

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

IN THE MATTER OF APPLICATION 54362)
FILED TO APPROPRIATE THE PUBLIC)
WATERS OF AN UNDERGROUND SOURCE IN)
BIG SMOKY VALLEY - TONOPAH FLAT,)
NYE COUNTY, NEVADA.)

RULING

GENERAL

I.

Application 54362 was filed on January 22, 1990, by Asa W. and Ruth E. Kelley to appropriate 2.0 c.f.s. of water from an underground source for irrigation purposes on 82.90 acres of land within the E1/2 NE1/4 Section 21, T.8N., R.42E., M.D.B.&M. The point of diversion is described as being within the NE1/4 NE1/4 Section 21, T.8N., R.42E., M.D.B.&M.¹

II.

Water Resources Bulletin No. 41 titled "Water Resources of Big Smoky Valley, Lander, Nye and Esmeralda Counties, Nevada", was prepared cooperatively by the Geological Survey, U.S. Department of Interior, and the State of Nevada, Department of Conservation and Natural Resources.¹

FINDINGS OF FACT

I.

The State Engineer issued Order No. 725 on May 14, 1979, designating and describing the Big Smoky Valley, Tonopah Flat Ground Water Basin, as a ground water basin coming under the provisions of Chapter 534 NRS (Conservation and Distribution of Underground Water).²

¹ Public record in the office of the State Engineer.

² Order No. 725 dated May 14, 1979, public record in the office of the State Engineer.

II.

On November 4, 1983, the State Engineer issued Order No. 828 designating municipal, quasi-municipal and domestic uses as preferred uses within a described area in the Big Smoky Valley, Tonopah Flat Ground Water Basin, used by the City of Tonopah for their municipal water supply.³

III.

Big Smoky Valley has two principal valley-fill reservoirs: one in the northern part of the valley and one beneath Tonopah Flat. The boundary between the two reservoirs coincides with the ground water divide, which is near the low alluvial divide in T.9N. The components of inflow to the valley-fill reservoirs are recharge from precipitation, runoff, subsurface inflow from Ione Valley to Tonopah Flat, and percolation to the water table of water imported to Tonopah.⁴

IV.

Average annual precipitation within the Big Smoky Valley Hydrologic Basin ranges from as much as 20 inches in the high mountains to 4 to 7 inches on the valley floor. The northern part receives more precipitation, at a given altitude, than Tonopah Flat. Inflow to the valley-fill reservoirs is mostly recharge from precipitation. Only an estimated 2 percent of the average annual precipitation of 580,000 acre-feet recharges the valley in Tonopah Flat yielding an annual recharge to the ground water system of 12,000 to 15,000 acre-feet.⁴

³ Order No. 828 dated November 4, 1983, public record in the office of the State Engineer.

⁴ Water Resources Bulletin No. 41.

V.

Inflow from Ione and Ralston Valleys, in the form of ground water inflow through the alluvium, is estimated to be on the order of 2,000 acre-feet annually. Leakage of ground water through the consolidated rocks is possible, but there is no field evidence that any such leakage enters the valley-fill reservoir of Tonopah Flat.⁴

VI.

Runoff from the mountains, estimated at the mountain front, to the valley-fill reservoir is estimated to be 5000 acre-feet annually in Tonopah Flat, with virtually all the runoff originating in the Toiyabe Range. Average annual streamflow crossing the east-west line between Townships 4N. and 5N. in Tonopah Flat is estimated to be about 500 acre-feet. Most of the runoff is generated north of this line, but the data indicates that it is greatly dissipated as it flows southward across the valley-fill reservoir.⁴

VII.

Since 1904, water has been imported to Big Smoky Valley from Ralston Valley to supply the Town of Tonopah. In 1968, the assumed recharge of the imported water was on the order of 200 acre-feet annually.⁴

VIII.

The components of outflow from Big Smoky Valley are evapotranspiration, spring discharge, subsurface outflow, irrigation and other consumptive uses. Over the long term, inflow to and outflow from a ground water system are equal. The total inflow to the Big Smoky Valley, Tonopah Flat Hydrologic Ground Water System, is approximately 14,000 acre-feet annually: 12,000 acre-feet from precipitation and 2,000 acre-feet from inflow from Ione Valley.⁴

IX.

The perennial yield of a hydrologic ground water system is the maximum amount of water of usable chemical quality that can be consumed economically each year for an indefinite period of time. For the Big Smoky Valley, Tonopah Flat area, the perennial yield is estimated to be 6,000 acre-feet annually. This figure is based on the outflow estimate of 14,000 acre-feet annually of which 8,000 acre-feet is believed to be lost to outflow to Clayton Valley.⁴

X.

Permits and certificates have been issued under existing rights for more than 24,000 acre-feet annually of ground water within the Big Smoky Valley, Tonopah Flat Hydrologic Basin.¹

XI.

The approval of the application 54362 would result in the additional withdrawal of 331.6 acre-feet annually compared to a perennial yield of 6,000 acre-feet annually.¹

XII

If the perennial yield of a hydrologic system is continually exceeded, ground water levels will decline until the ground water reservoir is depleted of water of usable quality or until the pumping lifts become uneconomical to maintain. Perennial yield cannot exceed the natural replenishment to an area indefinitely, and ultimately is limited to the maximum amount of natural discharge that can be salvaged for beneficial use.⁵

⁵ See attached Appendix of References.

XIII.

Withdrawals of ground water in excess of the perennial yield contributed 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. These conditions have developed in several other ground water basins within the State of Nevada where storage depletion and declining water tables have been recorded and documented.⁵

XIV.

Applications have previously been denied for irrigation purposes within the Big Smoky Valley-Tonopah Flat.⁶

CONCLUSIONS

I.

The State Engineer has jurisdiction of the parties and the subject matter of this action and determination.⁷

II.

The State Engineer is prohibited by law from granting a permit under an application to appropriate the public waters where:⁸

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

⁶ Applications 31510 through 31531, inclusive; 32088; 32089; 32271 through 32276, inclusive; 32400; 32401; 32402; 32407 through 32419, inclusive; 33001; 37001, through 37004, inclusive; 37222; 47220; and 47320; public record in the office of the State Engineer.

⁷ NRS Chapters 533 and 534.

⁸ NRS 533.370.

III.

The granting of a permit under Application 54362 would result in the withdrawal of a substantial amount of ground water in excess of perennial yield of the Big Smoky Valley, Tonopah Flat Ground Water Basin, and would, therefore, adversely affect existing rights and be detrimental to the public interest and welfare.

RULING

Application 53462 is herewith 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/MA/pm

Date this 21st day of

May, 1990

APPENDIX OF REFERENCES

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