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Long Valley—View of Well 20 58-8C2 and Buck Mountain

GROUND-WATER RESOURCES – RECONNAISSANCE SERIES

REPORT 3

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GROUND-WATER APPRAISAL OF LONG VALLEY,
WHITE PINE AND ELKO COUNTIES, NEVADA

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Estimated Average Annual Discharge

Some ground-water is discharged from Long Valley by transpiration of water-loving vegetation (phreatophytes) and by evaporation, but apparently a larger quantity is discharged from the valley fill through bedrock to areas outside of the drainage area of the valley, as discussed previously (p. 19). Because this latter quantity cannot be estimated directly, the estimate of ground-water discharge from Long Valley to areas outside of the drainage basin is obtained as the difference between the estimated ground-water recharge and the estimated ground-water discharge. Table 6 summarizes the estimated average annual ground-water discharge from Long Valley on the above basis.

Studies of Lee (1912) and White (1932) made in the Great Basin, and Young and Blaney (1942), made in southern California, form the basis for the estimate of evapotranspiration used in table 6. The rate of ground-water use was assigned on the basis of vegetative types, density, and depth to the water table.

The principal areas of phreatophytes total about 11,000 acres, and are largely in the region east and northeast of Long Valley Slough, and in parts of the axial drainage of the valley; such as Long Valley Wash in T. 23 N., R. 59 E. Elsewhere the depth to water seems to be 40 feet or more. Therefore, any phreatophytes in these areas probably obtain only negligible quantities of water from the ground-water reservoir.

Table 6. -- Estimated average annual ground-water discharge from Long Valley

Method of ground-water discharge	Estimated rate of ground water use (feet per year)	Area (acres)	Approximate discharge (acre-feet per year)
Evapotranspiration: principally by mixed rabbitbrush and greasewood; depth to water 10 to 40 feet, average 25 feet	0.2	11,000	2,200
Discharge by movement into bedrock from valley fill (recharge of 10,000 acre-feet minus discharge by evapotranspiration of 2,200 acre-feet) within drainage basin			7,800
Estimated average annual discharge			10,000