

TECHNICAL REPORT 31

**New Mexico State Engineer**  
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Characteristics  
of the  
**WATER SUPPLY IN NEW MEXICO**

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EXHIBIT 8  
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greatest precipitation is during July, August, and September. In eastern New Mexico precipitation is considerable also during May, June, and October. At higher elevations in the north precipitation is more evenly distributed throughout the year.

Figure 3, furnished by the State Engineer of New Mexico, shows the mean monthly precipitation patterns at selected stations in New Mexico. Figure 4 shows the variation in annual precipitation for the period of record at five stations.

#### Evaporation

The loss of water by evaporation varies considerably in different parts of the State. This loss includes evaporation from the free water surfaces, such as streams and lakes, from the surface of moist land, and from the vegetative cover. The rate of evaporation from a free water surface depends on the air and water temperatures, relative humidity, wind movement, size and configuration of the water body, and other factors.

Direct measurement of evaporation from a natural body of water is difficult because of the many factors involved. The usual practice is to measure evaporation from a large pan in which the daily and monthly changes in the level of the water can be accurately measured. A correlation of pan evaporation with measurable evaporation losses from larger bodies of water provides a factor that can be used to convert from pan evaporation to actual evaporation. Because of the transfer of energy involved the monthly pattern of evaporation from larger lakes and reservoirs differs from the pattern for small reservoirs.

Figure 5, prepared by the office of the State Engineer of New Mexico, shows the mean monthly pan evaporation at selected stations in the State for the period 1931-60. Figure 6 shows the approximate annual evaporation that may be expected from the smaller lakes and reservoirs.

#### Temperature

The average annual air temperature ranges from more than 60°F at lower altitudes in the southern part of the State to slightly more than 40°F in the higher mountains in the northern part of the State. Figure 7, furnished by the State Engineer of New Mexico, shows the variation in the average annual temperature from place to place in the State. Table 1 shows means of the maximum and minimum daily temperatures, by months, computed for the period 1931-52, for six locations in the State. Mean monthly temperatures at 21 selected stations for the period 1931-60 are shown in figure 3.

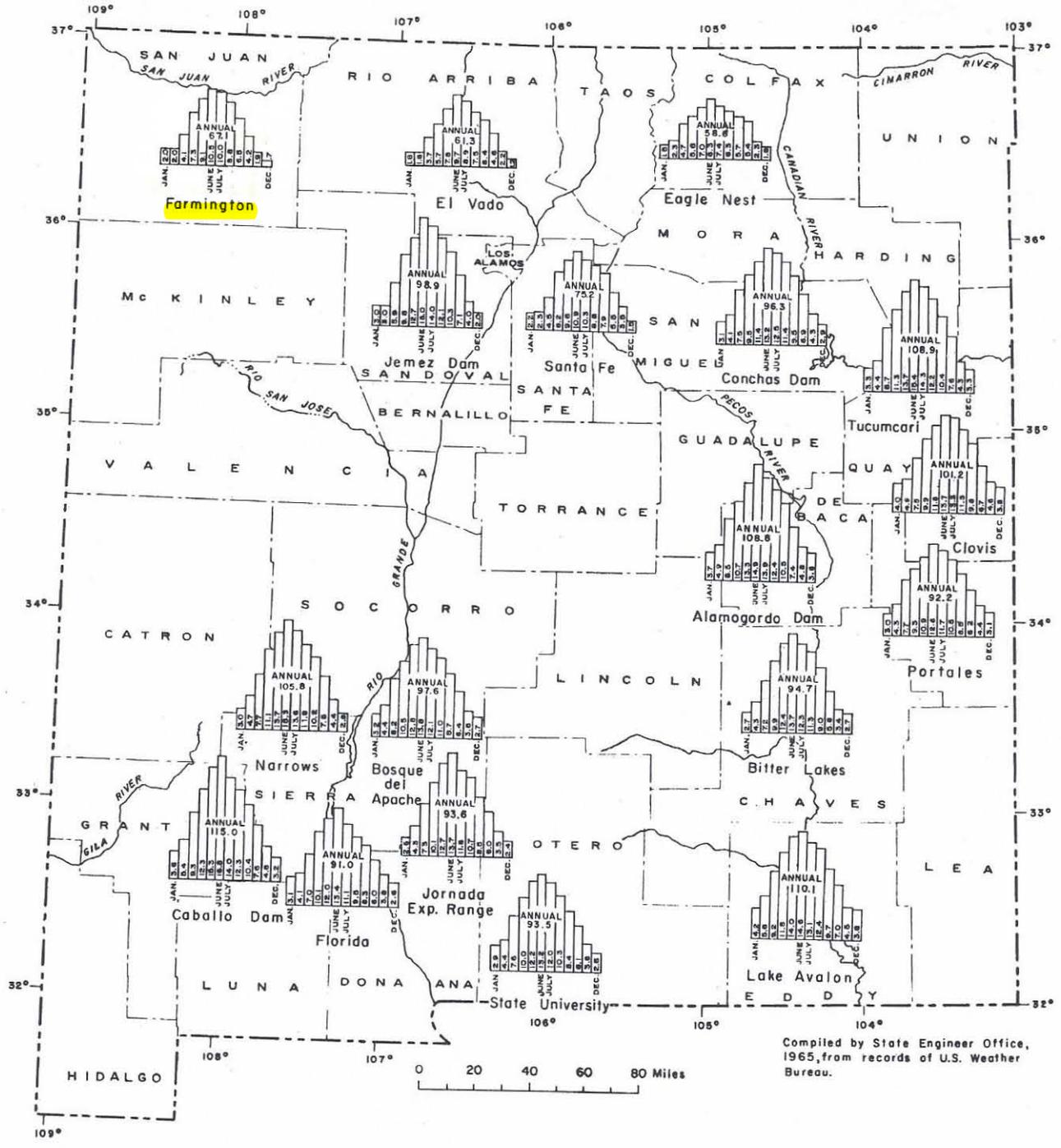
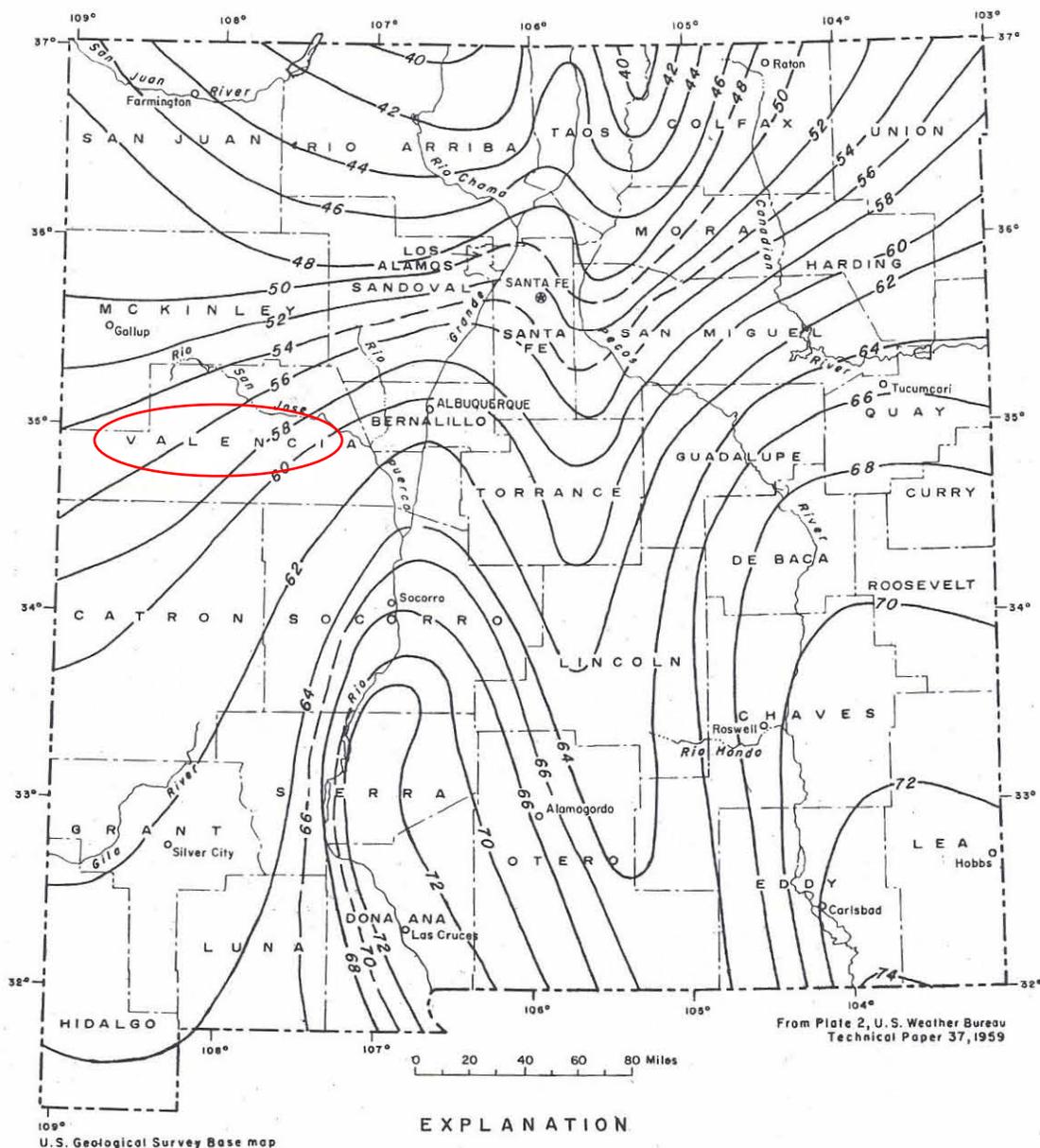


FIGURE 5. -- Mean monthly pan evaporation, in inches, at selected stations in New Mexico.



**SEASONAL RESERVOIR EVAPORATION**  
(Applicable to shallow exposed reservoirs)

Month	Percent of annual	Month	Percent of annual
January	1	July	46
February	1	August	14
March	5	September	12
April	9	October	6
May	14	November	3
June	17	December	2

66  
Lines of equal evaporation from shallow reservoirs, in inches

FIGURE 6. -- Average annual evaporation, in inches, from shallow reservoirs in New Mexico, 1946-55.