

December 6, 2002

To: Ann Bleed
From: Steve Gaul
Subject: Management of Interrelated Surface Water and Groundwater in Other Western States

Attached are summary points regarding use of groundwater and surface water and management of their interrelationship in other western states.

Broad generalizations about management of interrelated groundwater and surface water in other states are difficult to support because the legal basis for management in each state is different and specific application of the available laws is often based upon local hydrologic and water use factors. Varying authorities are also often delegated to special purpose local districts for groundwater management and those authorities may either enable or require actions from those units of government.

If an extremely broad generalization were to be made it would be that: 1) many western states have some type of permitting or prior appropriation for groundwater, and 2) once groundwater use begins to significantly affect surface water rights that fact becomes relevant to whether new groundwater permits are granted, denied, or only granted with conditions. In those states where groundwater is part of the prior appropriation system a senior surface water user can also make a call on junior groundwater appropriators. However, what that means in practice is difficult to determine.

It appears that a number of states or districts close off permits for new wells in areas where pumping exceeds recharge. In some instances even existing wells are or may be regulated to attain some version of safe yield or managed depletion. Colorado has implemented a highly organized management system for conjunctive use. Idaho appears to be in the process of implementing a fairly sophisticated response to these issues and other states such as Oregon have rules in place that can facilitate addressing conjunctive use issues. ~~I did not find any information on the administrative cost of conjunctive use management in other states and don't know what costs might be if Nebraska were to adopt any components of those some of those systems.~~ However, that may be a significant question.

Other western states do have different water use and physical characteristics that may have helped determine what is the most appropriate policy approach in each state. ~~I am of the opinion that~~ Nebraska's combined hydrologic and water use setting appear to be somewhat different

from that in most other western states. Specifically, ^{Nebraska has} ~~we have~~ comparatively large areas of aquifer being used for substantial groundwater irrigation that appear to often help provide varying degrees of long term base flow to surface waters that are being used for substantial surface irrigation. ~~We don't have all the studies to fully quantify the relationship yet,~~ but my suspicion is that overall it is more significant than in other western states. ^{Nebraska} We make about 77% of our irrigation water withdrawals from groundwater. All states to the west ^{of us} make a majority of their irrigation withdrawals from surface water. The complexities of mountain state topography, hydrology and climatic regimes may help result in varying approaches in those states. To ^{Nebraska} our south, Texas, Kansas and Oklahoma also make most of their irrigation withdrawals from groundwater. However Kansas and Oklahoma have relatively small acreages irrigated from surface water and while Texas has more surface water irrigation, I am not familiar with where it is and suspect it may largely not be in areas strongly influenced by groundwater withdrawals.