

No. 105, ORIGINAL

RECEIVED

AUG 31 2000

OFFICE OF THE CLERK
SUPREME COURT, U.S.

In The

Supreme Court of the United States

STATE OF KANSAS,

Plaintiff,

v.

STATE OF COLORADO,

Defendant,

and

UNITED STATES OF AMERICA,

Defendant-Intervenor.

ARTHUR L. LITTLEWORTH, Special Master
THIRD REPORT
APPENDIX (EXHIBITS 1-9)

August 2000

COCKLE LAW BRIEF PRINTING CO., (800) 225-6964
OR CALL COLLECT (402) 342-2831

No. 126, Orig.
Ex. K113

KS002993

APPENDIX

TABLE OF CONTENTS

	Page
Exhibit 1 Section XIII of Second Report (Measure of Damages Colorado Gain or Kansas Loss).....	App. 1
Exhibit 2 Order dated July 28, 1999 re Colorado's Motion in Limine to Exclude Evidence of Colorado's Benefits from Violations of Arkansas River Compact.....	App. 11
Exhibit 3 Section XIV of Second Report (Eleventh Amendment).....	App. 18
Exhibit 4 Section XV of Second Report (Prejudgment Interest).....	App. 38
Exhibit 5 Order dated January 11, 1999 re Modeling and Other Issues.....	App. 45
Exhibit 6 Order dated July 28, 1999 re Depletions for 1995-96.....	App. 64
Exhibit 7 Order dated March 22, 2000 re Mitigation of Damages, Colo. Exh. 1096.....	App. 68
Exhibit 8 Order dated May 1, 2000 re Objection to Expert Testimony (<i>Daubert</i> Motion)..	App. 76
Exhibit 9 Stipulation filed November 23, 1998, Table 4B.....	App. 86

IN THE SUPREME COURT OF THE UNITED STATES

STATE OF KANSAS,)	
Plaintiff,)	
v.)	No. 105 Original
)	October Term, 1999
STATE OF COLORADO,)	
Defendant,)	
UNITED STATES OF)	
AMERICA,)	
Intervenor.)	

ORDER OVERRULING COLORADO'S OBJECTION TO THE ADMISSIBILITY OF EXPERT TESTIMONY REGARDING SECONDARY ECONOMIC DAMAGES

(Filed May 1, 2000)

The Kansas claim for damages includes secondary or indirect economic losses to the Kansas economy resulting from the increased costs of pumping and crop production losses. Kansas employed two widely recognized experts, Professor Joel R. Hamilton and Dr. M. Henry Robison, to estimate these secondary economic damages. At the conclusion of the cross-examination of these experts, Colorado made an objection to the admissibility of all testimony concerning the analysis of secondary economic impacts. RT Vol. 187 at 54. The objection was based upon the argument that the testimony and exhibits of the Kansas experts did not meet the tests for expert testimony set forth in the *Daubert* and *Kumho Tire Co.* cases.¹ Colorado

¹ *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993); *Kumho Tire Co., Ltd. v.*

filed a written brief in support of its objection, and Kansas was given the opportunity to reply. Colorado also renewed its "gatekeeper" objection to keep Professor Hamilton off the stand when he returned to testify on rebuttal. RT Vol. 206 at 7. That objection was overruled, and the testimony and evidence on secondary economic damages was completed. However, the basic Colorado objection, in essence a motion to strike, was taken under submission. RT Vol. 206 at 6.

Rule 702 of the Federal Rules of Evidence provides:

"If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise."

In the *Daubert* case, the U.S. Supreme Court addressed the admissibility of scientific expert testimony under this Rule. The case involved the use of a prescription drug, Bendectin, taken during pregnancy, and the allegation that it had caused serious birth defects. A summary judgment was granted on behalf of the defendant drug company based upon a vast body of epidemiological data concerning the drug. The plaintiff's expert testimony, which relied upon animal-cell and live animal studies, and chemical structure analyses, was ruled inadmissible. Relying upon *Frye*,² the trial court found that these

Carmichael, 526 U.S. ___, 119 S.Ct. 1167, 143 L.Ed.2d at 238 (1999).

² *Frye v. United States*, 54 App. DC 46, 293 F. 1013 (1923).

studies were not "generally accepted" by the scientific community as being reliable.

The Supreme Court recognized that the "general acceptance" test had been the dominant standard for some 70 years since the *Frye* case, but nonetheless sharp divisions existed among the courts. The Court noted that the *Frye* decision predated Rule 702, and held that the general acceptance test, as the exclusive standard for admissibility of expert scientific testimony, was incompatible with the Federal Rules. The Rules, said the Court, assign to the trial judge "the task of ensuring that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand." 509 U.S. at 597. The Court emphasized that the Rule 702 inquiry is a "flexible one." *Id.* at 594.

The Court also discussed specific factors such as testing, peer review, error rates, and general acceptability in the scientific community, which might prove helpful in determining the admissibility of a particular scientific "theory or technique." *Id.* at 593-94. These factors are nicely summarized in the *Kumho Tire* case,³ but the Court makes it clear that they "may or may not be pertinent in assessing reliability." 143 L.Ed. 2d at 251. They can neither be ruled out, nor ruled in, since "Too much depends upon the particular circumstances of the particular case at issue." *Id.* at 252. The objective of the *Daubert* gatekeeping obligation, said the Court, is "to enforce the reliability and relevancy of expert testimony," and in this inquiry

³ *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. ___, 143 L.Ed. 2d 238, 119 S.Ct. 1167.

the trial court "must have considerable leeway." *Id.* at 252.

The *Kumho Tire* case involved the blowout of a tire, claimed to be defective by design or manufacture, which resulted in the death of a passenger. While the plaintiff's expert testimony was more technical than scientific the Court held that the *Daubert* ruling applies not only to scientific expert testimony, but to "all expert testimony." *Id.* at 250. In the case at hand, the Colorado objection relates to the testimony of one expert qualified in the area of "agricultural economics," and the other in the area of "economic modeling." RT Vol. 185 at 66; RT Vol. 186 at 55. Clearly they are both subject to the principles in the *Daubert* and *Kumho Tire* cases.

The secondary impacts to the Kansas economy as a whole were estimated through a process known as an input-output analysis. This process traces the ripple effects of the depletions within the ditch service areas, and the lowered groundwater levels in the adjacent region, throughout the statewide economy. The study of secondary economic impacts as part of the discipline of economics dates back to the mid-eighteenth century in France. RT Vol. 185 at 68. However, it was not until the 1930s that the concepts were more rigidly specified and converted to a mathematical rigor by Professor Leontief at Harvard University. *Id.* at 69. He received a Nobel Prize for his work. *Id.* The use of input-output computer models came into common usage after World War II. *Id.* at 71. The methodology, that is, the mathematics, of these models is formalized in a textbook by Miller and Blair, now considered the "bible" for input-output analysts. RT

Vol. 185 at 72-73; RT Vol. 186 at 78; Kan. Exh. 953. Beginning in the 1970s, with the rapid development of computer power, it became possible to construct input-output models for regions based on data collected and assembled by the federal government and others. RT Vol. 185 at 74; RT Vol. 186 at 59-60. The regional model constructed and used by the Kansas experts in this case to compute secondary economic damages applies accepted Miller and Blair principles. RT Vol. 185 at 72-73.

The Kansas regional model was constructed by Dr. Robison. It begins with the use of an input-output modeling system known as IMPLAN. This is a framework which uses national level coefficients, and from that starting point IMPLAN can calculate an appropriate region-specific, input-output model. RT Vol. 185 at 81. IMPLAN was developed in the early 1980s by the U.S. Forest Service for use in land management impact planning and analysis. Kan. Exh. 892, Section D at 5. However, the IMPLAN model is now maintained by the U.S. Department of Commerce, Bureau of Economic Analysis. RT Vol. 186 at 57, 61-62. It is a model that includes extensive survey data for the entire United States economy, covering more than 500 sectors of economic detail. It shows who sells to whom, and who buys from whom. In essence, the input-output model is a very elaborate double-entry accounting system. The sales to various sectors across a row have to balance with purchases from each sector down the column. RT Vol. 186 at 57-58.

In 1987 a private corporation, the Minnesota IMPLAN Group, located at the University of Minnesota, began work on regional IMPLAN data and software. Kan. Exh. 962; RT Vol. 186 at 59. The group now maintains data

at the county level, including statistics on employment, income, dividends, interest, rents, transfer payments, earnings, and other kinds of information that are needed to build a model, and these data have been privatized. RT Vol. 186 at 59-60. More than 125 significant studies and research projects have used IMPLAN software and these regional data since they have become commercially available. *Id.* at 60. The Kansas input-output model developed by Dr. Robison takes the national model, couples it with region-specific information, and converts the national model into a regional input-output model for the State of Kansas. *Id.* at 62.

In 1996-97, the U.S. Department of Commerce, Economic Development Administration, assessed the economic impact of 175 of its recent public works projects. Dr. Robison was hired to do the economic modeling for this study, in association with Princeton and Rutgers Universities. He constructed 175 different IMPLAN models to conduct the work. RT Vol. 186 at 50. Dr. Robison is now working with the Economic Development Administration on a new study that will involve constructing between 800 and 900 county-level IMPLAN models. *Id.* at 51. In 1997 Dr. Robison worked for the Colorado Department of Transportation to build about 10 IMPLAN models for different subregions of the Colorado economy. *Id.* at 51-52. The record discloses many more examples of input-output modeling, but perhaps it is sufficient here merely to note that there was no challenge to the testimony that IMPLAN is the "most widely used" model for assessing secondary economic impacts. RT Vol. 185 at 80; RT Vol. 186 at 26. Numerous peer reviewed journal articles, a number of which were authored by

Professor Hamilton and Dr. Robison, also support the broad acceptance and reliability of input-output modeling. Kan. Exhs. 938, 961.

There can be no doubt that evidence resulting from an input-output model analysis, and from IMPLAN in particular, meet the admissibility standards of *Daubert* and *Kumho Tire*. Colorado itself acknowledges that "input-output modeling rests upon a foundation which is generally recognized in the field of economics." Colo. Objection at 3. The Colorado position, however, is based upon a more discreet objection to IMPLAN, that is, whether it is sufficiently reliable to calculate secondary economic impacts going backwards for a period of 45 years, and forward for 50 years. This issue depends upon the use of "multipliers" within the modeling system.

Multipliers are computed from the input-output model and are used to show the effects of changes in an economy. RT Vol. 185 at 75. They translate the ripple effects of a primary impact on the economy into resulting impacts on various sectors of the economy. *Id.* The input-output model constructed by Kansas experts in this case is a snapshot of the Kansas economy in 1995. RT Vol. 186 at 74. The issue raised by Colorado is whether the multiplier relationships existing in 1995 are sufficiently stable to permit the model to be used for other years. Colorado raises the question, but has offered no evidence that IMPLAN cannot be used in this fashion. Dr. Robison's review of the literature indicates that the input-output coefficient tables are relatively stable and may be used for years. RT Vol. 186 at 77-79, 84-93. Dr. Robison cited examples of input-output models being used to look ahead 20 years and back almost that period of time. *Id.* at 92-97. If

the multipliers were not stable, they would be “going down” in Dr. Robison’s opinion, and that would mean that the Kansas approach underestimates secondary economic impacts. *Id.* at 99. This testimony was given as part of Kansas’ case in chief, and it was at the conclusion of Dr. Robison’s cross-examination that Colorado made its *Daubert* objection.

In response, as part of its rebuttal case, Kansas produced evidence that the IMPLAN model is currently being used by the United States Corps of Engineers to look ahead 100 years. Kan. Exh. 1084; RT Vol. 206 at 35-36, 72-73. The study, dated November 1999, considers a series of alternatives for salmon recovery. These include the “breaching” of four dams on the lower Snake River which would essentially eliminate water storage, reducing the water supply available to agriculture and for hydro power. RT Vol. 206 at 33-34. Professor Hamilton, as chair of the Independent Economic Analysis Board of the Northwest Power Planning Council, provided technical review and oversight of these economic impact studies. This latest use of the IMPLAN model effectively responds to Colorado’s argument that the Kansas evidence on secondary economic impacts is inadmissible when used over the time periods involved in this case.

Colorado also objects to the 20 percent limitation on the IMPLAN results imposed by the Kansas experts in order to limit secondary impacts to their net effect on the Kansas economy. However, that step is outside of the IMPLAN product. It is a judgment decision made by the input-output analyst, and is not part of the model nor the standards affecting its admissibility. RT Vol. 206 at 84-86.

App. 84

The Colorado objection to the admissibility of expert testimony regarding secondary economic damages is hereby overruled. This Order applies to the admissibility and not to the weight of the testimony.

DATED: May 1, 2000.

/s/ Arthur L. Littleworth
ARTHUR L. LITTLEWORTH
Special Master

PROOF OF SERVICE BY MAIL

STATE OF CALIFORNIA, COUNTY OF RIVERSIDE

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years and not a party to the within entitled action; my business address is Best, Best & Krieger, 3750 University Avenue, 400 Mission Square, Riverside, California 92502.

I am readily familiar with Best, Best & Krieger's practice for collecting and processing correspondence for mailing with the United States Postal Service. Under that practice, all correspondence is deposited with the United States Postal Service the same day it is collected and processed in the ordinary course of business.

On May 1, 2000, I served the within **ORDER OVER-RULING COLORADO'S OBJECTION TO THE ADMIS-SIBILITY OF EXPERT TESTIMONY REGARDING SECONDARY ECONOMIC DAMAGES** by placing a copy of the document in a separate envelope for each addressee named below and addressed to each such addressee as follows:

John B. Draper, Esq.
Montgomery & Andrews
325 Paseo de Peralta
P.O. Box 2307
Santa Fe, New Mexico 87504-2307

David W. Robbins, Esq.
Hill & Robbins
100 Blake Street Building
1441 Eighteenth Street
Denver, Colorado 80202

Jeffrey P. Minear
Assistant to the Solicitor General
Office of the Solicitor General
United States Department of Justice
Constitution Avenue & Tenth Street, N.W.
Washington D.C. 20530

James J. DuBois, Esq.
U.S. Department of Justice
General Litigation Section
999 18th Street, Suite 945
Denver, Colorado 80202

On May 1, 2000, at the office of Best, Best & Krieger, 3750 University Avenue, 400 Mission Square, Riverside, California 92502, I sealed and placed each envelope for collection and deposit by Best, Best & Krieger in the United States Postal Service, following ordinary business practices.

I declare under penalty of perjury under the laws of the State of California, that the foregoing is true and correct.

Executed on May 1, 2000, at Riverside, California.

/s/ Sandra L. Simmons
Sandra L. Simmons