



DEPARTMENT OF IRRIGATION
DAVIS, CALIFORNIA 95616

April 15, 1965

Mr. John Anderson
Farm Advisor
Mariposa County Agricultural Extension Service
Mariposa, California

Dear John:

Les Berry told me of your tour on April 20 and the need for data on the Piney Creek Study. I have summarized the values for the runoff and rainfall for the 10 years. We have this ready for a final run on the computer to get the data in a final format so it is all good. I have not pushed this because of other work, but plan to issue a draft of a report for your review.

My conclusions are summarized in the following statements based on these limits:

1. Excluding years of equipment failure due to floods, etc., when records were incomplete.
2. Realizing that these few data will not permit a real statistical test but must be judged and compared for similar years or averaged over similar periods before and after treatment.
3. Averaging all "good" years before treatment and after treatment and then comparing values of runoff.
4. The treatment effect is evaluated by taking the net difference in water yield from the treated area. (Station A minus Station B)
5. These runoff data are the measured outflows in the channel of the stream. Probably a like amount of outflow occurred underground -- so the total yield increase may be very much greater but is unaccountable by this study. We would need to have a complete hydrogeologic study to determine this factor. We did not and could not do this at the time of this study.

I thus conclude that the average runoff from the treated portion of the watershed was increased by about 1.25 inches. The value varies from less than 1 inch for low rainfall to over 2.5 inches. Therefore, the 1.25 inch value seems quite reasonable.

The treatment probably was not 100% effective. The area was not maintained completely void of deep-rooted species. The followup management was controlled

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only by several owners and others let it go -- so the net result may be lesser in magnitude and less permanent than is actually possible.

John, I hope these ideas will help. Please let me know if I can add to this story.

Sincerely,

Robert H. Burgy
Professor of Irrigation
and Engineering

RHB:shi
cc: Les Berry

Mariposa Watershed
Summary Data

Hydrologic Year*	Average Rainfall inches	Station A Runoff-inches	Station B Runoff-inches	$[(\text{Runoff})_A - (\text{Runoff})_B]$
1952-53	10.54(incomplete)	2.72	3.79	-1.07**
1953-54	17.40	1.80	3.50	-1.70
1954-55	13.78	1.15	2.03	- .88
1955-56	22.99(incomplete)	7.43	.31	-- **
1956-57	12.15	2.27	2.30	- .03
1957-58	32.44	8.06	12.41	-- **
1958-59	13.78	1.98	1.78	+ .20
1959-60	17.08	3.26	2.32	+ .94
1960-61	14.71	.69	.70	- .01
1961-62	18.74	5.67	5.19	+ .48

Untreated:

$$\text{Average } [(\text{Runoff})_A - (\text{Runoff})_B] = -.92 \text{ inch}$$

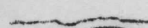

Treated:

$$\text{Average } [(\text{Runoff})_A - (\text{Runoff})_B] = +.40 \text{ inch}$$

Magnitude of Average Effect = about 1.25 inches

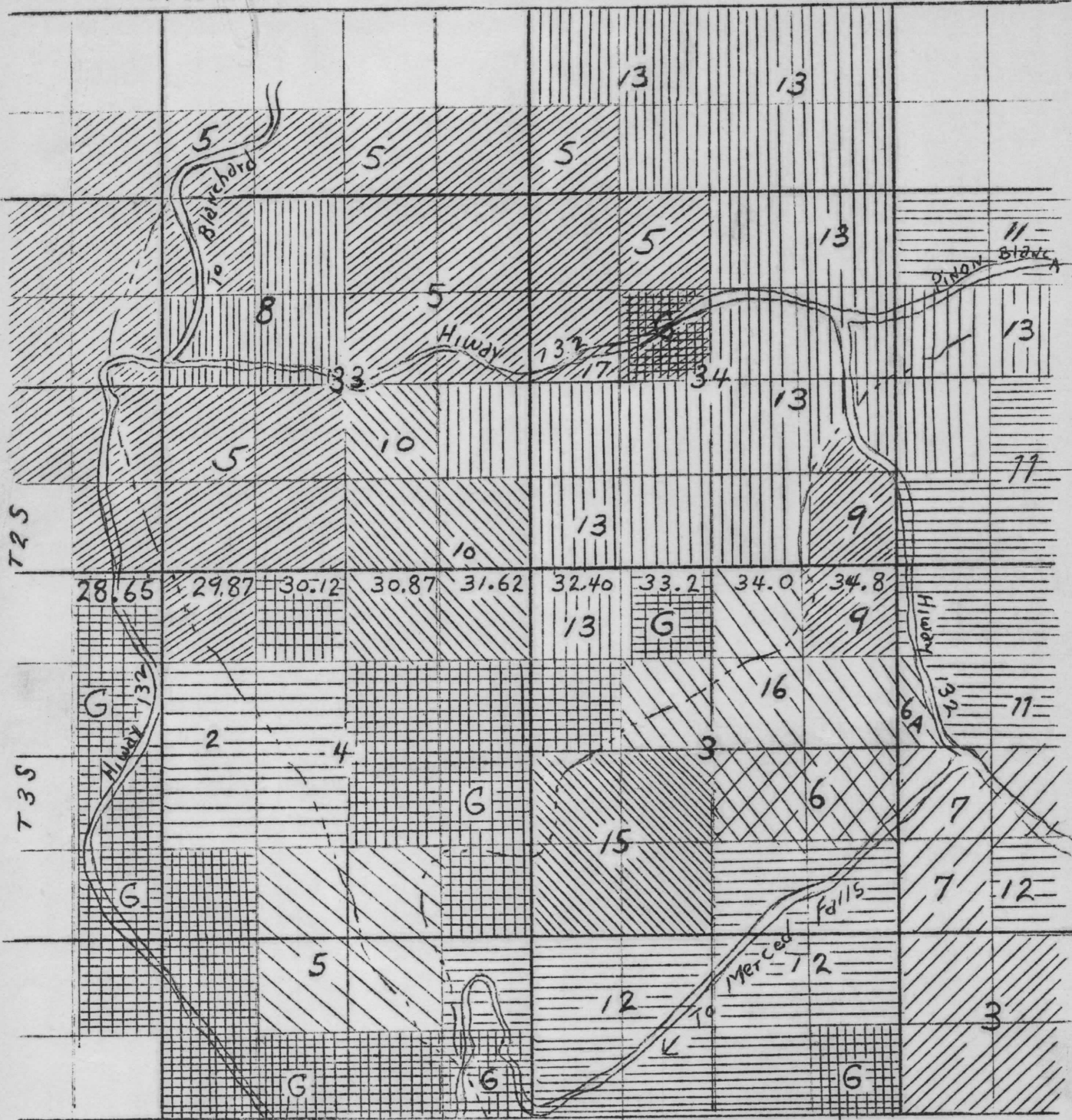
* October 1 to September 30

** These data are incomplete or occur in the year of treatment.

 Roads
 Creeks

Range 15 E

1" = 0.8 mile



- G - B.L.M. land
- 2 - Ruth Cassinella, Box 72, Snelling
- 3 - Robert & Editha W. Dunn, 2000 Page Mill Rd., Palo Alto
- 5 - Maize Erickson, La Grange
- 6 - Inez Robie, Coulterville
- 7 - R. E. Gale, Coulterville
- 8 - Valetino LaHarner, Coulterville
- 9 - R. W. Lynn, Coulterville
- 10 - Harland D. Mann, Coulterville
- 11 - E. F. McMahon, Box 709, Sonora

- 12 - M.C. & F. Stribling
- 13 - R.M. Strutevant, Coulterville
- 15 - Mack Smith, Box 451, Barstow and Willie Smith, Rt. 1, Box 301A, Turlock
- 16 - Warren Hamman & Herbert Francis Drawer A Modesto
- 17 - T. W. Miller, 2419 Robindile, Stockton

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