

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

IN THE MATTER OF APPLICATIONS 63576, )  
63577, 63578, AND 63579 FILED TO )  
APPROPRIATE THE PUBLIC WATERS OF AN )  
UNDERGROUND SOURCE WITHIN THE DAYTON )  
VALLEY GROUNDWATER BASIN (103), LYON )  
COUNTY, NEVADA. )

RULING  
# 4660

GENERAL

I.

Application 63576 was filed on November 21, 1997, by Lyon County to appropriate 3.0 cubic feet per second (cfs) of underground water for municipal purposes within all or portions of Sections 1, 2, 11, 12, 13, 14, 23, 24, 26, 27, 28, 33, and 34, all within T.16N., R.21E., M.D.B. & M.; Sections 3, 4, 5, 6, 9, 16, 17, 18, and 19 all within T.16N., R.22E., M.D.B. & M.; the SE¼ SE¼ of Section 36, T.17N., R.21E., M.D.B. & M., and Sections 31, 33 and 34 all within T.17N., R.22E., M.D.B. & M. The proposed point of diversion is described as being located within the NW¼ NW¼ of Section 5, T.16N., R.22E., M.D.B. & M.<sup>1</sup>

II.

Application 63577 was filed on November 21, 1997, by Lyon County to appropriate 3.0 cfs of underground water for municipal purposes within the same place of use as described under Application 63576. The proposed point of diversion is described as being located within the NE¼ SE¼ of Section 24, T.16N., R.21E., M.D.B. & M.<sup>2</sup>

III.

Application 63578 was filed on November 21, 1997, by Lyon County to appropriate 3.0 cfs of underground water for municipal purposes within the same place of use described under Applications

<sup>1</sup> File No. 63576, official records in the office of the State Engineer.

<sup>2</sup> File No. 63577, official records in the office of the State Engineer.

63576 and 63577. The proposed point of diversion is described as being located within the SW¼ NW¼ of Section 24, T.16N., R.21E., M.D.B. & M.<sup>3</sup>

IV.

Application 63579 was filed on November 21, 1997, by Lyon County to appropriate 3.0 cfs of underground water for municipal purposes within the same place of use described under Applications 63576, 63577 and 63578. The proposed point of diversion is described as being located within the SW¼ SW¼ of Section 12, T.16N., R.21E., M.D.B. & M.<sup>4</sup>

FINDINGS OF FACT

I.

The committed groundwater resource in the form of permits and certificates issued by the State Engineer to appropriate underground water from the Dayton Valley Groundwater Basin currently exceeds 30,063 acre-feet annually.<sup>5</sup>

The perennial yield of a hydrologic basin is the maximum amount of water of usable chemical quantity that can be consumed economically each year for an indefinite period of time. The perennial yield can not 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. If the perennial yield is continually exceeded groundwater levels will decline until the groundwater reservoir is depleted. Withdrawals of groundwater in excess of the perennial yield contribute to adverse conditions such as water quality degradation, storage

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<sup>3</sup> File No. 63578, official records in the office of the State Engineer.

<sup>4</sup> File No. 63579, official records in the office of the State Engineer.

<sup>5</sup> Nevada Division of Water Resources Water Rights Database, Hydrographic Basin Summary, Dayton Valley, August 13, 1998, official records in the office of the State Engineer.

depletion, diminishing yield of wells, increased economic pumping lifts, land subsidence and possible reversal of groundwater gradients which could result in significant changes in the recharge-discharge relationship.<sup>6</sup>

~~The Dayton Valley Groundwater Basin has experienced continual and vigorous development of its underground water resource since 1975 when the USGS first evaluated the groundwater basin's water resources as part of its Nevada water reconnaissance program. The findings of the hydrologic study which was specific to the Dayton Valley Groundwater Basin are found within Water Resources - Reconnaissance Series Report 59, Water-Resources Appraisal of the Carson River Basin, Western Nevada "Recon-59", which describes the sources and amounts of ground water available for appropriation from within the Dayton Valley Groundwater Basin which was derived by a quantitative analysis of the groundwater basin's inflow, outflow and recharge amounts was calculated by Glancy and Katzer and is found within Recon 59.<sup>7</sup>~~

Glancy and Katzer estimated the potential groundwater recharge to the Dayton Valley Groundwater Basin by precipitation was 7,900 acre-feet annually. An additional 1,615 acre-feet annually was added from subsurface inflow through the alluvial units from the adjacent Eagle Valley and Carson Valley groundwater basins, minus the 70 acre-feet of underground flow from Dayton Valley to Churchill Valley. Therefore, the perennial yield of the Dayton

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<sup>6</sup> State Engineer's Office, Water for Nevada, State of Nevada Water Planning Report No. 3, p. 13, October 1971.

<sup>7</sup> Glancy, P.A., and Katzer, T.L., Water-Resources Appraisal of the Carson River Basin, Western Nevada, Water Resources Reconnaissance Series Report 59, pp. 48, 51, State of Nevada, Department of Conservation and Natural Resources, Division of Water Resources, Geological Survey, U.S. Department of Interior, 1975.

Valley Groundwater Basin was calculated by Glancy and Katzer to be 9,445 acre-feet.<sup>7</sup>

In 1994, the USGS initiated a hydrologic study to re-evaluate the reconnaissance level water budget for the Dayton Valley, which had previously been defined in Recon 59. This new study culminated with the release of Water Resources Investigations Report 97-4123, Hydrology and Ground-Water Budgets of the Dayton Valley Hydrographic Area, West-Central Nevada, in 1997 "Report 97".<sup>8</sup> By utilizing refined estimates of the water budget components, the groundwater recharge and discharge estimates for the Dayton Valley Groundwater Basin were assigned a new range of values which exceeded those found in Recon 59. However, even if the high end recharge and discharge values are used to evaluate the basin's groundwater budget, the revised estimates of the underground water which may be available for appropriation are not of a magnitude which would exceed the basin's current committed groundwater resource. The State Engineer finds that both the original Recon 59 and revised Report 97 estimates of the Dayton Valley Groundwater Basin's perennial yield are significantly exceeded by the committed groundwater resource.

## II.

Applications which requested a permanent appropriation of underground water for municipal purposes within the Dayton Valley Groundwater Basin have been denied by the State Engineer since 1980. These denials were based on the grounds that, withdrawals of additional groundwater in a basin in which appropriations of groundwater substantially exceed the perennial yield of the basin would, therefore, adversely affect existing rights and be

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<sup>8</sup> Maurer, D.K., Hydrology and Ground-Water Budgets of the Dayton Valley Hydrologic Area, West-Central Nevada, Water-Resources Investigations Report 97-4123, U.S. Geological Survey, U.S. Department of Interior, Carson Water Subconservancy District, 1997.

detrimental to the public interest and welfare.<sup>9</sup> The State Engineer finds that Applications 63576, 63577, 63578 and 63579 were filed to appropriate underground water for a similar use and in the same hydrologic basin as applications which have been denied in the past.

### CONCLUSIONS

#### I.

The State Engineer has jurisdiction over the parties and the subject matter of this action and determination.<sup>10</sup>

#### II.

The State Engineer is prohibited by law from granting an application to appropriate the public waters where:<sup>11</sup>

- A. there is no unappropriated water at the proposed source;
- B. the proposed use conflicts with existing rights; or
- C. the proposed use threatens to prove detrimental to the public interest.

#### III.

Where a previous application for a similar use of water within the same hydrologic basin has been rejected on the grounds that there is no unappropriated water or where its proposed use conflicts with existing rights or threatens to prove detrimental to the public interest the new application may be denied without publication.<sup>11</sup>

#### IV.

Applications 63576, 63577, 63578 and 63579 were filed to appropriate underground water from the Dayton Valley Groundwater Basin. A comparison of the committed groundwater resource of the

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<sup>9</sup> See State Engineer's Rulings for Application Nos. 39087 and 43521, official records in the office of the State Engineer.

<sup>10</sup> NRS § Chapter 533.

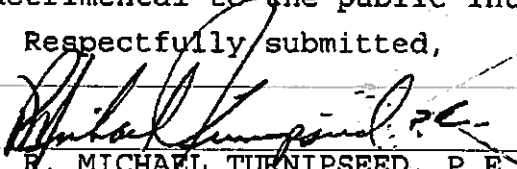
<sup>11</sup> NRS § 533.370(3).

Dayton Valley Groundwater Basin with the revised estimates of the basin's perennial yield fails to identify any additional underground water which may be available for appropriation within the groundwater basin. The State Engineer concludes that to grant ~~permits under Applications 63576, 63577, 63578 and 63579~~ in a groundwater basin where the quantity of water under existing appropriations exceeds the basin's perennial yield would conflict with existing rights and be detrimental to the public interest.

**RULING**

Applications 63576, 63577, 63578 and 63579 are hereby denied on the grounds that granting the applications would interfere with existing rights and be detrimental to the public interest.

Respectfully submitted,

  
E. MICHAEL TURNIPSEED, P.E.  
State Engineer

RMT/MDB/cl

Dated this 25th day of  
August, 1998.