NO. 65 ORIGINAL

IN THE

Supreme Court of the United States

OCTOBER TERM, 1985

STATE OF TEXAS,

Complainant,

v.

STATE OF NEW MEXICO,

Defendant,

THE UNITED STATES OF AMERICA,

Intervenor.

CHARLES J. MEYERS, SPECIAL MASTER

REPORT

July , 1986

TABLE OF CONTENTS

I

INTRODUCTION

In its June 17, 1983 decision, *Texas v. New Mexico,* 462 U.S. 554, 574 (1983), the Supreme Court returned this case to the Special Master to answer "the crucial question that remains to be decided: '[H]as New Mexico fulfilled her obligations under Article III(a) of the Pecos River Compact?'" Pursuant to that mandate, the Honorable Jean S. Breitenstein, Special Master, filed with the Supreme Court a "Report and Recommendation" dated January 16, 1984. This Report was summarily approved on June 11, 1984 by the Supreme Court in *Texas v. New Mexico,* 467 U.S. 1238 (1984).[1] Subsequent to this affirmance, and pursuant to the Court's 1983 instructions, the Special Master has endeavored to resolve all of the remaining disputed issues, both of fact and law, between the parties.

In the Court's 1983 opinion, Justice Brennan admonished the parties to try to settle their differences in a spirit of cooperation:

> Time and again we have counseled States engaged in litigation with one another before this Court that their dispute "is one more likely to be wisely solved by cooperative study and by conference and mutual concession on the part of representatives of the States so vitally interested in it than by proceedings in any court however constituted."
>
> * * * *
>
> It is within this Court's power to determine whether New Mexico is in compliance with Art. III(a) of the Pecos River Compact, but it is difficult to believe that the bona fide differences in the two States' views of how much water Texas is entitled to receive justify the expense and time necessary to obtain a judicial resolution of this controversy.

---

[1] On July 2, 1984 the Supreme Court accepted the resignation of the Honorable Jean S. Breitenstein as Special Master in this action and appointed Charles J. Meyers as Special Master to replace him. 104 S. Ct. 3568 (1984).

> With that observation, we return this case to the Special Master for determination of the unresolved issues framed in his pretrial order, in a manner consistent with this opinion.

462 U.S. at 575-76 (citations omitted). The parties have honored Justice Brennan's request and have worked together in cooperation with the Special Master and his technical consultant to resolve the issues remaining in the case. I have consulted with the parties on at least seven occasions since my appointment in an effort to reach agreement on the disputed issues. One result of those meetings was an Order issued on July 8, 1985, adopting a "Stipulation On Disputed Technical Issues," which had been entered into by the parties on July 3, 1985. Subsequent to that Order, the parties continued to work with the Special Master, and his technical consultant, to reduce, as much as possible, the number of issues left to be resolved by adjudication.

Continuing in this spirit of cooperation, the parties, at the hearing on November 18, 1985, notified the Special Master that they had reached an agreement with regard to many of the disputed issues contained in the Pretrial Order of October 10, 1985.[2] Reporter's Transcript of Hearing, *Texas v. New Mexico,* No. 65, pp. 8-11 (November 18-19, 1985), modified at pp. 104-105 (December 3, 1985) (hereinafter Tr., page (date)).

As a result of the stipulations reached by the parties, and approved by the Special Master, only four disputed issues remain to be decided: (i) whether the amount of accumulated departure for the period 1950-61 allegedly found by the Commission at its November 9, 1962 meeting is binding on the parties; (ii) whether negative departures that resulted from the completion of the McMillan training dike should be chargeable to New Mexico as a depletion by man's activities; (iii) whether changes in the contribution to the river in the reach above Alamogordo Dam should be included in an accounting of New

[2] As a result of those stipulations, the following issues in the Pre-Trial Order of October 10, 1985 were resolved: (i) Disputed Issues of Fact II.a.1. and II.b.1., which presented the question of the proper loss equation for channel loss, Artesia to Dam Site 3 for the 1954-83 period; (ii) Disputed Issues of Fact II.a.2. and II.b.2., *viz.* the proper area-capacity relations to be used to compute evaporation losses in McMillan and Avalon Reservoirs for the 1950-83 period; (iii) Disputed Issues of Fact II.a.4.(c) and II.b.4.(c), the issue of whether there were any depletions above the state line gauge which were assignable to Texas and (iv) Disputed Issues of Fact II.a.4(c) and II.b.4.(c), The Malaga Bend Salinity Alleviation Project.

In addition, New Mexico withdrew its objection to Texas' inclusion of evaporation losses from Tansill Lake as a depletion between the Carlsbad canal flume and the Carlsbad gauge in computing flood inflows, which resolved Disputed Issues of Fact II.a.3 and II.b.3.; and Texas withdrew its proposed Disputed Issue of Fact II.a.4.(d), *viz.,* whether any depletions above the state line gauge were caused by the transfer of water rights downstream of Alamogordo Dam to areas above the dam.

Finally, the parties stipulated the amount of depletions caused by the McMillan training dike and the amount due to decreased irrigation above Alamogordo Dam, while reserving their legal contentions.

Mexico's obligation under the 1947 condition; and (iv) whether ground water pumping by Texas resulted in depletions of the river which should be credited to New Mexico's obligation.

These issues have been the subject of oral and written testimony and have been extensively briefed. On March 18, 1986 the Special Master issued a Draft Report which was the subject of oral argument on April 16.[3] Pursuant to the request of New Mexico at the April 16, 1985 Oral Argument, a further hearing was held on May 20-21, 1986 to consider the issue of the proper relief to be granted to Texas. Based on the foregoing, the following findings, conclusions and recommendations are embodied in this Report.

II

NEGATIVE DEPARTURES FROM NEW MEXICO'S DELIVERY OBLIGATION DURING THE PERIOD 1950-1961

Two issues are presented here: whether the Commission made a finding of fact as to the accumulated departures at state line from the 1947 condition for the period 1950-61, and if the Commission made such a finding, whether it is binding in this action. The Commission, at its November 9, 1962 meeting, explicitly adopted a report of the Engineering Advisory Committee as to the "accumulated departures" from the 1947 condition over the period 1950-61. Minutes of the Commission, November 9, 1962, Stip. Exh. 4(b) at pp. 256-257. The table set forth on those pages, labelled Exhibit #1, was adopted by unanimous vote of the Commission and states that the accumulated departures from the 1947 condition were found to be 53,300 acre-feet.

---

[3] In Arizona v. California, 373 U.S. 546 (1963), the Special Master, Simon H. Rifkind circulated a Draft Report to the parties and invited oral agreement on it. That precedent, which was thought useful, was followed here, also usefully.

Although there is no doubt that the Commission did make a finding that the negative departures from the 1947 condition equalled 53,300 acre-feet during the 1955-61 period, the question remains whether the parties are bound by the Commission's action. While admitting that the Commission did adopt Exhibit #1, as amended (Texas' Post-Trial Brief at 15-16), Texas argues that Article V(f) of the Compact makes any Commission finding of fact only *prima facie* evidence in this action. (Texas' Response to New Mexico's Legal Objections to Texas' Computed Departures for the 1950-61 Period, dated April 12, 1985.) Article V(f) states:

> Findings of fact made by the Commission shall not be conclusive in any court, or before any agency or tribunal, but shall constitute prima facie evidence of the facts found.

If there was nothing else on the record, the Special Master would have discretion, pursuant to Article V(f), to decide whether to follow the Commission's decision. However, it is clear that any question about this matter was resolved by the Supreme Court in *Texas v. New Mexico,* 462 U.S. 554 (1983), wherein the Court instructed the Special Master on this issue. Because of its importance, the pertinent passage is quoted in full:

> The crucial question that remains to be decided is the fourth: "[H]as New Mexico fulfilled her obligations under Article III(a) of the Pecos River Compact?" Pretrial Order 6. That question necessarily involves two subsidiary questions. First, under the proper definition of the "1947 condition," see supra, at 563, . . ., what is the difference between the quantity of water Texas could have expected to receive in each year and the quantity it actually received? *For the 1950-61 period, that difference has been determined by unanimous vote of the Commission;* for 1962 to the present, determining the extent of the shortfall will require adjudicating disputes between the States as to the specific issues raised by the 1947 Study, the Review of Basic Data, and the Inflow-Outflow Manual.

462 U.S. at 574-75 (emphasis added). By this language the Supreme Court has instructed the Special Master to determine the shortfall from "1962 to the present", but for the 1950-61 period, the determination of the total accumulated departure has been decided by the Commission and accepted by the Supreme Court. Given the Court's clear instruction, I hold that the accumulated negative departure, for the period 1950-61, from New Mexico's obligation under the 1947 condition to deliver water at state line, equals 53,300 acre-feet.[4]

III

NEGATIVE DEPARTURES DURING THE PERIOD 1962-1983

At the hearings on November 18-19 and December 3-4, 1985, Texas introduced into evidence Tex. Exh. 79, "Computation of Departures of State Line Flows of the Pecos River From the 1947 Condition During the 1950-83 Period, Revised November 26, 1985 as Stipulated by Texas and New Mexico on November 18, 1985." This exhibit, which incorporates all of the technical stipulations by the parties,[5] utilizes Tex. Exh. No. 68 to calculate departures from the 1947 condition during the period 1950-1983. In prior proceedings in this case, the Special Master "ordered that the Texas Figure 1 and Table 1, see, Tex. Exh. 68, pp. 3, 4 and the attachments hereto, shall be used in the determination of New Mexico departures from the obligation imposed by the Pecos River Compact Art. III(a)." Special Master's Report and Recommendation, at p. 13 (January 16, 1984). This Report was approved in its entirety by the Supreme Court in Texas v. New Mexico, 467 U.S. 1238 (1984). The

[4] This amount does not reflect adjustments allowed to New Mexico for McMillan training dike and for changes in use in the Upper Reach above Alamogordo Dam. Both subjects are dealt with hereafter.

[5] *See, e.g.*, "Stipulation on Disputed Technical Issues", Order issued on July 8, 1985.

purpose of Tex. Exh. 79 was to determine, through the use of inflow-outflow and channel loss equations, the negative departures at state line from the 1947 condition that were attributable to man's activities. Based on the evidence contained in Tex. Exh. 79, I find that New Mexico had not met its Article III(a) obligation to Texas over the 1950-1983 period.

A. "Man's Activities" and the 1947 condition.

In commenting on the Draft Report, New Mexico took exception to the conclusion that Tex. Exh. 79, because it accounted for all natural depletions, could be utilized to determine the departures from the 1947 condition resulting from man's activities. New Mexico based its contention on the argument that Tex. Exh. 79 did not provide a sufficient evidentiary basis to establish that the negative departures were due to man's activities. In order to understand the New Mexico position and my reasons for rejecting it, a brief description of the nature and background of New Mexico's Article III(a) obligation may be helpful. The bargain struck in the Compact allowed New Mexico to retain the benefits of past development in the Pecos River Basin during the pre-Compact period. Sen. Doc. 109, Stip. Exh. 1 at 3-8. But in return, New Mexico had to forego increased uses by man after 1947. The mechanism for enforcing this bargain was the imposition on New Mexico of a duty to deliver annually to Texas, at the state line, the amount of water Texas would have received in 1947 if the water conditions of the given year had occurred in 1947 and if no increase in man-made uses had occurred in New Mexico. In other words, man-made uses were held to the 1947 level, and New Mexico's duty to supply water at the state line in any given year was determined by its baseline 1947 obligation. The technique for determining what the 1947 state-line flow would have been under the water conditions of some other year — 1980, to take an example — was called the inflow-outflow method. This methodology, consisting of elaborate correlations between observed data on which statistical projections were

based, presented difficult factual issues in the early stages of this case.[6] Judge Breitenstein concluded that the prescriptions in Art. II(f) and (g) of the Compact, which adopted the pre-Compact work of the Engineering Advisory Committee found in S. Doc. 109, were unworkable and, after ruling on certain disputed technical issues, directed that Tex. Exh. 68 be used to determine the simulated 1947 flow that would have occurred each year during the period 1962-1983 if there had been no increased depletions by New Mexico from man's activities. These inflow-outflow equations determine New Mexico's obligations under Art. III(a), because the difference between the numerical values appearing in Texas Exh. 68, the "1947 Condition" values, and the measured flow at the state line would presumptively be due to man's activities in New Mexico.

The further technical issues that arose thereafter were resolved, primarily by agreement, and Tex. Exh. 68 was incorporated into Tex. Exh. 73 and finally into Tex. Exh. 79. The purpose of these exhibits is clear. They tell the Court the amount of water that would have come down the river to the state line in 1947 if the same flow conditions had obtained then as did obtain in the year in question, corrected for non-man made depletions, and if New Mexico had not increased its man-made depletions.

At the Hearing on Relief and Remedy, May 20-21, 1986, requested by New Mexico during the Oral Argument on the Draft Report, New Mexico again advanced the contention that Tex. Exh. 79 does not provide a factual predicate for the presumption that the accumulated negative departures from the 1947 condition, presented in Table 2 of the exhibit, are a result of man's activities. *See,* Tr. 239-241 (5/20/86). To clarify the meaning of Tex. Exh. 79, Texas presented the testimony of Dr. V. R. Krishna Murthy, who is the principal author of both Tex. Exh. 68 and 79 and head of the team which prepared them.

[6] The Court describes the inflow-outflow methodology in Texas v. New Mexico, 462 U.S. 554, 572 (1983).

(Tr. 312 (5/21/86)). Dr. Murthy's testimony made it clear that the procedures followed in Tex. Exh. 79 accounted for all non-manmade depletions so that any residual departure was, by force of logic, the result of man's activities. (*Id.* at 313-315 (5/21/86)). Nothing in the New Mexico cross examination of Dr. Murthy or in the rebuttal testimony of Mr. Carl Slingerland convinced me to the contrary. Dr. Murthy's testimony was credible, consistent with the view of my technical consultant, and I accept it.

B. Allocation of the Burden of Proof.

The testimony at the Hearing on Relief and Remedy confirmed the position taken in the Draft Report that once the technical issues were resolved so that Tex. Exh. 68 could be utilized, the negative departures indicated by Tex. Exh. 73, and its successor Tex. Exh. 79, were necessarily due to increased man-made depletions. Since Tex. Exh. 79 accounted for all natural depletions, New Mexico had the burden of showing that man's activities did not account for the departures. New Mexico introduced no evidence to refute the technical conclusion that the negative departures shown in Table 2 of Tex. Exh. 79 were not the result of man's activities in New Mexico and stipulated to the technical accuracy of Tex. Exh. 79. Since New Mexico offered no evidence on those issues, she failed to discharge the burden of going forward and, accordingly, the burden of persuasion is not in issue.

New Mexico contends that, as a legal matter, this allocation of the burden of proof is in error. I am unpersuaded. This case was tried, from the beginning, on the basis of the fundamental assumption of the Compact, namely, that the 1947 flow of the river could be reconstructed by hydrologic equations, that such reconstruction would account for man's uses of the river as of 1947 and that any reduction of flow from the 1947 condition should be attributed to increased man-made uses or to "encroachment of salt cedars . . . or deterioration of

the channel of the stream." Art. II(e) Pecos River Compact. It is both logically correct and, at this stage of these proceedings, practically necessary to hold that once Tex. Exh. 79 was agreed to, the departures shown therein constitute New Mexico's shortfall in the required deliveries under Article III(a) unless New Mexico can show otherwise. On the technical side she has not done so. On the legal side, she has shown that certain departures ought not to be charged to her, not because Tex. Exh. 79 is wrong or that the burden of proof has been misplaced but because under the law, she is not chargeable for the increased departures even though they are man-made.

In summary, the evidence is clear that the equations found in Tex. Exh. 79 account for *all* natural (*i.e.,* non-manmade) losses, such as losses resulting from phreatophytes, evaporation and channel conditions. *See, e.g.,* Tex. Exh. 79, Appendix B, "Computation of Flood Inflows Artesia to Carlsbad Reach", especially page B-3. Since these equations account for all non-manmade depletions, the only logical conclusion that can be reached is that the remaining departures resulted from other than natural causes.

Table 2 of Tex. Exh. 79 lists New Mexico's departures from its state-line 1947 obligation. The amount of negative departures caused by man's activities in New Mexico is shown in Column (7) of Table 2 for the 1962-1983 period to be 372,200 acre-feet. Therefore, except as modified in Sections IV-VI below, which deal with New Mexico's contentions that a portion of the accumulated departures should not be charged to New Mexico, I find the negative accumulated departure during the 1962-83 period to be 372,200 acre-feet.

IV

NEGATIVE DEPARTURES FROM NEW MEXICO'S DELIVERY OBLIGATION RESULTING FROM THE CONSTRUCTION OF MCMILLAN RESERVOIR TRAINING DIKE

The issues here concern the diminished outflow from McMillan Reservoir caused by the construction therein of a training dike and whether New Mexico should be charged with any resulting negative departures from the 1947 condition. The reservoir was constructed in 1893 and has a long history of leakage. *See generally* S. Doc. 109, Stip. Exh. 1. In the water year 1941-42, large flood flows significantly increased that leakage, the effect of which was to increase the flow of the river at the state line. This increased flow was reflected in the 1947 condition. In 1951, the Commission unanimously approved a request to federal authorities to study the feasibility of "Rehabilitation of Lake McMillan by methods which will reduce seepage from that reservoir." Minutes of the Commission, November 9, 1962, Stip. Exh. 4(b) at 49-50. In 1954 a training dike was constructed that did reduce seepage and consequently decreased the flow from the 1947 condition. The question is, should New Mexico be charged for the depletion, and if not, what is the amount of salvage to be credited to her account.

In essence, New Mexico contends that the Pecos River Commission determined in its 1961 and 1962 Meetings that any departures in state-line flows from the 1947 condition caused by the McMillan dike would not be chargeable to New Mexico as a depletion by man's activities. *See* New Mexico's Memorandum on Consistency of Procedures and the McMillan Dike Adjustment to State Line Departures, at p. 3, dated November 14, 1985; New Mexico's Post-Hearing Brief, pp. 21-26, dated February 11, 1986. Texas, on the other hand, argues that a Commission action at its November 9, 1962 meeting demonstrates that there was no such determination. Thus, any depar-

tures at state line resulting from increased capacity at Lake McMillan should be chargeable to New Mexico as depletions caused by man's activities. *See* Texas Post-Trial Brief at pp. 13-18, dated February 11, 1986.

Given the parties' contentions, the starting point of the inquiry must be the Commissioners' Minutes for the meetings held on January 31, 1961 and November 9, 1962. In the 1961 meeting, a Joint Memorandum of the Commissioners and the Engineering Advisory Committee, dated August 23, 1960, was "approved, ratified and adopted by the Commission" (Stip. Exh. 4(b) at 233). The Commissioners describe the Lake McMillan problem this way:

> There was quite a sudden change after the unprecedented flood flows of 1941 and '42. Those flood flows removed from the east side of the reservoir near the dam materials further exposing fractures and caverns which exist in the formation along that reach of the reservoir, thereby materially increasing the seepage from the reservoir. In the mid-1950s the Interstate Stream Commission of New Mexico caused a dike to be constructed along that lower reach of the reservoir to prevent water from entering the fissures and caverns. This dike had been fairly effective and has resulted in a material reduction in the leakage from the reservoir. It is not known how much of the water lost from the reservoir, regardless of its amount, has been beneficially used within the State of New Mexico, and how much of it has crossed the state line. The question is, should the actual leakage that was taking place under 1947 conditions be used by the Engineering Advisory Committee in defining the 1947 conditions or should present conditions be used, or should the leakage that was occurring prior to the flood of 1941 and 1942 be used.
>
> The Commissioners recognize that morally New Mexico should not be penalized for an unusual act of nature such as occurred in 1941. The Commissioners do not know how much water is involved. It might be a relatively small amount; nevertheless a principle is involved. The Commissioners believe that under the Compact the problem can be

> handled in one of two ways. Under that section of the Compact which provides that New Mexico can take steps to replace the loss of effective reservoir capacity it could be considered that the building of the dike in the middle 1950s was for the purpose of bringing back into being some of the capacity of Lake McMillan, the effectiveness of which was being lost because of the leakage. Another way to handle the situation would be to use the relationship between stage of the reservoir and discharge of Major Johnson Springs that was originally used by the Engineering Advisory Committee, in which case the inflow-outflow studies would indicate a depletion at the state line to the extent that leakage from the reservoir that was actually taking place in 1947 now has been reduced by the dike. Since under the definition of the Compact such a depletion could not be termed depletion by man's activities, the effect on New Mexico by the finding of such a depletion would be nil.
>
> The Commissioners recommend that the subcommittee [this refers to the Subcommittee on Inflow-Outflow] will employ the same curve or relationship for McMillan leakage as that appearing in the Engineering Advisory Committee Report contained in Senate Document 109-81st Congress 1st Session.

Id. at 238-39.

Although not free from ambiguity, I construe this passage in the Joint Memorandum, which was approved, ratified and adopted by the Commission at its January 31, 1961 meeting, to decide the following issue relating to the McMillan Reservoir training dike: New Mexico was not to be obligated under the Compact to deliver to Texas water that leaked from Lake McMillan because of the 1941-42 flood. The Commissioners do not know and cannot find out how much more water leaked from the Reservoir after the flood than before, and similarly they do not know and cannot find out how much of the increased leakage is being used in New Mexico and how much is crossing the state line. However, the training dike is now in place and a practical solution is therefore at hand — in fact,

two possible solutions exist: (1) The training dike can be treated as a new facility permitted under Article IV(c)(i) of the Compact, or (2) the inflow-outflow studies (the routing studies) can be used to determine the difference, under the 1947 condition, between the outflow at the state line before the training dike was constructed and after. Either way, the principle that New Mexico should not be charged for reduced leakage from McMillan Reservoir is preserved. The Commissioners chose to use routing studies to solve the problem, but with the understanding that "the effect on New Mexico by the finding of such a depletion would be nil." *Id.* at 239.

These agreements were reached on August 22 and 23 of 1960. Apparently, the Inflow-Outflow Subcommittee went promptly to work, and by the time the formal meeting of the Commissioners was held on January 31, 1961, the Subcommittee and the Engineering Advisory Committee had in hand two routing studies relating to leakage and the effect of the dike on cumulative departures from the 1947 condition at the state line. One of the studies (*Id.* at 241) measured the leakage as part of the 1947 condition prior to construction of the training dike (*i.e.,* it measured the "1946-1952 leakage condition from Lake McMillan"). The other routing study (*Id.* at 242) measured the "1954-1958 leakage condition" after the dike was constructed in 1954. In other words, the latter study accounted for the effect of the training dike in determining the "1947 Condition State Line Flow", and the former did not. The Commission adopted both routing studies, not only for their methodology, but also as "findings of fact through 1959." (*Id.* at 247.) Thus by comparing the two studies, the credit to be given New Mexico for reduced leakage in McMillan could be determined.

If the record ended here, there would be no doubt that the Commission had agreed to credit New Mexico with the savings attributable to the training dike. However, Texas argues that the Commission, in effect, but without discussion, reversed itself

at its November 9, 1962 meeting. At that meeting, the Chairman of the Engineering Advisory Committee circulated, apparently without prior notice, a report setting forth for the years 1950-1961 the inflow-outflow numbers and the departures from the 1947 condition at the state line. This report is referred to in the Minutes as Exhibit #1. Following the tabulation of numbers, three paragraphs of text appear in Exhibit #1, the last of which deals with McMillan Reservoir. Because Texas relies heavily on Exhibit #1, and the actions of the Commission regarding it, the relevant portion is reproduced as a separate page of this Report in order for the Court to appreciate the format in which it appeared.

MINUTES OF THE COMMISSION, NOVEMBER 9, 1962, STIP. EXH. 4(b) at p. 257

[years 1950-56 omitted from the table]

1	2	3	4	5	6	7	8
1957	182.8	229.7	48.7	77.3	92.9	−15.6	+35.6
1958	379.2	243.9	148.7	78.1	100.0*	−21.9*	+13.7
1959	191.6	251.2	54.6	84.0	103.6*	−19.6*	−5.9
1960	310.3	293.7	108.6	104.0	128.2	−24.2	−30.1
1961	211.6	237.8	57.9	73.7	96.9	−23.2	−53.3

* The values in Columns 6 and 7 for the years 1958 and 1959 deviate slightly from those submitted to the Commission at its January 31, 1961 meeting. These small changes were brought about by minor arithmetic changes made in reviewing the flood inflow computation in these two years. It is recommended the above values be adopted as the official Commission values and replace those previously submitted.

The above table does not reflect adjustments for depletion, if any, which might have been caused below Carlsbad by pumping from the alluvium, with pumps constructed in 1947 or prior thereto.

The amounts set forth in the table below are departures caused by the training dike completed at McMillan Reservoir in 1954. In accordance with the action of the Pecos River Commission at its January 1961 meeting, these departures are not chargeable as a result of mans [sic] activities. The Engineering Advisory Committee has made no determination of what part, if any, of the remainder of the amount shown on Column 7 is so chargeable.

	3-year Mean	Accumulation
1955	2.7	2.7
1956	5.3	8.0
1957	8.0	16.0
1958	8.0	24.0
1959	8.0	32.0
1960	8.0	40.0
1961	8.0	48.0

Exhibit #1 was not adopted as presented. The Minutes state:

> Following a discussion concerning the second paragraph of the tabulation (which was to be referred to as Exhibit #1), it was agreed by the Engineering Advisory Committee that the paragraph should be deleted and the following inserted as the last sentence of the first paragraph, 'Otherwise the above findings are arrived at in the same manner as described in the January 1961 report of the Engineering Advisory Committee.'

Id. The Commission accepted the suggested amendment and adopted the exhibit as amended. *Id.*

Texas contends that the "second paragraph" is the one relating to McMillan Reservoir and that its deletion shows an intent by the Commission to rescind its 1961 decision not to charge New Mexico for reduced leakage from the reservoir. I agree with the first part of the proposition but not the second. It seems likely that the starred paragraph is a footnote, and that the "second paragraph," which was deleted by the amendment, was indeed the one dealing with McMillan Reservoir. The sentence added by the amendment to the "first paragraph" deals with methodology and fits the sense of that paragraph much better than it does the starred paragraph.

It does not follow, however, that by deleting the reference to McMillan Reservoir in Exhibit #1, the Commission intended to rescind its 1961 decision not to charge New Mexico for the training dike. A more plausible explanation for deletion of the second paragraph is that the table set forth at the end of that paragraph was derived from the January 30, 1961 Report of the Engineering Advisory Committee. *See* Minutes of the Commission, January 31, 1961, Exh. 4(b), especially the tables on pages 241-245. Apparently the only change the Commission made in Exhibit #1 was to substitute the source report for the deleted paragraph. Surely, if a reversal of policy was intended by the deletion of the second paragraph, some discussion would have appeared in the Minutes of the Commission, but none does.

Therefore, I conclude that the Commission agreed in 1961 not to charge New Mexico for the savings attributable to the training dike and that it did not change that decision in 1962 by an amendment to Exhibit #1 that merely substituted the underlying source material for the deleted paragraph.

At oral argument on the Draft Report Texas contended that the Commissioners did not have the legal authority to make this interpretation of the Compact — that the effect on depletions of the training dike presents a legal question of the meaning of "man's activities" that only this Court can decide. Tr. 22-23 (4/16/86). As a more modest second line of argument, she suggested that at least the Commissioners could not, as an administrative agency, make binding decisions good beyond 1961 and 1962. Tr. 8 (4/16/86). As suggested *supra,* pp. 5 and 6 the Supreme Court seems to have disposed of this contention by ruling that Commission actions on delivery obligations under the compact are dispositive. *Texas v. New Mexico,* 462 U.S. at 574-75 (1983). But if, as Texas suggests, I have misunderstood this statement of the Court, I am nevertheless satisfied that the Compact contained a latent ambiguity when the terms "deplete by man's activities" and "1947 condition" were applied to the effect on depletions of the training dike. That a latent ambiguity can be resolved by agreement between the parties to a contract is hornbook law. A. Corbin, *Corbin on Contracts* § 101 (1963). For this purpose there is no meaningful difference between an ambiguous contract and an ambiguous compact. If Texas' characterization of the Commission as an administrative agency is accepted, the result is the same. An interpretation of a statute (as the Compact may be treated) by the agency entrusted to its administration is entitled to substantial deference. *United States v. City of Fulton,* 54 U.S.L.W. 4343, 4345 (U.S. Apr. 7, 1986), *Chevron U.S.A., Inc. v. Natural Resources Defense Council,* 467 U.S. 837, 842-843 (1984), *United States v. Clark,* 454 U.S. 555, 565 (1982).

Having concluded that New Mexico should not be charged for reduced leakage from McMillan Reservoir, I must next decide how to measure the amount of water involved. For the period 1950-1961, the Commission itself made the decision. By adopting the routing studies at its 1961 and 1962 meetings, it effectively determined that New Mexico was to receive a credit of 48,000 acre-feet at the state line as a result of savings effected by the training dike.[7] *See* Minutes of the Commission, January 31, 1961, Stip. Exh. 4(b), at 240-245, 247-248. The decisions taken at the 1961 meeting were confirmed by the approval of the Minutes of that meeting at the next annual meeting on November 9, 1962. *Id.* at 252.

---

[7] The amount of water to be credited to New Mexico as a result of the McMillan training dike may be ascertained from the tables adopted by the Commission and set forth in the Commission Minutes. Stip. Exh. 4(b) at pp. 240-245. For the years 1955-1959, one compares column 15, "1947 Conditions State Line Flow", of the table "Values in Thousands of Acre Feet Texas and New Mexico State Line Outflows" ("with the 1946-1952 Leakage Condition from Lake McMillan"), (p. 241), with column 15, "1947 Conditions State Line Flow", of the similar table on p. 242 which is calculated "with [the] 1954-1958 Leakage Condition from Lake McMillan."

	1946-52 Leakage Condition	1954-1958 Leakage Condition (in 000)	Difference
1955	119.2	116.5	2.7
1956	126.0	120.7	5.3
1957	92.9	84.9	8.0
1958	100.6	92.6	8.0
1959	104.2	96.2	8.0

For the years 1960 and 1961, one looks to p. 245 of the Minutes: "Difference in Outflow at New Mexico-Texas State Line Between 1946-52 and 1954-58 Leakage Conditions McMillan Reservoir" which provides the "Difference in Outflow" for alternative "Index Inflows". For the years 1960 and 1961, the index inflow was 293,700 and 237,800 respectively (Exh. #1, Stip. Exh. 4(b) at pp. 256-257). The index inflows for both 1960 and 1961 correlate with a difference in outflow of 8,000 acre-feet. Thus the total amount to be credited to New Mexico is 32,000 acre-feet for the period 1955 through 1959 plus 16,000 acre-feet for 1960 and 1961, for a total of 48,000 acre-feet.

However, I find nothing in the Minutes subsequent to 1962 reflecting an agreement by the Commissioners on a methodology for making the measurement and it is clear that the decisions of 1961 and 1962 were for the period 1950-1961 only, since the methodology was regarded at the time as being only an approximation. *See* Minutes of the Commission, January 31, 1961, Stip. Exh. 4(b) at 247. New Mexico nevertheless claims that the methodology adopted by the Commission in 1961 should be utilized to determine, for the post-1961 period, the amount of water saved by McMillan dike, New Mexico Post-Hearing Brief at p. 26. However, the written testimony submitted by Carl Slingerland on behalf of New Mexico recognizes that:

> Given today's technology, the difference in state line flow between the two leakage conditions might be more accurately determined by developing a best fit equation for each condition and solving the equation for the desired index inflow. This latter procedure was used by Texas in preparing Texas Exhibit 74.

N. Mex. Exh. 122, Written Testimony of Carl Slingerland, "Procedures For Computing the Difference in State Line Flow Between the 1946-52 and the 1954-58 Leakage Conditions at Lake McMillan, Submitted by New Mexico Pursuant to Agreement Between the Parties December 4, 1985," dated December 16, 1985.

In her post-hearing brief and in oral argument on the Draft Report, New Mexico contends that the old methodology should be employed for the period 1962-1983, despite its inaccuracy, because of equitable estoppel. New Mexico asserts two kinds of equitable estoppel, estoppel by contract and estoppel by conduct. Neither doctrine precludes the use of accurate methods to determine the training dike depletions for the period 1962-1983. Estoppel depends upon a representation made by one party, detrimentally relied on by another. Texas made no representation as to future calculations of training dike depletions after the decisions, made on January 31, 1961 and

November 9, 1962, covering the period 1955-61. Both Commissioners recognized that the methodology was imperfect and subject to improvement. Minutes of the Commission, January 31, 1961, Stip. Exh. 4(b) at 243. Thus, not only did Texas *not* make representations as to future calculations, New Mexico had nothing on which to rely. Two key elements of estoppel are thus missing. After the unique agreement of 1961 and 1962, no other action on routing studies, inflow-outflow procedures or departures from the 1947 condition was ever taken by the Commission. The work of the Inflow-Outflow Subcommittee and the Engineering Advisory Committee was never completed, much less agreed to by the Commission. Hence, the task of the Special Master is to find the numerical values that apply to the 1962-83 period.

Since there is no Commission finding for the period 1962-1983 and since estoppel is inapplicable, the Special Master is free to use the most up-to-date methodology available to him, and that would appear to be, as recognized by New Mexico, the methodology advanced by Texas. *See* Tex. Exh. 90, Written Testimony of V.R. Krishna Murthy, "Increased Depletions (1955-1983) Resulting from the Construction of McMillan Training Dike, Submitted Pursuant to Agreement Announced on December 4, 1985," dated December 16, 1985. To determine the effect of the McMillan training dike, Dr. Murthy "performed a 1947 Condition river routing study, assuming that the McMillan Training Dike existed during the 1919-1946 routing period". Written Testimony of V.R. Krishna Murthy at p. 2. Utilizing the "revised gage height-capacity-area-leakage table" developed and presented in Tex. Exh. 74, Table 1, for the 1954-1958 McMillan Reservoir Leakage Condition, Dr. Murthy calculated the Revised Index Inflows and Index Outflows that appear on pp. 71-72 of Tex. Exh. 74. Dr. Murthy then estimated a least squares regression equation, incorporating all the stipulations entered into between Texas and New Mexico, to evaluate the effect of the McMillan training dike on state-line flows. Dr. Murthy found that the increased

depletions at state line resulting from the McMillan training dike equaled 27,600 acre-feet during the 1962-1983 period. *See* Written Testimony of V.R. Krishna Murthy at p. 4; Stipulation No. 4 between Texas and New Mexico, Tr. 10, modified at 104-105 (11/18/85, 12/3/85).

Therefore, I find that the departure from the 1947 condition chargeable to New Mexico must be reduced by 48,000 acre-feet for the 1955-1961 period, and by 27,600 acre-feet for the 1962-1983 period.

V

THE UPPER REACH ABOVE ALAMOGORDO DAM

The issue here is whether any change in depletion in the Upper Reach above Alamogordo Dam must be considered in an accounting of New Mexico's obligation to Texas under the Pecos River Compact. New Mexico contends that the "Compact requires adjustments for both Negative and Positive Depletions above Alamogordo Dam", New Mexico Post-Hearing Brief at 13-20. Texas, on the other hand, states that accounting for the effect of changes in depletions in the Upper Reach on state-line flows should include only "the years when depletions due to man's activities in that reach increased. . . ." Texas Post-Trial Brief at 9-10. In short, New Mexico nets out positive and negative changes, while Texas charges New Mexico for all increases in use, but gives no credit for decreases.

As a threshold matter, prior determinations in this case appear to support New Mexico's legal contention that both increases and decreases in depletion in the Upper Reach were an integral part of the accounting procedure in the 1948 inflow-outflow manual. *See, e.g.,* S. Doc. 109, Stip. Exh. 1 at 151-153. This is consistent with the provision of the Compact that allows New Mexico freedom to administer the Pecos River within its own boundaries. Article VIII states:

> The provisions of this Compact shall not apply to, or interfere with, the right or power of either signatory state to regulate within its boundaries the appropriation, use and control of water, not inconsistent with its obligations under this Compact.

The only relevant limitation on New Mexico's ability to affect Pecos River flows is Article III(a) of the Compact, which prohibits New Mexico from depleting by man's activities the flow of the Pecos River *at the New Mexico-Texas state line* below an amount equivalent to that available to Texas under the 1947 condition. Analyzing these provisions of the Compact leads me to conclude that the *source* of contributions to the Pecos River is irrelevant to New Mexico's obligation, as long as that obligation is met. This was the view expressed in the Report of the Special Master to the Supreme Court, September 7, 1979: "The determining factor is the quantity of the flow at state line. The source of the flow is immaterial." *Id.* at 42 (adopted by the Court, *Texas v. New Mexico,* 446 U.S. 540 (1980)).

As stipulated by the parties (Stipulation No. 3 between Texas and New Mexico, Tr. 9 (11/18/85)), the number of acres in irrigation in the Upper Reach above Alamogordo Dam has decreased from 14,600 acres in 1951 to 11,250 acres in 1983, for an average decrease of 2,719 acres (N. Mex. Exh. 74). The effect of this decrease in irrigation would be, everything else being held constant, to increase the inflow of the Pecos River at Alamogordo Dam, which could have some measurable effect on the amount of water at state line. The intent of the Compact appears to be that this increased "contribution" to the river by New Mexico can be offset by depletion by man's activities of an equal amount of water from the river, said amounts always being measured at state line. *See* Articles III(a) and VIII of the Pecos River Compact. Texas cites no authority that convinces me to the contrary. Moreover, unless New Mexico is credited with contributions to the river resulting from decreased usage, she is deprived of one of the

principal means of making up her negative departures from the 1947 condition.

Having concluded that any accounting of New Mexico's obligation to Texas at state line must account for both increases and decreases in contribution from the Upper Reach, I must decide upon the method to be utilized in measuring the amount of water involved. This task has been made easier by the Stipulation entered into between the parties regarding both the change in irrigated acreage above Alamogordo Dam, and the streamflow depletion rate of that acreage. Stipulation No. 3 between Texas and New Mexico, Tr. 9 (11/18/85). In that Stipulation, the parties agreed that: (1) the number of acres in irrigation in the upper reach above Alamogordo has decreased from 14,600 acres in 1951 to 11,250 acres in 1983, for an average decrease of 2,719 acres (N. Mex. Exh. 74); and (2) that "the stream flow depletion rate for the 1947 condition period is .74 acre-feet per acre; [and] the stream flow depletion rate for the period 1950-1983 is .88 acre-feet per acre". *Id.* It is clear that the effect of the first stipulation (*viz.,* a decrease in the number of acres irrigated in the reach above Alamogordo Dam) would, all other things being equal, increase the contribution to the river from the Upper Reach, while the second stipulation (*viz.,* the increase in the depletion rate from .74 to .88 acre-feet per acre) would, all other things being equal, decrease the contribution to the river from the Upper Reach. Thus, both of these stipulated facts must be taken into account in any accounting of New Mexico's obligation to Texas at state line.[8]

[8] These stipulations do impose some artificiality on the calculation. For example, the stipulation that the depletion rate for the 1947 condition is .74 acre feet per acre does ignore the fact that the rate varied over the 1919-1946 period as a result of various causes including different amounts of yearly precipitation. In other words, the stipulation imposes an "average" for the yearly depletion rate over the 1919-1946 period. This is also true for the .88 depletion rate for the 1950-1983 period. Nonetheless, the parties have *stipulated* and *agreed* to use the .74 and .88 depletion rates, no matter how artificial, and I am thus required to utilize these numbers in my calculation.

While I have accepted New Mexico's legal theory that both increases and decreases in uses above Alamogordo Dam must be taken into account in determining its state-line obligation, I find that New Mexico's proffered methodology for calculating this change in contribution to the Pecos River is inconsistent with its own legal theory. New Mexico does not charge herself with the increase in consumptive use from .74 acre-feet per acre to .88 acre-feet per acre. What New Mexico's calculation reflects is the discredited argument that the Compact protects all of New Mexico's uses, no matter the level of water consumption, that existed at the time that the two states entered into the Compact. This argument was rejected by the former Special Master (Report of Special Master on Obligation of New Mexico to Texas under the Pecos River Compact, September 7, 1979, at 2, 38-39 and 50 ("Special Master's Report (1979)"), and that Report was confirmed by the Supreme Court "in all respects". 446 U.S. 540 (1980). If I were to accept New Mexico's method of calculation, I would be "accept[ing] . . . the New Mexico position [that] protects New Mexico's rights but destroys Texas' rights". Special Master's Report (1979) at 38-39. The Supreme Court has rejected the protected use theory of New Mexico and that is the law of the case.

Although Texas disputed New Mexico's legal theory as to the proper accounting for changes in depletions in the Upper Reach, Texas did introduce into evidence two exhibits that calculated what the effect on New Mexico's state-line obligation would be if New Mexico's legal theory was adopted, a calculation that incorporated Stipulation No. 3. Tex. Exh. 82, "Written Testimony Pursuant to Stipulation 3(f) Between Texas and New Mexico on November 18, 1985" by Zack L. Dean, and Tex. Exh. 89, "Written Testimony of Zack L. Dean, Adjustment for Changes in Depletions Above Alamogordo Dam, Submitted Pursuant to Agreement Announced on December 4, 1985," dated December 16, 1985. On page 4 of

Tex. Exh. 89, Mr. Dean calculates the effect on New Mexico's state-line obligation of accounting for both increases and decreases in depletion in the Upper Reach, by incorporating the Stipulations into the inflow-outflow equations of Tex. Exh. 79. For the period 1950-1983, Mr. Dean calculates that the effect of the decreased acreage and the increase in stream flow depletion has decreased departures at state line chargeable to New Mexico by 6,800 acre-feet.[9] I accept his calculations.

Therefore, I find that the depletion chargeable to New Mexico during the 1950-1983 period must be reduced by 6,800 acre-feet to account for contributions to the river in the Upper Reach above Alamogordo Dam.

VI

THE EFFECT OF PUMPING IN TEXAS ON STATE-LINE DEPARTURES: CAPITAN AQUIFER

At the hearing on November 19, 1985, New Mexico claimed for the first time during the proceedings that oil and gas operations in the vicinity of Kermit, Texas, located some 100 miles from Carlsbad, caused depletions of the river at Carlsbad Springs in the amount of 93,250 acre-feet over the 1950-83 period ("Capitan Aquifer claim"). In support of this claim New Mexico offered the testimony of Ms. Deborah L. Hathaway, a hydrologist employed in the Office of the State Engineer of New Mexico. Ms. Hathaway holds a B.A. degree, an M.A. in secondary education from the University of New Mexico, and an M.S. in Civil Engineering in Hydrology and Water Resources from Colorado State University. Ms. Hathaway was accepted by Texas an an expert in hydrology, although her testimony was objected to on the ground that the

[9] This decrease in New Mexico's state-line obligation includes Stipulation No. 3(e) which states "the evaporation due to the operation of the Los Esteros Reservoir for the period 1980 through 1983 is 2,300 acre-feet. This amount will be added as a depletion chargeable to New Mexico for the 1950-1983 period for the reach above Alamogordo Dam." Tr. 9 (11/18/85).

claim was presented too late. While there was merit in Texas' objection, I admitted the testimony, because of the sovereign status of the party offering it, and granted Texas a recess of 14 days, until December 3, 1985, to prepare cross-examination.

In simplified terms, the theory of New Mexico's claim is that pumping in the Capitan Aquifer in Texas reduced the piezometric water level in the aquifer, causing the surface flow of the Pecos River at Carlsbad Springs to diminish and thus reducing the river's flow at the state line. Such reductions of flow should not, New Mexico contends, be charged against New Mexico under the Compact.

I conclude that the evidence is insufficient to support the claim. The Capitan Aquifer is a buried limestone reef in the shape of an inverted crescent running from a point west of the river at Carlsbad Springs, crossing the river and curving south, where it crosses the state line east of the river and continues to run southeast into Texas. (*See* Fig. 3, N. Mex. Exh. 105.) In the area critical to New Mexico's claim, east of the river in the vicinity of the Lea-Eddy County line in New Mexico, the reef is traversed by canyons which have been filled with rock substantially more impermeable than the surrounding limestone. In order for New Mexico's theory to hold, three geohydrological conditions must obtain:

> (1) the contribution of water from the aquifer to the river at Carlsbad Springs, where the river crosses the aquifer, should have been reduced or reversed;
>
> (2) water must be able to flow in the aquifer between the portion of the aquifer west of the canyon section and the portion east thereof;[10] and
>
> (3) water must be able to flow between the portion of the Capitan aquifer east of the canyon area and the portion of that aquifer and adjacent aquifers further east in Texas, where the pumping occurs, a distance of some 100 miles from Carlsbad Springs.

[10] This entire section of the aquifer is east of Carlsbad Springs.

If any one of these conditions remained unproved by New Mexico, the claim collapses, because there must be both communication throughout the aquifer and a force to divert the water through the aquifer from the river at Carlsbad to the area of pumping in Texas. I am not persuaded that the evidence establishes the existence of any of the conditions, much less all three. In the interest of brevity, only the second condition is discussed in detail.

As stated above, in the submarine canyon section of Capitan Aquifer, near the Lea-Eddy County line, the relatively permeable limestone reef is traversed by canyons that are filled with relatively impermeable rock. The major impermeable (or in the terminology of geohydrology, low transmissivity) submarine canyon is named West Laguna. If groundwater cannot move, in any significant degree, between that portion of the aquifer east of the West Laguna submarine canyon (toward Texas) and that west of West Laguna (toward the river at Carlsbad), then pumping in Texas would not affect the flow of the river at Carlsbad. The evidence does not support a finding of a degree of transmissivity that would allow such flow across the submarine canyon zone. Ms. Hathaway, who is not a geologist, relied heavily on a Ph.D. thesis by William Hiss (N. Mex. Exh. 105) for the geologic foundations of her testimony. But N. Mex. Exh. 105 does not support a conclusion that transmissivity of sufficient magnitude exists through the West Laguna canyon. The Hiss thesis repeatedly states that there is minimal transmissivity in this area. N. Mex. Exh. 105 at 197, 272 and 348. Moreover, no correlation exists between the observation wells lying east of the West Laguna canyon and those west thereof, indicating lack of meaningful hydraulic connection. N. Mex. Exh. 105 at 195, Figure 25.

Similar deficiencies in proof are present for both Conditions 1 and 3. As to Condition 1, the problem is not transmissivity but the absence of a change in the driving force that would divert water from the Pecos River to the Capitan

Aquifer. Ms. Hathaway herself testified that water levels in this area are flat (Tr. 53 (11/19/85)), and N. Mex. Exh. 105 (Fig. 23) confirms this fact. No change in the gradient over time was shown. If anything, the evidence suggests an increase inflow from the aquifer to the river. N. Mex. Exh. 105, Fig. 24, gives hydrographs of observation wells in the section of the aquifer between the river and West Laguna canyon. No decline in the water table is shown. In fact, N. Mex. Exh. 105 at p. 195 shows a cumulative increase in the piezometric water levels in observation wells 3, 4, 5 and 6.

New Mexico relied on its Exhibit 95 to establish a change in gradient. But this exhibit is derived from Figs. 22 and 23 of the Hiss thesis (N. Mex. Exh. 105), which do not show a draw down in the relevant area (Pecos River to West Laguna submarine canyon). Thus, while there may be a hydraulic connection between the river and the aquifer in the area west of the submarine canyons, there is insufficient evidence of a change in head to permit gravity to divert water from the river.

Finally, the evidence of movement of water in the aquifer in Texas owing to oil and gas (and other) operations is unsatisfactory. The area is large, the geology is sketchy at best, and the information about the *net* amount of water withdrawn in Texas is inadequate because of the lack of data.[11]

In summary, New Mexico had the burden of establishing three links in a chain of proof and failed to establish any of them. The Capitan Aquifer claim must therefore be denied.

---

[11] Secondary recovery operations in Texas—on the shelf at the edges of the aquifer—could have resulted in some draw down of the aquifer in Texas, but injection of salt water produced from oil wells could have offset the draw down. The data on both withdrawal and injection are incomplete. Tr. 65-67 (11/19/85).

VII

CLAIMS OF THE UNITED STATES

The United States intervened in this case but advised the Special Master that it would not participate actively in the case, Letter from Rex E. Lee, Solicitor General of the United States, to Special Master Jean S. Breitenstein, dated January 22, 1982, and it has not done so. A general adjudication of water rights in the Pecos Basin in New Mexico is now under way in a New Mexico tribunal and the United States is a party in that action. Accordingly, I recommend that the Court dismiss the United States without prejudice.

VIII

REMEDY

By resolving the foregoing issues of mixed law and fact, by giving effect to the Commission's findings for the period 1950-1961 as directed by the Court, and by adopting the many useful stipulations of the parties, I am in a position to determine the negative departure from the 1947 condition resulting from man's activities and chargeable to New Mexico, and I find the total amount for the full period, 1950-1983, to be 340,100 acre-feet of water.

NEGATIVE DEPARTURES FROM THE 1947 CONDITION CHARGEABLE TO NEW MEXICO

TOTAL NEGATIVE DEPARTURES:

1950-61	53,300	acre-feet (Section II)
1962-83	372,200	acre-feet (Section III)

MINUS THE AMOUNTS NOT CHARGEABLE TO NEW MEXICO:

McMillan Dike (1955-1961)	48,000	acre-feet (Section IV)
McMillan Dike (1962-1983)	27,600	acre-feet (Section IV)
Upper Reach above Alamagordo Dam (1950-1983)	6,800	acre-feet (Section V)
Capitan Aquifer (1950-1983)	0	(Section VI)
Malaga Bend Salinity Alleviation Project (Stip. No. 2, November 18, 1985)	3,000	acre-feet
Net Amount Chargeable to New Mexico (1950-1983)	340,100	acre-feet

The question remaining is how this amount of water should be repaid. The average flow of the river at state line for the period 1950-1983 was only 75,500 acre-feet.[12] Obviously it will take time to repay the debt if repayment is made with water. An alternative solution might be repayment in money. It is quite possible that both Texas and New Mexico would be better off with a monetary solution than with repayment in kind. The suggestion was made to counsel but institutional difficulties were noted: Would a legislature appropriate the funds? How could those who suffered and moved away be compensated?

[12] Tex. Exh. 79, Table 2. Moreover, the flow is highly variable. During the same period the flow ranged from a maximum of 325,200 acre feet in 1966 to a minimum of 12,100 acre feet in 1977. *Id.*

In any event, I do not feel free to recommend that the Court impose a monetary solution, for I can find no explicit basis for such a remedy in the Compact. The Compact appears to contemplate delivery of water; being a law of the United States, *Texas v. New Mexico,* 462 U.S. 554 (1983), the Court may not order relief inconsistent with its terms. *Id.* at 564. Hence the relief to be recommended, at least by a Special Master, ought to be specified in quantities of water.

A. New Mexico's Obligation to Texas under the Pecos River Compact.

The Draft Report circulated to the parties on March 18, 1986 contained the following findings and recommendations:

> 1. New Mexico failed to meet its Article III(a) obligation under the Pecos River Compact;
>
> 2. New Mexico should be allowed ten years in which to satisfy its obligation to deliver the 340,100 acre feet of water due, subject to a "annual minimum delivery" obligation of 34,010 acre feet at the state line;
>
> 3. To prevent procrastination by New Mexico, water interest should be charged on the undelivered balance of water due in any year in which New Mexico does not meet its annual minimum delivery obligation ("deficit amount").[13]

Thus, according to the Draft Report, if New Mexico at the end of any year after the decree took effect failed to satisfy the annual minimum delivery obligation, at the end of the next year the amount of water owing would consist of three components:

> 1. The Article III(a) obligation;

[13] The suggested rate of water interest was equal to the yield on one year Treasury bills on the date that New Mexico's delivery deficit is determined. This rate was thought to approximate the opportunity cost to Texas of late delivery of water by New Mexico.

2. The principal unpaid amount, a component of which is the current year's "annual minimum delivery."

3. The deficit amount for the previous year, plus one year's water interest.

In each year, the Article III(a) obligation would have to be satisfied first, then that year's minimum delivery obligation, and then the deficit amount plus accrued interest.[14]

At oral argument on the Draft Report held on April 16, 1986, New Mexico moved for a hearing on the questions of New Mexico's ability to meet these obligations and the economic hardship they would impose. The hearing was held on May 20 and 21, 1986, at which New Mexico made the following four points:

1. Any allocation of water in New Mexico to maintain flows at the state line *must* be governed by the rule of prior appropriation, which is adopted in Article IX of the Pecos River Compact and in Article XVI of the New Mexico Constitution. Tr. 14-15 (5/20/86);

2. The *only* solution available to New Mexico, therefore, is to shut down pumpage of ground water of junior water rights holders, primarily in the Roswell Basin. *See e.g.* Tr. 34-45 (5/20/86);

3. Because of the geohydrology of the aquifers and the river, it would be impossible to meet the Master's proposed decree in the early years, even if all ground water users in the Roswell Basin were totally closed down. *See, e.g.,* Tr. 12 (5/20/86); and

4. Of the water that would be made available to the Pecos River as a result of the termination of ground water

[14] If New Mexico did not make up the deficit in the year subsequent to which it was incurred, then the deficit would carry over to the next year and water interest (at the rate originally determined) on that amount would accumulate at a compound rate until that deficit plus interest was paid in full.

pumping in the Roswell Basin, only 34% would reach state line. Tr. 67-68 (5/20/86); N. Mex. Exh. 125.

New Mexico also presented evidence on the economic loss that would be incurred if she were required to shut down pumpage in the Roswell Basin. New Mexico estimated the present value of its maximum "primary" economic loss to be $151,781,678, with a maximum "secondary" loss of $180,081,000; these losses were assumed to occur over a period of 20 years. N. Mex. Exh. 136, Table 26, p. 31.

With regard to the secondary impacts, I am quite skeptical of their validity, a skepticism that appeared to be shared to some extent by New Mexico's economic expert, Dr. Snyder, *see* Tr. 197-198 (5/20/86), as well as by Texas' economic expert, Mr. Wright, *see* Tr. 376-379 (5/20/86). As to the relative magnitude of the primary loss to New Mexico, Texas introduced Exhibit 101, entitled "Personal Income by Major Source and Earnings by Major Industry", a table developed by the Bureau of Economic Analysis specifically related to Chaves and Eddy Counties, New Mexico, which comprise the Roswell Basin. As Mr. Wright noted in his testimony, the economic loss to New Mexico for one of the scenarios presented, *i.e.,* a delivery to Texas of 20,000 acre-feet per year (N. Mex. Exh. 136, Table 26, p. 31) is equal to less than one percent of non-farm income for the Roswell Basin. Tr. 383-384 (5/21/86). While New Mexico will undoubtedly suffer some economic loss from being required to deliver water to Texas, the amount is too speculative to quantify.

As to New Mexico's physical ability to deliver water to Texas, Proposition 1 is true but not dispositive and Proposition 2 is incorrect. While it is clear that prior appropriation governs any *curtailment* of water rights by New Mexico to meet its Article III(a) and repayment obligation under the proposed relief, curtailment is not the only method of internal ordering open to New Mexico. As disclosed in the testimony of the New Mexico State Engineer on cross-examination, it is possible for

New Mexico to purchase or condemn water rights and then (i) pump the water directly into the river in the case of ground water rights or (ii) curtail diversions in case of surface water rights. *See* Testimony of Stephen E. Reynolds, Tr. 56-60 (5/20/86).[15] As further noted in the testimony of Carl L. Slingerland, a consulting engineer for the New Mexico Interstate Stream Commission, the Carlsbad Irrigation District alone diverted during the 1950-1983 period an average of 60,000 acre feet per year from the river. Tr. 86 (5/20/86). Thus, it is clear that New Mexico has other means of meeting a delivery obligation than curtailment of pumpage by junior rights holders in the Roswell Basin. Accordingly, New Mexico's Proposition 3 is beside the point.

With regard to Proposition 4, that only 34% of the water returned to the river in the Roswell Basin would reach state line, it was clear from both Mr. Slingerland's testimony, *see* Tr. 80-86 (5/20/86), and the rebuttal testimony of Dr. Murthy, *see* Tr. 352-363 (5/21/86) and Tex. Exh. 96, 97, and 98, that the depletion in the river results not only from natural channel losses, but also from diversions by senior surface water rights holders located in the Carlsbad to state line reach of the River. Given New Mexico's obligations to Texas under the Pecos River Compact, New Mexico cannot throw up its hands and state that because of the rule of prior appropriation it is impossible to provide the necessary water to Texas. Purchase or

[15] In Kaiser Steel Corporation v. W. S. Ranch Company, 81 N.M. 414, 467 P.2d 986, 992 (1970), the New Mexico Supreme Court stated that "a *jus publicum* [is] present in water. . . ." In *Kaiser,* a case involving the right of a private corporation to condemn property to secure water for business use, the court emphasized the unique public policy position of water in New Mexico and stated that "only by invoking the power of eminent domain can the state distribute its own waters as its public policy requires." *Id.* at 989-90. (Citing Threlkeld v. Third Judicial District Court, 36 N.M. 350, 15 P.2d 671 (1932)). New Mexico law clearly allows transfers of water rights as well as a change in the purpose for which water was originally appropriated. *See, e.g.* N.M. Stat., §§ 75-5-21 to 75-5-25. New Mexico law, therefore, appears to provide a sufficient basis for the type of internal ordering recognized by the State Engineer.

condemnation of these surface rights in the Carlsbad to state line reach would alleviate the problem of channel losses and would obviate New Mexico's having to shut down all the irrigation in the Roswell Basin. A combination of strategies could reduce the burden on New Mexico of compliance. In the early years, New Mexico could rent water in the Carlsbad area, resorting in the later years to increased flows resulting from reduced pumping.

Therefore, it is my recommendation that the Court enjoin New Mexico and the appropriate officials therein (i) to meet her Article III(a) obligation under the Pecos River Compact, (ii) to deliver to Texas the amount of 340,100 acre feet over a period of ten years, with an annual minimum delivery obligation each year of 34,010 acre feet, and (iii) if New Mexico does not make a good faith attempt to meet the minimum annual delivery obligation of 34,010 acre-feet specified above, require New Mexico to pay water interest to Texas on the balance of the amount of water owed. In order for both New Mexico and Texas to make the necessary preparations for delivery of the water, I recommend that New Mexico be given a three-year grace period to commence performance of the annual minimum delivery obligation, provided that during that three-year period she demonstrates her good faith by meeting for this three-year period the Article III(a) obligation. As admitted by New Mexico, *see, e.g.,* N. Mex. Exh. 134, Table 1A, the Article III(a) obligation requires New Mexico to increase its delivery to Texas by approximately 10,000 acre feet per year.

As for the payment of water interest, a balance must be struck between the opportunity costs that Texas has incurred from New Mexico's failure to deliver water during 1950-1983 period, and will incur because it will receive water from New Mexico over a ten year period (1989-1999) rather than all at once, and the cost to New Mexico of having to increase her deliveries to Texas by 34,010 acre feet per year under the decree. To balance these equities I propose the following:

Water interest will be due on the amount owed by New Mexico only if New Mexico fails to act in good faith in meeting the terms of the decree. For purposes of the decree, good faith will be defined as meeting at least 80% of the aggregate minimum delivery requirement for the first five years, and the annual minimum delivery obligation each year thereafter.[16] Once it is determined that New Mexico has not acted in "good faith", i.e., has not met 80% of its aggregate delivery obligation by the fifth year of the decree, water interest will begin to run on the amount that New Mexico has fallen short as well as on the 34.010 acre feet per year that she must deliver over the last five years of the decree. For example, if in year five of the decree it is determined that New Mexico has not met her aggregate minimum delivery obligation by an amount of 50,000 acre feet, then in the next year not only will New Mexico have to make up that 50,000 acre-feet in addition to delivering the 34,010 acre feet owed under the decree, she will also have to pay interest on the total amount due in that year, that is interest on the 84,010 acre feet.[17] Interest will continue to accumulate thereafter on all amounts that remain undelivered under the decree whether or not New Mexico meets her 80% obligation in subsequent years.

---

[16] The basis for choosing 80% as the good faith standard is the following; the mean index inflow over the 1950-1983 period was 194,170 acre-feet with a standard deviation around the mean of 42,170 acre-feet. Thus, the percentage deviation from the average three year index inflow over the 1950-1983 period equals approximately 21.7%. Because of this variation around the average index inflows, which results both from natural causes and the three year method of averaging required by the Compact, it is quite possible that New Mexico may be acting in good faith in attempting to add more water to the river to meet her obligation but will fall short through no fault of her own. Therefore, if New Mexico meets 80% of its obligation during the first five years and each year thereafter a rebuttable presumption should exist that she acted in good faith.

[17] As noted in note 13 of this Report, *supra,* the interest rate should equal the yield on one year treasury bills on the date that New Mexico's delivery obligation is found to be in deficit. I believe this rate approximates the opportunity cost to Texas of late delivery of any water by New Mexico. This interest rate would have to be determined and calculated for each year remaining under the decree for the balance of water owed.

Although I recognize that charging interest to New Mexico will impose a significant burden on her, without an interest penalty, New Mexico will have no incentive to fulfill the terms of the decree other than Texas' instituting another original action in this Court. Given the lengthy fact finding process of such a suit as evidenced by the present action, another original action, or an action to enforce this decree, by Texas would not provide enough incentive for New Mexico to meet its obligation to deliver water to Texas at state line according to the terms of the decree.

B. Retrospective Relief Under the Compact.

At the May 21, 1986 Hearing on remedies, New Mexico asserted, for the first time in 12 years of proceedings, that the Compact did not authorize relief for past defaults in meeting the Article III(a) delivery obligation. Succinctly stated, New Mexico contended that the Compact contemplated prospective relief only but not repayment of prior under-deliveries. In ordinary litigation, such a contention, which should have been advanced at the pleading stage, would be summarily dismissed, but given the sovereign status of the parties and the stakes involved, New Mexico was given the opportunity to brief the question and did so. Texas responded, and the issue is ripe for decision. In my view, wholly apart from the procedural irregularity, New Mexico's position has no merit.

Her argument, simply stated, is that the Compact, by its express terms, does not contemplate accumulation of debits and credits and repayment to Texas of accumulated negative departures. Instead, the only relief Texas is entitled to is prospective relief, *i.e.,* if New Mexico fails to deliver at state line in a particular year an amount of water that satisfies the Article III(a) obligation, then New Mexico would be instructed to increase the flow at state line in future years by an amount that would cause New Mexico to meet the obligation. In addition to this recently proffered interpretation of the Compact, New Mexico also argues "there is nothing in the pleadings and

papers filed in this case to indicate that Texas seeks payment of past accumulated departures and state line deliveries." New Mexico's Legal Memorandum on Relief under the Pecos River Compact, at 14.

The Court itself has rejected both propositions, at least implicitly, in *Texas v. New Mexico,* 462 U.S. 554 (1983). New Mexico, in the exceptions that it filed to the Special Master's 1982 Report, argued that "this Court may do nothing more than review official actions of the Pecos River Commission, on the deferential model of judicial review of administrative action by a federal agency, and that this case should be dismissed if [the Court] find[s] either that there is no Commission action to review or that the actions the Commission has taken were not arbitrary or capricious." 462 U.S. 566-567. In rejecting this view the Court clearly stated that New Mexico's position would leave Texas with no remedy: "Under New Mexico's interpretation, this court would be powerless to grant Texas relief on its claim under the Compact." 462 U.S. at 569. Noting its equitable power to apportion interstate streams, the Court clearly recognized Texas' right to seek judicial relief under the Compact. 462 U.S. at 567. It would be inconsistent with this view to adopt New Mexico's new argument that Texas, which is a party to what is in effect a contract between two states (Special Master's Report at 12 (May 6, 1977) *cf. West Virginia ex rel. Dyer v. Sims,* 341 U.S. 22 (1951) (substantive law of contracts applies to interstate compacts)), is not entitled to the normal remedy that applies in contract cases, namely, damages for past wrongs. Moreover, New Mexico's position as to remedy cannot be reconciled with the Court's order to the Special Master to determine for the period 1962 to the present New Mexico's negative departures from its 1947 condition obligation. 462 U.S. at 575. No purpose would be served in spending

considerable resources to determine the amount of past shortfalls if no remedy is available for the deficiency.[18]

Another reason for rejecting New Mexico's position is that the sole relief she proposes, namely adjustments in New Mexico water consumption to meet future delivery obligations, is illusory. Take the following example. Assume that the Commission, or some other entity designated by the Court, found that in a particular year, say 1988, New Mexico had not met its Art. III(a) obligation.[19] Also assume that this shortfall equaled ten thousand acre-feet. Pursuant to this finding the entity responsible for determining negative departures would order New Mexico to reduce water consumption in order to deliver ten thousand acre-feet more water in 1989.[20] However, there is no way to determine New Mexico's 1989 delivery obligation under the 1947 condition, until the actual flood inflows have been measured, adjusted for natural depletions, and averaged as required by Article VI(b) of the Compact. If a drought occurred in 1989, New Mexico's 1947 state-line obligation would be reduced; if 1989 were a very wet year, it would be increased. There is no constant relationship between the Article

---

[18] Even New Mexico, at one time, conceded that repayment was a remedy contemplated by the Compact. In her fifth affirmative defense to the Texas Complaint, New Mexico responded to Texas' request for retrospective relief not by stating that this relief is unavailable under the Compact but by arguing that it is "barred by laches." Answer of the State of New Mexico at 4. In addition, New Mexico has conducted itself throughout this litigation as if she believed that the Court could order payback of accumulated deficits. *See, e.g.,* Tr. 94 (5/16/86). Even if Texas' Complaint is read as not seeking retrospective relief, Texas would be allowed to amend its Complaint to conform with the evidence presented in this litigation. *Cf.* Fed. R. Civ. P. 15(b).

[19] Remember that the 1947 Condition obligation is not a specific number that can be assessed prior to the year in question but only a standard that may be quantified by putting into the inflow-outflow equation the adjusted three year average historical flood inflows.

[20] This additional delivery is made, not on a theory that it is a payback, but on New Mexico's theory that past negative departures require reduced consumption to bring New Mexico up to the 1947 Condition in the future.

III(a) obligation in one year and the Article III(a) obligation in the next year. The determination of a negative departure in 1988 of 10,000 acre-feet causing an order to issue for increased flows in 1989 by that amount may cause more or less water to be delivered than is required to meet the 1947 condition. In effect, the 1947 condition is a moving target, changing from year to year depending upon the amount of flood inflows into the Pecos River. Thus, if the Court were to adopt New Mexico's proposal that only prospective relief is allowed under the Compact, it is possible that Texas would never receive any makeup water, although negative departures occurred in a number of years. New Mexico could thus deprive Texas of its equitable share of Pecos River water apportioned by the Compact, because the amount that Texas is owed prospectively can only be determined after that year is over, when the flood inflows have been measured, adjusted, and averaged and the calculation made by the inflow-outflow equation. The Compact is not an illusory contract that deprives Texas of any meaningful remedy. "It is difficult to conceive that Texas would trade away its right to seek an equitable apportionment of the river in return for a promise that New Mexico could, for all practical purposes, avoid at will." (footnote omitted.) 462 U.S. at 569.

It should be emphasized that the proposed remedy of requiring New Mexico to pay back accumulated departures over the 1950-1983 period is not based on any finding that New Mexico acted in a reprehensible manner. It is clear from the Commission minutes that during the entire period of the Compact's existence it has been difficult to ascertain whether or not New Mexico has met its delivery obligations in any particular year, but this difficulty should not deprive Texas of its rightful share of Pecos River water.

As the Court made clear, 462 U.S. at 568-569, if the Commission cannot agree as to what Texas should receive under the Compact, Texas has a right to pursue a judicial remedy. This of course is not a perfect solution. Even if Texas

receives an amount of water over the next ten years equalling the accumulated negative departures over the 1950-1983 period, she is not made completely whole. New Mexico has had the advantage of more than its equitable share of water during the period 1950 to 1983 while Texas will receive its water in the future years of 1989 to 1999. When the water is discounted to present value, Texas is worse off and New Mexico better off as a result of the departures. This is why I recommend that New Mexico be required to pay back the accumulated departures over a period not greater than ten years and why interest should be charged if New Mexico does not meet the proposed good faith standard for compliance with the decree. The longer Texas must wait, the less the value of what she receives under the decree and the Compact. The evidence is clear that Texas can put this water to immediate use. Tr. 404-405 (5/21/86). The Red Bluff Reservoir, which has a capacity of 310,000 acre-feet, is at the present time virtually dry. Tr. 403-404 (5/21/86). Clearly, Texas can make use of the water that it is entitled to but has been deprived of for the last 30 years.

C. Enforcement of the Decree.

Any decree which requires New Mexico to honor the Article III(a) obligation in the future and repay past deficits requires a determination annually of that year's 1947 condition and the departure, whether positive or negative, from the state-line delivery obligation. New Mexico and her officials can be enjoined to deliver a specified quantity of water but to enjoin them to determine the departure from the 1947 condition would be infeasible because of the judgment that must be exercised in making the determination. Other enforcement mechanisms must be found, and three are considered here. They are:

1. Appointment of a River Master, such as the Court did in *New Jersey v. New York,* 347 U.S. 495 (1954), cited in *Texas v. New Mexico,* 462 U.S. 554, 566, n.11 (1983);

2. An injunction issued to the Pecos River Commission to enforce the decree; or

3. Enforcement of the decree by judicial means.

The Court's 1983 opinion may allow room for appointment of a River Master with the responsibility of applying the law of this case to determine departures from the 1947 condition for the sole purpose of determining whether New Mexico has complied with the decree. But the Court is reluctant to employ river masters (*Texas v. New Mexico,* 462 U.S. at 566), and I am therefore reluctant to recommend such action.

Enforcement of the decree could be left to the Compact Commission. Each year it would determine for the prior year: (1) New Mexico's Article III(a) obligation, and (2) the amount of water reaching the state line. From these two findings the Commission could then determine whether New Mexico has met its annual minimum delivery obligation (or exceeded it). If not, the deficit amount could be determined; this process would be repeated each year. If the Commission performed these tasks, it would not only be enforcing the decree as to past water delivery deficits, it would also be determining contemporary compliance with the Article III(a) obligation. Three questions arise about this possible remedy. (1) Should the Commission be enjoined to make the necessary determinations? (2) If so, should the Commission be enjoined to use a particular methodology for making the determinations, until it agreed on a different methodology? (3) Should those determinations apply not only to past delivery obligations but also to future obligations? Texas supports an affirmative answer to all those questions, and tendered a provisional manual (Tex. Exh. 103) for making the necessary determinations. New Mexico would answer all three questions in the negative but offered its manual in case the Court accepted the Texas position. (New Mex. Exh. 62).[21]

[21] Both manuals were admitted solely as suggested manuals for use "in the event that the Court should impose such a manual [upon the Commission]." Tr. 338 (5/31/86); Tr. 237 (5/20/86).

If the slate were clean, I would accept the Texas position as a practical and fair way to bring Pecos River Compact litigation to a final conclusion. But my reading of the Court's opinion in *Texas v. New Mexico,* 462 U.S. 554 (1983) discerns a pervasive reluctance by the Court to issue orders to the Commission binding it to act in a certain way or to adopt a particular methodology.

Enforcement of the decree is thus left to agreement by the Commission or to judicial action. If the Commissioners are unable to agree on what the current Article III(a) obligation is, neither the parties nor this Court will know whether New Mexico has satisfied the decree or not. In that event, Texas would have to apply to the Court for enforcement of the decree, and a proceeding to determine the 1947 condition, under the principles and methodologies stipulated or ordered herein, would ensue. If such proceedings should become the norm, the Court would presumably reconsider the question of appointing a River Master or enjoining action by the Commission.

While judicial enforcement of the decree may operate smoothly, I would be remiss in my duty to the Court to ignore the difficulties that can arise in determining New Mexico's compliance with the decree. As noted briefly earlier in this Report, compliance with the decree will require either the Commission, a River Master or the Court to make the following determinations: (1) what is the Article III(a) obligation for the year in question? This determination must be made because the starting point each year for testing compliance with the decree is that year's Article III(a) obligation. The next question to be answered is, (2) was the Article III(a) obligation met? If not, then New Mexico has not satisfied the annual minimum delivery obligation of the decree, and the deficit amount must be determined. If New Mexico has met her Article III(a) obligation, the amount of excess water she has delivered must be determined so she can receive credit for it towards her obligation under the decree. But the reference point in either

case must be the Article III(a) obligation, which must be determined annually and which will change annually as water supply conditions vary from year to year. It must be emphasized that this requirement of an annual determination of the Article III(a) obligation is not a product of the particular requirements of the relief proposed in this Report; *any* decree that requires New Mexico to meet its Article III(a) obligation and deliver water to Texas over a period of time to compensate for underdeliveries during the 1950-1983 period will encounter the necessity of an annual determination of the Article III(a) obligation.

In addition, for the period of time not litigated in this action, 1984 forward, there must also be a determination by someone of the Article III(a) obligation. If the Commission cannot agree, another original action may be the only choice Texas has.

Thus, in the worst of circumstances, two proceedings to determine the Article III(a) obligation could be taking place at the same time. To take the year 1990 as an example, Texas might have to file an enforcement action to obtain water due under the decree and it might also have to file another original action to determine what it is owed from 1984 to 1990. Both actions would require determination of the 1990 Article III(a) obligation, and the answer in each action might be different. Perhaps this worst case scenario is far fetched. But it remains true that in every year hereafter, the 1947 condition must be determined for two purposes: (1) for payment of the water debt owing from 1950-1983 and (2) for the water debt, if any, arising in 1984 and thereafter. It seems desirable to have those determinations made by one decision-maker, employing a single standard of decision and producing one numerical value for the Article III(a) obligation.

That result can be reached if either of two alternatives is accepted by the Court: (1) the alternative proposed by Texas, that the Commission be enjoined to apply a Manual such as

Tex. Exh. 103, or possibly N. Mex. Exh. 62, to future years beginning with 1984 until the Commission adopts some other standard for measuring the 1947 condition; or (ii) the alternative I would recommend (which I believe is more consistent with the Court's views regarding the Pecos River Commission) that the Commission, or another designated entity such as a River Master, be enjoined to utilize Tex. Exh. 79, appropriately modified to reflect the Court's legal determination as to which of man's activities are not chargeable to New Mexico, as a basis for determining both New Mexico's Article III(a) obligation and its compliance with the decree for the mandated ten-year delivery schedule. Since Tex. Exh. 79 utilizes the routing study adopted by this Court in Texas v. New Mexico, 467 U.S. 1238 (1984) for determining the 1947 condition, such a requirement would not impinge unduly upon the prerogatives of the Commission and at the same time would allow for enforcement of the decree.

I have included a proposed decree with this Report incorporating the recommendations made above.

Denver, Colorado, July ....., 1986.

Charles J. Meyers
Special Master

APPENDIX A

PROPOSED DECREE

IT IS ORDERED, ADJUDGED AND DECREED THAT

I. For purposes of this decree:

(A) "Annual Minimum Delivery Obligation" shall mean the annual amount of water owed by New Mexico to Texas under this decree over and above the Article III(a) obligation.

(B) "Index Inflow" shall mean the three year progressive average of "annual flood inflows" as those terms are defined in Tex. Exh. 79, Table 2 at page 5.

(C) "Water Interest" shall equal the return on one year treasury bills as of the date that it is determined that New Mexico has not met its obligations under this decree.

II. The State of New Mexico, its officers, attorneys, agents, and employees be and they are hereby severally enjoined:

(A) To comply with the Article III(a) obligation of the Pecos River Compact by delivering to Texas at state line each year an amount of water calculated in accordance with the inflow-outflow equation contained in Tex. Exh. 68 at page 2.

(B) To calculate the Index Inflow component of the inflow-outflow equation by using the inflow-outflow and channel loss equations contained in Tex. Exh. 79.[1]

(C) To deliver to Texas at state line an additional amount of water aggregating 340,100 acre feet over a period of ten years as specified in Article III of this Decree and to deliver to Texas at state line not less than 34,010 acre feet of water per year for ten years to satisfy the Annual Minimum Delivery Obligation.

---

[1] Tex. Exh. 79 will have to be modified to reflect decisions by the Court as to man-made depletions chargeable to New Mexico.

III. New Mexico is granted three years from the date of this Decree to commence performance of the Annual Minimum Delivery Obligation, provided that during the three-year period she demonstrates good faith by complying with the Article III(a) obligation in each of the three years. If New Mexico fails to demonstrate such good faith, New Mexico shall commence performance of the Annual Minimum Delivery Obligation of 34,010 acre feet at the beginning of the year next ensuing after the year of default in the Art. III(a) obligation.

IV. If New Mexico shall have failed to deliver to Texas at state line at the end of five years from the date specified in Article III of this Decree 136,040 acre feet of water (being eighty percent of 170,050 acre feet of water owed by New Mexico during this five-year period), New Mexico shall pay to Texas, in addition to any amounts owed under this Decree, Water Interest on all amounts undelivered during the five-year period as well as Water Interest on the balance of the amount New Mexico owes to Texas under Section II(B) of this Decree.

V. [If an arbiter is appointed] The Pecos River Commission, its officers and employees [or, the River Master] are enjoined to make the calculations provided for in this Decree annually as promptly as data are available and to report the calculations to appropriate representatives of the State of New Mexico and the State of Texas.