March 5, 1945

Mr. A. E. Moritz, Regional Director
U. S. Bureau of Reclamation
Boulder City, Nevada
Dear Mr. Moritz:

Your two letters, both dated March 1, were received Saturday, and I wish to thank you for them.

Taking up first the letter relating to the use of water in Mexico, I may say that from your letter and from other correspondence, I am convinced that it is the International Boundary Commission which should be held responsible for the gross misstatements that have been made regarding present use of water in Mexico. There is a distinction between diversions and use. In some instances, as in the Salt River Valley, the difference is negligible, but in a case like that of the Alamo Canal, it is very great. I am of the opinion that the item covering the use under the Alamo Canal should be cut down about one-third.

The second item in the Boundary Commission's breakdown is for 90,000 acres of cotton lands for which water is pumped direct from the river. They have allowed a duty of 6 acre-feet per acre. The duty should be not over 3½ acre-feet per acre. We consider the duty for short-staple cotton as 3 acre-feet and for long-staple cotton as 3½ acre-feet.

The third item relates to the water received from the lower end of the Yuma Valley project. That water aggregates 7,000 to 8,000 acre-feet per month during the months of cotton irrigation, and 9,000 to 10,000 acre-feet per month in the winter. Cotton uses water about a month in the spring, and then after a considerable period of nonuse it uses water heavily for 3 or 3½ months in the summer. The Boundary Commission counted all 12 months of the waste water from the Yuma project as being used. The figures should be somewhere between 40,000 and 50,000 acre-feet per year instead of 103,000.

I wish to repeat the last paragraph of my letter to you dated February 9 as follows: "It makes a startling difference psychologically and practically whether the actual use is on the high side or the low side of the 1,500,000 acre-feet, which is the basis of the treaty."

Your other letter deals with the measured flow and virgin flow in the Colorado River at Lees Ferry, and you enclosed with your letter a tabulation of the past flow, depletions, and the virgin flow for the period 1897 to 1943. You suggest that I furnish you with a copy of my tabulation so that you can compare it with yours.

I found that my figures for depletion for the last 7 or 8 years were lower than yours and probably because there has been some additional transmountain diversion that I did not know of. I have corrected my figures to agree with yours so that the whole record for upstream depletions will not differ from yours at all. The differences, therefore, are in the column of past flow at Lees Ferry.

After studying the new record in Water Supply Paper 918 I wrote to the author and asked him why he had made changes in the original data and called his attention also to the record used by Mr. Debler. In his reply he states that he did a great deal of research and went back to original data, and while in most cases he confirmed the old LaRue figures as published in Water Supply Paper 556, yet he did find some errors which he had to investigate in the field. The most serious one was for the years 1898 and 1899. The measurements at Green River, Utah, were taken from a skew bridge and the length of the spans was used instead of the distances at right angles to the piers. The proper correction reduced the discharge for 1898 from 12,400,000 to 10,200,000, and for 1899 from 20,300,000 to 17,400,000.

Also he found errors in the measurements at Fruita, Colorado, for the winter of 1912-13, which changed the discharge for those two years.

I consider that Dickinson's strenuous work in preparation of Water Supply Paper 918 should make his tabulation acceptable to everyone. Just why Mr. Debler increased the figures for a good many years I cannot imagine, but the Geological Survey, which secured the data, should have the right to interpret the data. Then if Mr. Debler wishes to change them, the burden of proof is on him, and his tabulation should be accompanied by a statement of reasons for the changes. Therefore, I shall stick to the records as published last fall in Water Supply Paper 918, and I have a feeling that the Bureau of Reclamation should do the same. The record is as follows, the values being in 1,000 acre-feet:

1895	13,200	1911	14,710	1927	17,510
1896	12,800	1912	17,080	1928	14,710
1897	17,700	1913	12,640	1929	19,590
1898	10,200	1914	18,900	1930	12,390
1899	17,400	1915	11,670	1931	6,218
1900	12,700	1916	17,880	1932	15,130
1901	13,500	1917	20,470	1933	9,733
1902	8,850	1918	14,080	1934	3,948
1903	12,800	1919	10,480	1935	10,270
1904	12,100	1920	19,160	1936	12,110
1905	13,600	1921	20,440	1937	11,980
1906	17,400	1922	16,070	1938	15,640
1907	21,100	1923	16,950	1939	8,839
1908	11,100	1924	11,690	1940	7,589
1909	21,200	1925	12,340	1941	17,860
1910	12,500	1926	13,060	1942	14,790
				1943	11,410

In addition to lowering the average figure for the long period, I think that we should give much less weight to the period during which the figures are merely "estimates" derived from various and sundry records on the upstream reaches of the river. Granted that the flow might be expected to be above normal from a study of the rainfall, yet perhaps not all of the excess was due to that factor, and if the estimated flow for that period is to be given consideration, we should also take into consideration the fact that the rainfall averages for Utah, Colorado, and Wyoming for the previous two decades were very low—much lower than the general average. The deficiency in rainfall from 1881 to 1897 was much more than the excess of rainfall for 1897 to 1921.

Certainly we have been counting on much more water in the Colorado River system than we were justified in doing. This situation is unpalatable, but it is better to face it now than to have it held against us later that we made unwarranted assumptions and used incorrect figures.

Yours very truly,
G. E. P. Smith

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P.S. Since dictating the above letter, the morning mail has arrived and in it is a copy of the report of the Senate Foreign Relations Committee to the Senate on the Mexican water treaty. In going over the pages rather hurriedly, I noted one thing that caused me to gasp. It appears that the Bureau of Reclamation is held responsible in large part for the statement that there will be 900,000 to 1,100,000 acre-feet of return water at the International Boundary Line. This is an exaggeration to the Nth degree. It must assume that a vast quantity of water from the Colorado River is going to be applied to Arizona lands, and the answer to that is that it can't be done for there is not sufficient water supply in the river after satisfying the claims of the upper basin states and the California contracts which were dated in 1931. I occasionally hear it stated that Arizona will be allowed to use temporarily the waters allocated to the upper basin. That is a ridiculous assumption. The upper basin people know that once supplied, the water would never be severed from the lands, and I have direct information that the officials in the upper basin states were incensed at the idea of using their water in Arizona.

Even if Paradise Valley and other Central areas could be irrigated, return water would not reach Yuma. If it were not re-used it would be lost thru evaporation and transpiration of salt cedar, batamote, etc.

cc: Carl Hayden
Ernest W. McFarland