about 5.5 miles west of Lookout, California, in Modoc County. Diversions 30 through 35 may divert water rights totaling up to 5.78 cubic feet per second of water in the first priority to 404.5 acres. Diversions may be combined and rotated, per explicit provision in the decree, meaning some or all of the flow may be diverted from one diversion as the landowner / lessee finds convenient. The only condition is that the Watermaster has to agree that no harm is done to other water right holders.**

**The water rights downstream of Diversion 35 on Widow Valley Creek are in the second and third priorities. This simplifies the regulation of water somewhat; Diversions 30 through 35 will still have water rights when there is no longer second or third priority water available downstream of Diversion 35.**

Widow Valley Creek goes subsurface upstream of Widow Valley Creek, and gradually resurfaces as it flows into Widow Valley. See the attached maps. Diversion 30 supplies water to the greatest area, with downstream dams serving smaller areas of the valley. Since the creek is partly subsurface at Diversion 30, water becomes unavailable to divert at this point early in the season, in May or June.

It is possible that flows in Widow Valley Creek could be measured in some way, perhaps driving deep sheet-pilings to force groundwater flow to the surface. Given the porous gravels in the soil upstream of Diversion 30, pilings might have to be driven for a width of 200 feet or more. Alternatively, groundwater wells could be drilled, and the surface water flow through each well measured to determine the total inflow of the creek. Both of these methods would be prohibitively expensive, and could interfere with wildlife in the area.

Review of two University of California Cooperative Extension publications (attached) give figures for the necessary amount of water for mountain pasture, ranging from 2.25 to 3.0 acre-feet / acre / year (AF/acre/year).

The decreed irrigation season is April 1 to September 30. Flows decline throughout the season, and water rights decline in proportion to the water supply. Based on past watermaster experience, typical water supply might be something like the following:

Typical W.R.			
Month	Avail. (CFS)	Typical AF/acre /month	
April	5.78	0.85	AF/acre/month
May	4.00	0.64	AF/acre/month
June	2.20	0.43	AF/acre/month
July	1.50	0.22	AF/acre/month
August	1.00	0.15	AF/acre/month
September	1.00	0.15	AF/acre/month
TOTAL:		2.43	AF/acre/year

The typical application of 2.4 AF/acre/year is between the published values of 2.25 to 3.0 AF/acre/year.

If there were not a Watermaster at some point in the future, or if the Watermaster did not report individual diversions to the Water Board, then the amount of applied water might need to be considered in determining the water right available for diversion on any particular day. This might be correlated with the spring that comes in from the southwest, since the flow of Widow Valley Creek is subsurface at the upstream end of the valley.

On the other hand, all of the diversions supply water to pasture on land that is adjacent to Widow Valley Creek. Any water that infiltrates returns back to the creek. Therefore, it would be difficult to apply more water than the specified water right, for more than the few days it takes water to pool deeply behind dams.

If water were diverted and pooled by taking more than the available water right, the pooled water would cause non-pasture grasses to grow, reducing the feed for cattle. That is why the ranchers who have had cattle have made sure that the pasture drains back to the creek with minimal pooling.

Flows in June, or even late May, can drop so much that essentially no water can be diverted at the upstream, western end of the valley. A groundwater well and agricultural pump augments flows starting in June. The amount pumped may be greater than the total water right, meaning that the pump makes water available for Diversions 30-35, as well as for lands downstream of the upper creek.

Therefore, in the summer months most of the water may be groundwater rather than surface water.