No. 80, Original

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1977

STATE OF COLORADO, *Plaintiff*

v.

STATE OF NEW MEXICO
AND TONEY ANAYA,
ATTORNEY GENERAL OF THE STATE OF
NEW MEXICO, *Defendants*

REPLY BRIEF OF THE STATE OF COLORADO

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REPLY BRIEF OF THE STATE OF COLORADO

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I. INTRODUCTION

This is a proceeding for the equitable apportionment of the waters of the Vermejo River, a river which originates in Colorado and flows into New Mexico. In June of 1978, the State of Colorado filed with this Court a Motion for Leave to File Complaint in an original proceeding. New Mexico resisted the Motion by filing a Brief in Opposition to Motion for Leave to File Complaint. Colorado filed a Reply Brief in Support of Motion for Leave to File Complaint.

On April 16, 1979, the Court granted Colorado's motion and appointed the Honorable Ewing T. Kerr, Senior Judge of the United States District Court for the District of Wyoming, as Special Master in this case. After an extensive presentation of evidence involving sixteen full days of trial, the Special Master issued his Report recommending that Colorado be allocated 4,000 acre feet of water per year from the Vermejo River. The Special Master concluded that the "equities require that Colorado receive her equitable share of Vermejo River waters." Report of the Special Master on the Equitable Apportionment of the Vermejo River, p. 23 (December 31, 1981) (hereinafter "Report").

Colorado believes the conclusions in the Special Master's Report are fully supported by the law of equitable apportionment, and by a weighing of all of the equities relevant to this proceeding. Furthermore, the evidence presented at trial showed that New Mexico had not sustained its burden of proving that the diversions in Colorado would cause sustantial injury to New Mexico users.

Our order of presentation in this brief will be as follows: a description of the Vermejo River system and the water claimants thereon, a summary of Colorado's argument, an analysis of the cases and law applicable to this equitable apportionment proceeding and, finally, a

discussion of basic considerations involved in the equities in this case, including a specific response to items in New Mexico's Exceptions to the Report of the Special Master and Brief in Support Thereof (hereinafter ("N.M. Br.").

As a preliminary matter, with the thought that it would be helpful to the Court, we will define the two basic terms which are used for water measurement:

> "Acre foot" is a volumetric measurement which means the amount of water required to cover one acre of ground one foot deep. One acre foot consequently equals 43,560 cubic feet or 325,900 gallons.
>
> "Cubic foot per second" (c.f.s.) is a rate of flow measurement which means, as its words indicate, the flow of one cubic foot of water per second past a given point. One c.f.s. produces 450 gallons per minute or approximately 2 (1.983) acre feet per day.

II. THE VERMEJO RIVER SYSTEM

A. Description

The Vermejo River originates on the eastern slope of the Sangre De Cristo Mountains in southern Colorado. Three tributaries — Ricardo Creek, Little Vermejo Creek, and the North Fork of the Vermejo — combine to form the Vermejo River approximately one mile south of the Colorado/New Mexico state line. Fish Creek joins the Little Vermejo Creek just above the state line. Other tributaries contribute water to the Vermejo River in New Mexico (Colo. Ex. 5, Fig. 1).

The Vermejo River flows generally southeast for a distance of roughly 55 miles before its confluence with the Canadian River about 4 miles southwest of Maxwell, New Mexico (*Id.*). However, the amount of water that actually flows from the Vermejo River into the Canadian River is negligible because the Vermejo Conservancy District diverts almost the entire flow at its diversion structure, the last diversion point on the Vermejo River.[1] The Special Master found that the Vermejo "is essentially a closed system" in that "little, if any, of the water of the Vermejo reaches the Canadian River."[2]

B. Hydrologic data

Streamflow data for the Vermejo River system is limited. There is only one operating U.S. Geological Survey stream gauging station in the Vermejo watershed. This station, located about 1½ miles above Dawson, New Mexico, operated intermittently between 1916 and 1928, and regularly from 1928 to the present. Records from that gauging station show an average annual flow for the entire recorded period of 12,919 acre feet (Colo. Ex. 5, Tbl. 2).

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[1]During the thirty-year period 1950-1979, appreciable amounts of water spilled past the Vermejo Conservancy District's diversion structure in only six years, totaling for the thirty-year period only 6,900 acre feet. Such spills occur when flood flows exceed the capacity of the District's diversion structure (N.M. Ex. F-29, Colo. Ex. 66).

[2]This is demonstrated by evidence presented during the trial. It was admitted that there are never any calls for water below the headgate of the Vermejo Conservancy District, and Mr. Knox, president of the District, stated that the District has never had to bypass water for downstream users. (Tr. 1112, 1327; Knox Dep., pp. 34, 35, 40, 41; *see also* Bureau of Reclamation Definite Plan Report for the Vermejo Project, which states: "There is no requirement for bypassing water for downstream uses; therefore, it is all potentially divertible water for the project." (Colo. Ex. 19, p. 29.)

As with most rivers in the arid West, the annual flow of the Vermejo River is variable.[3] To determine the amount of water contributed by the Colorado portion of the Vermejo watershed, the State of Colorado and CF&I Steel Corporation, the owner of conditional water rights on the Vermejo in Colorado, undertook measurements. Measuring devices were installed on Ricardo Creek at the proposed point of diversion in Colorado and at the state line, and on Little Vermejo Creek at the state line (Tr. 722-727). Actual measurements were taken at these three locations during the years 1977, 1978, 1979 and 1980. The measurements for these years were used to estimate Colorado's water production as set forth in Colorado Exhibit No. 5, Table 4. These estimates showed an average annual production for Ricardo Creek of approximately 6,900 acre feet and for Little Vermejo Creek of approximately 1,500 acre feet, making up a total production of 8,400 acre feet annually (Tr. 2527, 2528). Because these figures do not include the water contribution from the North Fork of the Vermejo, the actual Colorado production would be somewhat larger.

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[3]Extensive evidence was presented as to the average annual flow of the Vermejo River. For the twenty-five year period selected by Colorado as its analysis period (1955-1979), the average annual flow at the Dawson station was 11,035 acre feet (Colo. Ex. 5, p. 4). Colorado chose its analysis period to correspond to the period of operation of the "rehabilitated" Vermejo Project (Colo.Ex. 5, p. 1). On the other hand, New Mexico generally used the twenty-nine year period of 1950-1978 for analysis. This period produced a significantly lower average annual flow at the Dawson gauging station of 9,800 acre feet. The figure is only 77% of the average annual flow for the entire period of record from 1916 to 1979. By using this analysis period, New Mexico's figures minimize the amount of water contributed from sources in Colorado and the amount of water that would be available for diversion by the Vermejo Conservancy District. Because New Mexico's twenty-nine year analysis period included the extremely dry years of 1950-1954 while excluding any of the wet years during the period 1940-1949, its figures are not fairly representative of the average annual flow at the Dawson gauging station (*see* Colo. Ex. 5, Tbl. 2).

New Mexico declined to be involved in taking measurements at the state line (Tr. 1119, 1120, 1141, 1142). Instead, New Mexico estimated the water produced in the Colorado watershed by altitude-runoff relationships using records from other drainages. The New Mexico estimate of the average annual production from Colorado was 5,500 acre feet, although this average was for a lower flow period (N.M. Ex. 36) than that used by Colorado (*see* fn. 3, *supra*).

The usefulness of four years' measurement at the state line was demonstrated shortly before trial when the 1980 figures for the Dawson gauge were obtained. These figures showed a discharge at that point for 1980 of 14,790 acre feet (Tr. 2532). The average for the four years at the Dawson gauge, 1977 through 1980, was very close to the average for the 1956-1980 twenty-five year period at that gauging station (Tr. 2530). Therefore, it is reasonable to assume that the Colorado measurements at the state line for these same four years would be fairly representative of the twenty-five year average. Both Mr. Wayne Criddle, a recognized water expert (Tr. 868, 869), and Dr. Everett Richardson of Colorado State University (Tr. 2477, 2517) testified to the value of actual measurements. The Special Master recognized the value of actual measurements (Report, p. 4).

These two figures, i.e., the state line figures and the Dawson gauge figures, cannot be used directly to obtain a percentage of the water which is contributed to the entire Vermejo River system from sources within Colorado. This is because the flow at the Dawson gauging station is not a virgin flow (Tr. 1402); it has been reduced by depletions upstream in New Mexico and does not include accretions to the Vermejo River between that gauging station and the Vermejo Conservancy District. The diversions between the state line and the Dawson gauge include those by Vermejo Park Corporation, Kaiser Steel Corporation, and, most notably, the diversions by stock-

ponds, fishponds and water detention dams.[4] The accretion below the Dawson gauge was estimated by a New Mexico witness to be at least 800 acre feet annually but he stated that it could be as much as 1,800 acre feet (Tr. 1405, 1406, 1463, 1464, 1465).

Colorado contributes approximately one-half of the water supply for the Vermejo River system (Colo. Ex. 5, Tbl. 7). Of this one-half, Colorado would take about one-half, i.e., approximately one-fourth of the Vermejo River virgin flow. *See* section V.A. of this brief.

C. Vermejo River appropriators

There are five major diversion points in the Vermejo River watershed. Starting from the upper end, there are the diversion points for conditional water rights decreed in Colorado which would divert water from three creeks, Ricardo, Little Vermejo and Fish. Next in order down the river are the diversions by the Vermejo Park Corporation, both from the river and its tributaries. Third is the Kaiser Steel Corporation diversion, which is the last one above the Dawson gauge. Below the Dawson gauge is the Phelps-Dodge diversion. Finally, there is the largest user in New Mexico, the Vermejo Conservancy District. It diverts through a canal with a 600 cubic foot per second capacity, supplying not only itself but several small users with separate water rights who divert from the canal before the water reaches the first District reservoir. A more complete description of these water rights follows.

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[4]These are referred to in the Bureau of Reclamation documents that will be discussed later (Colo. Exs. 37, 38, 40, 43, 44, 45, 48).

1. Colorado appropriators

CF&I Steel Corporation, a Colorado corporation, owns conditional water rights[5] in Colorado entitling it to divert a total of 75 cubic feet per second (c.f.s.): 45 c.f.s. from Ricardo Creek, 25 c.f.s. from Little Vermejo Creek and 5 c.f.s. from Fish Creek (Colo. Exs. 9 and 10). Water would be diverted from the three points and transported some eight miles through a ditch and 3,000 feet of tunnel to a storage point on Johnson Creek, a tributary of the Purgatoire River in Colorado (Colo. Ex. 15, p. 3). Colorado estimates that the amount of water available on an average annual basis at these diversion points is approximately 4,700 acre feet (Colo. Ex. 5, Tbl. 5). Thus, the 4,000 acre feet apportioned by the Special Master to Colorado would be less than all of the water available at

[5]In Colorado there are two types of water rights. They are defined in Colorado statutes, C.R.S. 1973, § 37-92-103. One type is what is commonly called an absolute right or just a water right. It is a right based on the diversion of water from a stream and actual beneficial usage of the water. The right becomes absolute upon such usage, *Archuleta v. Ditch Company,* 118 Colo. 43, 192 P.2d 891 (1948). The other type of right is a conditional water right which is a confirmed right to have in the future an absolute right if certain conditions are met. The conditional right concept was developed early in Colorado water law because of the need of persons undertaking sizeable projects to have certainty that once a project was completed it would have a water right of a particular priority date. By statute in Colorado, C.R.S. 1973, § 37-92-302, anyone may file an application in court for a conditional water right setting forth his plan for the development of an absolute water right, stating how much water will be involved and what the use will be. The court may then award him a conditional water right to the effect that if he completes his plan with reasonable diligence, he will have an absolute right to use the specified amount of water as of a priority date corresponding to the inception of the plan. To continue his conditional water right the person must come into court every four years and show that his plan is being pursued with "reasonable diligence," C.R.S., § 37-92-301(4). When the plan is completed and the water is put to beneficial use, his conditional water right is made absolute. The conditional water right is a firm, unassailable right so that the person can know with certainty that if the plan is completed with reasonable diligence, he will have the right to the water as of the decreed priority date.

these diversion points.[6] Nearly one-half of the water produced by Colorado is produced in the drainage below these points.

The Colorado need for Vermejo water was fully explained by a number of witnesses, including the Colorado State Engineer, Dr. Jeris Danielson (Tr. 536-540); Ralph Adkins representing CF&I Steel Corporation; and Messrs. Garlutzo, Latuda, Amato, Ryan and Soltis representing various public entities in the Purgatoire River Basin, into which Colorado's portion of the Vermejo River water would be diverted. These people testified as to the shortage of water in the Purgatoire River, the inability to satisfy anything but the most senior water rights, and the current and potential uses for water in the area (Tr. 626, 627, 639, 640, 663, 711; Colo. Exs. 13 and 15).

The uses of Vermejo water in Colorado would help alleviate water shortages and be used in industrial operations at coal mines, agriculture, timbering, power generation, domestic needs and other industrial operations, including synthetic fuel development (Colo. Exs. 13 and 15; Tr. 713, 714; coal washery, 738; synfuel, 739, 740; reclamation, 741; timber, 742; power, 744; agriculture, 744, 745, 746; domestic and reclamation, 747). Mr. Adkins, a Colorado witness, emphasized that there is immediate need for this Vermejo water for existing operations and agriculture in the Purgatoire Valley, for the various developments in the area and for the definitive planning for further growth (Tr. 794, 795).

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[6]New Mexico using, as indicated above, a period of record with a lower average annual flow estimates that the amount of water available at these diversion points on an average annual basis would be approximately 3,600 acre feet (N.M. Ex. F-36).

2. New Mexico appropriators

The following is a list of the New Mexico water appropriators and their actual water usage as revealed by the evidence in this case.

Name	Acres Actually Irrigated (if applicable)	Amount of Water	Transcript or Exhibit Reference
Vermejo Park Corporation	250	500 a.f.	(Charlesworth) Tr. 2068, 2097
Kaiser	Not applicable	361 (max.usage)	(Taylor) Tr. 1738
Phelps-Dodge	150	300	(Davis) Tr. 2163
Duell-Messick	48.4	96.8	(Compton) Tr. 1029
Pompeo	50	100	(Pompeo) Tr. 2201
Ray Porter	14	28	(Porter) Tr. 2189
Vermejo Park Corporation[7]	46.73	93.46	(Charlesworth) Tr. 2110
Odom	113	226	(Odom) Tr. 2213
Vermejo Conservancy District	4,379 (Av. acres irrigated)	14,535[8] (25-yr. average)	N.M. Ex. F-37 and Colo. Ex. 71

[7]The Vermejo Park Corporation has this small acreage between the Vermejo Conservancy District headgate and its reservoirs as well as the acreage just below the state line.

[8]This includes water from both the Vermejo and the Chico Rico.

Proceeding down the river from the state line, the first water user is the Vermejo Park Corporation, which according to its testimony irrigates approximately 230-250 acres of hay land from the Vermejo (Tr. 2068, 2097). The land irrigated is in the vicinity of the hunting and fishing lodges (Tr. 2109). Vermejo Park Corporation is a subsidiary of Pennzoil Corporation and holds the Vermejo Park property primarily for recreational hunting and fishing rather than raising hay (Tr. 2064-67, 2108, 2109). The cattle operation also involves lands on the Cimarron River where there is considerably more water and more hay production than on the Vermejo (Charlesworth Dep. 623; Tr. 2109). The Cimarron River is in a different watershed.

The next user downstream is Kaiser Steel Corporation, which operates a coal mine in York Canyon and uses the water primarily for coal washing, dust suppression and land reclamation (Tr. 1724, 1725, 1738). Kaiser acquired water for this operation from two sources. It purchased water rights formerly owned by a man named Messick in the amount of 230 acre feet, being the water allocable to 115 acres of irrigation (N.M. Exs. G-13, G-14). As indicated by Colorado Exhibits 49 and 6, page 6, these Messick rights had not been used for many years. The other source of the Kaiser water is a lease from Phelps-Dodge Corporation of 400 acre feet of water, being that amount allocable to 200 acres under the Phelps-Dodge claimed right (Colo. Ex. 51). The New Mexico Brief at page 27 states that this lease was entered into by Phelps-Dodge to avoid the possibility of forfeiture of the right.

The Kaiser use is a new use which commenced in recent years with the opening of the new mine (Tr. 1105, 2437). The total amount of water Kaiser acquired by purchase and lease was 630 acre feet per year. However, Kaiser's witness, Mr. Taylor (Tr. 1727), indicated uncertainty as to whether they would increase their operation beyond its current size. The present operation

has used no more than 361 acre feet, and that was in 1976 (Colo. Ex. 6, Tbl. 1; Tr. 1725). Since then the use has actually decreased (Colo. Ex. 6, Tbl. 2).

The next appropriation down the river is the Phelps-Dodge Corporation, which holds the senior water right on the Vermejo River in New Mexico. Its point of diversion is situated just below the Dawson gauge. For several years, Phelps-Dodge has leased certain of its land and the water available under its water right to the C. S. Springer Cattle Company, which has irrigated no more than 150 acres (Colo. Ex. 6, pp. 6-7; Tr. 2163). Mr. Spencer, the general manager of the Vermejo Conservancy District, testified that he did not think Phelps-Dodge or its lessee had irrigated more than 80 acres (Knox Dep., p. 54; Colo. Ex. 6, pp. 6-7).

The most significant depletions of the river flow between the state line and Vermejo Conservancy District are caused by water detention dams, fishponds and stockponds. These impoundments, each one of which is fairly small, have a significant effect on the flow of the river and are said to be the primary cause of the water shortage in the Vermejo Conservancy District (Colo. Exs. 37, 38, 40, 43, 44, 45, 48). Stockwater ponds of 10 acre feet or less are not administered by New Mexico officials, are not limited in number, and are not subject to the doctrine of prior appropriation in New Mexico. §72-9-3 NMSA 1978.

The last diversion point on the Vermejo River is that of the Vermejo Conservancy District, which has a diversion structure capable of diverting 600 cubic feet per second (Tr. 1414).[9] The District distribution system

[9]That structure is capable of diverting the entire flow of the Vermejo River just below the Dawson gauge some 99.9% of the time during the period of record (N.M. Exs. F-18; D-1, p. 23). Little water in the Vermejo passes this diversion point.

consists of over 70 miles of canals and laterals and a reservoir system which was largely rehabilitated under a reclamation project commenced in the early 1950's (Colo. Ex. 36). However, before the water gets to the first reservoir of the Vermejo Conservancy District, there are diversions in small amounts by individual users whose rights are senior to those of the District (Colo. Ex. 25). Those amounts are shown above in the tabulation.

The history of the Vermejo Conservancy District is one of continuous problems, uncertainties and highly questionable justification. It started out being described as a "rescue project" by President Truman when he signed the authorizing legislation and loan (Tr. 1560). It has paid virtually nothing on the principal and no interest on this indebtedness (Tr. 1557; Colo. Ex. 46). The District is limited by agreement with the federal government to irrigate no more than 7,379 acres, approximately one-half of its decreed rights (Colo. Ex. 19, 25, 33). In no year during the history of the District has all of this 7,379 acres been irrigated (N.M. Ex. F-37). The efficiency of the District system is 32.7% to the farm headgate and 24.6% to the crops (Colo. Exs. 70, 71).[10] New Mexico's chief witness, Mr. Mutz, discussed the District water system losses in detail (Tr. 1280, 1285, 1286, 1297, 1315, 1318).

Of great importance to this case is the more than 2,000 acre feet of water which is released annually by the District from its reservoirs for stockwatering. This stockwater could be supplied through a closed system, which would use less than 100 acre feet of Vermejo water per year (N.M. Ex. E-3). State and federal grants and loans are available to finance such a closed system. A savings of some 2,000 acre feet, currently lost through the present open ditch stockwatering system, would result (N.M. Ex.

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[10]This means that 67.3% and 75.4% of the water diverted from the river is lost between the diversion from the river, through the reservoirs and canals, and the farm headgate and the fields, respectively.

E-3, pp. 2, 18; Colo. Exs. 69 and 70). Colorado demonstrated, using New Mexico's own figures, that this saving would virtually offset any effect the Colorado diversion might have on the District in critical dry periods (Colo. Exs. 69 and 70).

D. Chico Rico system

In concluding this discussion of the Vermejo River system for the purpose of this case, it is important to give a brief picture of the Chico Rico system since it contributes a significant amount of water to the Vermejo Conservancy District. Mr. Mutz, New Mexico's chief witness, indicated in his testimony (Tr. 1303) that the Chico Rico contribution to the District water supply is approximately 30%. The Chico Rico, like the Vermejo, originates in Colorado, which contributes a major part of its flow (Tr. 1564). Its location is east of the Vermejo. A Bureau report (Colo. Ex. 40) indicates that the Chico Rico at times may well be a more important source of water to the District than the Vermejo. Included in the Chico Rico system are three creeks, Willow, Curtis and Crow, which involve only small amounts of water.

The testimony indicated that there was only one claimant for Chico Rico water below the Vermejo Conservancy District canal, the Red River Irrigation Company. The New Mexico officials do not know how many times water is passed to this company or how many acres are irrigated by it. In short, there is no administration of water rights on the Chico Rico (Tr. 1066, 1114, 1115, 1116).

Although Colorado, as indicated, contributes a significant amount of water to the Chico Rico, it is claiming none of that water in this proceeding.

III. SUMMARY OF THE ARGUMENT

Equitable apportionment of interstate waters involves a consideration of many factors. Such cases involve substantial interests of quasi-sovereign states in a necessity of life. Time and again the Supreme Court has rejected a rigid adherence to any particular legal doctrine, always attempting to achieve an "equitable apportionment" in light of the facts. In no equitable apportionment proceeding wherein water was available to both states (or in any interstate compact) has a state been allowed to divert the entire flow of an interstate stream, thereby denying the right of the other state to make diversions from that stream.

The Special Master conducted an extensive trial, involving a great deal of testimony and numerous exhibits. Exhaustive briefs were submitted in support of each state's case. Upon consideration of all of these matters, the Special Master recommended that Colorado be allowed to divert 4,000 acre feet per year from the Vermejo River system, leaving much more than that for New Mexico. His recommendation is based upon the factual conclusion that Colorado's diversion would not materially injure the New Mexico uses, upon a balancing of the equities which show that the injury, if any, to New Mexico would be offset by the benefit to Colorado and upon countervailing equities in Colorado. His recommendation and conclusions, especially in light of New Mexico's ability to prevent any injury to its users through reasonable conservation measures, are equitable to both states and are supported by the evidence in the record.

IV. THE SPECIAL MASTER PROPERLY ANALYZED AND APPLIED THE LAW OF EQUITABLE APPORTIONMENT

A. New Mexico's legal argument is reducible to the contention that priority of appropriation

is the only factor to be considered in an equitable apportionment.

New Mexico acknowledges on the opening page of its Brief that the instant proceeding "is an action in which the State of Colorado seeks an 'equitable apportionment' of the Vermejo River." (N.M. Br., p.1.) Yet, New Mexico's legal argument in support of its exceptions to the Special Master's Report simply attempts to equate the legal principles in this case to the rules which govern the rights of private appropriators in New Mexico. This position misunderstands the nature of equitable apportionment.

New Mexico's legal theory may be fairly summarized by the following quotations from its Brief:

> In this case all of the factors which create equities that have been recognized in equitable apportionment litigation are in New Mexico. Because Colorado has never applied the water of the Vermejo River to beneficial use, she possesses no equities with which to justify an award of 4,000 acre-feet per annum.

N.M. Br., pp. 9-10.

> Priority of appropriation is not a mere factor in settling interstate water disputes — it is the paramount basis of decision, to be modified or varied to protect existing economies as the facts of each case warrant.

N.M. Br., p. 2.

New Mexico argues there can be only one equity worthy of consideration: the relative priorities of the parties in their appropriation of water from the Vermejo River. New Mexico also seems to assert that no equitable apportionment has ever awarded water to one state to the detri-

ment of another state's existing economy. The cases are contrary to both assertions. New Mexico, in effect, argues for a hard and fast rule of law rather than a weighing of equities.

While the Special Master gave due consideration to the fact that priority of appropriation is a guiding factor to be considered in an action of this nature (Report, p. 22), he also evaluated the other factors enumerated in previous equitable apportionment decisions. To the extent that New Mexico contends the Special Master did not treat this case as one arising under and governed solely by the doctrine of prior appropriation, it is correct. To the extent that New Mexico claims the Special Master erred in that regard, it has no support in the law of equitable apportionment.

B. An equitable apportionment calls for the exercise of an informed judgment which is based on a consideration of many factors.

Two basic systems govern the allocation of water in the United States: the riparian system and the prior appropriation system. The doctrine of equitable apportionment is a separate specialized body of law applicable only to disputes between states over the right to divert water from an interstate stream. *Kansas v. Colorado,* 206 U.S. 46 (1907). As its very name implies, "equitable apportionment" is an equitable doctrine, an attempt to apportion waters between states in a fair and reasonable manner.

New Mexico contends the only fair apportionment in this case would be to give New Mexico all of the water in the Vermejo River. The Special Master, upon consideration of all relevant factors, determined that it would be equitable to allow Colorado to divert up to 4,000 acre feet per year from the waters it produces for the Vermejo River; less than one-half of Colorado's annual contribution to the River (Colo. Ex. 5). New Mexico was

awarded the remainder of Colorado's production in the Vermejo system and all of the water which it contributes to the Vermejo River (Colo. Ex. 5, Tbl. 7). Colorado believes that such a division is fair, takes into account the legitimate needs and equities of the two states, and is supported by the prior decisions of this Court.

The body of law pertaining to equitable apportionment is not extensive, consisting of but seven cases (not including subsequent decisions relating to the basic cases). In chronologic order, they are: *Kansas v. Colorado,* 206 U.S. 46 (1907); *Wyoming v. Colorado,* 259 U.S. 419 (1922); *Connecticut v. Massachusetts,* 282 U.S. 660 (1931); *New Jersey v. New York,* 283 U.S. 336 (1931); *Washington v. Oregon,* 297 U.S. 517 (1936); *Colorado v. Kansas,* 320 U.S. 383 (1943); *Nebraska v. Wyoming,* 325 U.S. 589 (1945). *Arizona v. California,* 373 U.S. 546 (1963), as the Special Master notes at page 22 of his Report, involved primarily an interpretation of the Boulder Canyon Project Act, 43 U.S.C. §§617-617t (1976), and was "not controlled by the doctrine of equitable apportionment or by the Colorado River Compact." 373 U.S. at 565.

The equitable apportionment decisions establish that priority of appropriation is an important consideration, but is not dispositive of the competing rights of states to the waters of an interstate stream. The oft-quoted passage from *Nebraska v. Wyoming,* cited by the Special Master at page 20 of his Report, is of great significance to the case at bar:

> But if an allocation between appropriation States is to be just and equitable, strict adherence to the priority rule may not be possible. For example, the economy of a region may have been established on the basis of junior appropriations. So far as possible, those established uses should be protected, though strict application of the priority

> rule might jeopardize them. Apportionment calls for the exercise of an informed judgment on a consideration of many factors. Priority of appropriation is the guiding principle. But physical and climatic conditions, the consumptive use of water in several sections of the River, the character and rate of return flows, the extent of established uses, the availability of storage water, the practical effect of wasteful uses on downstream areas, the damage to upstream areas as compared to the benefits to downstream areas if a limitation is imposed on the former — these are all relevant factors. They are merely an illustrative, not an exhaustive, catalogue. They indicate the nature of the problem of apportionment and the delicate adjustment of interests which must be made.

325 U.S. at 618.

The resolution of conflicting priorities in *Nebraska v. Wyoming* is instructive in the case at bar. Nebraska had filed an action against Wyoming, in which Colorado was impleaded as a defendant, alleging that Colorado and Wyoming, by diversions from the North Platte River, were violating the rule of priority of appropriation in force in the three states and depriving Nebraska of water to which she was equitably and legally entitled.

The Special Master in that case estimated that Colorado appropriators junior to the Pathfinder Project in Nebraska consumed about 30,000 acre feet a year. Since the Pathfinder Project, after 1930, had never received the full amount of its decreed rights and had always been in need of water for storage, the Special Master found, and the Supreme Court agreed, that those Colorado junior appropriations caused "present injury" to downstream users with senior rights in Nebraska and Wyoming. 325 U.S. at 601, 609. That Colorado's uses were in respects junior, and that allocation of water to those junior uses caused "present injury" to downstream seniors and their

existing economies, did not, however, warrant a reduction in those decreed Colorado rights. 325 U.S. at 621. Out-of-priority, junior appropriations were permitted in Colorado even though these appropriations limited and detracted from the amount of water available to satisfy downstream senior rights.

Similarly, the allocation between Wyoming and Nebraska, on the basis of a 25/75% division of the river's flow, respectively, gave each state water to which it would not have been entitled under the priority system. 325 U.S. at 638, 642, 643. Thus, the actual allocation of water from the North Platte River contradicts New Mexico's statement at page 15 of its Brief that, "Priority was strictly applied between Wyoming and Nebraska [in *Nebraska v. Wyoming*]."

What is shown by the result in *Nebraska v. Wyoming,* and in the other equitable apportionment decisions, is that hard and fast rules of allocation are inappropriate. Absolute protection of existing economies, even senior existing economies, did not occur in that case. Each case must be decided on the basis of the particular facts and equities involved.

The first equitable apportionment case — and still of major importance — was *Kansas v. Colorado,* 206 U.S. 46 (1907). That was a proceeding in which the State of Kansas alleged that diversions in Colorado diminished the natural flow of the Arkansas River through Kansas, thereby threatening the vested rights of Kansas' users. The relief sought by Kansas was a decree enjoining irrigation by Colorado in the Arkansas Valley and allowing the Arkansas River to flow undiminished into Kansas.

Kansas v. Colorado provides useful reference for the Master's decision in this case. Like New Mexico, Kansas contended that it was entitled to the natural flow of an

interstate stream, unbridled by upstream diversions in Colorado. Kansas (like New Mexico) argued as the basis of its case that Colorado's diversions caused injury to established Kansas water rights.

Notwithstanding the injury to water rights and existing economies in Kansas, the United States Supreme Court dismissed the bill filed by Kansas stating:

> [W]hile the influence of such diminution [by Colorado] has been of perceptible injury to portions of the Arkansas Valley in Kansas, particularly those portions closest to the Colorado line, yet to the great body of the Valley it has worked little, if any, detriment, *and regarding the interests of both States and the right of each to receive benefit through irrigation and in any other manner from the waters of this stream,* we are not satisfied that Kansas has made out a case entitling it to a decree.

206 U.S. at 117 (emphasis added).

In a preceding passage, the Supreme Court also noted:

> [T]he diminution of the flow of water in the river by the irrigation of Colorado has worked some detriment to the southwestern part of Kansas, and yet when we compare the amount of this detriment with the great benefit which has obviously resulted to the counties in Colorado, it would seem that equality of right and equity between the two States forbids any interference with the present withdrawal of water in Colorado for purposes of irrigation.

206 U.S. at 113-114.

In *Kansas v. Colorado,* the Court considered the relative benefits and detriments to each state, without strict

regard for the relative priorities of the users in each state. *See also Nebraska v. Wyoming,* 325 U.S. at 618. Colorado submits that the Special Master in the case at bar did precisely the same, determining that "any damages to New Mexico must be weighed against benefits which will accrue to Colorado" and further that the "injury, if any [to New Mexico], will be more than offset by the benefit to Colorado." (Report, pp. 17, 23.)

In the second equitable apportionment case, *Wyoming v. Colorado,* 259 U.S. 419 (1922), the United States Supreme Court refused to allocate water strictly on the basis of priority of appropriation, as New Mexico here argues. That case involved a suit brought by Wyoming against Colorado and two Colorado corporations over the use of the Laramie River.

A perceptive and thorough explanation of the Court's ruling in *Wyoming v. Colorado* is found in the New Mexico Brief filed in *Arizona v. California,* 373 U.S. 546 (1963), attached to Colorado's Brief in Opposition to Defendant's Motion for Summary Judgment as it was filed with the Special Master in the case at bar. Colorado recommends the following discussion to the Court's attention:

> The Court first determined the dependable supply available. It then determined the quantity needed for the senior Wyoming uses and subtracted this figure from the dependable supply. Colorado was enjoined from diverting more than this balance for the use of the junior Colorado appropriator, and thus the Court made a specific allotment of water for the junior appropriator, which would constitute a firm supply for this right. This is irrespective of the senior claims in Wyoming. *The decree did not protect the senior appropriator in time of shortage as would be the case if strict priority were applied. The Court did not follow the*

application of priority regardless of state line on the basis of the natural flow of the stream. Further, the Court placed the burden of providing the storage upon the senior appropriator by the following language:

> "But Wyoming takes the position that she should not be required to provide storage facilities in order that Colorado may obtain a larger amount of water from the common supply than otherwise would be possible. In a sense this is true; but not to the extent of requiring the lowest natural flow to be taken as the test of available supply. The question here is not what one State should do for another, but how each should exercise her relative rights in the water of this interstate stream. Both subscribe to the doctrine of appropriation, and by that doctrine rights to water are measured by what is reasonably required and applied. *Both States recognize that conservation within practical limits is essential in order that needless waste may be prevented and the largest feasible use may be secured.* This comports with the all-prevailing spirit of the doctrine of appropriation and takes appropriate heed of the natural necessities out of which it arose. *We think that the doctrine lays on each of the States a duty to exercise her right reasonably and in a manner calculated to conserve the common supply."* 259 U.S. at 484.

New Mexico Brief in *Arizona,* pages 18-19 (emphasis added).

In its Brief in *Arizona,* New Mexico aptly pointed out two major features of the decision in *Wyoming v. Colorado:*

Priority of appropriation must be considered in light of countervailing equities. Each state has a duty to do its best to "conserve the common supply," whether by providing storage, eliminating waste, or otherwise; a fact which Colorado has urged throughout this lawsuit (*see* Colorado Post Hearing Brief). As New Mexico itself stated:

> It seems to the state of New Mexico that the cases all point to the conclusion that the doctrine of equitable apportionment contains many, many factors, of which priority is but one. To blindly follow this principle [of priority of appropriation] at the expense of the many factors is to urge a technical rule which is totally out of keeping with the spirit of the concept of determination of the equitable share of the benefit of an interstate stream system. These cases demonstrate that in this type of dispute the Court will not be encumbered by any technical rules in finding a reasonable solution to a particular problem.

New Mexico Brief in *Arizona,* pp. 32-33.

Even in *Wyoming v. Colorado,* the equitable apportionment case wherein the priority doctrine was most closely followed, other equities including waste, ability to conserve, and storage, bore upon the ultimate apportionment. The decision did not prohibit a transmountain diversion in Colorado for a new use. The Special Master in the case at bar heard the evidence and considered the various facts.[11] He did not blindly follow the priority system, the avenue rejected by New Mexico in *Arizona v. California,* but urged by New Mexico here. His approach was consistent with, and required by, prior case law.

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[11]The Special Master as attorney general of Wyoming actually participated in one phase of that case, *Wyoming v. Colorado,* 309 U.S. 572 (1940) (Tr. 581-82.)

The conspicuous omission in the New Mexico Brief of any reference whatsoever to two of the equitable apportionment cases underscores the weakness of its position. The only possible explanation of why New Mexico makes no mention of *Connecticut v. Massachusetts,* 282 U.S. 660 (1931) or *New Jersey v. New York,* 283 U.S. 336 (1931), is that each decision is persuasive authority that water may be allocated to a state in an equitable apportionment proceeding for a new use, where there is no present use of the water.[12]

In *Connecticut v. Massachusetts,* for example, the State of Connecticut sought to restrain diversions from the Connecticut River which would provide water for the future growth of Boston and neighboring cities. As it had done in *Kansas v. Colorado* and *Wyoming v. Colorado,* the Court unconditionally rejected the notion that the determination of the relative rights of contending states in respect to the use of streams flowing through them is governed by the same rules of law that are applied within each of those states. *Connecticut v. Massachusetts,* 282 U.S. at 670. Division of an interstate stream depends "upon a consideration of the pertinent laws of the contending states and all other relevant facts [which] will determine what is an equitable apportionment of the use of such waters." 282 U.S. at 670-671.

Massachusetts proposed to accomplish a diversion which it had never before made, one for future uses in the Boston area. Although Connecticut complained of injury, the Court nonetheless permitted the diversion, emphasizing that due consideration must be given "all relevant facts." The water allocated to Colorado by the Master in the case at bar is water produced in Colorado

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[12]New Mexico argues against "future uses" in Colorado on the one hand, and at the same time urges that Vermejo Park Corporation, Kaiser Steel Corporation and Phelps-Dodge Corporation be allowed to expand their present usage of Vermejo water for future requirements.

and water which will aid the existing economy in Colorado's Purgatoire Valley.

New Jersey v. New York, 283 U.S. 336 (1931), was the next equitable apportionment suit. In that case the State of New Jersey sued the State of New York and the City of New York to enjoin them from diverting water from non-navigable tributaries of the Delaware River for the purpose of increasing the water supply of the City. Importantly, that case involved a future, proposed use of Delaware River water in another watershed, the Hudson River. New Jersey's arguments were, predictably, that it was already using the water which New York wanted, and in any event, there was not enough water to go around. Initially, the Court rejected a rigid application of the riparian doctrine. Citing western apportionment suits, particularly *Wyoming v. Colorado,* the Court, speaking through Mr. Justice Holmes, stated, "[T]he effort always is to secure an equitable apportionment without quibbling over formulas." 283 U.S. at 343.

The Master in *New Jersey v. New York* recommended to the Supreme Court an apportionment quite similar to the result which the State of Colorado here urges. While New Jersey claimed (through prior use) the right to the entire flow of the Delaware River, the Master allocated a substantial quantity of water to the State of New York and the City of New York. Looking not at who used the water first, but at how use in both states might be accomplished without grave injury to either, the Master allotted to New York a portion of water which would benefit New York without substantially impairing rights in New Jersey. As in *Connecticut v. Massachusetts,* the Court permitted a diversion by New York, even though no prior use existed. It announced the following controlling principle:

> [The river] offers a necessity of life that must be rationed among those who have power over it. New York has the physical power to cut off all the

> water within its jurisdiction. But clearly the exercise of such power to the destruction of the interest of lower States could not be tolerated. And on the other hand equally little could New Jersey be permitted to require New York to give up its power altogether in order that the River might come down to it undiminished. *Both States have real and substantial interests in the River that must be reconciled as best they may be.*

283 U.S. at 342 (emphasis added).

The Special Master's ruling in the case before the Court reconciles the "real and substantial interests" which both Colorado and New Mexico enjoy in the Vermejo River and acknowledges that neither state may command the total flow of the river.

The obvious reason why New Mexico ignores *Connecticut v. Massachusetts* and *New Jersey v. New York,* is that each case provides specific support for the Special Master's legal conclusions. If, upon consideration of all relevant facts, it is determined that an allocation of water for a new use is fair and equitable, that allocation is proper and will be sustained.

New Mexico's argument against Colorado's diversion because it involves a "future use" is ironic. Colorado has an existing economy with a present need and plan of use for the water. New Mexico, on the other hand, urges that it be permitted the entire flow of the river so that entities such as Kaiser Steel and the Vermejo Park Corporation can expand their present use of Vermejo water at some undetermined time in the future, and that the Vermejo Conservancy District can continue its wasteful use of water.

The second equitable apportionment case between Colorado and Kansas is also instructive. The decision in

Colorado v. Kansas, 320 U.S. 383 (1943), shows again that the concept of prior use will not necessarily be determinative when there are other countervailing equities. The second action was instituted by Colorado to prevent Kansas users from continuing pending suits against Colorado users, or from commencing further actions. Kansas again sought an equitable apportionment of the Arkansas River, claiming Colorado had increased its diversions to the material injury of Kansas users.

The suit was resolved in much the same way as *Kansas v. Colorado.* Initially, the Court granted Colorado's request that Kansas and its users be enjoined from bringing further suits against Colorado or its users to prevent diversions from the Arkansas River. As to Kansas' renewed request for an equitable apportionment of the Arkansas River, the Court, for a second time, denied the request on the ground that Kansas had failed to sustain its allegations that Colorado's uses "worked a serious detriment to the substantial interests of Kansas." 320 U.S. at 400.

While the case essentially follows the ruling in *Kansas v. Colorado,* its reemphasis of several points is noteworthy. As to Colorado's basic right to divert water from the Arkansas River, the Court repeated, "The lower State [Kansas] is not entitled to have the stream flow as it would be in nature *regardless of need or use.*" 320 U.S. at 393 (emphasis added). *Accord, Kansas v. Colorado,* 206 U.S. 85, 101-102; *Connecticut v. Massachusetts,* 282 U.S. 660, 669-670; *Washington v. Oregon,* 297 U.S. 517, 523, 526. In other words, each state has a substantial claim to a portion of the flow of an interstate river, the real question being the amount of each state's entitlement.

New Mexico places great emphasis upon the ruling in *Washington v. Oregon,* 297 U.S. 517 (1936). As the Special Master notes, that case was one in which it was not clear that the disputed water would ever reach the

Washington users if an allocation of water to Washington were made. The case involved a situation where Oregon was allowed to divert the entire flow of a small river, the Tum-a-lum. The reason for that ruling was the fact that Washington's demand for water from the Tum-a-lum involved a "futile call."[13] In the words of the Special Master in *Washington v. Oregon:*

> There is no satisfactory proof that to turn down water past the Red Bridge in Oregon during the period of water shortage would be materially more advantageous to Washington users than to permit such water to be applied to surface irrigation in Oregon.

297 U.S. at 522.

The Supreme Court explained as follows:

> This is so because of the nature of the channel of the Tum-a-lum River. During the period of water shortage, only a small quantity of water would go by if the dams [on the Tum-a-lum] should be removed. There is evidence that this quantity, small at the beginning, would be quickly absorbed and lost in the deep gravel beneath the channel.

297 U.S. at 522-23.

Water passed by Oregon users would not have reached Washington. Thus, there is considerable doubt that the Tum-a-lum was even an interstate stream subject to equitable apportionment. New Mexico's reliance on this case is misplaced. Its argument that Colorado, like Washington, is guilty of laches also misses the mark. The

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[13] "Futile call" is a term used in western water parlance to denote a situation in which water would not reach the person calling for it even if an upstream diversion were curtailed.

Washington users failed to exercise their decreed rights for over 30 years before asserting them against Oregon's users. Colorado's rights are recent, and an attempt to exercise them has been made since their inception.

New Mexico argues that the Special Master's discussion of *Arizona v. California* is the "most incomprehensible portion" of his Report. (N.M. Br., p. 16). The Special Master's Report is consistent with the ruling of the Court in that case, in that the division of the waters of the Colorado River turned upon an interpretation of the Boulder Canyon Project Act. What is difficult to understand is New Mexico's contention that the Gila River dispute provides legal precedent for the case at bar, when that dispute was settled out of court by compromise of the parties, and not by decision of the Supreme Court. 373 U.S. at 594.

While *Arizona v. California* is not an equitable apportionment case, portions of the opinion are relevant to the case at hand. The problem facing the Court in *Arizona v. California* was how to divide 7,500,000 acre feet of water annually between the lower basin states: California, Arizona and Nevada. The Colorado River Compact allocated that amount to the states, but failed to divide the lower basin states' share of the Colorado River water between them. Of fundamental concern to Arizona and Nevada was the possibility that by prior appropriation, California might acquire rights to most of the Colorado River, leaving Arizona and Nevada but a miserly share. The Supreme Court explained:

> Failure of the Compact to determine each State's share of the water left Nevada and Arizona with their fears that the law of prior appropriation would be not a protection but a menace because California could use that law to get for herself the lion's share of the waters allotted to the Lower Basin.

373 U.S. at 558.

This was a concern which was originally brought to life in the upper basin states when the possibility of storage and canal projects raised the spectre that California might appropriate the additional water made available by these projects. 373 U.S. at 555.[14] Thus, one of the underlying concerns for both the Colorado River Compact and the Boulder Canyon Project Act was that the law of prior appropriation would deprive other states of water and their ability to develop local economies.

The case was decided in part on the factors mentioned above, in part upon a compromise settlement between New Mexico and Arizona over conflicting claims on the Gila River, and in part on the doctrine of reserved rights.[15] 373 U.S. at 546-590, 594-595, 598-601. Interestingly, none of these divisions involved a strict application of the prior appropriation doctrine.

A composite of the various equitable apportionment cases shows that the Special Master properly rejected New Mexico's contention that priority of appropriation is the paramount (only) consideration in an equitable apportionment action and demonstrates the propriety of the Special Master's equitable approach:

A. One state will not be permitted to command the entire flow of an interstate stream "regardless of need or use." *Kansas v. Colorado,* 206 U.S. 46, 85, 101-102; *Connecticut v. Massachusetts,* 282 U.S. 660, 669-670; *New Jersey v. New York,* 283 U.S. 336, 342; *Washington v.*

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[14]The New Mexico State Engineer, Mr. Reynolds, emphasized in his testimony that a prime consideration underlying the Colorado River Compact was the desire of the upper basin states to protect themselves, lest the priority of appropriation doctrine allow California to appropriate the entire remaining flow of the Colorado River (Tr. 2382-83).

[15]The Court also allocated water for future uses in Arizona, California and Mexico pursuant to the intent of Article III(A) and (B) of the Boulder Canyon Project Act. 373 U.S. at 555, 561-562.

Oregon, 297 U.S. 517, 523, 526; *Colorado v. Kansas,* 320 U.S. 383, 393.

B. While priority of appropriation is a consideration, water can be apportioned to junior priorities even if such apportionment injures existing economies and senior priorities. *Kansas v. Colorado,* 206 U.S. 46, 113-114; *Wyoming v. Colorado,* 259 U.S. 419, 484; *Connecticut v. Massachusetts,* 282 U.S. 660; *Nebraska v. Wyoming,* 325 U.S. 621, 642-643.

C. Each state bordering an interstate stream must exercise her rights in an interstate stream reasonably and institute conservation or storage practices to conserve the common supply. *Wyoming v. Colorado,* 259 U.S. 419, 484; *Nebraska v. Wyoming,* 325 U.S. 589, 618.

D. The law governing disputes between states is not the same as the law which governs the resolution of disputes between private citizens. *Kansas v. Colorado,* 185 U.S. 125, 136; *Connecticut v. Massachusetts,* 282 U.S. 660, 670; *New Jersey v. New York,* 283 U.S. 336, 343.

E. A state may divert water from an interstate stream even if it has not done so previously. *Connecticut v. Massachusetts,* 282 U.S. 660; *New Jersey v. New York,* 283 U.S. 336.

F. Priority of appropriation is but one of many considerations in an equitable apportionment proceeding. *Wyoming v. Colorado,* 259 U.S. 419; *Nebraska v. Wyoming,* 325 U.S. 589, 622.

G. Physical conditions of the river, consumptive use, return flows, and other "countervailing equities" or "exigencies" which a state may present must be considered. *Nebraska v. Wyoming,* 325 U.S. 589, 622; *Kansas v. Colorado,* 206 U.S. 46, 113-114; *Connecticut v. Massachusetts,* 282 U.S. 660, 670. In short, the law of equitable

apportionment requires consideration of all equitable factors.

C. New Mexico did not satisfy the burden of proof it bears to sustain a ruling in its favor.

Though Colorado is the plaintiff in this action, New Mexico bears the burden of demonstrating that Colorado diversions would work a serious injury to the substantial interests of New Mexico and its citizens.[16] Notwithstanding the nominal standing of the parties as plaintiffs or defendants in equitable apportionment cases, the decisions in those cases uniformly place the burden on the *downstream* state to show by clear and convincing proof that diversions in an upstream state would cause serious injury to the substantial interests of the lower state and its citizens. *E.g., Kansas v. Colorado,* 206 U.S. at 117; *Connecticut v. Massachusetts,* 282 U.S. at 669; *Colorado v. Kansas,* 320 U.S. at 393-394.

The Supreme Court's statement of issues in *Colorado v. Kansas* establishes that the burden of proof remains on the downstream state — the state seeking to enjoin diversions in another state — regardless of which state was plaintiff: "(1) Is Colorado entitled to an injunction against the further prosecution of litigation by Kansas users against Colorado users? (2) Does the situation call for allocation of the waters of the basin between Colorado and Kansas in second feet or acre feet? (3) Has Kansas proved that Colorado has substantially and injuriously aggravated conditions which existed at the time of her earlier suit?" *Id.* at 389-390.

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[16]Colorado has been forced to appear in this action as the plaintiff because of litigation in the United States District Court for the District of New Mexico in which an injunction was issued against diversions of Vermejo River water in Colorado. *Kaiser Steel Corporation v. CF&I Steel Corporation,* No. 76-244, United States District Court, Dist. N.M. (1976). *See* Colorado's Order for Appearance, Motion for Leave to File Complaint, and Statement of Facts and Brief in Support of Motion for Leave to File Complaint in the case at bar.

The Court placed the burden on Kansas to demonstrate serious injury to its interests, stating, "The *lower state is not entitled* to have the stream flow as it would regardless of need or use." 320 U.S. at 393 (emphasis added). The Court held that Kansas had not satisfied its burden of proving that Colorado's use had worked a serious detriment to the substantial interests of Kansas, and refused to enjoin the upstream uses. 320 U.S. at 400.

The controlling factor in allocating the burden of proof is not which state is the plaintiff in an equitable apportionment action; the burden is always on the downstream state to show that a junior use in an upstream state would work a serious injury to the interests of the downstream state and its citizens. In his Report, the Special Master concluded:

> It is the opinion of the Master that a transmountain diversion would not materially affect the appropriations granted by New Mexico for users downstream. A thorough examination of the existing economies in New Mexico convinces the Master that the injury to New Mexico, if any, will be more than offset by the benefit to Colorado.

Report, p. 23.

Thus, as the Special Master's conclusions demonstrate, New Mexico has not shown by necessary evidence that Colorado's diversion would "materially affect" the New Mexico uses, or that it is entitled to enjoin Colorado's uses.

D. New Mexico's position conflicts directly with concepts inherent to interstate compacts and with the law of equitable apportionment.

Equitable apportionment may be achieved either through interstate compact or through decision of the

United States Supreme Court. In either case, the priorities or the riparian rights in the particular states adjust to apportionment. *Hinderlider v. La Plata River & Cherry Creek Ditch Co.*, 304 U.S. 92 (1938). In no equitable apportionment proceeding wherein water was available to both states or in any interstate compact has any state been permitted to divert the entire flow of an interstate stream.

Dr. Jeris Danielson, the State Engineer of the State of Colorado, testified at length regarding the interstate compacts to which Colorado is a party. He explained that pursuant to a number of those compacts, senior priorities in Colorado are curtailed to satisfy its obligations to a neighboring state in which the water rights are junior. He stated (Tr. 519) that under the Rio Grande Compact involving Texas, New Mexico and Colorado, it is often necessary "to curtail water users on the Conejos River [in Colorado] with priorities as early as 1851 in order to meet Colorado's obligation under the 1938 compact at the state line gauge between Colorado and New Mexico." Under the South Platte River Compact between Nebraska and Colorado, senior rights in Colorado may have to be curtailed to meet obligations to Nebraska (Tr. 542, 543). Under the Republican River Compact between Nebraska and Colorado each state is given a certain amount of water without regard "to priorities, or to delivery obligations." (Tr. 548). The Arkansas River Compact between Kansas and Colorado also involves an allocation of a certain amount of water to each state from storage in a particular reservoir without "administration on a priority basis per se interstate." (Tr. 549,550).

Dr. Danielson discussed at length the Colorado River Compact involving California, Arizona and Nevada, as the lower basin states, and Wyoming, Colorado, Utah and New Mexico as the upper basin states. Under this compact, each upper basin state is "allocated a percentage of the upper basin's share of water." Colorado "must guarantee to the state of Utah a flow of 5,000,000 acre feet

of water in the Yampa River . . . without regard to the priorities." (Tr. 558). Referring to the Colorado River Compact, he stated that "the net result of the compact, as I stated, was to preserve those waters to the upper basin even though they weren't using them, and generally are still not completely using them today, for future development." (Tr. 575).

On cross-examination, Dr. Danielson was asked by the New Mexico attorney if it was not "true that priority is ordinarily the most important criterion in negotiating the compact?" Dr. Danielson responded as follows:

> Well, I think if that were true across the board, Texas and southern New Mexico would not have received a drop of water out of the Rio Grande, because there was really little or no irrigation on the Rio Grande until the Elephant Butte Reservoir was built in the early 1900's.
>
> If we want to play the priority game solely, then I think Colorado could have established clearly a need for all the waters it generates in the state in the Rio Grande basin.
>
> But that is not the result because Texas, southern New Mexico and New Mexico above Elephant Butte could clearly establish they had an equitable interest in the waters of the Rio Grande. So the allocations were made, not on the basis of priority, but on the basis of what that equitable apportionment would be.

Tr. 579-80.

Mr. Reynolds, the State Engineer of the State of New Mexico, testified (Tr. 2382, 2383) that the Colorado River Compact was negotiated in 1922 because of prior and "extensive development of waters in the lower basin." He

confirmed that "New Mexico receives Colorado River system water under the San Juan-Chama Project." (Tr. 2407) He agreed that under the Rio Grande River Compact it was "probably so" that "senior rights in Colorado would be curtailed on occasion to satisfy junior rights in New Mexico." (Tr. 2409)

In connection with the San Juan-Chama Project, it would be well to point out that New Mexico's Exhibit C-5, a water study for the City of Raton, states that 3,000 acre feet of San Juan-Chama water is available for the future use of Raton. This is water which Colorado produces, and which New Mexico may allocate for some future use.

As indicated, these compacts deal with the apportionment of the waters of interstate streams on a basis of equity, with each state having rights in the stream. As indicated by the State Engineers for both New Mexico and Colorado, a major objective in certain of the compacts is to protect an upper state with respect to priorities in lower states. In other cases, upstream states are required to suspend their senior rights to supply junior rights in downstream states. Under the various interstate compacts to which Colorado is a party, and the equitable apportionment proceedings in which it has been involved, Colorado is generally obligated to deliver about half of the water that it produces (Tr. 562).

Thus, whether equitable apportionment is achieved through interstate compact or United States Supreme Court decision, the objective is to apportion the waters of an interstate stream on the basis of the equities. No case or compact involves a situation in which one state was allocated no water, as New Mexico contends for here, and most compacts and cases involve situations where priorities in particular states give way to the overall allocation accomplished through the equitable apportionment (Tr. 584); *Hinderlider v. La Plata River & Cherry Creek Ditch Co.*, 304 U.S. 92 (1938).

E. This proceeding is not barred by the Eleventh Amendment.

At every stage of this proceeding New Mexico has insisted that Colorado does not have an interest in this litigation sufficient to make the case a controversy between states and, therefore, a suit within the Supreme Court's original jurisdiction under Section 2 of Article III of the United States Constitution. And, at every stage, the argument, which has worn various disguises, has been rejected: by this Court when it gave Colorado leave to file a complaint despite New Mexico's Brief in Opposition to Motion for Leave to File Complaint; and by the Special Master with respect to New Mexico's motion made on the next to the last day of trial (Tr. 2678-2694, 2770-2785).

1. New Mexico's argument has been raised previously and rejected by this Court.

In its Brief in Opposition to Motion for Leave to File Complaint, dated October 11, 1978, the State of New Mexico raised and argued the position which it here seeks to resurrect. A cursory review of the Statement of the Case in that Brief reveals that a nearly identical argument was presented by New Mexico from the outset, and was rejected by this Court. The final paragraph at page 7 of the Brief in Opposition to Motion for Leave to File Complaint illustrates this point:

> Colorado thus comes before this Court with no existing uses and no existing equities, seeking leave to justify an "equitable apportionment" of the waters of the Vermejo River. In truth, however, Colorado seeks not an equitable apportionment. She possesses only one interest in the Vermejo waters — the paper right to CF&I. The proposed action, in reality, is nothing greater than an attempt by CF&I to enjoin long-established uses

> in New Mexico in order to make water available for contemplated uses of its own. Nominally designated an action in equitable apportionment, Colorado's proposed complaint is an effort at corporate expansion wrapped in the rhetoric of constitutional law.

This Court rejected New Mexico's argument and granted Colorado leave to file its complaint.

As the Court has previously observed, "[the] requirement of a motion for leave to file a complaint, and the requirement of a brief in opposition, permit and enable us to dispose of matters at a preliminary stage." *Ohio v. Kentucky,* 410 U.S. 642, 644 (1973). These procedural prerequisites facilitate the Court's determination of whether its exercise of jurisdiction would be constitutionally sound. Very recently, in *Maryland v. Louisiana,* 101 S. Ct. 2114 (1981), the Court stated that "[u]sually, when we decline to exercise our original jurisdiction, we do so by denying the motion for leave to file." *Id.* at 2126 n. 16. *See, e.g., Pennsylvania v. New Jersey,* 426 U.S. 660 (1976); *Arizona v. New Mexico,* 425 U.S. 794 (1976); *Massachusetts v. Missouri,* 308 U.S. 1, 14-15 (1939); *Alabama v. Arizona,* 291 U.S. 286 (1934). *See also* Note, *The Original Jurisdiction of the United States Supreme Court,* 11 Stanford L. Rev. 665, 687 (1959). In the present case, Colorado's motion was granted. Inasmuch as this Court has effectively ruled on the jurisdictional issue, the matter has been decided and did not require the Special Master's further attention.

2. Colorado, in precisely the same manner as New Mexico, has a substantial interest in this litigation.

Waters of the natural streams in Colorado are owned by the state in trust for the people. *Wheeler v. Northern Colorado Irrigation Company,* 10 Colo. 582, 17 P. 487

(1887); *Platte Water Company v. Northern Colorado Irrigation Company,* 12 Colo. 525, 21 P. 711 (1889). The following quote from *Stockman v. Leddy,* 55 Colo. 24, 129 P. 220 (1912), conclusively demonstrates this point:

> The State [of Colorado] has never relinquished its right of ownership and claim to the waters of our natural streams, though it has granted to its citizens, upon prescribed conditions, the right to the use of such waters for beneficial purposes and within its own boundaries . . . . Such being the peculiar conditions, *the state was justified in asserting its ownership of all the natural streams within its boundaries.*

55 Colo. at 28, 29, 129 P. at 222 (emphasis added).

Accord, Colorado Constitution, Article XVI, Section 5.

A dispute "directly affecting the property rights and interests of a state" is a proper subject of litigation between states. *Missouri v. Illinois,* 180 U.S. 208, 240 (1901). A state has an inherent interest in its natural resources, which is direct enough to support a suit against another state on its own behalf and on behalf of its citizens. *Georgia v. Tennessee Copper Co.,* 206 U.S. 230, 237 (1907) (a state has "an interest independent of and behind the titles of its citizens, in all the earth and air within its domain").

As trustee of the waters within its territory, Colorado must protect the present and future interests of the beneficiaries of this public trust, the citizens of Colorado. Colorado is by no means the first state to bring a suit to protect the rights its citizens derive from its sovereign property rights. *See, e.g., New Jersey v. New York,* 345 U.S. 369 (1953); *Kentucky v. Indiana,* 281 U.S. 163 (1930); *Pennsylvania v. West Virginia,* 262 U.S. 553 (1923); *Wyoming v. Colorado,* 259 U.S. 419 (1922); *Kansas v.*

Colorado, 185 U.S. 125 (1902). That New Mexico even questions Colorado's right to bring this action is somewhat remarkable. The role of a state in bringing an action to protect the rights of its citizens is as parens patriae.

A dispute involving the water rights of neighboring states is a uniquely appropriate setting for one state to claim standing as parens patriae in a suit against the neighboring state. The citizens' rights are derived from and, therefore, cannot exceed those of the state. Furthermore, a state cannot grant its citizens the use of water in which the state has no property right. *See Badgley v. City of New York,* 606 F.2d 358, 365-66 (2d Cir. 1979), *cert. denied,* 100 S. Ct. 2989 (1980). A state's interest in water rights is "indissolubly linked with the rights of the appropriators." *Wyoming v. Colorado,* 259 U.S. 419, 468 (1922). For one state to deny the rights of the appropriators in another state is tantamount to denying the property rights of the state itself. Clearly, a state has a direct interest in the resolution of such a dispute regardless of the nature or number of private users who are directly affected.

In at least two equitable apportionment cases previously decided by the Supreme Court, *Connecticut v. Massachusetts* and *New Jersey v. New York,* the state seeking the right to divert water represented only one entity, the City of Boston and the City of New York, respectively. In *Wyoming v. Colorado,* the State of Colorado represented but three water claimants, two of which were private corporations.

Colorado represents not only the interests of CF&I, which already owns water rights on the Vermejo, but the interests of other Colorado citizens who might jointly use Vermejo water with CF&I, or who might purchase such water. The City of Trinidad and the Purgatoire River Water Conservancy District have expressed a present

interest in using water from the Vermejo (Tr. 641, 664, 674). Additionally, either of those entities, as well as any other Colorado citizen, may acquire a water right on the Vermejo in the future. The water interests of the State of Colorado include, but also transcend, any interest claimed by CF&I.

The role of parens patriae is the role asserted by every state in each previous equitable apportionment case. *See, e.g., Nebraska v. Wyoming; Arizona v. California; Kansas v. Colorado.* In every case a portion of the state's "interest" in the equitable apportionment proceeding stems from its role as parens patriae, protector of its citizens' water rights. Colorado's role differs in no manner from those roles it and other states have previously played.

None of the cases cited by New Mexico involve an equitable apportionment proceeding, or even a dispute over water or some other natural resource held by the state in trust for the people. *New Hampshire v. Louisiana,* 108 U.S. 76 (1883) (suit by New Hampshire to collect debts owed to its citizens by Louisiana); *Kansas v. United States,* 204 U.S. 331 (1907) (action by Kansas to obtain patent from United States for land owned by a railroad company and in which the state had no interest); *Oklahoma v. Cook,* 304 U.S. 387 (1938) (suit by Oklahoma on behalf of creditors of a state bank that was in liquidation). In each case the state had no interest, unlike Colorado, whose interest in the protection of its natural resources is substantial.

New Mexico's Eleventh Amendment argument cannot be accepted. If it were a valid argument, it would be practically impossible for any state ever to bring an equitable apportionment proceeding. Did Wyoming represent a sufficient number of its citizens to prosecute *Wyoming v. Colorado,* 259 U.S. 419 (1922)? Wyoming apparently felt it did. Does New Mexico represent a suffi-

ciently significant number of its citizens to legitimize its participation in this case? New Mexico apparently feels it does. Yet, in comparison to the interests represented by Nebraska or Wyoming in *Nebraska v. Wyoming,* the number or Colorado or New Mexico interests represented is small. New Mexico's numbers game is myopic, and could be contrary to the rights of its own citizens.[17]

Colorado has not "abandoned its own interest" in bringing this case (N.M. Br., p. 45). The minimum stream flow application filed by Colorado is junior in priority to the water rights owned by CF&I, and is one of literally hundreds of such applications which have been filed by the Colorado Water Conservation Board throughout the entire state. C.R.S. 1973, §§ 37-92-102, 103. The advantage of a minimum stream flow right is not so much in its priority as in the fact that it can be used to maintain the stream conditions as they were at the time of the adjudication of the minimum stream flow right. By contrast, the duty to protect the waters of the state for public appropriation is a constitutional responsibility of the State of Colorado. Colorado Constitution, Article XVI, Section 5.

New Mexico's claim that Colorado has "abandoned its own interest" and has been led by CF&I to bring this action is a serious affront to the integrity of the governor of Colorado and to the other officials involved in this case. Admittedly, it is in the interest of both the State of Colorado and CF&I Steel Corporation to obtain a favorable ruling in this case. Colorado's citizens will benefit. Likewise, had any other citizen been interested in this case, no doubt the State of Colorado would have represented his interest. The question is not what type of citizen each state represents (because the type of citizen which each state represents is nearly identical in

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[17]Actually, CF&I, a Colorado corporation employing thousands of people in southern Colorado, affects many more people than do the New Mexico entities.

this case), but rather whether Colorado has an interest in the water which it produces. The answer must be "yes."[18]

F. The doctrine of laches does not bar Colorado's claim to an equitable share of the waters of the Vermejo River.

The doctrine of laches is an equitable defense designed to encourage parties to air grievances and to vindicate rights promptly. It promotes diligence and endeavors to prevent the enforcement of stale claims. *Environmental Defense Fund v. Alexander,* 614 F.2d 474, 477-78 (5th Cir. 1980). An adverse party raising the defense must establish both that the plaintiff delayed unreasonably in seeking a remedy and that this delay caused the party undue prejudice. *Id.* at 478. The prejudice that frequently supports the defense results from such factors as the unavailability of witnesses and the loss of evidence supporting a party's position. *Tobacco Workers Local 317 v. Lorillard Corp.,* 448 F.2d 948, 949, (4th Cir. 1971).

In its attempt to invoke the doctrine of laches in this action, New Mexico has pointed to two equitable apportionment cases — *Washington v. Oregon,* 297 U.S. 517 (1936), and *Colorado v. Kansas,* 320 U.S. 383 (1943) — and has declared that laches formed the basis for the Court's denial of injunctions against actual or threatened diversions. Contrary to New Mexico's assertions, however, this Court did not base its decisions on the doctrine.

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[18]The duplicity in New Mexico's criticism of Colorado is demonstrated by its complaint that an attorney whose law firm does legal work for CF&I is a special assistant attorney general in this case when Neil Stillinger, an attorney whose law firm does work for the Vermejo Conservancy District, was a special assistant attorney general of New Mexico during the entire trial before the Special Master (Tr. 3, 4).

In *Washington v. Oregon,* a *private* claimant, the Gardena Farms District, which had a water right with a priority date of 1892, failed to claim any beneficial use of the water until 1930. 297 U.S. at 528. In other words, Washington's users failed to exercise their decreed rights for nearly 40 years. Oregon appropriators, however, had made extensive use of the water with Gardena Farms' apparent acquiescence. *Id.* Thus, the Court charged Gardena with laches and abandonment. Nothing in the opinion suggests, however, that the State of Washington lost its sovereign interest in the waters of the disputed river by virtue of its own or the Gardena Farms District's inaction. The suit was dismissed because Washington could offer no evidence of a "compensating benefit" to offset the loss that would accrue to Oregon and its appropriators. *Id.* at 523. Indeed, the evidence revealed that the water Washington sought was not likely ever to reach the State. *Id.* at 523, 529. To enjoin Oregon's diversion would have worked a needless deprivation and would have benefitted no one.

In *Colorado v. Kansas,* the State of Kansas lost its bid to enjoin Colorado's appropriators from diverting the waters of the Arkansas River. The Court noted that Kansas had not previously acted to redress the grievances it was then asserting. Indeed, the State's request for injunctive relief came in response to a complaint filed by Colorado. 320 U.S. at 394. Though the Court observed that Kansas' inaction *"might* well preclude the award of the relief" Kansas sought, *id.* (emphasis added), it did not state that Kansas' delay in challenging Colorado's conduct constituted laches sufficient to bar Kansas' claim for relief. The Court's refusal to enjoin Colorado's uses was based upon the fact that Kansas had not sustained the heavy burden of proving that Kansas users were injured by the Colorado diversions. The State failed to establish clearly that diversions in Colorado had caused "serious damage" to "substantial interests" of both Kansas and its citizens.

Id. at 398, 400. Accordingly, the Court denied the request for relief. *Id.* at 400.

The facts in this case clearly do not support New Mexico's defense of laches. Colorado's appropriator, CF&I, was awarded conditional water rights in May, 1975. Before it could divert the water for application to a beneficial use, New Mexico's appropriators filed suit in federal court to enjoin the planned use. An injunction was issued in January, 1978, with respect to diversions in Colorado from the Vermejo River. Meanwhile, Colorado and New Mexico attempted to negotiate a mutually satisfactory division of the disputed waters. When New Mexico terminated the negotiations (Colo. Ex. 53), Colorado commenced this proceeding in November, 1978. Thus, unlike the Gardena Farms District in *Washington v. Oregon,* both Colorado and its appropriator acted promptly to protect their water rights when those rights were challenged.

New Mexico has also asserted that Colorado failed "to display some sovereign interest" in the Vermejo River (N.M. Br., p. 44). It would characterize this alleged inaction as laches sufficient to bar Colorado from diverting water in the case at bar. From this contention, it is clear that New Mexico does not understand that a state has an inherent interest in the natural resources within its boundaries. *See Georgia v. Tennessee Copper Co.,* 206 U.S. 230, 237 (1907); *Stockman v. Leddy,* 55 Colo. 24, 28, 129 P. 220, 222 (1912). The right to a fair share of those resources is vested and, under normal circumstances, is indefeasible. New Mexico would apparently require a state to take affirmative acts to preserve its rights even when those rights have not been threatened.

When appropriate, Colorado has "displayed" its interest in the Vermejo River. It granted conditional water rights to CF&I; it attempted to negotiate with New Mexico (Colo. Ex. 53); and, finally, it brought this equit-

able apportionment action to obtain a judicial confirmation of its "sovereign interest" in the Vermejo River.

New Mexico's laches argument has no merit. It is simply one more desperate ploy New Mexico would use to apply the appropriation doctrine across state lines, obtain all the water in the Vermejo River and prevent this Court from considering the equities of the case. By invoking the defense of laches, New Mexico has again demonstrated its blind refusal to honor the "reciprocal rights and obligations" imposed upon those states whose boundaries are crossed by the same stream. *Colorado v. Kansas,* 320 U.S. 383, 385 (1943).

V. THE REPORT OF THE SPECIAL MASTER EQUITABLY APPORTIONS THE WATER FROM THE VERMEJO RIVER

The recommendations of the Special Master fairly and equitably apportion the interstate waters of the Vermejo River, giving proper deference to precedents on equitable apportionment and properly weighing all of the relevant factors in this case.

A. Over one-half of the water supply for the Vermejo River system originates in Colorado.

One of the most basic considerations of the case, to which great attention was given at the trial, is that Colorado contributes over one-half of the water in the Vermejo River. For the period of record, 1916-79, an average of 12,919 acre feet of water was available annually at the Dawson gauge (Colo. Ex. 5, Tbl. 2). Based upon Colorado's actual measurements of the flow of the Vermejo River system in Colorado, the Special Master concluded that Colorado's average annual contribution to the Vermejo River system was roughly 8,400 acre feet (Report, p. 3; Tr. 2530, 2531; Colo. Ex. 5, p. 2, Tbl. 4). As the Special Master notes, the facts that Colorado did not include in its estimate the contribution from Colorado of

the North Fork of the Vermejo, and that Colorado's stream gauges measured on the low side, "would appear to compel the conclusion that the estimate of 8,400 acre feet for the Colorado production was somewhat low." (Report, p. 3). New Mexico's Brief disputes none of these facts.

The recorded flow at the Dawson gauge does not, of course, reflect water in the Vermejo River which has been diverted from the river upstream, by the Vermejo Park Corporation, by Kaiser Steel Corporation, or by the proliferating water detention dams, fishponds and stockwater ponds which are not subject to administration in New Mexico (Colo. Exs. 37, 38, 40, 43, 44, 45 and 48). When added to the Dawson gauge flow, these depletions show that Colorado's diversion of 4,000 acre feet annually is approximately one-fourth of the system's total flow.

B. A critical water shortage exists in the area of Colorado where Colorado's apportionment would be used.

Ignored by the New Mexico Brief is another important equity in this case: Colorado would use its share of water to sustain an existing economy beset by chronic water shortages (Colo. Exs. 13 and 15). Implicit in the Special Master's finding that "the injury to New Mexico, if any, will be more than offset by the benefit to Colorado" (Report, p. 23) is the extreme water shortage in Colorado and the benefit which the water will bring to Colorado.

Colorado's State Engineer, Dr. Jeris Danielson, testified at length regarding the severe water shortage in the Purgatoire River Valley. Demand, to satisfy decreed rights on the Purgatoire below Trinidad, exceeds the supply of available water 99.5% of the time (Colo. Ex. 14-5; Tr. 534). In other words, certain water rights "go without water 99.5% of the time" (Tr. 535). Fifty percent of the

time there is less than 25 cubic feet per second available to meet the 788 c.f.s. demand (Tr. 536; Colo. Exs. 14-5, 14-6).

Officials from the Trinidad region underscored Dr. Danielson's appraisal. The Purgatoire River Water Conservancy District suffers a chronic water shortage (Tr. 539-40). It can well use any Vermejo water, and would willingly participate in any joint development of that water with CF&I or other local entities (Tr. 641).

CF&I's need for additional water to maintain its current operations in the Purgatoire Valley emphasizes the water scarcity in Colorado (Colo. Exs. 13 and 15). Its decrees, dating to 1866, cannot satisfy the demand (Colo. Ex. 13, p. 8).

Contrasted to the noteworthy inefficient uses of Vermejo water in New Mexico, Colorado's use of its portion of that water would be both comprehensive and considered. Colorado Exhibit 13, "Ricardo Creek Project Water Uses and Needs," explains the numerous uses CF&I contemplates. Mining, timbering, agriculture and power generation present immediate needs and uses in this area of Colorado (Colo. Ex. 13, pp. 5, 10, 12-13, 17 and 19).

All of the Colorado witnesses in regard to the usage of water testified that there would be cooperation among themselves in the Purgatoire River area to put this water to its most beneficial use. CF&I testified that it would cooperate with the City of Trinidad, the Purgatoire River Water Conservancy District and the County of Las Animas in this regard. Those entities, through their spokesmen, testified that if for some unforeseen reason CF&I would not or could not completely develop the Vermejo River water usage, they would undertake such development to help satisfy the urgent needs of the area (Tr. 641, 664, 674). Colorado recognizes that as time progresses, the existing water rights of CF&I could be used

by others through joint arrangements, through sale or even as the result of condemnation by a public entity (Tr. 749). CF&I usage would, of course, involve return flows that would augment existing supplies of these local entities.

The Trinidad area of Colorado has been singled out as one justifying particular attention in regard to synthetic fuel development. That city is one of six cities in the country being considered for a pilot plant having to do with the production of methane gas (Colo. Ex. 15). For that reason, among others, the State of Colorado is vigorously pursuing its right to water in this case. Such a project would require an infusion of water to this water-scarce area. New jobs and new activities will be created. At the same time the existing jobs and existing economies will be protected (Colo. Ex. 15).

The Special Master properly considered how Colorado would beneficially use its water allocation. Weighing the relative benefits and detriments to the respective states of an apportionment is a crucial aspect of any case of this nature. As this Court held in *New Jersey v. New York* and *Connecticut v. Massachusetts,* an allocation of water for new uses to sustain or aid in the growth of a region is proper in an equitable apportionment proceeding, especially where such an allocation will not materially injure downstream users. *See* section V.C., *infra.*

C. Adverse impacts on New Mexico from Colorado's diversion can be minimized, if not precluded, through proper administration and conservation efforts in New Mexico.

One of the most striking aspects of this case developed during discovery and trial. New Mexico had asserted from the beginning of this case that the Vermejo River had been fully appropriated in New Mexico for nearly 100

years (N.M. Br., p. 2). The actual facts, however, proved to be quite different. New Mexico, in its case on injury, has relied on technical decrees which bear no relation to actual beneficial use. In addition, New Mexico relied on uses on the Canadian River which would not be affected by diversions in Colorado. New Mexico had claimed that the annual flow was not divertible for irrigation use when, in fact, the largest and most junior Vermejo water user in New Mexico has a ditch with a capacity of 600 cubic feet per second and substantial storage capacity for all the water it diverts (Tr. 1298).

Assuming reasonable conservation procedures in New Mexico, the diversion in Colorado will not materially affect any New Mexico user. Colorado's evidence, in connection with the testimony of New Mexico's chief witness, proved that Colorado's water diversion would not impair in any way the rights of the Vermejo Park Corporation, the Kaiser Steel Corporation, or the Phelps-Dodge Corporation (Colo. Exs. 5, pp. 6-10, 67, 68; Tr. 1018, 1246, 1323, 1379, 2427). The Special Master adopted this conclusion (Report, p. 23). New Mexico's appropriator with the largest decreed rights can be insulated from any adverse effect from the Colorado diversion by instituting presently available conservation practices. The State of New Mexico can further insulate the District through reasonable administration of water rights in New Mexico.

At trial, the evidence showed among other things that the only water user which could potentially be injured by diversions in Colorado was the Vermejo Conservancy District (Report, p. 23; Tr. 1323, 1381; Colo. Exs. 67, 68). It was demonstrated that the District's use of water on a project-wide basis is highly inefficient (Colo. Ex. 71), partially because the majority of the District farmers engage in agriculture on a part-time basis (Tr. 861-862; Colo. Exs. 17, 19, 26); that the District could offset virtually all of the effects of diversions in Colorado by

installing a closed domestic and stockwatering system (N.M. Ex. E-3; Colo. Exs. 69 and 70); that the District has another source of water, the Chico Rico, which it has not attempted to use fully (Colo. Ex. 29); that the District and the State of New Mexico could further limit any injury by insisting on strict administration of senior rights upstream in New Mexico and by insisting that New Mexico's officials carry out their statutory duties to declare that rights upstream, or portions thereof, have been forfeited or abandoned; that the District could be further protected if New Mexico would regulate the proliferation of undecreed, unadministered junior water detention structures, stockwater ponds and fishponds (Colo. Exs. 37, 38, 40, 43, 44, 45 and 48); not to mention other conservation measures of a very significant nature which can be taken, such as reservoir consolidation (Tr. 863). In short, Colorado showed that New Mexico had failed in its basic obligation regarding an interstate stream, "a duty to exercise her right reasonably and in a manner calculated to conserve the common supply." *Wyoming v. Colorado,* 259 U.S. at 484.

1. Conservation efforts available to the District.

The evidence proves that any adverse effect in New Mexico from Colorado's diversions could be offset by constructing facilities within the Vermejo Conservancy District to deliver stockwater by a closed system rather than the open system now in use. Colorado Exhibits 69 and 70, which were derived from New Mexico's own figures, demonstrate this fact, and it was established by one of New Mexico's exhibits, which it pointedly fails to call to the Court's attention in its Exceptions and Brief: New Mexico Exhibit E-3, the Dennis Engineering Report. The basic figures are simple. The District now uses over 2,000 acre feet of water per year for stockwatering purposes, primarily during the winter months (N.M. Ex. E-3, p. 18). With a closed system, this 2,000 acre feet could be reduced to much less than 100 acre feet. In other words,

approximately 2,000 acre feet which are lost through seepage or evaporation could be saved for irrigation (N.M. Ex. E-3, p. 18).

From the efficiency figures and from the figures as to losses in canals and evaporation from the reservoirs, a savings of 2,000 acre feet by the District would offset a diversion of approximately twice that amount in Colorado (Colo. Ex. 70). This computation is based upon New Mexico Exhibits D-2, F-21 Revised, F-29 and F-37, and upon the testimony and notes of Mr. Mutz. In other words, it would take a diversion of approximately 4,000 acre feet from the river to produce the 2,000 acre feet at the fields.

Appendix A to the New Mexico Brief confirms this essential fact, although it is incorrect in other respects as is pointed out below. In Appendix A, New Mexico assumes a Colorado diversion of slightly less than 4,000 acre feet annually. It also assumes that "Conservancy Stockwater Releases" will decrease from 2,000 acre feet to 35 acre feet annually, through installation of the closed system. The net loss to the supply of water available for irrigation of the District's crops is found in the column entitled "Conservancy Irrigation Water." Appendix A shows such net loss to be "-100 acre feet." Thus, by its own document, New Mexico has shown that conservation practices can virtually eliminate injury to the District.

Just as public money paid for the initiation of the Vermejo Conservancy District project and has been subsidizing it on an interest-free basis ever since (Tr. 1557), public money is available to finance the closed system for the delivery of stockwater (N.M. Ex. E-3, pp. 26-27). The minimal cost of the proposed closed domestic and stockwater system in relation to the benefits to be derived from the elimination of waste and the overall maximum beneficial use of water is demonstrated by the Dennis Engineering Report (N.M. Ex. E-3). The report, at pages 26 and 27, analyzes the overall cost in terms of debt repayment, operation and maintenance, etc. The report

assumes, as has been confirmed by the testimony of Mr. Knox, that a substantial part of the construction funds will be in the form of grants from state or federal agencies. The loans will be at a low rate of interest (N.M. Ex. E-3; Tr. 2271).

2. Conservation efforts available to the State of New Mexico.

Unlike the situation in Colorado, the evidence in this case reveals that administration by state officials of the waters of the Vermejo River and the Chico Rico River is virtually nonexistent. New Mexico witnesses testified again and again that they do not involve themselves in administration unless they receive a complaint (Tr. 1063, 2423-2426). There is no supervision of the decrees that pertain to the Vermejo and the Chico Rico (Tr. 2434).

There is no effort on the part of administrative officials to determine whether the proper amount of water is being used under New Mexico's decrees, and private users are not able to do this (Tr. 1863, 1864, 1881, 1967-69). Mr. Compton, the New Mexico water administration official, testified to this (Tr. 987, 1071, 1098-1101). Mr. Reynolds, the State Engineer, confirmed that this was the case (Tr. 2434). New Mexico's Exhibit A-130 shows usage by Phelps-Dodge, during the period of a seepage run from mid-September to mid-October, of all of the water which would be properly allocable to it on an annual basis (300 acre feet). Mr. Davis, representing the Phelps-Dodge lessee (Tr. 2169), testified that there was no measurement of the Phelps-Dodge diversions on a regular basis and that the Springer Cattle Company "took all it could get" (Tr. 2168).

Mr. Reynolds testified that there was no effort to deal with forfeitures and abandonment until and unless a complaint was received, that it was the policy of the State Engineer's office *not* to declare forfeitures (Tr. 2422, 2423, 2426). Even in the face of substantial evidence that the Messick rights, now owned in part by Kaiser Steel

Corporation, had not been used for over 13 years, no abandonment or forfeiture proceeding was commenced. Mr. Compton (Tr. 1088) testified as to this as did Mr. Weimer (Tr. 1589, 1590).

By contrast, Colorado's administration of its rivers is intended to promote beneficial use, eliminate waste, and conserve the supply of water. Dr. Danielson, the Colorado State Engineer (Tr. 516, 517, 518), testified as to the activity of the water commissioners in Colorado and the extent to which they measure water being taken by particular water users and determine proper usage. In the Arkansas Valley Water Division (Division 2), "The Commissioner has daily records, at least during the irrigation season." (Tr. 516) Dr. Danielson then described the administrative system in detail (Tr. 517, 518, 522, 523). He also testified as to Colorado's abandonment procedure, wherein recently some 650 water rights in the Arkansas River Basin were listed as presumptively abandoned, and some 35 on the Purgatoire River alone.

Water administration is as important to the integrity of a water right as is the granting of the right. C.R.S. 1973, §§ 37-92-501, 502; *Wadsworth v. Kuiper,* 193 Colo. 95, 562 P.2d 1114 (1977).

Over and over again the Bureau documents stress the manner in which uncontrolled multiplication of water detention dams, fishponds and stockwater ponds deprive the District of its full share of water (Colo. Exs. 37, 38, 40, 43, 44, 45 and 48). These unrestricted diversions seriously deplete the Vermejo River, as noted in a letter dated April 24, 1975, from Bureau of Reclamation Commissioner Stamm to New Mexico Senator Joseph M. Montoya:

> The [Vermejo Conservancy D] istrict officials feel that the numerous water detention, stockwater, and fish pond structures, which have been constructed during the last 20 years or subsequent

> to the water supply studies associated with the authorization of the [Vermejo] project, are the primary causes of the water shortage.

Colo. Ex. 37, p. 1.

As can be seen in light of the District's own situation, where the stockwater ponds it uses cause the loss of over 2,000 acre feet of water to deliver the needed 35 acre feet, the depletion of the river is substantial (N.M. Ex. E-3, p. 18).

This unregulated depletion of the natural stream flow, especially when it interferes with beneficial uses of water, should not be tolerated. If it so desired, New Mexico, by regulation or statute, could control these structures, prevent the waste which they necessarily occasion, and thereby provide the District with more water. In its Brief in *Arizona v. California,* 373 U.S. 546, New Mexico stressed that "each of the States [has] a duty to exercise her right reasonably and in a manner calculated to conserve the common supply." (N.M. Br. at p. 19, quoting *Wyoming v. Colorado,* 259 U.S. at 484.) Colorado asks that New Mexico act accordingly. By adopting these conservation practices, practices which are easily within reach, Colorado and New Mexico can share the benefits of the river, with little or no injury to existing uses.

D. It would be inequitable, and contrary to precedent, to deny Colorado water in order to permit New Mexico to continue wasteful practices.

A primary argument advanced by New Mexico is that water has never been awarded for "future developments . . . at the expense of an existing economy." (N.M. Br., p. i.) Our discussion in section IV.B. of this brief shows this is not the case. *New Jersey v. New York; Connecticut v. Massachusetts.* Our discussion in section V.C. above

demonstrates that the evidence shows adverse effects on the "existing economy" in New Mexico can be avoided through reasonable conservation practices.

New Mexico has greatly exaggerated the economic realities of the District. To the extent New Mexico relies on paper decrees and acreage in the District that has never been irrigated, it attempts to preserve water to protect future uses at best. Because of the history of the District, it is apparent that those future uses are unlikely to develop. With regard to the District, Colorado asserts that the District and the other New Mexico users have a duty to prevent waste. "Equity abhors waste and delights to restrain it in a proper case." *Finney Co. Water Users Ass'n v. Graham Ditch Co.*, 1 F.2d 650, 652 (D. Colo. 1924). The evidence showed that one of the main reasons for the inefficient use of water in the District was the fact that so few of the District members depend upon agriculture for their livelihood, hence little time is invested in sound water management practices.

Having heard the evidence, the Special Master rendered the following summary of the District:

> The Vermejo Conservancy District is the largest user of Vermejo water in New Mexico. The Vermejo is not, however, the only source of water for the District. Approximately 1/3 of the District's water supply comes from the Chico-Rico system which also originates in Colorado.
>
> In the early 1950's, the District was part of a large reclamation project. Although doubt about the effectiveness of the project was expressed from the start, the project was still completed. The projected impact and effect of the project have never been realized. The passage of time has confirmed the fact that the project should never have been built. The District has not made any pay-

> ments for the project for many years. Unfortunately, the project is a failure in spite of the tremendous outpouring of money, effort and time. At no time in the history of the project has the full amount of acreage to be irrigated under the project been irrigated.
>
> . . . .
>
> Most of the farmers in the area are employed in other jobs in addition to maintaining their farms. The jobs held by these farmers are mainly full-time jobs, although some do hold part-time jobs.

Report, pp. 7, 8.

This conclusion is important for several reasons. It undercuts New Mexico's argument that the people living within the District are an existing agricultural economy dependent upon irrigation and agriculture for a livelihood. It also supports Colorado's position that the District has an extremely wasteful system of water distribution, and that it would be inequitable to force Colorado to forego its rightful share of water to subsidize that use.

Nowhere is the situation of the Vermejo Conservancy District better described than in the various Bureau of Reclamation documents and other public records which are among the exhibits in this case. We start with the fact that the predecessor of the District, the Maxwell Irrigation Company, had gone bankrupt (Colo. Ex. 34). Congress, after an initial veto, passed the enabling legislation for the present reclamation project. In New Mexico Exhibit C-2, the "Plan for Rehabilitation for the Vermejo Project, Project Planning Report," is a letter from President Truman in which he described the situation as "a rescue project." Thereafter, the project continuously failed to make any appreciable payments on the over

$2,000,000 indebtedness (Colo. Ex. 48). There is no obligation to pay interest (Tr. 1557).

Under date of September, 1962, a report was written regarding the current economic conditions of the project in connection with a request for the extension of the development period (Colo. Ex. 36). This report said that "there has been little improvement over what it [the condition] was several years ago." It said that an analysis of the 1961 ownership "shows a total of 86 owners" with over one-half owning 80 acres or less, with the average ownership being 86 acres.

The report said that nearly 1,000 acres of the project lands "have not been developed and irrigated since the project was rehabilitated." It stated that: "There are relatively few farm homes and farmsteads on the project. Some of the farm operators live in the towns of Maxwell or Springer and others live in Raton. There are many absentee owners who rent their property to the few resident operators." Mr. Weimer, the Regional Director of the Bureau of Reclamation, testifying at the trial stated that the conditions as reported in this report of 1962 are very much the same today (Colo. Ex. 36; Tr. 1569-70).

Colorado Exhibit 38 is a memorandum from the Acting Commissioner of Reclamation dated June 3, 1976, regarding "a bill for the relief of the Vermejo Conservancy District." In that memorandum, he refers to the water detention structures as the primary cause of the water shortages as well as the condition of the "diversion dams and supply canals which often become clogged with debris and silt." He says that because of this, "much of the available runoff, which is normally available to the District, cannot be diverted." He mentions that "the Chicorico Creek, which derives its water largely from rainfall and high runoff, has produced the only major supply of water for the project." That memorandum concludes that "there is no practical solution to the District's

repayment problem and, therefore, the entire remaining construction obligation amounting to $2,065,099 as of August, 1975 should be cancelled." This fact was confirmed by Mr. Weimer in a March 17, 1978 memorandum, where he recognized that the repayment obligation, which at that time had increased to $2,107,923, "will have to be written off." (Colo. Ex. 44).

Finally, in Colorado Exhibit 46, there is a letter dated September 26, 1978 from the Acting Assistant Secretary of the Department of the Interior to Senator Henry M. Jackson as Chairman of the Committee on Energy and Natural Resources. In that letter appears the following statement:

> The sad story of the Vermejo Project is a good example of the need for an adequate understanding of the economic and environmental ramifications of a reclamation project *before* it is authorized and funded. Based on our current understanding of the hydrology and soil characteristics of the area and the potential of the area for economic production of crops, this project probably should not have been authorized. The fact that we find ourselves faced with a decision to defer and possibly write-off costs owed the United States because a project has not lived up to its expectations is evidence of the need for a more sound approach to evaluating and authorizing projects.

Bureau of Reclamation Regional Director Weimer went even further. When asked if he agreed with the statement quoted immediately above from Colorado Exhibit 46, he answered:

> Based on current understanding of hydrology and based on current policy within the Department of Interior, I would make the statement even

> stronger than that. That if the project was being studied today, that it would not have been built.

Tr. 1586.

As if to support these admissions that the Vermejo project is not a carefully managed farming operation, the realities of the people living within the District demonstrate that few of these people depend upon farming for their livelihood. The "Vermejo Project Report" dated February, 1949 (Colo. Ex. 17, p. 4), indicates that in 1949 some 60% of the area farm operators depended on off-farm income. The ten-year period preceding 1949 appears to have been one of the wettest periods of record (Colo. Ex. 6, p. 8). This part-time situation was echoed in 1952 in "Definite Plan Report" for the Vermejo Project (Colo. Ex. 19, p. 18).

By 1962, following rehabilitation of the District's diversion and storage works, the reliance upon farming had, if anything, decreased. In a report issued by the Bureau of Reclamation dated September, 1962 (Colo. Ex. 36, pp. 6-7), the following statements appear:

> At the time the project rehabilitation was completed in 1955, farm buildings and improvements were in a bad state of repair and most of them had little salvage value. Many of the farm operators lived in the town of Maxwell and had few, if any, improvements on the farm. During the last 3 to 4 years, a few of the more enterprising farmers have built some nice homes on their farms; but, in general, there has been little improvement over what it was several years ago.

As indicated above, Mr. Weimer testified that the situation described above continues today (Tr. 1569, 1570). According to the 1962 report, few farmers made any improvement to their farms even after the $2,000,000

redevelopment project. The average farm size in 1962 was only 86 acres, hardly a viable farming unit (Colo. Ex. 36, p. 8). Some of the "farmers" lived as far away as Raton, a distance of over 30 miles (Colo. Ex. 36, p. 13). Because they live at such a distance from their farms in the District, their use of the water that is available is bound to be inefficient.

This inefficient manner of the District's water use is well-established in the record. Only approximately 30% of the water available to the District is applied to a beneficial use (Colo. Ex. 71). While an annual average of 14,535 acre feet of water was available to the District from all sources, only an average of 3,575 acre feet was actually applied to a beneficial use (Colo. Exs. 70 and 71). The poor condition of the District's diversion works and structures prevents it from diverting all that it is entitled to (Colo. Ex. 37). The State of New Mexico has noted and verified the "excessive losses in the canals and laterals when making farm deliveries" (Colo. Ex. 41, p. 3). An official from the Maxwell Wildlife Refuge has termed the management practices by the Vermejo Conservancy District to be "questionable" (Colo. Ex. 42, last page). It is respectfully submitted that an operation committed to full-time farming would simply not allow such practices to continue.

By 1975, the number of District people depending upon outside income to support themselves increased. This factor suggests why the District's use is so inefficient, and confirms the increasingly small number of water users primarily dependent upon irrigation. In a letter from Vermejo Conservancy District President Durward Sims to the Honorable Joseph M. Montoya, dated February 25, 1975, wherein relief from the loan repayment requirements was sought, the following statement appeared:

> We believe, that without exception, every farmer in this area is supported to some degree from an off-farm job or income.

Mr. Knox, who apparently has the largest farm in the District, has been employed for years at the Springer Boys School in a 40-hour per week job (Tr. 1889). Mr. Spencer has full-time responsibilities as the District Manager (Tr. 1932-35). The list continues. Typical of the farming situation in this area are the cases of Mr. Pompeo and Mr. Ray Porter, both of whom have full-time jobs elsewhere; Pompeo as a school superintendent (Tr. 2194, 2204), and Porter as an employee of a cattle company (Tr. 2186, 2189). These are two of the users taking from the District diversion canal above the reservoirs.

Possibly the most current information with regard to the part-time farming operation is New Mexico's own Exhibit C-9, a 1979 crop production report. It states that as of that time there were 35 part-time farmers and only 19 full-time farmers.

The law of prior appropriation itself imposes a duty to use water in a reasonably efficient manner as do the Colorado Statutes. C.R.S. 1973, § 37-92-502. For example, the Colorado Supreme Court, in the case of *Town of Sterling v. The Pawnee Ditch Extension Company,* 42 Colo. 421, 94 P.339 (1908), made the following statement with regard to the economical use of water:

> The law contemplates an economical use of water. It will not countenance the diversion of a volume from a stream which, by reason of the loss resulting from the appliances used to convey it, is many times that which is actually consumed at the point where it is utilized. Water is too valuable to be wasted, either through an extravagant application for the purpose appropriated, or by waste

> resulting from the means employed to carry it to the place of use, which can be avoided by the exercise of a reasonable degree of care to prevent unnecessary loss, or loss of a volume which is greatly disproportionate to that actually consumed. [Citation omitted]. An appropriator, therefore, must exercise a reasonable degree of care to prevent waste through seepage and evaporation, in conveying it to the point where it is used. In cases where this question arises, the purpose for which the appropriation is made and the proportion of the diversion actually applied to a beneficial use, as compared with the volume diverted, would doubtless be important matters to consider.

42 Colo. at 430, 94 P. at 341-42.

The above quotation is remarkably pertinent insofar as the Vermejo Conservancy District is concerned, with its loss of approximately two-thirds of the water between the point of diversion from the river and the farm usage. It would be eminently unfair and inequitable to penalize one state with regard to its rights to water in an interstate stream because of the lax administration or the wasteful uses in another state. In Colorado, the owner of a water right is entitled to only such water as he puts to "beneficial use." *The New Mercer Ditch Co. v. Armstrong,* 21 Colo. 357, 40 P. 989 (1895). This term is defined in Colorado statutes and is referred to in numerous Colorado cases. *See, e.g., Archuleta v. Ditch Company,* 118 Colo. 43, 192 P.2d 891 (1948).

Colorado does not believe these people will be deprived of their farming by this action. Instituting the described conservation practices will preserve that farming and will relieve Colorado of the burden of subsidizing such wasteful uses.

E. Specific points raised by New Mexico.

New Mexico argues that the Special Master "did not understand or properly analyze much of the technical evidence" (N.M. Br., p. 2). As support for this statement, New Mexico says the Special Master found that a "*major irrigation district* in New Mexico 'is inefficient, resulting in a water loss which can run as high as 33%.'" (N.M. Exceptions, p. 2, emphasis added). The Special Master actually stated, "The *system of canals* used to transport the water to the fields is inefficient, resulting in a water loss which can run as high as 33%." (Report, p. 8, emphasis added). What the Special Master actually said, and what New Mexico claims he said, are different. New Mexico changed the subject of the Special Master's sentence.

New Mexico argues this shows the Special Master "found that [the District] has an unrealistically ideal efficiency of 67%." (N.M. Br., p. 3) Nowhere does the Special Master contend that the District has a water use efficiency of 67%. The Special Master's statement concerned only the District's "*system of canals* used to transport the water to the fields" (Report, p. 8, emphasis added), and not the entire system, which includes reservoirs where over 3,000 acre feet are lost through evaporation, and a diversion structure from the river to the reservoirs where 10% is lost due to seepage (Colo. Ex. 70; Tr. 1271). The canals carry water from the District reservoirs to the farm headgates. The Special Master correctly notes that the District's efficiency in getting water from the reservoirs to the farm headgate is roughly 33%. New Mexico's primary witness, Mr. Mutz, indicated these canal losses alone were between 25% and 50% for the District (Tr. 1315). Mr. Helton, Colorado's expert witness on the hydrology of the Vermejo River system, estimated such canal and lateral losses at about 37.5% of the total amount of water diverted by the District (Colo. Exs. 69 and 70; Tr. 2571). The Special Master's figure of 33% loss from the District's "system of canals" is

supported by the evidence. Other losses, bringing the total loss to some 67% of the available water, include losses between the diversion works and the reservoirs (Tr. 1279), losses from reservoir evaporation (Colo. Exs. 68 and 70), and losses from the Chico Rico diversions.

The Special Master's Report shows an appreciation of the evidence. The "system of canals" does have a water loss which can run as high as 33%. It is not the Special Master's "evaluation" of the evidence that is "flawed" as alleged by New Mexico on page 3 of its Exceptions; it is New Mexico's evaluation of the Report that is flawed.

At item 3 of its Exceptions, New Mexico criticizes the Special Master because, it says, he "ignored 41,000 acres of irrigated lands" below the point where the Vermejo connects with the Canadian River. The Special Master did not "ignore" that acreage. Rather, New Mexico failed to prove its contention that Vermejo water reached downstream users, much less that those users applied any such water to a beneficial use. The District has the right and ability to divert the entire flow of the Vermejo River (N.M. Ex. F-29; Colo. Ex. 19). Therefore, if users downstream from the District do receive Vermejo water, it is as a result of the District's negligence in exercising its rights. The Special Master rightly concluded, "There was no competent evidence of any dependency on Vermejo water by users downstream from the Vermejo Conservancy District." (Report, p. 4; N.M. Ex. F-29)

Supporting the Special Master's finding is the fact that the District's diversion structure is capable of diverting the entire flow of the Vermejo River just below the Dawson gauge some 99.9% of the time during the period of record (N.M. Exs. F-18, D-1, p. 23). New Mexico's own Exhibit F-29 shows that in only six years out of thirty were there any spills of water at the Vermejo Conservancy District diversion works. *See also* Colo. Ex. 66. The evidence further shows (Tr. 1112, 1327; Knox Dep.,

pp. 34, 35, 40, 41) that there are no calls for Vermejo water below the Vermejo Conservancy District headgate. The Bureau of Reclamation's Definite Plan Report for the Vermejo Project states, "There is no requirement for by-passing water for downstream uses; therefore it is all potentially divertible by the project." (Colo. Ex. 19, p. 29)

In this same item 3, the Special Master is criticized for adopting the "historic use" figures with respect to the water users on the Vermejo. New Mexico's Exhibit F-37 shows that for the ten years of the 1970's, i.e., 1970 through 1979, the Vermejo Conservancy District irrigated an average of 4,147.4 acres per year, and that for the ten years of the 1960's, i.e., 1960 through 1969, the District irrigated an average of 4,573.8 acres per year. Although the irrigated acreage figure is somewhat less for the 1970's than for the 1960's the difference hardly indicates that the 1970's represented a "severe drought" in comparison to other periods.

This ability of the Vermejo Conservancy District in the 1970's to irrigate an average of 4,147.4 acres per year is perhaps the most conclusive refutation of the contention by New Mexico that there wasn't enough water for the senior priorities of Phelps-Dodge and Vermejo Park Corporation to irrigate more than 150 acres and 250 acres respectively during the 1970's. They could have taken water which otherwise went to the Vermejo Conservancy District to accomplish this additional irrigation if they had really wanted to accomplish it. Thus, whether the 1970's were a "severe drought" or not under New Mexico's categories, there was not such a drought that precluded the first and second priorities on the river from irrigating more acreage than they did. Of course, New Mexico's own witnesses have acknowledged that a drought was not the reason that these two entities did not irrigate more (Tr. 2174-2176, 2427).

New Mexico cannot reasonably argue that the ability of the users upstream from the District was impaired by water availability during the 1970's. The Vermejo Park Corporation, which acquired the property in 1973 and operates it primarily as a hunting and recreational ranch, with second priority on the river, never irrigated more than 250 acres (Tr. 2068, 2097). This was by choice, not by result of water limitations. Mr. Reynolds, New Mexico's State Engineer, indicated that Vermejo Park could have irrigated more from its available water supply (Tr. 2427). Colorado Exhibit 68, based upon New Mexico's figures, proved that Vermejo Park could have irrigated twice the amount of acreage it irrigated. In 1979, for example, when over 7,600 acre feet of water passed the Vermejo Park diversion points between April and October, Vermejo Park diverted only 506 acre feet (Colo. Ex. 68). Vermejo Park experienced no "drought," only an intent not to use its water rights.

Similarly, the evidence does not support New Mexico's claim that the Phelps-Dodge "historic use" was restricted by water availability in the 1970's. Phelps-Dodge claims it irrigated but 150 acres annually during that period (Colo. Ex. 6, pp. 6-7), although the general manager of the District testified that he did not think Phelps-Dodge or its lessee irrigated more than 80 acres (Knox Dep., p. 54; Colo. Ex. 6, pp. 6-7). Bearing in mind that Phelps-Dodge is only entitled to 2 acre feet per acre, i.e., 300 acre feet of water annually for the 150 acres, it is difficult for anyone to contend that there was not enough water in the Vermejo River to provide more than 300 acre feet annually. At least ten times that much, and more often twenty or thirty times that much, went by the Dawson gauge annually. Colorado's Exhibit 67, prepared specifically to demonstrate water availability to that user, shows the fallacy in the New Mexico argument. Furthermore, it was the Phelps-Dodge decision not to repair its diversion works which has limited its irrigated acreage, and not any shortage of water (Tr. 2174; N.M. Br., p. 27).

The "severe drought" during the 1970's of which New Mexico complains evidences its disregard for the facts in the record. That evidence shows that New Mexico has not fully used its decreed rights, even when water has been available. Referring to decreed rights, as opposed to actual diversions, is an attempt to inflate the extent of New Mexico's use of the Vermejo River and to provide water for future rather than existing uses.

New Mexico asserts in Exception No. 4 that the Special Master, following "a line of reasoning that has been expressly rejected by the Court," concluded that there would be no injury to New Mexico if Colorado was awarded "essentially all of the dependable flow of the river," suggesting that 4,000 acre feet is all of the dependable flow. There are no citations to the record supporting these statements.

The question of the just measure of available water for purposes of a decree in equitable apportionment has commanded considerable discussion in previous cases. *Nebraska v. Wyoming,* 325 U.S. at 620-622; *Wyoming v. Colorado,* 259 U.S. at 471-486. Each case was decided upon consideration of the evidence. While New Mexico raises the question of "dependable flow," it never answers that inquiry, or even suggests what might be a proper basis for resolving the question. The Special Master did, in fact, address that issue. He considered the annual flows for the entire period of record at the Dawson gauge, for the years 1955-1979 and 1950-1978, as well as the actual measurements of Colorado's contribution to the Vermejo System and New Mexico's altitude runoff calculation of that contribution (Report, pp. 2-3, 23). Based upon all of the evidence before him, he found that "sufficient water is available for Vermejo Park Corporation, Kaiser Steel, and Phelps-Dodge." (Report, p. 23)

That conclusion is supported by Colorado Exhibits 67 and 68, which take into account the effects of a Colorado

diversion upon Vermejo Park and Phelps-Dodge, and which show that even in the lowest years a great deal more water would be available than would be required by those entities. Kaiser Steel receives approximately 25% of its water from a tributary in York Canyon (Tr. 1744); making it a source which would in no way be affected by Colorado's diversion. The remainder of its requirement, or less than 300 acre feet annually, would obviously be available based upon measurements at the Dawson gauge in even the lowest of years, bearing in mind that 400 acre feet of Kaiser's water are first priority under its lease from Phelps-Dodge. (Colo. Ex. 5, Tbl. 2; Colo. Ex. 6, Tbl. 2). This data, and the Special Master's conclusion that the three corporations would be unaffected by Colorado's diversions, is further supported by Mr. Mutz who stated that "the effect of [the Colorado] diversion would be essentially felt in its entirety on the water users of the Vermejo Conservancy District." (Tr. 1323) Contrary to New Mexico's statements, there would be a dependable flow for those direct flow users.

"Dependable flow" must be viewed in a different context as regards the District. The diversion works and the reservoirs maintained by the District permit it to store water, thereby allowing the District to create its own dependable supply. This Court acknowledged the utility of such a storage system in *Wyoming v. Colorado,* saying:

> According to the general consensus of opinion among practical irrigators and experienced irrigation engineers, the lowest natural flow of the years is not the test [of dependable supply]. In practice they proceed on the view that within limits, financially and physically feasible, a fairly constant and dependable flow materially in excess of the lowest may generally be obtained by means of reservoirs adapted to conserving and

> equalizing the natural flow; and we regard this view as reasonable.

259 U.S. at 484.

The very purpose of the District's reservoirs is to provide a dependable flow from a somewhat erratic supply. Perhaps because of these reservoirs, New Mexico concedes in Appendix A of its Brief that Colorado's diversion will reduce available irrigation water from the Vermejo River to the District by a mere 100 acre feet annually, and will not affect the supply from the Chico Rico.

New Mexico grasps at straws in criticizing the Special Master's Report upon the basis of dependable flow. New Mexico presents no citation to show the Report fails to consider dependable or available flow. The basic facts of the case demonstrated that the corporations upstream from the District will always have an adequate supply of water. The individual users between the District's headgate and the reservoirs, all of whom have priorities senior to the District, will likewise have an adequate supply based on the fact that the annual flow at the Dawson gauge is approximately three times the amount of water which Colorado would divert and due to the accretions to the river below the Dawson, which accretions alone are sufficient to satisfy the individual users (Tr. 1405, 1406, 1463-65). The District, by effectively using its storage system, and by taking reasonably available conservation practices previously discussed, can continue at its present level and maintain a dependable supply of Vermejo River water. Additionally, the District's Chico Rico supply, some 30% of the total supply, will be enhanced by better reservoir practices.

In its Brief (pp. 4, 6 and 8), New Mexico refers to the case of *Kaiser Steel Corporation v. CF&I Steel Corporation,* No. 76-244 (D. N.M. 1976). This case is on appeal to

the Tenth Circuit, which has stayed proceedings during the pendency of this case. A brief description of that case is in order. It did involve a suit by the New Mexico water claimants against CF&I to enjoin the diversion of water by CF&I in Colorado. The plaintiffs moved for summary judgment on the basis of certain affidavits submitted with the motion and the injunction was granted by means of the summary judgment. There was no trial, contrasting dramatically with the sixteen full days of trial conducted by the Special Master. Judge H. Vearle Payne, the United States District Judge granting the injunction, in his letter of December 9, 1977, to counsel stated as follows:

> The Court is of the opinion that "the equitable apportionment of the waters" of the Vermejo River does not apply in this case. Neither Colorado nor New Mexico is a party to this action and no adjudication has been made between the states.

To bolster its argument that the doctrine of prior appropriation should govern the outcome of this case, New Mexico purports to show that both Colorado and New Mexico have the same water law (N.M. Br., p. 8). This, however, is not the case. In fact, one of the considerations before the Special Master was the fact that New Mexico's practices are different regarding non-use and abandonment, administration and waste. The fact that two states ostensibly follow the priority of appropriation doctrine by no means establishes that they have the same law or practice as to administration or as to the effectiveness of water rights themselves. For example, the State Engineer of the State of Colorado testified (Tr. 516, 517, 518) as to the daily surveillance of water diversions by water commissioners. By contrast, the Assistant Chief of the Water Rights Bureau of New Mexico, Mr. Compton, who is in charge of water administration under the State Engineer, testified (Tr. 1098-1101) that in New Mexico no check is made to determine

whether the proper amount is being diverted in relation to the acreage to be irrigated. Likewise, Dr. Danielson, the State Engineer of Colorado, testified (Tr. 563, 565) as to action taken by him with respect to the abandonment of water rights, thirty-five put on the abandonment list in the Purgatoire River Basin alone, whereas Mr. Reynolds, the New Mexico State Engineer (Tr. 2425) and Mr. Compton (Tr. 1086-89) testified that they have taken no action with respect to forfeiture or abandonment on the Vermejo. Dr. Danielson also testified that Colorado looks to the beneficial use of the water (Tr. 517), whereas Mr. Compton (Tr. 1078) testified that New Mexico looks to the decree. This practice in New Mexico permits rights such as the Messick rights to be transferred to Kaiser Steel, when there is ample evidence that those rights had not been used in many years (Colo. Ex. 49, pp. 4-6; Tr. 1975). To claim that Colorado and New Mexico apply the same water laws, for the purpose of advancing an erroneous argument that the doctrine of prior appropriation controls this case, compounds the flaw in New Mexico's theory of the case.

The New Mexico Brief is rife with predictions as to how the Special Master's apportionment will affect New Mexico users (N.M. Br., pp. 10, 18, 29). New Mexico goes so far as to say, "As recognized by the Master in this case, CF&I's proposed diversion will destroy the Vermejo Conservancy District in New Mexico." (N.M. Br., p. 18.) The Master nowhere makes such a statement. In fact, the Master said the opposite, concluding:

> It is the opinion of the Master that a trans-mountain diversion would not materially affect the appropriations granted by New Mexico for users downstream.

Report, p. 23.

New Mexico predicts the Colorado diversion will destroy not only the District, but also the United States' Maxwell Wildlife Refuge (N.M. Br., p. 29). As discussed above, the District can insulate itself from any injury through reasonable conservation measures (*see also* N.M. Br., App. A). John Brock, the Wildlife Refuge Manager, testified that Reservoirs 12 and 14, which are within the Refuge and leased from the District, "are fed from the Chicorica [sic] primarily." (Tr. 2046, 2051.) Colorado's diversion will not affect the Chico Rico. In short, New Mexico's predictions are not warranted by the facts presented before the Special Master.

New Mexico cites a portion of the Special Master Report in *Arizona v. California,* wherein it was stated:

> It would be unreasonable in the extreme to reserve water for future use in New Mexico when senior downstream appropriators remain unsatisfied.

N.M. Br., p. 21, quoting Master Report, *Arizona v. California,* Dec. 5, 1960, p. 332.

While this quote may have had relevance to the facts in *Arizona v. California,* the facts before the Court do not support its application here. As we explained above, the needs in Colorado are real, and the existing economy in the Purgatoire Valley will use any water. As the evidence showed, the effect of the diversions in Colorado could be offset by reasonable conservation measures (Report, p. 23).

On pages 34 and 35 of its Brief, there is a reference to New Mexico's Appendix A, which is an example of mixing apples and oranges and which is therefore incorrect in several respects. It is stated that this Appendix A was calculated on the basis of Colorado Exhibits 69 and 70. These two exhibits employ different premises, making their use as a combined exhibit

improper. Colorado Exhibit 69 was prepared to show the effect of a diversion in Colorado of 3,600 acre feet, the amount of water New Mexico said would be available at the Colorado diversion points. In that calculation for Exhibit 69, the *actual* conditions were represented and were based on the testimony and evidence in the record. That is, the depletions, the accretions and losses were the actual figures established by the record as being the current conditions. With respect to Exhibit 70, Colorado again used New Mexico's figure as to the amount of water produced by Colorado, which was significantly less than Colorado's figure, and then used New Mexico's claimed *decreed* rights, not the actual usage.

Aside from the *non sequitur* assumptions, Appendix A is internally inconsistent. For example, it shows that after a Colorado diversion of 3,600 acre feet, Kaiser Steel would receive nearly three times the amount of water that it now receives (240 acre feet after, as compared to 90 acre feet before). To the extent Appendix A claims that upstream New Mexico users would be injured by the Colorado diversion, it contradicts the testimony of New Mexico's primary witness, Mr. Mutz (Tr. 1323). The bottom line of the last column does show, however, that the Colorado diversion would, by New Mexico's own calculations, only take 100 acre feet from the District's irrigation supply.

New Mexico's use of Appendix B to its Brief, to which it refers at page 34, is misleading. Not only do the listed decreed rights not correspond to actual use (*see* section V.D.), but the right listed for the Vermejo Conservancy District is nearly twice the amount of acreage which the District may now irrigate. By letter dated January 2, 1953, the Secretary of the Interior reduced the amount of acreage irrigable by the District to 7,379 acres, contrasting with the decreed right of 14,621.55 acres (Colo. Ex. 33). Thus, nearly thirty years have passed since the District had a right to irrigate the amount of acreage listed in Appendix B.

New Mexico's economic report (N.M. Ex. 33), cited at page 37 of the Brief, contains an error similar to that present in much of New Mexico's argument: overstating the impact of Colorado's diversion on New Mexico. As its basic premise, the economic report assumed that Colorado would divert the *entire* flow of the Vermejo River (Tr. 2305, 2313-14, 2322). Because of the fact that Colorado would divert less than one-half of the water which it produces, and only approximately one-fourth of the Vermejo River virgin flow, the fundamental error in the study's basic premise is fatal to the Armageddon-like conclusions which follow.

New Mexico concludes its discussion under "Point II" with speculation that "the Master looked only to the expert testimony" as to Vermejo water supply (N.M. Br., p. 40). The portions of the record which are then cited were all evidence which was before the Special Master. Because the Special Master did not base his ruling upon certain portions of the record means only that other portions of the record were deemed more convincing. The Master was in the unique position to judge the credibility of the witnesses, as well as the weight to be given their testimony. His conclusions are amply supported by the record.

VI. CONCLUSION

New Mexico, although professing concern with the equities in this case, bases its efforts to prevail on attempts to preclude a full consideration of all factors presented to the Special Master, urging this Court to consider no factor other than priority of appropriation. New Mexico's contrived legal theory would result in denying much needed water for use in Colorado to subsidize inefficient and wasteful practices in New Mexico. Colorado believes the Special Master's conclusion was the correct one based on a consideration of all the equities in the case.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Robert F. Welborn, hereby certify that I am a member of the bar of this Court and counsel of record for the plaintiff and that on May 7, 1982, 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 Reply Brief, by first class mail, postage prepaid, to the following officials of the State of New Mexico:

The Honorable Bruce King
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I certify that on May 7, 1982, pursuant to Rule 28 of the Rules of the Supreme Court of the United States, I caused to be served by Federal Express the requisite number of copies of the foregoing Reply Brief on the following counsel of record:

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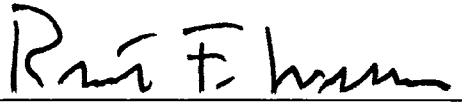
I certify that all parties required to be served have been served.



Robert F. Welborn
Special Assistant Attorney General