

**IN THE OFFICE OF THE STATE ENGINEER OF  
THE STATE OF NEVADA**

IN THE MATTER OF APPLICATIONS 72868- )  
72896, 73351-73357, 73743-73749, 73919-73929, )  
74354-74357, 74957-74976, INCLUSIVE, FILED )  
TO APPROPRIATE THE UNDERGROUND )  
WATERS OF THE GRANITE SPRINGS )  
VALLEY HYDROGRAPHIC BASIN (078), )  
PERSHING AND CHURCHILL COUNTIES, )  
NEVADA. )

**RULING**

**#5782**

SNWA'S EXHIBITS 448
DATE: 10-3-11

**GENERAL**

**I.**

Applications 72868 – 72896 were filed on May 27, 2005, by Aqua Trac, LLC to appropriate 52.5 cubic feet per second, not to exceed 38,000 acre-feet annually (afa) under the combined applications, of the underground water of the Granite Springs Valley Hydrographic Basin for quasi-municipal purposes within the Hydrographic Basins identified as the Fernley Area (076), Tracy Segment (083), Warm Springs Valley (084), Spanish Springs Valley (085), and Truckee Meadows (087).<sup>1</sup>

Pershing County protested Applications 72868-72893 and 72896; the United States Department of Interior, Bureau of Land Management protested Applications 72868-72896; C-Punch Ranch protested Applications 72868 through 72896; ATI Systems International protested Applications 72869-72877 and 72855-72893, and Churchill County protested Applications 72868-72895.

**II.**

Applications 73351 – 73357 were filed on October 18, 2005, by Aqua Trac, LLC to appropriate 35 cubic feet per second, not to exceed 38,000 afa under the combined applications, of the underground water of the Granite Springs Valley Hydrographic Basin for quasi-municipal purposes within the Hydrographic Basins identified as the Fernley Area, Tracy Segment, Warm Springs Valley, Spanish Springs Valley, and Truckee Meadows.

Frank Lipera protested Applications 73351 and 73353 and Churchill County protested Applications 73351 through 73357.

<sup>1</sup> A complete listing of the applications is found as Attachment 1 to this ruling.

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perennial yield of a basin. Therefore, the State Engineer finds that revised estimates of precipitation alone are not sufficient for justifying higher ground-water recharge estimates and are not applicable in revising the perennial yield of a basin.

There is a large disparity between estimates of ground-water recharge of the Harrill report, the Applicant, and the Protestants. The Applicant used two methods: the Nichols method and a derivative of the Maxey-Eakin method. Their use of the Nichols method was questioned by the Protestants, primarily due to their use of a June 1998 PRISM precipitation map rather than the May 1997 version, which was the version Nichols used to derive the recharge coefficients.<sup>24</sup> It was not clarified at the hearing what the actual difference was between the PRISM map used by the Applicant and the May 1997 version of the map, or what effect those differences might have on the recharge computation for Granite Springs Valley. However, the State Engineer has been hesitant to revise perennial yield estimates for any hydrographic basin on the basis of Nichols' recharge estimates. This hesitation stems from the fact that Nichols recharge coefficients were calibrated to estimated ground-water discharge, where ground-water ET was estimated from an empirical relationship between plant cover and ground-water ET with source data almost entirely from Ash Meadows, Nevada, and Owens Valley, California. Both of these sites are likely to have greater ET rates for the given plant cover than in northern or central Nevada, and the method may significantly overestimate ground-water recharge by over-estimating ground-water ET.

**The use of the Maxey-Eakin recharge coefficients with any of the PRISM maps has been addressed in several recent rulings and was addressed in questioning at the hearing. In short, the State Engineer finds that the use of the Maxey-Eakin recharge coefficients with any precipitation map other than the Hardman map is inappropriate, because the recharge coefficients were computed by trial and error using the Hardman map to balance recharge with discharge. To use any other precipitation map would require recalibration of the coefficients. The State Engineer finds that recharge estimates alone are rarely sufficient to re-estimate a basin's perennial yield, particularly when there are other, more reliable methods available such as estimation of ground-water discharge.**

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<sup>24</sup> Transcript, pp. 537 and 538.