

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

IN THE MATTER OF APPLICATION 53072 )  
FILED TO APPROPRIATE THE PUBLIC )  
WATERS OF AN UNDERGROUND SOURCE IN )  
DAYTON VALLEY, LYON COUNTY, NEVADA.)

RULING

GENERAL

I.

Application 53072 was filed on March 30, 1989, by Seniors Mobilhome Village, Inc. to appropriate 0.5 c.f.s. of water from an underground source for quasi-municipal purposes within the W1/2 NE1/4 of Section 1, T.16N., R.21E., M.D.B.&M. The point of diversion is described as being within the SW1/4 NE1/4 Section 1, T.16N., R.21E., M.D.B.&M.<sup>1</sup>

II.

Water Resources-Reconnaissance Series Report 59 titled "Water Resources Appraisal of the Carson River Basin, Western Nevada", was prepared cooperatively by the Geological Survey, U.S. Department of the Interior and State of Nevada, Department of Conservation and Natural Resources. For the purposes of that report, the Carson River Basin was divided into seven hydrologic subareas; Carson Valley (Nevada part only), Eagle Valley, Dayton Valley, Churchill Valley, Carson Desert, Packard Valley and White Plains.<sup>1</sup>

FINDINGS

I.

The potential estimated ground water recharge to Dayton Valley by precipitation is 7,900 acre-feet per year. An additional 1,545 acre-feet is added from subsurface inflow through alluvium from Eagle Valley and Carson Valley.<sup>2</sup> Therefore, the perennial yield of Dayton Valley is 9,445 acre-feet per year.<sup>1</sup>

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<sup>1</sup> Public record in the office of the State Engineer.

<sup>2</sup> Water Resources-Reconnaissance Series Report 59, public record in the office of the State Engineer.

## II.

The Geological Survey, U.S. Department of Interior, in cooperation with the State of Nevada, Department of Conservation and Natural Resources, is currently conducting an ongoing study of the effects of ground water flow on surface water by use of a modular three-dimensional finite difference ground water flow model. The information developed for the model has assisted in the identification and quantification of the effects of ground water pumpage on surface water flow.<sup>3</sup>

## III.

The perennial yield of a hydrologic system is the maximum amount of water of usable chemical quality that can be consumed economically each year for an indefinite period of time. Perennial yield cannot exceed the natural replenishment to an area indefinitely and ultimately is limited to the maximum amount of natural recharge that can be salvaged for beneficial use.<sup>4</sup> If the perennial yield is continually exceeded, ground water levels will decline until the ground water reservoir is depleted. Withdrawals of ground water in excess of the perennial yield contribute to adverse conditions such as water quality degradation, storage depletion, diminishing yield of wells, increased economic pumping lifts, land subsidence and possible reversal of ground water gradients which could result in significant changes in the recharge-discharge relationship.

## IV.

Estimates of pumpage of ground water in Dayton Valley have been made by the Division in 1977, 1979 and 1984. These years represent a below average water year, an average water year and a good water year, respectively.<sup>1</sup>

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<sup>3</sup> Information available in the office of the State Engineer.

<sup>4</sup> NRS 534.100. Does not apply.

The 1977 inventory estimated total pumpage to be 14,300 acre-feet in Dayton Valley while the 1979 inventory estimated that pumpage to be 15,930 acre-feet. The methodology used in deriving the estimates consisted of well power readings supplied by Sierra Pacific Power Company converted to pumpage of water.<sup>1</sup>

The 1984 pumpage of ground water in Dayton Valley including the Stagecoach sub-basin was determined to be approximately 6,000 acre-feet. This estimate was based on a survey of the houses, mining activity, water systems, and irrigated acreage in Dayton Valley. The Stagecoach sub-basin is more difficult to estimate because of the rapid change over from agricultural use to quasi-municipal use taking place. An estimate of the water use in the Stagecoach sub-area is 1600 acre-feet per year. Therefore, the total pumpage in Dayton Valley in 1984 is estimated to be 7600 acre-feet. This figure is almost 50% less than was estimated in the average water year of 1979.

#### V.

The State Engineer finds that permits and certificates have been issued under existing rights for more than 26,700 acre-feet annually of ground water within Dayton Valley.

#### IV.

Should additional water be allowed for appropriation development under new applications and subsequent detrimental effects occur, the State Engineer is required by law to order withdrawals be restricted to conform to priority rights.<sup>5</sup>

#### VII.

The State Engineer finds that approved ground water appropriations in the Dayton Valley Ground Water Basin exceeds the perennial yield of the basin.

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<sup>5</sup> NRS 534.110(6)

VIII.

The State Engineer has previously denied applications to appropriate ground water from Dayton Valley for irrigation, quasi-municipal and municipal uses on the grounds that "withdrawal of additional ground water in a basin in which appropriations of ground water substantially exceed the perennial yield of the basin would, therefore, adversely affect existing rights and be detrimental to the public interest and welfare".<sup>6</sup>

CONCLUSIONS

I.

The State Engineer has jurisdiction under the provisions of NRS Chapters 533 and 534.

II.

The State Engineer is prohibited by law from granting a permit where:

- A. There is no unappropriated water at the proposed source,
- B. The proposed use conflicts with existing rights,
- C. The proposed use threatens to prove detrimental to the public welfare.<sup>7</sup>

III.

The granting of a permit under Application 53072 would result in the withdrawal of additional ground water in a basin in which appropriations of ground water substantially exceeds the perennial yield and would, therefore, adversely affect existing rights and be detrimental to the public interest and welfare.

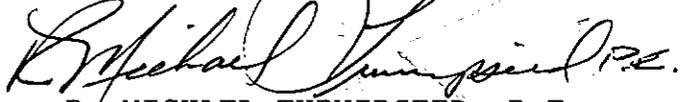
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<sup>6</sup> See Rulings 1996, 2064, 2168, 2173, 2220, 2226, 2322, 2323, 2436, 2493, 2539, 2588, 2593, 2630, 3022 and 3114, public record in the office of the State Engineer.

<sup>7</sup> NRS 533.370.

RULING

Application 53072 is hereby denied on the grounds that the granting thereof would adversely affect existing rights and would be detrimental to the public interest and welfare.

Respectfully submitted,



R. MICHAEL TURNIPSEED, P.E.  
State Engineer

RMT/MM/pm

Dated this 21st day of

May, 1990