IN THE MATTER OF APPLICATIONS 36226, 39585, 39586, 39587 AND 39588 TO APPROPRIATE UNDERGROUND WATER FROM CARSON DESERT, CHURCHILL COUNTY, NEVADA

RULING

GENERAL

U.S. Geological Survey Open-File Report 80-2042, "Geohydrology of the Basalt and Unconsolitated Sedimentary Aquifers in the Fallon Area, Churchill County, Nevada", by Patrick A. Glancy was prepared in cooperation with the Nevada Division of Water Resources and filed in 1981 at U.S.G.S. offices. A copy may be viewed at the office of the State Engineer.

FINDINGS OF FACT

I

Applications 36226, 39585, 39586, 39587 and 39588 were filed by Clarence H. Niebuhr to appropriate underground water for irrigation and domestic purposes within T.19N., R.27E., M.D.B.&M., in Carson Desert, Nevada.

Application 36226 was filed on November 30, 1978 for 1.8 c.f.s. of water to irrigate 120 acres within the N½ SW¼, SE¼ SW¼ Section 31. The point of diversion is within the NW¼ SW¼ Section 31.

Applications 39585, 39586, 39587 and 39588 were filed on November 8, 1979.

Application 39585 is for 5.4 c.f.s. of water to irrigate 320 acres within the S½ Section 27. The point of diversion is within the SW¼ SE¼ Section 27.

Application 39586 is for 2.7 c.f.s. of water to irrigate 160 acres within the E½ W½ Section 33. The point of diversion is within the SE¼ SW¼ Section 33.

Application 39587 is for 5.4 c.f.s. of water to irrigate 320 acres within the SW¼, S½ NW¼, W½ SE¼, SW¼ NE¼ Section 23. The point of diversion is within the SE¼ SW¼ Section 23.

Application 39588 is for 2.7 c.f.s. of water to irrigate 160 acres within the SE¼ Section 33. The point of diversion is within the SE¼ SE¼ Section 33.

Applications 36226, 39585, 39586, 39587 and 39588 are for a total of 1080 acres. If a duty of 4 acre-feet per acre per year is allowed then the annual appropriation would be 4320 acre-feet of water. 1/

II

The applicant asked for a hearing to present additional information in the matter of Applications 36226, 39585, 39586, 39587 and 39588. A hearing was held on April 27, 1981.

A hearing was held on July 12, 1978, in the matter of Applications 30338, 30616, 30617, 30624, 30625, 30694, 30840, 30851, 30852, 30864, 31185, 31186, 31187, 31268, 31717, 31723, 31724, 31958, 32008, 32009, 32616, 32646, 32647, 32648, 32649, 32650, 32651, 32652, 32653, 32654, 32655, 32656, 32657, 32658, 32659, 32660, 32661, 32710, 32711, 32909, 32932, 32933, 32951, 32952, 33054, 33191, 33490, 33872, 33993, 33994, 33995, 33996, 34677, 34706, 34710, 34721, 34879, 34880 and 35020 which were also filed to appropriate underground water in the Carson Desert. Most of these applications were protested.

Transcripts of these hearings may be viewed at the office of the State Engineer.

III

On July 6, 1978, the State Engineer designated the Carson Desert Ground Water Basin as provided under NRS 534.010 to 534.190, inclusive, by Order 716. 2/

IV

On October 4, 1978, the State Engineer issued Order 722 which stated, in part, that the irrigation of additional land using underground water is not a preferred use of the limited underground fresh water resource and that all applications filed after October 4, 1978, to appropriate underground water to irrigate additional land within the Carson Desert Ground Water Basin will be denied. A copy of Order 722 is attached.

V

The wells proposed under Applications 36226, 39585, 39586, 39587 and 39588 are centrally located within the Fallon fresh water irrigation system with reservoirs, canals, irrigated farmlands and the Carson River surrounding the proposed wells. 3/

VI

The hydrology of the aquifers near Fallon is complex but the Basalt aquifer is defined and recognized as the source of municipal water for Fallon, Kennametal, and the Fallon Naval Air Base. Pumpage from the Basalt aquifer is estimated at 1730 acre-feet for 1978. 4/ Calculations suggest that pumping has already lowered the artesian head 4 to 5 feet. 5/ This aquifer is also expected to support urban growth in the area.

The Basalt aquifer is hydraulically connected with other aquifers in the Fallon area including an overlying intermediate aquifer which recharges moderately fresh water to the Basalt aquifer and also including an underlying deep aquifer of mostly saline water. 6/ Hydraulic connection is indicated by the correlation of water level fluctuation in wells with pumpage and river flow. 7/

The major source of fresh water to the Basalt aquifer is from the irrigation of farmlands in the Fallon area. A portion of the applied and stored fresh river water percolates downward through the shallow and intermediate aquifers to eventually collect in and recharge the highly permiable Basalt aquifer which is tapped by the municipal and quasi-municipal wells. 8/ The system is similar to a huge French drain with the Basalt aquifer serving as the ground water collector.

CONCLUSIONS

1. The protection of the Basalt aquifer is essential to the public welfare of the Fallon area. The proposed wells are centrally located in the area where fresh river water is stored, transported, and applied. To allow large draught irrigation wells to pump from this area would interfere with the recharge of fresh water to the Basalt aquifer and may cause the intrusion of more saline ground water into the Basalt aquifer. The proposed pumpage (4320 acre-feet per year) is more than twice the estimated pumpage (1730 acre-feet per year) from the Basalt aquifer. The Basalt aquifer is already losing artesian head and if it were adversely affected as a public water source, existing water rights would be adversely affected. 9/

2. The pumpage of large quantities of ground water to irrigate additional land is not a preferred use of the limited fresh water resource of the Carson Desert. 10/

3. The proposed pumpage of large quantities of ground water by large draught irrigation wells to irrigate additional land would cause an adverse effect on existing rights because the water pumped by the wells would:

    a) be replaced by intruding saline water that would prevent the aquifer from being used for human consumption,

    b) be replaced by infiltrating surface water that otherwise would satisfy existing water rights, or

    c) not be replaced resulting in an unreasonable lowering of the water table for other water right holders. 11/

RULING

Applications 36226, 39585, 39586, 39587 and 39588 are denied on the grounds that to permit them would adversely affect existing rights and be detrimental to the public welfare.

Respectfully submitted,

Peter G. Morros
State Engineer

PGM/JC/bc

Dated this 15th day of

JANUARY, 1982.

FOOTNOTES

1. Public records on file at the Office of the State Engineer.
2. Public records on file at the Office of the State Engineer.
3. See U.S. Army Map Service 1:250,000 Scale Map, Reno, NJ 11-1. This map may be viewed at the Office of the State Engineer.
4. U.S.G.S. Report 80-2042, Table 6, Page 37.
5. U.S.G.S. Report 80-2042, Pages 28 through 31, Page 88.
6. U.S.G.S. Report 80-2042, the entire report is about the Basalt aquifer and its relationship with the surrounding sedimentary aquifers.
7. U.S.G.S. Report 80-2042; Figure 7, Page 31; Figure 18, Page 63; Figure 19, Page 64; Figure 20, Page 65; Figure 21, Page 67.
8. U.S.G.S. Report 80-2042, Pages 87 and 88.
9. NRS 533.370, Section 4.
10. NRS 534.120, Section 2.
11. NRS 533.370, Section 4.