No. 80, Original

IN THE

Supreme Court of the United States

OCTOBER TERM, 1983

STATE OF COLORADO, *Plaintiff*

v.

STATE OF NEW MEXICO
AND PAUL G. BARDACKE,
ATTORNEY GENERAL OF THE STATE OF
NEW MEXICO, *Defendants*

NEW MEXICO'S MOTION FOR LEAVE TO FILE REPLY BRIEF AND NEW MEXICO'S REPLY BRIEF

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COME NOW the defendants, State of New Mexico and Paul G. Bardacke, Attorney General of New Mexico, pursuant to Rules 9.2 and 9.6 of the Rules of the Supreme Court of the United States, and request the Court for leave to file the attached Reply Brief. In support thereof, New Mexico states:

1. The State of New Mexico filed its Exceptions to the Report of Special Master and Brief in Support of Exceptions with the Court on August 11, 1983. The State of Colorado filed its Brief in Reply to the Exceptions and Brief of the State of New Mexico on September 22, 1983.

2. Colorado's Reply Brief takes exception to the Special Master's Report of May 31, 1983, by urging the Court to

alter the Master's Report with respect to Colorado's recommended diversion right despite waiving its right to take exception on July 14, 1983.

3. In its Reply Brief Colorado distorts certain facts in evidence, misconstrues certain exhibits, and criticizes New Mexico's presentation of supply and demand on the basis of assertions which are incorrect and prejudicial.

4. A decision of this Court based upon the assertions recited in Colorado's brief would be highly injurious to established property interests in New Mexico and to the livelihood of New Mexico's citizens.

WHEREFORE, the State of New Mexico respectfully moves the Court for leave to file the attached Reply Brief of the State of New Mexico.

Respectfully submitted,

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NEW MEXICO'S REPLY BRIEF

INTRODUCTION AND SUMMARY OF ARGUMENT

This brief is made necessary by Colorado's treatment of critical factual issues in its Brief in Reply to the Exceptions and Brief of the State of New Mexico (hereinafter Colorado Brief). The Court's opinion following the first phase of this case emphasized the need for a complete analysis of the factual questions pertaining to water supply and demand on the Vermejo River. The case was remanded to the Special Master for comprehensive factual findings. —U.S.—, 103 S.Ct. 539, 545 (1982).

Two factors are predominant. In submitting its Reply Brief, Colorado has proposed that the Court increase the

Special Master's recommendation despite having waived its right to do so. This would alter equitable considerations relied upon by the Special Master in his second Report (hereinafter Report of May 31, 1983).[1] More importantly, Colorado has obscured both New Mexico's actual demand as well as the supply of Vermejo water available to satisfy that demand. A full discussion of this question is essential to any evaluation of New Mexico's needs or injury to New Mexico's interests caused by diversions by C. F. & I. Steel Corporation from the Vermejo tributaries in Colorado. The Court must have the facts fully developed to reach a decision.

POINT I

COLORADO'S "SUGGESTED TERMS AND CONDITIONS TO PROMOTE SHARING THE COMMON SUPPLY" TAKE EXCEPTION TO THE SPECIAL MASTER'S REPORT AND CONSTITUTE AN ATTEMPT TO OBTAIN MORE WATER THAN IS RECOMMENDED BY THE SPECIAL MASTER.

The Special Master recommended that Colorado be awarded 4,000 acre-feet of Vermejo River water per calendar year. Report of December 31, 1981 at 22-24; Report of May 31, 1983 at 29. Colorado expressly waived its right to take exception to this recommendation. *See* letter of July 14, 1983, from Robert Welborn to Alexander Stevas. Notwithstanding its waiver, Colorado now asks the Court to increase the Master's award by adopting a ten year progressive average, which would permit Colorado to compensate for the effects of dry years by increasing diversions in wet years. Colorado Brief at 54-56.

[1] The Master's first Report is cited as Report of December 31, 1981.

Colorado states that its suggestion is being made in the interest of "renewed interstate comity," demonstrating that it is willing "to share the burden of drier years if allowed to share in the benefits of wetter years." *Id.* at 54, 56. In reality, Colorado is suggesting that the Court alter the Master's Report to allow Colorado to take considerably more water than the Master recommended. Colorado's proposal, if applied during the 25 year period of record 1955-79, would increase the Master's award by 14%.

At trial, Colorado represented that an average of 4,702 acre-feet annually was available for diversion at C.F.&I.'s proposed points of diversion. Colo. Ex. No. 5. Tbl. 5. New Mexico's evidence showed that an annual average of approximately 3,650 acre-feet was available. Tr. 1322-24. Colorado assured the Master that its proposed diversions would take less than half of the water produced in that state, with the remainder available to satisfy New Mexico's uses. *See, e.g.*, Colorado's Reply Brief of July 17, 1981, Appdx. A at 14. The Master accepted these estimates, finding that New Mexico would be able to use the inflow below the points of diversion. Report of May 31, 1983 at 29.

Colorado now urges the Court to permit it to take more than would have been possible under the annual 4,000 acre-fee limit recommended by the Master. Because less than 4,000 acre-feet would be available in some years, Colorado proposes that its "diversion should be calculated on the basis of a ten-year progressive average. . . ." Colorado Brief at 55. According to Colorado's evidence the average amount of water at the proposed diversion points in the 1970s was 3,495 acre-feet per year, with an average supply of only 2,322 acre-feet in six years.[2] Colorado Ex. No. 5,

Tbl. 5. Aware of this shortage, Colorado is now requesting the Court to allow it to mitigate the deficit by taking more water in years when there are more than 4,000 acre-feet available at the diversion points.

Under Colorado's proposal, C. F. & I. would have dried up the river at its diversion points in each and every year in the 1970s. This would reduce the dependable snowmelt runoff by over one-half, leaving the New Mexico users with the summer flood-water, much of which is not divertible, and creating precisely the injury described in New Mexico's Brief in Support of Exceptions at Point VI.

POINT II

THE EXCLUSION OF EVIDENCE ON THE SUPPLY OF VERMEJO WATER TO RIGHTS ON THE CANADIAN RIVER WAS PREJUDICIAL TO NEW MEXICO.

In its Reply Brief, Colorado claims that the Special Master did not commit error by declining to hear the evidence described in New Mexico's Amended Narrative Tender of Evidence. The tender addressed four points: completion of the Vermejo Conservancy District's closed stockwater system, stockpond depletions, flood flow contributions to the Canadian River from the Vermejo, and the difference between basin discharge and practicably

[2] The average amount of water produced in the 1960s was 4,846 acre-feet. When it comes to assessing the water supply in New Mexico, Colorado refuses to recognize the drastic drop in supply in the 1970s. In assessing C. F. & I.'s potential supply, however, Colorado acknowledges and seeks to compensate for the drought of the 1970s by requesting the Court to adopt the ten year progressive average.

divertible supply. Colorado argues that this evidence is either cumulative of evidence in the record or that the Master's ruling was not prejudicial to New Mexico. Colorado Brief at 5.

The completed stockwater system and stockpond depletions are discussed in Point IV, *infra.* With respect to contributions from the Vermejo River to the Canadian River, Colorado contends that New Mexico's evidence has little relevance to the case because these flood flows do not originate in Colorado. *Id.* at 6. The evidence shows that flows originating in Colorado form part of the flood flows which pass the District's headgates. The Vermejo tributaries in Colorado and the Vermejo River in New Mexico are perennial streams. Colo. Ex. No. 5; N.M. Ex. No. A-130; A-1 through A-79. Diversions from the tributaries in Colorado would therefore necessarily reduce the flood flows into the Canadian River to the detriment of rights on the Canadian River senior to the proposed diversions of C. F. & I. Tr. 1378.

New Mexico's tendered evidence would demonstrate the extent of flood flows based upon records from a streamflow gauge installed in 1980. It was tendered in response to Colorado's erroneous assertion, adopted by the Master, that the Vermejo is virtually a "closed system," from which "little, if any, of the water of the Vermejo reaches the Canadian River." Report of December 31, 1981 at 2. New Mexico's tender was rejected by the Master despite his assertion that a major difficulty in the fact finding process was "the lack of reliable streamflow measurements." *Id.* While Colorado argues that the record supports the Master's conclusion that "the effect of a diversion in Colorado on those who live below the Vermejo Conservancy District would be negligible and virtually non-

existent," New Mexico's tendered evidence would show that in the two years of record, 12,000 acre-feet of flood flows spilled past the District's diversion works and were available for appropriation by rights on the Canadian River. Amended Narrative Tender of Evidence at 2-4. Tr. 1040-56, 1131-32, 2218-36; N.M. Ex. Nos. G-3 through G-8, G-10, G-15, G-28, G-30, G-31.

The tendered evidence also demonstrates that Colorado's argument that all basin discharge is "available" for diversion from the Vermejo in New Mexico, an argument adopted by the Master in assessing the supply and demand, is unquestionably erroneous. While the tendered evidence is cumulative of opinion testimony on the subject, it contains the only actual measurements of basin discharge and actually divertible Vermejo River water by Vermejo Conservancy District diversion.

POINT III

COLORADO'S ATTEMPT TO REFUTE THE FACT THAT THE VERMEJO SUPPLY DID NOT MEET THE DEMAND BY NEW MEXICO'S USERS IN THE LATE 1960s AND THE 1970s RELIES ON A MISLEADING USE OF AVERAGE FIGURES.

Colorado attempts to rehabilitate the Master's Report by arguing that we "overstate the acres irrigated, overstate the amount of water needed, and understate the water supply," resulting in a "deceptive, greatly exaggerated" accounting of demand, and that the Master did not utilize average annual flows in reaching his conclusions. Colorado Brief at 28. Colorado is demonstrably wrong.

Demand for Vermejo Water

In his Additional Factual Findings the Master surmised that "an average of 10,900 acre-feet at Dawson gauge would seem to provide a fair amount of available water, and more than enough to supply the current uses below the gauge." Report of May 31, 1983 at 11. In our brief we demonstrated that the evidence shows that the demand for Vermejo water below Dawson, exclusive of the demand of Canadian River users, is 17,000 acre-feet per year. New Mexico Brief at 14-35.

Colorado attacks the record in five ways, the most outspoken of which relates to duty of water. By arguing that the Vermejo Conservancy District's adjudicated duty of 1.5 acre-feet per acre per year is its "maximum" entitlement and "represents the greatest amount of water ever required to grow a crop without waste," Colorado asserts that we have converted "this measure of maximum need into the measure of minimum supply. . . ." Colorado Brief at 22.

Colorado makes no reference to the record in its argument with respect to duty. To understand duty, the Court must first distinguish between maximum entitlement under a court decree and the calculation of the amount of water it takes to grow crops per acre per year. The duty of water in New Mexico is adjudicated on the basis of average cropping pattern, average climatic data, and average farm irrigation efficiency. The calculated duty, in other words, is not "the greatest amount of water ever required to grow a crop," as Colorado argues, but is an *average* requirement. Using a similar methodology, the Bureau of Reclamation calculated the average farm delivery requirement (duty) in the District to be 1.73 acre-feet per acre

per year. The Bureau calculated the maximum annual duty for District lands at 2.20 acre-feet per acre. N.M. Ex. No. C-2.

In the Vermejo River decree the adjudicated duty of water is 2.0 acre-feet per acre, *i.e.*, less than the maximum duty computed by the Bureau, for all of the water users except the farmers in the Vermejo Conservancy District. Their adjudicated duty was reduced even more, *i.e.*, to 1.5 acre-feet per acre. The adjudicated duty, in other words, is considerably below the average requirement and is by no means the "greatest" water need that Colorado ascribes to the average demand below Dawson of 17,000 acre-feet per year.[3]

With regard to the fact that 1.5 acre-feet per acre per year is the maximum entitlement under the adjudication decree, albeit that it defines less than average need, Colorado argues that the District's farmers have not used available water. Colorado Brief at 23. Colorado can find no support in the record, however, for its conclusions. In combination with decreed acreage, duty limits the total amount of water an appropriator can apply in a year under New Mexico law; *e.g.*, 100 acres adjudicated at 1.5 acre-feet per acre sets a maximum delivery at the farm headgate of 150 acre-feet per year. Limited always by beneficial use, the entitlement can be used for high water use demand crops, low demand crops, or the average cropping pattern. In the case of the District, most farmers have a large portion of their acreage in alfalfa and hay, both high demand crops. N.M. Ex. No. C-9. With a limited duty, the irrigation

[3] The District's duty of 1.5 acre-feet is based on the bylaws of the Maxwell Irrigation Company, the District's predecessor. The company had created the low duty in an unsuccessful attempt to "spread" the available supply to the 14,620 acres of decreed right, about twice what New Mexico claims to have been diligently developed in this lawsuit.

of high demand crops results in the irrigation of less than the total farm acreage. Also, the District delivers water to its water users in accordance with orders received, limited by the prorations. If water is available only late in, or at the end of, the irrigation season or if local rainfall satisfies the irrigation requirement, the farmer will not order water even though it has been prorated.

Colorado's second assertion is that the District has "settled into an historic water use pattern of irrigating about 4,500 acres annually." Colorado Brief at 18. In an attempt to bury the realities of farming in average figures, Colorado also argues that there could have been no drought in the 1970s because "(i)ronically, the years in which the greatest irrigation occurred are the same years that New Mexico claims the District suffered severe drought." *Id.* at 19. Analytically, Colorado's argument goes no deeper than to point out that the average acreage irrigated was 4,453.2 acres in the 1950s, 4,573.8 acres in the 1960s, and 4.147.4 acres in the 1970s.[4] Aside from the fact that the crop censuses show as irrigated for the entire year acreage that may have been irrigated only once, the facts in evidence, as opposed to Colorado's averages, explain why the District did not irrigate more in the 1970s than in the previous two decades.

As in every reclamation project, the contract between the United States and the Vermejo Conservancy District established a "development period" or a period of time "required to convert the project from its present economy

[4] It should be emphasized that Colorado's average acreage comparison is indifferent to the hydrologic information detailing the U.S.G.S. record of flow of the Vermejo from 1916 to the present and showing the drought conditions without contradiction. N.M. Ex. No. F-29; N.M. Ex. Nos. A-1 through A-79.

to one making full use of the proposed water supply from the project to be constructed and rehabilitated." *See* Contract Between United States and the Vermejo Conservancy District for the Construction, Operation, and Maintenance of the Vermejo Reclamation Project, New Mexico, August 8, 1952 at 5, Colo. Ex. No. 20. Ordinarily, the first repayment of construction costs is due the year following the development period.

The Vermejo Project was completed in 1955, and the original development period was 7 years, *i.e.*, 1955 to 1962. In 1962, the original contract was amended to extend the development period to 10 years or from 1955 to 1965. Colo. Ex. No. 22. As explained by the Commissioner of Reclamation to the Secretary of the Interior, the amendment was needed because of the price-cost squeeze evidenced by the existing national parity ratio of about 80. As can be readily seen from the District's prorations, the water supply in 1963 was less than 1/3 of what it was in 1962, and in 1964 was only about 13% of what it was in 1962. While the supply in 1965 was about 2/3 of a full supply, each subsequent year through 1979 was a drought year. N.M. Ex. No. F-37. In short, when the development period was about to end, drought severely reduced the water supply, restricting the development even more profoundly than the price squeeze did in the late 1950s and early 1960s.[5]

The third way in which Colorado attacks the supply and demand chart on pages 40-41 of our Brief in Support of Exceptions is the most egregious. Colorado argues:

> That exhibit is deceptive. It is taken from New Mexico Exhibit F-37, but omits the important column contain-

[5] Larger amounts of acreage were irrigated when more water was available, e.g., 6,294 acres in 1969 and 6,262 acres in 1974.

> ing the amount of water released for irrigation in each of the years. Thus in 1955, for example, the amount of water actually released to the 3,763 acreage irrigated was 9,225 acre-feet, or 2.45 acre-feet per acre, an amount greatly in excess of the 1.25 acre-feet per acre shown in the brief.
>
> * * *
>
> To arrive at its proration figures in that exhibit, New Mexico divides the amount of water released from the reservoirs by 7,380 acres, the amount which the District is permitted by the Bureau of Reclamation to irrigate, rather than by the amount of acres actually irrigated (Colo. Ex. 33; N.M. Ex. F-37; Tr. 1306, 1308). Since the 7,380 acres have never been irrigated, the New Mexico proration figures shown on the exhibit never correspond to the acreage actually irrigated and understate the amount of water available and released for irrigation (N.M. Ex. F-37). Colorado Brief at 20-21.

New Mexico Exhibit F-37 is reproduced for convenience as Figure 1.

Colorado misconstrues the exhibit. In Figure 1, following each calendar year there are seven columns showing the acreage irrigated in the District, the "full supply" or duty of 1.5 acre-feet, the proration in terms of duty, the anticipated proration in volume of acre-feet, and the shortage to the farms in terms of duty and volume. Colorado selects the fourth column, *i.e.*, the proration in volume of acre-feet, and explains that in our supply-demand chart we omitted "the important column containing the amount of water released for irrigation in each of the years." Colorado then proceeds to state that we arrive at the proration figures by dividing "the amount of water released from the reservoirs by 7,380 acres. . . ." Based on these

Figure 1

VERMEJO CONSERVANCY DISTRICT
WATER PRORATIONS AND SHORTAGES
1955 - 1979

Calendar Year	Irrigated Acreage [1]	Full Water Supply (Ft.)[2]	Annual Water Proration		Shortage to Farm Deliv.	
			Ft. [3]	Acre-ft.[4]	Acre-ft./ Acre	Acre-ft.[4]
1955	3763	1.50	1.25	9225	.25	1845
1956	4941	1.50	1.38	10185	.12	885
1957	4276	1.50	.67	4945	.83	6125
1958	4602	1.50	1.00	7380	.50	3690
1959	4693	1.50	1.50	11070	0	0
1960	4592	1.50	.50	3690	1.00	7380
1961	6436	1.50	1.00	7380	.50	3690
1962	5869	1.50	1.50	11070	0	0
1963	4244	1.50	.38	2805	1.12	8265
1964	2349	1.50	.11	810	1.39	10260
1965	3218	1.50	1.08	7970	.42	3100
1966	4114	1.50	.60	4430	.90	6640
1967	3902	1.50	.58	4280	.92	6790
1968	4720	1.50	.67	4945	.83	6125
1969	6294	1.50	.33	2435	1.17	8635
1970	5559	1.50	.67	4945	.83	6125
1971	5094	1.50	.08	590	1.42	10480
1972	4912	1.50	.29	2140	1.21	8930
1973	5083	1.50	.58	4280	.92	6790
1974	6262	1.50	.54	3985	.96	7085
1975	5422	1.50	.25	1845	1.25	9225
1976	2063	1.50	.05	370	1.45	10700
1977	665	1.50	0	0	1.50	11070
1978	3016	1.50	.48	3540	1.02	7530
1979	3398	1.50	.50	3690	1.00	7380
Mean	4379	1.50	.64	4720	.86	6350

[1] From: "Water and Land Resource Accomplishments, Statistical Appendix I, U.S. Bureau of Reclamation."

[2] 1.5 ft./ac. is considered by the District Board to be a full supply.

[3] Compiled from Vermejo Conservancy District Water prorations.

[4] Based on 7,380 acres.

two premises, Colorado argues that we "understate the amount of water available and released for irrigation." *Id.* at 21.

In view of the fact that Colorado was made aware at trial of how each column in Exhibit F-37 was prepared, Colorado's explanation to the Court in its Reply Brief is misleading. Tr. 1305-13. In its brief, Colorado describes the computation backwards.

The annual prorations in acre-feet per acre shown on New Mexico's Exhibit F-37 and on pages 34-35 of our Brief in Support of Exceptions are taken from the records of the Vermejo Conservancy District. N.M. Ex. No. E-8. The annual prorations in acre-feet, column 4, are the product of the acre-feet per acre proration and the total project acreage of 7,380 acres. The figures do not represent either water actually delivered or water actually released. The proration represents the amount of water prorated for delivery to the entire acreage in the District. The District's policy is that all users share in available water supply.

The second column in Exhibit F-37 and on pages 34-35 of our brief, showing irrigated acreage, is from crop census data. The District does not tell the farmers how many acres can be irrigated. With the prorations made at the beginning of the season, an individual farmer may decide to irrigate his entire farm or only a portion thereof, depending on his own assessment of the water supply available for the year. The acreage figures shown in the census result from the farmer's decision on how many acres to irrigate with the prorations made by the District.

In some years, when a small amount is prorated, the

farmers may irrigate a large acreage at the beginning of the irrigation season with the first proration hoping they will get additional water. If the additional water does not materialize, the acreage is counted as irrigated in the crop census even though the crop yield is materially deficient due to only one irrigation. In other years in which a large proration occurs, the water users may not take the entire amount prorated, either because they left a part of their acreage fallow or because the water was not needed for irrigation due to timely rainfall during the season. The large prorations were possible only during the first few years of project operation due to the available supply. These years were in the project development period during which time many farmers had not yet developed their entire acreage for irrigation. Consequently, Colorado's statement that the "proration figures . . . never correspond to the acreage actually irrigated and understate the amount of water available" is a totally unfounded criticism of our supply and demand figures. Colorado Brief at 21.

Colorado contends that other New Mexico users have chosen not to exercise their rights in periods of ample supply. Colorado Brief at 9. Despite the disavowals in its brief (Colorado Brief at 9, n. 5), Colorado restricted its analysis of irrigation at Vermejo Park to a period beginning in 1973. This is unequivocally clear from the testimony of Colorado's witness. *E.g.*, Tr. 305-07. Similarly, Colorado presented no historical analysis for Phelps Dodge and did not account for the evidence of its irrigation prior to the flood of 1965. Tr. 2174-75. The Master apparently adopted this analysis in determining the "current uses." Report of May 31, 1983 at 2-9. Colorado's claim that Mr. Helton analyzed the history of recorded flows is totally irrelevant. Colorado Brief at 9, n. 5. The issue,

and the Court's inquiry, was to irrigated acreage, not average annual flows at the Dawson gauge.

Colorado also attempts to support the Master's Report by arguing that the actual Dawson gauge figures show that there has been much more water than is necessary to satisfy the senior priorities of Phelps Dodge Corporation and Kaiser Steel Corporation and still satisfy the entire upstream decreed rights of Vermejo Park. Colorado Brief at 10-11. The Dawson gauge is of limited relevance for determining the available supply for the upstream uses of Vermejo Park and Kaiser Steel. In addition, the table showing the flows at the Dawson gauge provides only the total monthly and annual flow in acre-feet. Report of May 31, 1983, Tbl. 2. This record does not show when during the month the flows occurred nor the relation between the flow and the irrigation demand. Vermejo Park Corporation and Phelps Dodge Corporation do not have storage to regulate flood flows to satisfy the irrigation demand. Furthermore, the flood flows carry large amounts of debris and they cannot be diverted because the debris will plug the small ditches. *E.g.*, Tr. 2199. The recorded monthly flows at the Dawson gauge, especially during the irrigation season months of July, August and September, do not demonstrate that there is an adequate supply of water for the direct flow irrigation requirements of Vermejo Park and Phelps Dodge.

A more credible analysis of the water supply available to the direct flow irrigators is the testimony of those users. Witnesses for both Vermejo Park and Phelps Dodge testified to their inability to rely upon a sufficient supply of water during the irrigation season to produce crops on more acreage than is being irrigated. Vermejo Park has attempted to irrigate more acreage in each year since 1973,

but has not been able to depend on more than one watering. Tr. 2076 - 80, 2084, 2116-17. The same is true of Phelps Dodge. Tr. 2180, 2142, 2164-65.

Available Supply

Colorado supports its contention that the 1970s were not drought years by stating that precipitation in areas surrounding the Vermejo was not significantly lower on the average in the 1970s than in prior decades. Colorado Brief at 20. Colorado's statement is ostensibly based on a number of New Mexico exhibits. *See* N.M. Ex. Nos. F-4, F-6, F-8, F-9.

The actual precipitation values will not substantiate Colorado's argument. Precipitation at the weather stations at North Lake, Colorado, and Eagle Nest, New Mexico, was below normal in six of the nine years from 1970 through 1978. N.M. Ex. Nos. F-5, F-6. The significance of these deficits is made clearer when considering the elevation of the gauges in relation to the Maxwell gauge. It is true that precipitation at the Maxwell gauge (elev. 5,909) in the 1970s averaged close to the mean for previous decades, but precipitation at Maxwell contributes little flow to the Vermejo River at Dawson. Tr. 1217. The higher weather stations at North Lake (elev. 8,800) and Eagle Nest (elev. 8,280) are more indicative of the watershed precipitation that constitutes the flow in the Vermejo River at Dawson. Tr. 1218. Records at these stations show that the annual Vermejo River flows indicate a strong tendency to be below average in the same years that deficient annual precipitation occurs at Eagle Nest and North Lake.

Finally, Colorado also tries to attack the 17,000 acre-feet demand below the Dawson gauge by arguing that carryover

water was available to the District in 1967 and 1979, years in which New Mexico, the Bureau of Reclamation, and Congress believe the District was in short supply. Colorado Brief at 32. In this regard, Colorado contradicts itself, saying on one hand that the District's reservoirs will insulate the District from any effects of an appropriation by Colorado and, on the other hand, criticizing the District for trying to conserve a reserve supply of water.

It was carryover storage from 1966 that enabled the District to irrigate in the spring and early summer of 1967, when the flow at Dawson totalled only 369 acre-feet during the months of April, May, and June. Colo. Ex. No. 5. During this time, the District released approximately 5,000 acre-feet from its reservoirs. N.M. Ex. No. F-24. Summer rains provided sufficient inflow to result in a storage increase of approximately 5,600 acre-feet in the District's reservoirs. At the end of 1967, the carryover reservoir storage was 8,650 acre-feet and not the 11,300 acre-feet Colorado claims. Colorado Brief at 32. Assuming that the District released all of its carryover storage in 1967, which would not have been prudent and for which there was likely no demand because the storage occurred toward the end of the irrigation season, the shortage of 8,560 acre-feet still would not have been offset because of delivery losses between the reservoirs and the farms. N.M. Ex. No. F-37.

Colorado's principal argument with respect to available supply has been that the average basin discharge represented by the Dawson gauge provides the best evidence of divertible supply. Tr. 395-424. The Court has rejected such a theory. *Wyoming v. Colorado*, 259 U.S. 419, 471 (1922); *Colorado v. Kansas,* 320 U.S. 383, 396-97 (1943). Tendered New Mexico Exhibit No. F-56, which Colorado vehemently objected to and which the Master refused to receive in

evidence, displays the fallacy of Colorado's argument with undisputed U.S.G.S. records. The record is also abundantly clear in this regard. Tr. 1295, 1670. For this reason, Colorado has tried to deny that the Master relied upon the average figures supplied by Colorado. Colorado Brief at 28.

There is no disputing that the Master used average monthly and average annual flows to reach his ultimate conclusion that "an average of 10,900 acre feet at Dawson gauge would seem to provide a fair amount of water...." Report of May 31, 1983 at 11.

> Colorado determines the available supply of water by using basin discharge or water produced from the watershed upstream from a given point of diversion. (Tr. 416). Colorado further attempts to supply a figure for virgin flow of the river, 1955-1979. This figure is achieved by taking the average annual flow of the river at the Dawson gauge and adding the depletions of the appropriators prior to the gauge, an accretion between the gauge and the Vermejo Conservancy District, and a questionable 2,000 acre-feet depleted by an unknown number, possibly hundreds of ponds and foot dams. The resulting figure reveals an average over 14,000 acre-feet of water in the Vermejo River virgin flow. (Plaintiff's Brief on Remand, pp. 28-29). Report of May 31, 1983 at 10.

The Master employs two other annual averages based upon different periods of time — 11,543 acre-feet for the period 1916-1979 and 8,262 acre-feet for the 1970s. Report of May 31, 1983 at 11.

Although the Master's figures from the Dawson gauge are indisputably annual averages, even a comparison of

these against either the Master's or New Mexico's computed demand reveals the predominance of shortage. The Master concludes that 10,900 acre-feet "would seem to provide a fair amount of available water, and more than enough to supply the current uses below the gauge." *Id.* Although New Mexico believes that the Master's use of an annual average figure of 10,900 acre-feet to show that supply meets demand is wrong, even on its merits the amount of 10,900 acre-feet is plainly inadequate to satisfy the demand for the diligently developed rights below the Dawson gauge, *i.e.*, 17,000 acre-feet, or for the Master's own view of the "current uses," *i.e.*, 11,400 acre-feet. Colorado cannot correct this obvious failing in the Special Master's Report.

POINT IV

COLORADO FAILED TO PRESENT EVIDENCE OF REASONABLE CONSERVATION MEASURES AVAILABLE TO NEW MEXICO UPON WHICH THE MASTER COULD HAVE SUPPORTED FINDINGS OF FACT.

In both his Report and his Additional Findings, the Special Master did not identify a single effective conservation measure available to New Mexico or discuss the physical or economic feasibility of any measure. Recognizing this basic deficiency in the Master's Report, Colorado attempts to provide independent support for the Master's conclusions in its Reply Brief. Apparently unaware of the significance of its assertion, Colorado argues that the Master has "identified several *areas* in which New Mexico could eliminate waste and inefficiency from its use of Vermejo River water. . . ." Colorado Brief at 40, emphasis

added. Inadvertently, Colorado recognizes the speculative nature of the Master's discussion of conservation.

Administration

While describing administration as "the most important element" in conserving Vermejo water, the Master's fact finding in this regard is wholly deficient. He discusses administration chiefly with regard to four items: stockponds, obstructed diversions, headgate spills, and monitoring and regulating water use. Report of May 31, 1983 at 18-20.

The Master found that there are approximately 2,024 stockponds in Colfax County, New Mexico, that the number of "ponds and other structures" should be reduced, and the remaining ponds be governed by "regulation of some type." *Id.* at 18. Without reference to the 3,771 square mile area of Colfax County, most of which is used for grazing, he presumes that 2,024 is an inordinate number. Had the Master heard the evidence described in New Mexico's Amended Narrative Tender of Evidence, he would have found that there are only 80 active stockponds within the Vermejo River drainage above the District's diversions, that there are no "other structures for retaining water," and that the maximum annual stockwater depletion does not exceed 192 acre-feet per year. *See* Amended Narrative Tender of Evidence at 2-4. Two facts are unassailable: the stockponds represent a valid beneficial use of Vermejo water and their depletion is not significant.

In an attempt to bolster the Master's Report, Colorado states that New Mexico failed "to realize that the Special Master to a large extent found in [our] favor concluding that [the ponds] were both necessary and beneficial."

Colorado Brief at 45. This statement, however, is irrelevant to the Master's ultimate conclusion that Vermejo water could be conserved through some unidentified administration of stockponds.

The Master's statement that there is no administration with respect to blocked diversion works is unfounded. Report of May 31, 1983 at 19. The evidence shows that the District officials operate an alarm system that notifies the Manager and other District employees when the Vermejo River floods at the diversion structures. This system allows the District personnel to reach the diversion structure in a timely manner to clear debris obstructing the canal headgates, allowing the works to divert as much of the floodwater as possible. Tr. 1954. This alarm system is an effective means for ensuring that blocked diversion works are cleared to permit the maximum diversion of water. In any event water not divertible by the District flows down the Canadian River to Conchas Reservoir and aids in meeting chronic shortages for rights senior to the proposed diversions of C. F. & I.

In light of the Master's failure to specify facts in support of his conclusion that "proper administration" could conserve Vermejo water, Colorado attempts to substantiate his conclusions. First, Colorado asserts that New Mexico "makes no attempt to ensure that the proper amount of water is being diverted in relation to the acreage being irrigated or to declare all or part of the water rights forfeited for nonuse." Colorado Brief at 35. The first statement is not true, as the record shows. Tr. 1063-64, 2416-17. It makes no difference that each and every diversion on the Vermejo is not metered. *Id.* In the western states, farmers are extremely careful with their

water supplies, especially in times of shortage. If one saw another wasting water the matter would be quickly resolved by the water users. Tr. 2416-17. Furthermore, no presumption of overuse should accrue to Colorado because diversions to some tracts of irrigated land in New Mexico are not metered. On the contrary, the burden remains on Colorado to prove that there is wasteful overuse in New Mexico that should be controlled administratively. Colorado did not meet such a burden.

Many rivers in New Mexico are controlled by water masters appointed by the State Engineer or the courts. To date, the Vermejo has not required a water master because of the small number of direct diversions and the informal practice of self-initiated priority calls. Tr. 2086-87, 2088, 2132, 2144, 2165, 2179. If any evidence of overuse or waste were presented to the State Engineer, however, he would seek to enjoin such use in the courts. The only "evidence" of overuse in the record is Colorado's distortion of a seepage run conducted by the U.S.G.S. for New Mexico. By lifting out of context two instantaneous measurements taken a month apart, Colorado tries to make it appear that Phelps Dodge overused water during a one month period. Colorado Brief at 35-36. This "evidence" is as probative as using two instants widely separated in time to prove a continuing fact. With regard to forfeitures, they are regularly declared in New Mexico while Colorado has no statutory forfeiture provision. *See also*, New Mexico Brief at 74-76.

Administration of priorities could conserve no Vermejo water in any event. Its only utility would be to distribute an admittedly short supply strictly pursuant to the priorities of the competing property rights.

Colorado also tries to support its administration argument with the fact that a water master has not been appointed on the Vermejo. It refers to a Bureau of Reclamation memorandum describing a meeting on December 13, 1976. The discussion of "excessive losses" at the meeting did not imply that those losses constituted waste unnecessary to the project operation. In fact, much of those losses reappear in the stream system as return flow available for users downstream.

Closed Stockwater System

When confronted with the argument that effective conservation measures do not exist, Colorado retorts that the one "fact" which it has stressed throughout this case is "that a closed stock and domestic water system could eliminate the waste of over 2,000 acre-feet annually." Colorado Brief at 41, n. 20.

The important factor to consider in regard to the closed domestic and stockwater system is the timing. This lawsuit was instituted by Colorado in 1978. Nearly a decade ago, the water users in the Maxwell area began discussing the possibility of building a stockwater distribution system that could save the water necessarily lost by utilizing the Vermejo Conservancy District's 60 mile network of open canals. Approximately seven years ago the Maxwell Cooperative Water Users Association was formed to investigate possible solutions. N.M. Ex. No. E-3 at 1.

It took the Association seven years of hard work to finance and construct the system. In 1976, the New Mexico Interstate Stream Commission provided the Association with grant funds to finance a feasibility report for a closed pipeline water distribution system. Amended Narrative

Tender of Evidence, Affidavit of L. Knox at 2. Every conceivable private, state, and federal agency was applied to for loan or grant money to finance the project. Tr. 2763-70. Finally, after arranging for loan and grant funds in 1982, two wells were drilled in the alluvium next to the Vermejo River. Water rights were transferred to the new point of diversion, 48 miles of pipeline were laid, and a 60,000 gallon storage tank was installed. After ten years of effort and persistence, the first meter was installed on February 18, 1983.[6] *See* Amended Narrative Tender of Evidence at 4-6.

During this period, Colorado filed this lawsuit on behalf of C. F. & I. Claiming that the water salvaged by the efforts of New Mexicans should be awarded to C. F. & I., Colorado now asserts that the Court should not protect "wasteful" uses. Because of the timing of New Mexico's conservation efforts, however, the question is not whether the Court will protect "wasteful" uses, but rather whether the Court will protect ongoing conservation efforts.

The record shows that the primary reason the Maxwell Cooperative Water Users Association undertook to build a closed system was because they experienced shortages for irrigation and they believed the water thus conserved would mitigate shortages. Tr. 276. There is no reason in law or equity why the Court should refuse to protect the kind of conservation effort it has stated should be under-

[6] Colorado objected to the Master hearing any evidence on the actual existence of the system, the costs of authorizing and constructing it, and the obligations New Mexicans incurred as a result of its construction. Colorado has also stated that this aspect of its case "is now a reality which New Mexico cannot deny." Id. at 41, n. 21. New Mexico obviously does not deny the existence of the system, but rather that the benefits of conservation efforts which preceded this lawsuit should now be awarded for the vicarious benefit of C. F. & I.

taken wherever possible. *Colorado v. New Mexico*, 103 S. Ct. at 546-547. If it is not protected, the incentive to conserve interstate waters would be replaced by a distinct incentive not to conserve any water for fear that neighboring states would file suit for an "equitable apportionment" of the water conserved.

In sum, the Master's hypothetical discussion of "areas" of conservation does not enable the Court to know whether there are any physically and economically feasible conservation measures available to New Mexico to eliminate some unidentified waste or unreasonable inefficiency.

CONCLUSION

The Special Master set out to determine the equities on both sides of the New Mexico—Colorado state line. With regard to New Mexico, his reasoning is flawed in two critical respects: he used average basin discharge instead of the amount of water actually available for diversion to try to understand supply and demand, and he hypothesized the possibility of conservation measures in New Mexico without discussing any specific measure or its physical or economic feasibility. As a result, he concluded that there has been no shortage of Vermejo water in New Mexico and that there could be little, if any, injury to the "diligently developed" rights in New Mexico, provided that conservation in various areas could be undertaken. For Colorado, the Master idealized Colorado's proposed use of water and concluded that equity should be imputed to Colorado simply because the headwaters of the Vermejo rise just inside the State.

It is New Mexico's position that legally and equitably the Master is in error. He has analyzed superficial, un-

telling facts in attempting to balance the equities. The result is a recommendation to the Court that is manifestly inequitable and unjust, and which should be rejected.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Jay F. Stein, hereby certify that I am a member of the bar of this Court and that on October 24, 1983, pursuant to Rule 28 of the Rules of the Supreme Court of the United States, I caused to be mailed the requisite number of copies of the foregoing Motion and Reply Brief, by first class mail, postage prepaid, to the following officials of the State of Colorado:

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Governor of the State of Colorado
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The Honorable
Duane Woodard
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I certify that on October 24, 1983, pursuant to Rule 28 of the Rules of the Supreme Court of the United States, I caused to be served by express mail, postage prepaid, the requisite number of copies of the foregoing Motion and Reply Brief on the following counsel of record:

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I certify that all parties required to be served have been served.

Jay F. Stein

JAY F. STEIN
Special Assistant Attorney General