

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

IN THE MATTER OF PROTESTED )  
APPLICATION 67675 FILED TO )  
APPROPRIATE THE PUBLIC WATERS )  
OF AN UNDERGROUND SOURCE )  
WITHIN THE PAHRANAGAT VALLEY )  
HYDROGRAPHIC BASIN (209), )  
LINCOLN COUNTY, NEVADA. )

RULING

# 5559

GENERAL

I.

Application 67675 was filed on June 15, 2001, by Luis Ramallo to appropriate 0.05 cubic feet per second, not to exceed 2,700 gallons per day, of the underground water from the Pahrnagat Valley Hydrographic Basin for commercial purposes, i.e., a service station, mini-mart and food court. The proposed place of use is described as being located within portions of the NW¼ NE¼ of Section 10, T.5S., R.60E., M.D.B.&M. The proposed point of diversion is described as being located within the NW¼ NE¼ of said Section 10.<sup>1</sup>

II.

Application 67675 was timely protested by Bruce and Pauli Shields on the grounds that the point of diversion from which the water would be appropriated is 60 feet east of their septic leach field and their supply of water is already depleted during the time in which properties just south of them are irrigated.<sup>1</sup>

FINDINGS OF FACT

I.

The location of Crystal Springs is described as being within the SE¼ NE¼ of Section 10, T.5S., R.60E., M.D.B.&M.<sup>2</sup> The right to the use of water from Hiko, Crystal and Ash Springs was decreed by the Pahrnagat Lake Decree of October 1929, as amended by the

---

<sup>1</sup> File No. 67675, official records of the Office of the State Engineer.

<sup>2</sup> United States Geological Survey Hiko Quadrangle Map 1980.

Nevada Supreme Court in *Alamo Irrigation Company, Inc. v. United States of America*, 81 Nev. 390 (1965). Said decree provides that the Hiko, Crystal and Ash Springs are fully appropriated. The State Engineer finds the proposed point of diversion under Application 67675 is less than 1,000 feet from Crystal Springs and the State Engineer has previously denied applications that had points of diversion approximately one-half mile from Crystal Springs.<sup>3</sup>

## II.

Ground water in the Pahranaगत Valley Basin is stored and transmitted in the Paleozoic carbonate rocks beneath the valley fill. Hiko, Crystal and Ash Springs issue from the Paleozoic carbonate rocks and play a dominant role in the economy of Pahranaगत Valley. The magnitude of the combined discharge, averaging 35.0 cfs (25,000 acre-feet annually), is far in excess of the amount that might be supplied by recharge from precipitation within the defined surficial area of the valley (estimated average 1,800 acre-feet annually). This indicates that much of the ground water discharged by the springs is derived from beyond the drainage divide of the valley. The general hydraulic gradient tends to slope southward and towards the White River Channel, of which Ash, Crystal and Hiko springs are located along said course.<sup>4</sup>

That the existing fractures or solution openings have extensive hydraulic connection throughout the area, is demonstrated by the regional hydrology. Ground water movement through carbonate rocks in this region occurs through both fractures and solution opening. Solution openings developed near sources of recharge where carbon dioxide carried by rain water penetrate the rocks, or where organic and other acids derived from decaying vegetation and other sources were carried by water into contact with carbonate rocks. The principle significance of solution openings is that

---

<sup>3</sup> State Engineer's Ruling No. 3225, dated August 14, 1985, official records in the Office of the State Engineer.

<sup>4</sup> State Engineer's Ruling No. 3225, dated August 14, 1985, official records in the Office of the State Engineer and T. Eakin, *Ground-water Resources - Reconnaissance Series Report 21, Ground-water Appraisal of Pahranaगत and Pahroc Valleys, Lincoln and Nye Counties, Nevada*, pp.13-15 (1963).

they greatly facilitate movement of ground water through carbonate rocks. Certainly, the large quantity of ground water issuing from fractures and solution openings, such as those of Ash, Crystal and Hiko Springs in Pahrnagat Valley, is a dramatic demonstration that ground water moves through Paleozoic carbonate rocks in this region of Nevada.<sup>5</sup>

Water Resources Reconnaissance Series Report No. 21 provides information as to the occurrence and movement of ground water.

The occurrence of ground water in Pahrnagat and Pahroc Valleys is one of contrast. The depth to ground water in most of Pahroc Valley is generally more than 200 feet. In Pahrnagat Valley, however, the depth to water along the White River channel from the vicinity of Hiko Spring to Maynard Lake is at or within a few feet of land surface. Northward from Hiko along the lowland the depth to water increases; at the north end of Pahroc Valley it apparently is on the order of 250 feet or more. In most of Pahrnagat Valley the younger valley fill along the White River channel is saturated to or nearly to land surface. Toward the mountains the depth to water increases.<sup>6</sup>

"Thus, based on the potential hydraulic gradients, ground water probably moves from the northwest, north, and northeast toward the principal carbonate springs in Pahrnagat Valley."<sup>7</sup>

Present development in Pahrnagat Valley is using nearly all of the natural spring discharge of about 25,000 acre-feet per year.<sup>8</sup> The ground water in the Pahrnagat Valley is stored and transmitted in the Paleozoic carbonate rocks beneath the valley fill. From this carbonate flow, Hiko, Crystal and Ash Springs issue and play a dominant role in the economy of Pahrnagat Valley.<sup>9</sup> The right to use the water of Hiko, Crystal and Ash Springs was decreed by the Pahrnagat Lake Decree of October 1929,

---

<sup>5</sup> State Engineer's Ruling No. 3225, dated August 14, 1985, official records in the Office of the State Engineer and Water Resources Reconnaissance Series Report No. 21, p.11.

<sup>6</sup> Water Resources Reconnaissance Series Report No. 21, p.12.

<sup>7</sup> Id. at 15.

<sup>8</sup> Id. at 1.

<sup>9</sup> Water Resources Reconnaissance Series Report No. 21, pp. 13-15.

amended by the Nevada Supreme Court in *Alamo Irrigation Company, Inc. v. United States of America*, 81 Nev. 390 (1965).

The State Engineer finds the hydraulic gradient indicates that groundwater flow is southward from the northern portion of Pahranaagat Valley towards the White River Channel along which are located Hiko, Crystal, Ash Springs, and Upper and Lower Pahranaagat Lake. The State Engineer finds the proximity of the point of diversion under this application to Crystal Springs and the path of the White River Flow System indicates that to grant a permit under Application 67675 would interfere with existing rights and thereby threaten to prove detrimental to the public interest.

#### CONCLUSIONS OF LAW

##### I.

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

##### II.

The State Engineer is prohibited by law from granting a permit under 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 or change conflicts with existing rights;
- C. the proposed use or change conflicts with protectible interests in existing domestic wells as set forth in NRS § 533.024; or
- D. the proposed use or change threatens to prove detrimental to the public interest.

##### III.

The State Engineer concludes that to permit the appropriation of ground water under Application 67675 would interfere with existing water rights thereby threatening to prove detrimental to the public interest.

---

<sup>10</sup> NRS chapters 533 and 534.

<sup>11</sup> NRS § 533.370(4).

Ruling  
Page 5

**RULING**

Application 67675 is hereby denied on the grounds that to permit the appropriation of water under the application would interfere with existing rights and threaten to prove detrimental to the public interest. No ruling is made on the merits of the protest.

Respectfully submitted,



HUGH RICCI, P.E.  
State Engineer

HR/SJT/jm

Dated this 9th day of

February, 2006.