

No. 141, Original

IN THE  
SUPREME COURT OF THE UNITED STATES

◆  
\_\_\_\_\_  
STATE OF TEXAS,

*Plaintiff,*

v.

STATE OF NEW MEXICO and  
STATE OF COLORADO,

*Defendants.*

◆  
\_\_\_\_\_  
**OFFICE OF THE SPECIAL MASTER**

◆  
\_\_\_\_\_  
**NEW MEXICO'S MOTION *IN LIMINE* TO EXCLUDE TESTIMONY  
OF DR. ROBERT J. BRANDES**

HECTOR H. BALDERAS  
New Mexico Attorney General  
TANIA MAESTAS  
Deputy Attorney General  
CHOLLA KHOURY  
Assistant Attorney General  
ZACHARY E. OGAZ  
Assistant Attorney General  
P.O. Drawer 1508  
Santa Fe, New Mexico 87501  
505-239-4672

MARCUS J. RAEL, JR.\*  
LUIS ROBLES  
SUSAN BARELA  
Special Assistant Attorneys General  
Robles Rael & Anaya  
500 Marquette Ave NW #700  
Albuquerque, NM 87102  
[marcus@roblesrael.com](mailto:marcus@roblesrael.com)  
505-242-2228

*\*Counsel of Record*

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## TABLE OF CONTENTS

MOTION.....	1
GROUND FOR THE MOTION.....	1
BACKGROUND .....	2
LEGAL STANDARD.....	3
ARGUMENT .....	5
I. Dr. Brandes’ New Opinions Should Be Excluded at Trial. ....	5
A. Importance of Dr. Brandes’ New Opinions to Texas.....	5
B. New Mexico Would Be Unfairly Prejudiced at Trial if Dr. Brandes Offered These New Opinions. ....	6
C. Trial Is Nearly Here; A Cure by Continuance Is Not Possible.....	6
D. Texas Offers No Explanation for Its Late Disclosure. ....	7
CONCLUSION.....	7

## TABLE OF AUTHORITIES

### Cases

<i>Advanced Analytics, Inc. v. Citigroup Global Mkts., Inc.</i> , 301 F.R.D. 47 (S.D.N.Y. 2014).....	7
<i>Beller ex rel. Beller v. United States</i> , 221 F.R.D. 689 (D.N.M. 2003).....	4
<i>Cheung Jacky Chik-Kin v. Axis Surplus Ins. Co.</i> , 2015 U.S. Dist. LEXIS 73519 (N.D. Tex. Jan. 21, 2015)....	4
<i>Greenwood v. Henkel</i> , 2009 WL 8711142 (W.D. Okla. 2009).....	6
<i>Hearing Components, Inc. v. Shure, Inc.</i> , 2008 U.S. Dist. LEXIS 121434 (E.D. Tex. Dec. 16, 2008).....	5
<i>Jonasson v. Lutheran Child and Family Services</i> , 115 F.3d 436 (7th Cir. 1997) .....	3
<i>Luce v. United States</i> , 469 U.S. 38 (1984).....	3
<i>Mariscal v. Graco, Inc.</i> , 52 F.Supp.3d 973 (N.D. Cal. 2014).....	6
<i>Morritt v. Stryker Corp.</i> , 2011 U.S. Dist. LEXIS 98218 (E.D.N.Y. Sep. 1, 2011) .....	7
<i>Sandata Techs., Inc. v. Infocrossing, Inc.</i> , 2007 U.S. Dist. LEXIS 85176 (S.D.N.Y. Nov. 16, 2007).....	4

<i>Tex. A&amp; M Rsch. Found. v. Magna Transp., Inc.</i> , 338 F.3d 394 (5th Cir. 2003).....	5
<i>United States v. City of New York</i> , 637 F.Supp.2d 77 (E.D.N.Y. 2009).....	6
<i>Yates-Williams v. Nihum</i> , 268 F.R.D. 566 (S.D. Tex. 2010).....	4

## Statutes

Fed. R. .Civ. P. 26.....	1, 4
Fed. R. Civ. P. 26(a)(2)(B)(i) .....	3, 4
Fed. R. Civ. P. 26(a)(2)(D).....	4
Fed. R. Civ. P. 37(c)(1) .....	4

## MOTION

COMES NOW the State of New Mexico (“New Mexico”) and respectfully moves *in limine* to limit the scope of Texas expert Dr. Robert J. Brandes’ testimony to his previously disclosed opinions under Rules 26 and 37 of the Federal Rules of Civil Procedure.

### GROUND FOR THE MOTION

In contravention of Federal Rule of Civil Procedure 26 and the Case Management Plan (“CMP”), Texas seeks to expand Dr. Brandes’ testimony into the following ***new areas*** that Texas ***never previously disclosed***:

- (1) “[T]he New Mexico modeling’s failure to demonstrate impacts on New Mexico from any operations by irrigators or municipal providers in Texas.” *See Exhibit A, State of Texas’s Witness List Pursuant to Section III of the April 9, 2021 Trial Management Order* at 4 (June 30, 2021) (“Texas Witness List”) (excerpt);
- (2) The work performed by Texas’s expert Mr. Shane Coors. *See Exhibit B, Declaration of Robert J. Brandes* at 5-7 (Dec. 22, 2020) (“*Brandes December Declaration*”); and
- (3) The 2008 Operating Agreement. *Id.* at 10.

New Mexico previously filed a Motion to Strike these opinions as expressed in the Brandes December Declaration, and that motion is pending. *See New Mexico Objections to and Motion to Strike Texas’s Late-Filed Expert Opinions* (Feb. 12, 2021) (“NM Motion to Strike”) [Dkt. 476]. Now, Texas is again attempting to expand Dr. Brandes’s testimony through its Witness List.

Allowing Dr. Brandes to offer trial testimony into undisclosed subject matter in contravention of the CMP and Federal Rules of Civil Procedure is not substantially justified or harmless. Therefore, the scope of Dr. Brandes’ testimony at trial must be limited to the areas disclosed in his expert reports and deposition testimony. In addition, the Special Master should preclude Texas from introducing as a trial exhibit portions of Dr. Brandes’s December Declaration containing these new opinions.

## BACKGROUND

1. The CMP as adopted and amended in this case set deadlines for the disclosure of Texas's expert reports and any final supplemental reports or disclosures:  
  
May 31, 2019: Texas's expert reports and disclosures;  
  
December 30, 2019: Texas's rebuttal expert reports and disclosures; and  
  
September 30, 2020: Final supplemental expert reports and disclosures, and amendments.
2. No party objected to this schedule. Order of the Special Master (Aug. 28, 2020); Order and Amendment to Trial Management Schedule (Sep. 29, 2020). The CMP establishes that backup data and documents must be provided with each expert disclosure. CMP, § 6.2.2.
3. In May of 2019, Texas made its expert disclosures, including an expert report by Dr. Brandes. Exhibit C, *Expert Report of Robert J. Brandes* (May 31, 2019) ("*Brandes Expert Report*") (cover page and table of contents). In his expert report, Dr. Brandes offered opinions relating to the Project, Project water budgets, historical trends in flows in the Rio Grande, Project water deliveries, and historical Project operations. *Id.* at ii. New Mexico deposed Dr. Brandes on the contents of his expert report in September of 2019.
4. In October of 2019, New Mexico disclosed its expert reports, including its disclosure of New Mexico's hydrologic model—the Integrated Lower Rio Grande Model ("Integrated Model")—which is central to New Mexico's position on the hydrology of the Lower Rio Grande basin and Rio Grande Project operations.
5. Texas filed its rebuttal expert reports on December 30, 2019, but did not file a rebuttal report for Dr. Brandes.
6. With its December 2019 rebuttal expert disclosures, Texas also disclosed Mr. Shane Coors. Mr. Coors was the sole Texas expert who analyzed New Mexico's Integrated Model.

7. Discovery closed on August 31, 2020. Order of the Special Master (May 5, 2020). Final supplemental expert reports and disclosures were due by September 30, 2020. Order and Amendment to Trial Management Schedule (Sep. 29, 2020).
8. In support of its summary judgment briefing in December of 2020, Texas filed a declaration from Dr. Brandes (“December Declaration”), where Dr. Brandes presented opinions and analysis, for the first time, on New Mexico’s Integrated Model, on the amount of water New Mexico has received under the 2008 Operating Agreement, and on the data and analysis disclosed by Texas’s expert Mr. Coors. New Mexico documented these untimely new opinions in the NM Motion to Strike [Dkt. 476]. That Motion is currently pending.
9. On June 30, 2021, Texas exchanged its Witness List, identifying each percipient and expert witness that Texas will or may call to testify at trial. *Texas Witness List*. The summary of Dr. Brandes’s testimony in the Texas Witness List states that he will offer opinions on “New Mexico modeling’s failure to demonstrate impacts on New Mexico from any operations by irrigators or municipal providers in Texas.” *Id.* at 4. This is in addition to the new opinions Dr. Brandes offered in his December Declaration on the 2008 Operating Agreement and Mr. Coors’s analysis.

### **LEGAL STANDARD**

A party may use a motion *in limine* to exclude inadmissible or prejudicial evidence before it is actually introduced at trial. *See Luce v. United States*, 469 U.S. 38, 40 n.2 (1984). “[A] motion in limine is an important tool available to the trial judge to ensure the expeditious and evenhanded management of the trial proceedings.” *Jonasson v. Lutheran Child and Family Services*, 115 F.3d 436, 440 (7th Cir. 1997).

Rule 26 requires that a party’s expert witness disclose, in a written report, “a complete statement of all opinions the witness will express” at trial, and the basis and reasons for them. Fed.

R. Civ. P. 26(a)(2)(B)(i). Rule 26 further provides that these disclosures be made at the times directed by the court. *See* Fed. R. Civ. P. 26(a)(2)(D). The purpose of these requirements “is to provide ‘information regarding expert testimony sufficiently in advance of trial [so] that opposing parties have a reasonable opportunity to prepare for effective cross examination and perhaps arrange for expert testimony from other witnesses.’” *Yates-Williams v. Nihum*, 268 F.R.D. 566, 570 (S.D. Tex. 2010). (quoting Fed. R. Civ. P. 26 Committee Note (1993 Amendments)).

Rule 37 provides that if a party fails to provide the information required by Rule 26(a), “the party is not allowed to use that information or witness to supply evidence on a motion, at a hearing, or at a trial, unless the failure was substantially justified or harmless.” Fed. R. Civ. P. 37(c)(1); *see also Yates-Williams*, 268 F.R.D. at 570 (“[w]hen a party fails to comply with the requirements of Rule 26, the court may exclude the witness or report as evidence at trial, at a hearing, or on a motion, and may ‘impose other appropriate sanctions.’”) (quoting Fed. R. Civ. P. 37(c)(1)). “[E]xperts are not free to ... continually supplement their opinions. If that were the case, there would never be any closure to expert discovery, and parties would need to depose the same expert multiple times.” *Sandata Techs., Inc. v. Infocrossing, Inc.*, Nos. 05 Civ. 09546(LMM)(THK), 06 Civ. 01896(LMM)(THK), 2007 U.S. Dist. LEXIS 85176 \*20 (S.D.N.Y. Nov. 16, 2007). Failure to impose the Rule 37 sanction “would create a system where preliminary reports could be followed by supplementary reports and there would be no finality to expert reports, [which] would surely circumvent the full disclosure requirement implicit in Rule 26.” *Beller ex rel. Beller v. United States*, 221 F.R.D. 689, 695 (D.N.M. 2003); *see also Cheung Jacky Chik-Kin v. Axis Surplus Ins. Co.*, 2015 U.S. Dist. LEXIS 73519 \*3 (N.D. Tex. Jan. 21, 2015).

In evaluating whether a violation of Rule 26 is harmless, the court should consider: (1) the importance of the evidence; (2) the prejudice to the opposing party of including the evidence; (3) the possibility for curing such prejudice by granting a continuance; and (4) the explanation for the party’s

failure to disclose. *Tex. A& M Rsch. Found. v. Magna Transp., Inc.*, 338 F.3d 394, 402 (5th Cir. 2003). The burden is on the party who failed to disclose the information to prove that such failure is harmless. *Hearing Components, Inc. v. Shure, Inc.*, 2008 U.S. Dist. LEXIS 121434 \*4-5 (E.D. Tex. Dec. 16, 2008).

## **ARGUMENT**

### **I. Dr. Brandes' New Opinions Should Be Excluded at Trial.**

There is a clear CMP for this case. Discovery closed on August 31, 2020, and final supplemental expert reports and disclosures were due by September 30, 2020. The only report by Texas's retained expert Dr. Brandes was his May 31, 2019 report. New Mexico conducted discovery on the facts and opinions expressed in that report. Nothing more was heard from Dr. Brandes until Texas offered new opinions by Dr. Brandes in his December Declaration.

On June 30, 2021 Texas expanded the scope of evidence to be presented at trial by Dr. Brandes by describing a subject area in the Texas Witness List that had not been previously disclosed. There is no basis for Dr. Brandes to offer these new expert opinions at trial. In expanding the scope of Dr. Brandes' opinions in its Witness List and in Dr. Brandes's December Declaration, Texas invites the Special Master to allow Dr. Brandes to offer previously undisclosed and untested opinions at trial. Such a result would circumvent the provisions of the CMP and would defeat the purpose of the Federal Rules of Civil Procedure to prevent unfair surprise at trial. The factors for assessing whether Dr. Brandes' new opinions should be admissible despite their untimely disclosure weigh heavily in favor of exclusion.

#### **A. Importance of Dr. Brandes' New Opinions to Texas.**

Texas has introduced Dr. Brandes' new opinions without explaining their late disclosure or discussing their importance to Texas's case. Ostensibly, they have been silently introduced to "fill



holes” in Texas’s case, *United States v. City of New York*, 637 F.Supp.2d 77, 107 (E.D.N.Y. 2009), which is not a justifiable reason to permit the introduction of them at trial. If these opinions were important to Texas’s case, Texas should have developed and disclosed them in accordance with the schedule in the CMP.

**B. New Mexico Would Be Unfairly Prejudiced at Trial if Dr. Brandes Offered These New Opinions.**

Allowing Dr. Brandes to offer new opinions at trial well outside the scope of his previously disclosed opinions would be highly prejudicial to New Mexico. Expert rebuttal disclosures from Texas were due a year-and-a-half ago, on December 30, 2019. This case has involved extensive expert discovery, with Texas, New Mexico, and the United States each disclosing numerous experts and numerous experts’ reports and those experts being the subject of numerous depositions. Now, this case has moved well past the discovery phase towards trial of many complex factual and technical issues. *See e.g., Greenwood v. Henkel*, 2009 WL 8711142, at \*4 (W.D. Okla. 2009) (stating that once a case has moved past discovery to the adjudicatory stage, “litigants are entitled to assume that ... they are not going to be subjected to the delay and expense which result from another trip through the discovery stage”). Allowing Texas to expand the scope of Dr. Brandes’ expert opinions at this late date severely hampers New Mexico’s ability to prepare for trial. When Texas filed its initial and rebuttal expert disclosures in May and December of 2019, New Mexico was “entitled to a *complete* disclosure of all opinions—not a sneak preview of a moving target.” *Mariscal v. Graco, Inc.*, 52 F.Supp.3d 973, 983 (N.D. Cal. 2014) (emphasis added). Texas is not allowed to “sandbag [its] opponent with claims and issues that should have been included in the expert witness’ report.” *Id.*

**C. Trial Is Nearly Here; A Cure by Continuance Is Not Possible.**

There is no time for a continuance in the current case schedule, and Texas should not be

rewarded for its untimely disclosures. *See Morrill v. Stryker Corp.*, 2011 U.S. Dist. LEXIS 98218 at \*24 (E.D.N.Y. Sep. 1, 2011) (“[T]he fact that discovery is closed and this case has been pending for over four years weighs strongly against the possibility of a continuance.”) (internal quotation omitted). With trial in eight (8) short weeks, New Mexico should not be forced to guess at Dr. Brandes’ undisclosed opinions or divert its limited resources to conduct additional discovery.

#### **D. Texas Offers No Explanation for Its Late Disclosure.**

Texas has offered no explanation for its late attempt to expand the scope of Dr. Brandes’ testimony. The topics for which Texas now offers new opinions from Dr. Brandes have been known to Texas for more than a year-and-a-half. The only reasonable inference is that Texas offers these new opinions to impermissibly fill a gap in its previous expert reports it must have been aware of since at least October 31, 2019. *See Advanced Analytics, Inc. v. Citigroup Global Mkts., Inc.*, 301 F.R.D. 47, 51 (S.D.N.Y. 2014) (precluding an expert declaration containing new opinions, not within the scope of the expert’s “prior submissions” that was “based entirely on materials that have been in [the party’s] possession for well over a year”) (internal quotations and citations omitted). Texas should not be allowed to shore up its case deficiencies at this late date with “hail Mary” expert opinions in violation of the case management deadlines and at the expense of New Mexico.

### **CONCLUSION**

For the foregoing reasons, New Mexico requests that the Special Master limit the scope of Dr. Brandes’ trial testimony to his previously disclosed opinions as set forth in his May 31, 2019 Expert Report, and his September 24-25, 2019 deposition. Specifically, Dr. Brandes’s proposed opinions concerning (1) “the New Mexico modeling’s failure to demonstrate impacts on New Mexico from any operations by irrigators or municipal providers in Texas,” as expressed on page four in the Texas Witness List; and (2) the work performed by Texas’s expert Mr. Shane Coors and

(3) the 2008 Operating Agreement, both as expressed in Dr. Brandes' December Declaration,<sup>1</sup> should be excluded from trial. Additionally, New Mexico requests that the Special Master enter an order precluding Texas from introducing at trial these portions of Dr. Brandes's December Declaration that contain new opinions.

Respectfully submitted,

/s/ Jeffrey J. Wechsler

HECTOR H. BALDERAS  
New Mexico Attorney General  
TANIA MAESTAS  
Deputy Attorney General  
CHOLLA KHOURY  
Assistant Attorney General  
ZACHARY E. OGAZ  
Assistant Attorney General  
P.O. Drawer 1508  
Santa Fe, New Mexico 87501  
505-239-4672

JEFFREY J. WECHSLER  
Special Assistant Attorney General  
KALEB W. BROOKS  
MONTGOMERY & ANDREWS, P.A.  
325 Paseo de Peralta  
Santa Fe, NM 87501  
[jwechsler@montand.com](mailto:jwechsler@montand.com)  
[kwbrooks@montand.com](mailto:kwbrooks@montand.com)

JOHN B. DRAPER  
Special Assistant Attorney General  
CORINNE E. ATTON  
DRAPER & DRAPER LLC  
325 Paseo de Peralta  
Santa Fe, NM 87501  
[john.draper@draperllc.com](mailto:john.draper@draperllc.com)  
505-570-4591

MARCUS J. RAEL, JR.\*  
LUIS ROBLES  
SUSAN BARELA  
Special Assistant Attorneys General  
Robles Rael & Anaya  
500 Marquette Ave NW #700  
Albuquerque, NM 87102  
[marcus@roblesrael.com](mailto:marcus@roblesrael.com)  
505-242-2228

*\*Counsel of Record*

BENNETT W. RALEY  
LISA M. THOMPSON  
MICHAEL A. KOPP  
Special Assistant Attorneys General  
TROUT RALEY  
1120 Lincoln Street, Suite 1600  
Denver, Colorado 80203  
303-861-1963

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<sup>1</sup> Within Dr. Brandes' December Declaration, the previously undisclosed opinions are located in paragraphs 8-11 and 17 (new opinions on Integrated Model), paragraphs 19, 23-24 (new opinions based on Mr. Coors's expert report), and paragraph 31 (new opinions on 2008 Operating Agreement).

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\_\_\_\_\_  
**OFFICE OF THE SPECIAL MASTER**

\_\_\_\_\_  
**STATE OF NEW MEXICO'S CERTIFICATE OF SERVICE**

\_\_\_\_\_  
This is to certify that on July 20, 2021, I caused true and correct copies of **NEW MEXICO'S MOTION *IN LIMINE* TO EXCLUDE TESTIMONY OF DR. ROBERT J. BRANDES** to be served by e-mail and/or U.S. Mail, as indicated, upon the Special Master, counsel of record, and all interested parties on the Service List, attached hereto.

Respectfully submitted this 20th day of July, 2021.

/s/ Michael A. Kopp

Michael A. Kopp  
Special Assistant Attorney General  
TROUT RALEY  
1120 Lincoln Street, Suite 1600  
Denver, Colorado 80203  
(303) 861-1963

## SPECIAL MASTER

### **HONORABLE MICHAEL J. MELLOY**

*Special Master*

United States Circuit Judge  
111 Seventh Avenue, S.E., Box 22  
Cedar Rapids, IA 52401-2101

[TXvNM141@ca8.uscourts.gov](mailto:TXvNM141@ca8.uscourts.gov)

(319) 432-6080

(service via email and U.S. Mail)

### **MICHAEL E. GANS**

*Clerk of the Court*

United States Court of Appeals - Eighth Circuit  
Thomas F. Eagleton United States Courthouse  
111 South 10th Street, Suite 24.329  
St. Louis, MO 63102

[TXvNM141@ca8.uscourts.gov](mailto:TXvNM141@ca8.uscourts.gov)

(314) 244-2400

## MEDIATOR

### **HON. OLIVER W. WANGER (USDJ RET.)**

WANGER JONES HELSLEY PC  
265 E. River Park Circle, Suite 310  
Fresno, California 93720

[owanger@wjhattorneys.com](mailto:owanger@wjhattorneys.com)

(559) 233-4800 Ext. 203

### **DEBORAH L. PELL (Paralegal)**

[dpell@whjattorneys.com](mailto:dpell@whjattorneys.com)

## UNITED STATES

### **ELIZABETH B. PRELOGAR\***

*Acting Solicitor General*

### **EDWIN S KNEEDLER**

*Deputy Solicitor General*

### **JEAN E. WILLIAMS**

*Deputy Assistant Attorney General*

### **FREDERICK LIU**

*Assistant to the Solicitor General*

U.S. DEPARTMENT OF JUSTICE  
950 Pennsylvania Avenue, NW  
Washington, DC 20530-0001

[supremectbriefs@usdoj.gov](mailto:supremectbriefs@usdoj.gov)

(202) 514-2217

### **JAMES J. DUBOIS\***

### **R. LEE LEININGER**

U.S. DEPARTMENT OF JUSTICE  
Environment & Natural Resources Division  
999 18th Street

South Terrace – Suite 370

Denver, Colorado 80202

### **SETH C. ALLISON, Paralegal**

[james.dubois@usdoj.gov](mailto:james.dubois@usdoj.gov)

(303) 844-1375

[lee.leininger@usdoj.gov](mailto:lee.leininger@usdoj.gov)

(303) 844-1364

[Seth.allison@usdoj.gov](mailto:Seth.allison@usdoj.gov)

(303) 844-7917

**JUDITH E. COLEMAN**  
**JENNIFER A. NAJJAR**  
U.S. DEPARTMENT OF JUSTICE  
Environment & Natural Resources Division  
P.O. Box 7611  
Washington, D.C. 20044-7611

[Judith.coleman@usdoj.gov](mailto:Judith.coleman@usdoj.gov)  
(202) 514-3553  
[jennifer.najjar@usdoj.gov](mailto:jennifer.najjar@usdoj.gov)  
(202) 305-0476

## STATE OF NEW MEXICO

**HECTOR H. BALDERAS**  
*New Mexico Attorney General*  
**TANIA MAESTAS**  
*Chief Deputy Attorney General*  
**CHOLLA KHOURY**  
*Assistant Attorney General*  
**ZACHARY E. OGAZ**  
*Assistant Attorney General*  
STATE OF NEW MEXICO  
P.O. Drawer 1508  
Santa Fe, New Mexico 87501  
**PATRICIA SALAZAR** - Assistant

[hbaldaras@nmag.gov](mailto:hbaldaras@nmag.gov)  
[tmaestas@nmag.gov](mailto:tmaestas@nmag.gov)  
[ckhoury@nmag.gov](mailto:ckhoury@nmag.gov)  
[zogaz@nmag.gov](mailto:zogaz@nmag.gov)  
[psalazar@nmag.gov](mailto:psalazar@nmag.gov)  
(505) 239-4672

**MARCUS J. RAEL, JR.\***  
**LUIS ROBLES**  
**SUSAN BARELA**  
*Special Assistant Attorneys General*  
ROBLES, RAEL & ANAYA, P.C.  
500 Marquette Avenue NW, Suite 700  
Albuquerque, New Mexico 87102  
**CHELSEA SANDOVAL** - Paralegal  
**PAULINE WAYLAND** – Paralegal  
**BONNIE DEWITT** – Paralegal

[marcus@roblesrael.com](mailto:marcus@roblesrael.com)  
[luis@roblesrael.com](mailto:luis@roblesrael.com)  
[susan@roblesrael.com](mailto:susan@roblesrael.com)  
[chelsea@roblesrael.com](mailto:chelsea@roblesrael.com)  
[pauline@roblesrael.com](mailto:pauline@roblesrael.com)  
[bonnie@roblesrael.com](mailto:bonnie@roblesrael.com)  
(505) 242-2228

**BENNETT W. RALEY**  
**LISA M. THOMPSON**  
**MICHAEL A. KOPP**  
*Special Assistant Attorneys General*  
TROUT RALEY  
1120 Lincoln Street, Suite 1600  
Denver, Colorado 80203

[braley@troutlaw.com](mailto:braley@troutlaw.com)  
[lthompson@troutlaw.com](mailto:lthompson@troutlaw.com)  
[mkopp@troutlaw.com](mailto:mkopp@troutlaw.com)  
(303) 861-1963

**JEFFREY WECHSLER**  
*Special Assistant Attorney General*  
MONTGOMERY & ANDREWS

[jwechsler@montand.com](mailto:jwechsler@montand.com)  
(505) 986-2637

325 Paseo De Peralta  
Santa Fe, NM 87501  
**DIANA LUNA** – Paralegal

[dluna@montand.com](mailto:dluna@montand.com)

**JOHN DRAPER**  
*Special Assistant Attorney General*  
DRAPER & DRAPER LLC  
325 Paseo De Peralta  
Santa Fe, NM 87501  
**DONNA ORMEROD** – Paralegal

[john.draper@draperllc.com](mailto:john.draper@draperllc.com)  
(505) 570-4591

[donna.ormerod@draperllc.com](mailto:donna.ormerod@draperllc.com)

## STATE OF COLORADO

**PHILIP J. WEISER**  
*Attorney General of Colorado*  
**ERIC R. OLSON**  
*Solicitor General*  
**LAIN LEONIAK**  
*Acting First Assistant Attorney General*

[eric.olson@coag.gov](mailto:eric.olson@coag.gov)

**CHAD M. WALLACE\***  
*Senior Assistant Attorney General*  
**PRESTON V. HARTMAN**  
*Assistant Attorney General*  
COLORADO DEPARTMENT OF LAW  
Ralph Carr Judicial Center  
7<sup>th</sup> Floor  
1300 Broadway  
Denver, CO 80203  
**NAN EDWARDS**, Paralegal II

[chad.wallace@coag.gov](mailto:chad.wallace@coag.gov)

(720) 508-6281 (direct)

[preston.hartman@coag.gov](mailto:preston.hartman@coag.gov)

(720) 508-6257 (direct)

[nan.edwards@coag.gov](mailto:nan.edwards@coag.gov)

## STATE OF TEXAS

**STUART SOMACH\***  
**ANDREW M. HITCHINGS**  
**ROBERT B. HOFFMAN**  
**FRANCIS M. GOLDSBERRY II**  
**THERESA C. BARFIELD**  
**SARAH A. KLAHN**  
**BRITTANY K. JOHNSON**  
**RICHARD S. DEITCHMAN**  
SOMACH SIMMONS & DUNN, PC  
500 Capital Mall, Suite 1000  
Sacramento, CA 95814-2403  
**CORENE RODDER** - Secretary  
**CRYSTAL RIVERA** - Secretary  
**CHRISTINA GARRO** – Paralegal

[ssomach@somachlaw.com](mailto:ssomach@somachlaw.com)

[ahitchings@somachlaw.com](mailto:ahitchings@somachlaw.com)

[rhoffman@somachlaw.com](mailto:rhoffman@somachlaw.com)

[mgoldsberry@somachlaw.com](mailto:mgoldsberry@somachlaw.com)

[tbarfield@somachlaw.com](mailto:tbarfield@somachlaw.com)

[sklahn@somachlaw.com](mailto:sklahn@somachlaw.com)

[bjohnson@somachlaw.com](mailto:bjohnson@somachlaw.com)

[rdeitchman@somachlaw.com](mailto:rdeitchman@somachlaw.com)

(916) 446-7979

(916) 803- 4561 (cell)

[crodder@somachlaw.com](mailto:crodder@somachlaw.com)

[crivera@somachlaw.com](mailto:crivera@somachlaw.com)

[cgarro@somachlaw.com](mailto:cgarro@somachlaw.com)

**YOLANDA DE LA CRUZ - Paralegal**

[ydelacruz@somachlaw.com](mailto:ydelacruz@somachlaw.com)

**KEN PAXTON**

*Attorney General*

**JEFFREY C. MATEER**

*First Assistant Attorney General*

**DARREN L. McCARTY**

*Deputy Attorney General for Civil Litigation*

**PRISCILLA M. HUBENAK**

*Chief, Environmental Protection Division*

OFFICE OF ATTORNEY GENERAL

OF TEXAS

P.O. Box 12548

Austin, TX 78711-2548

(512) 463-2012

(512) 457-4644 Fax

[Priscilla.Hubenak@oag.texas.gov](mailto:Priscilla.Hubenak@oag.texas.gov)

**AMICI / FOR INFORMATIONAL PURPOSES ONLY**

**ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY**

**JAMES C. BROCKMANN\***

(505) 983-3880

**JAY F. STEIN**

[jcbrockmann@newmexicowaterlaw.com](mailto:jcbrockmann@newmexicowaterlaw.com)

STEIN & BROCKMANN, P.A.

[jfstein@newmexicowaterlaw.com](mailto:jfstein@newmexicowaterlaw.com)

P.O. Box 2067

[administrator@newmexicowaterlaw.com](mailto:administrator@newmexicowaterlaw.com)

Santé Fe, New Mexico 87504

**Administrative Copy**

**PETER AUH**

(505) 289-3092

ALBUQUERQUE BERNALILLO COUNTY

[pauh@abcwua.org](mailto:pauh@abcwua.org)

WATER UTILITY AUTHORITY

P.O. Box 568

Albuquerque, NM 87103-0568

**CITY OF EL PASO**

**DOUGLAS G. CAROOM\***

(512) 472-8021

**SUSAN M. MAXWELL**

[dcaroom@bickerstaff.com](mailto:dcaroom@bickerstaff.com)

BICKERSTAFF HEATH DELGADO

[smaxwell@bickerstaff.com](mailto:smaxwell@bickerstaff.com)

ACOSTA, LLP

2711 S. MoPac Expressway

Building One, Suite 300

Austin, TX 78746



## CITY OF LAS CRUCES

**JAY F. STEIN \***

(505) 983-3880

**JAMES C. BROCKMANN**  
STEIN & BROCKMANN, P.A.  
P.O. Box 2067  
Santé Fe, New Mexico 87504  
**Administrative Copy**

[jcbrockmann@newmexicowaterlaw.com](mailto:jcbrockmann@newmexicowaterlaw.com)  
[jfstein@newmexicowaterlaw.com](mailto:jfstein@newmexicowaterlaw.com)  
[administrator@newmexicowaterlaw.com](mailto:administrator@newmexicowaterlaw.com)

**JENNIFER VEGA-BROWN**

(575) 541-2128

**ROBERT CABELLO**  
LAW CRUCES CITY ATTORNEY'S OFFICE  
P.O. Box 20000  
Las Cruces, New Mexico 88004

[jvega-brown@las-cruces.org](mailto:jvega-brown@las-cruces.org)  
[rcabello@las-cruces.org](mailto:rcabello@las-cruces.org)

## ELEPHANT BUTTE IRRIGATION DISTRICT

**SAMANTHA R. BARNCastle\***  
BARNCastle LAW FIRM, LLC  
1100 South Main, Suite 20 (88005)  
P.O. Box 1556  
Las Cruces, NM 88004  
**JANET CORRELL – Paralegal**

(575) 636-2377  
(575) 636-2688 (fax)  
[samantha@h2o-legal.com](mailto:samantha@h2o-legal.com)

[janet@h2o-legal.com](mailto:janet@h2o-legal.com)

## EL PASO COUNTY WATER IMPROVEMENT DISTRICT NO. 1

**MARIA O'BRIEN\***  
**SARAH M. STEVENSON**  
MODRALL, SPERLING, ROEHL, HARRIS  
& SISK, PA  
500 Fourth Street N.W., Suite 1000  
Albuquerque, New Mexico 87103-2168  
**CHARLIE PADILLA – Legal Assistant**

(505) 848-1803 (direct)  
[mobrien@modrall.com](mailto:mobrien@modrall.com)  
[sarah.stevenson@modrall.com](mailto:sarah.stevenson@modrall.com)

[charliep@modrall.com](mailto:charliep@modrall.com)

**RENEA HICKS**  
LAW OFFICE OF MAX RENEA HICKS  
P.O.Box 303187  
Austin, TX 78703-0504

[rhicks@renea-hicks.com](mailto:rhicks@renea-hicks.com)  
(512)480-8231

## HUDSPETH COUNTY CONSERVATION AND RECLAMATION DISTRICT NO. 1

**ANDREW S. "DREW" MILLER\***  
KEMP SMITH LLP  
919 Congress Avenue, Suite 1305  
Austin, TX 78701

(512) 320-5466  
[dmiller@kempsmith.com](mailto:dmiller@kempsmith.com)

## STATE OF KANSAS

**DEREK SCHMIDT**

*Attorney General of Kansas*

**JEFFREY A. CHANAY**

*Chief Deputy Attorney General*

**TOBY CROUSE\***

*Solicitor General of Kansas*

**BRYAN C. CLARK**

*Assistant Solicitor General*

**DWIGHT R. CARSWELL**

*Assistant Attorney General*

120 S. W. 10th Ave., 2nd Floor

Topeka, KS 66612

(785) 296-2215

[toby.crouse@ag.ks.gov](mailto:toby.crouse@ag.ks.gov)

[bryan.clark@ag.ks.gov](mailto:bryan.clark@ag.ks.gov)

## NEW MEXICO PECAN GROWERS

**TESSA T. DAVIDSON\***

DAVIDSON LAW FIRM, LLC

4206 Corrales Road

P.O. Box 2240

Corrales, NM 87048

**JO HARDEN – Paralegal**

[ttd@tessadavidson.com](mailto:ttd@tessadavidson.com)

(505) 792-3636

[jo@tessadavidson.com](mailto:jo@tessadavidson.com)

## NEW MEXICO STATE UNIVERSITY

**JOHN W. UTTON\***

UTTUN & KERY, P.A.

P.O. Box 2386

Santa Fe, New Mexico 87504

(505) 699-1445

[john@uttonkery.com](mailto:john@uttonkery.com)

*General Counsel*

New Mexico State University

Hadley Hall Room 132

2850 Weddell Road

Las Cruces, NM 88003

[gencounsel@nmsu.edu](mailto:gencounsel@nmsu.edu)

(575) 646-2446

## SOUTHERN RIO GRANDE DIVERSIFIED CROP FARMERS ASSOCIATION

**ARNOLD J. OLSEN\***

HENNIGHAUSEN OLSEN & MCCREA, L.L.P.

P.O. Box 1415

Roswell, NM 88202-1415

**Malina Kauai, Paralegal**

**Rochelle Bartlett, Legal Assistant**

(575) 624-2463

[ajolsen@h2olawyers.com](mailto:ajolsen@h2olawyers.com)

[mkauai@h2olawyers.com](mailto:mkauai@h2olawyers.com)

[rbartlett@h2olawyers.com](mailto:rbartlett@h2olawyers.com)

No. 141, Original

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IN THE  
SUPREME COURT OF THE UNITED STATES

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STATE OF TEXAS,

*Plaintiff,*

v.

STATE OF NEW MEXICO AND  
STATE OF COLORADO,

*Defendants.*

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OFFICE OF THE SPECIAL MASTER

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**THE STATE OF TEXAS'S WITNESS LIST  
PURSUANT TO SECTION III OF THE  
APRIL 9, 2021 TRIAL MANAGEMENT ORDER**

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STUART L. SOMACH, ESQ.\*  
ANDREW M. HITCHINGS, ESQ.  
ROBERT B. HOFFMAN, ESQ.  
FRANCIS M. GOLDSBERRY II, ESQ.  
THERESA C. BARFIELD, ESQ.  
SARAH A. KLAHN, ESQ.  
BRITTANY K. JOHNSON, ESQ.  
RICHARD S. DEITCHMAN, ESQ.  
SOMACH SIMMONS & DUNN, PC  
500 Capitol Mall, Suite 1000  
Sacramento, CA 95814  
Telephone: 916-446-7979  
[ssomach@somachlaw.com](mailto:ssomach@somachlaw.com)  
\*Counsel of Record

June 30, 2021

EXHIBIT A

	<u>Will-Call Witness</u>	<u>Category/Party</u>	<u>General Summary of Testimony</u>
			technical perspective; the purpose, history and/or operation of contracts by and between the United States, EP1, and/or EBID and communications regarding the same; the management and administration of the Compact within the Districts, including issues related to Project deliveries, Project accounting, surface water flows and diversions, groundwater pumping and/or the interconnections between Rio Grande surface flow and groundwater; description of how the Districts operate pursuant to the 2008 Operating Agreement; how the Districts interact with landowners and the substance of the interactions, including but not limited to the utilization of surface and groundwater resources, agricultural practices and crop management, decreased water quality and increased salinity; the receipt, delivery, and/or supply of Rio Grande Project Water by the Districts.
4.	<b>Robert J. Brandes, P.E. Ph.D.,</b> Robert J. Brandes Consulting 6000 Maurys Trail Austin, TX 78730 (512) 342-3233	Retained Expert of Texas	Dr. Brandes is a Civil Engineer and Water Resources specialist. Dr. Brandes' expected testimony will include, without limitation, the subjects and issues raised, and matters and opinions discussed, in his expert reports and disclosures, supplemental disclosures, declarations, and depositions, as well as responses at trial to evidence presented. The general nature of the expert testimony includes facts and opinions related to groundwater-surface water connections; an overview of the physical setting associated with the 1938 Rio Grande Compact ("1938 Compact" or "Compact") and the Rio Grande Project; relationship of groundwater pumping to injury to Texas's apportionment; characterization and analysis of conditions reflecting Texas's 1938 Condition; proliferation of wells in the Lower Rio Grande; Project operations and responses to groundwater development; ground water pumping impacts reflected in flows at the El Paso gage; the New Mexico modeling's failure to demonstrate impacts on New Mexico from any operations by irrigators or municipal providers in Texas. Further, Dr. Brandes will provide preemptive rebuttal testimony to issues raised by New Mexico.

**No. 141, Original**

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**In the  
SUPREME COURT OF THE UNITED STATES**

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**STATE OF TEXAS,**

**Plaintiff,**

**v.**

**STATE OF NEW MEXICO and  
STATE OF COLORADO,**

**Defendants.**

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**OFFICE OF THE SPECIAL MASTER**

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**DECLARATION OF ROBERT J. BRANDES, P.E., PH.D. IN SUPPORT OF THE  
STATE OF TEXAS'S OPPOSITIONS TO THE STATE OF NEW MEXICO'S  
MOTIONS FOR PARTIAL SUMMARY JUDGMENT AND BRIEFS IN  
SUPPORT**

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Stuart L. Somach, Esq.\*  
Andrew M. Hitchings, Esq.  
Robert B. Hoffman, Esq.  
Francis M. Goldsberry II, Esq.  
Theresa C. Barfield, Esq.  
Sarah A. Klahn, Esq.  
Brittany K. Johnson, Esq.  
Richard S. Deitchman, Esq.  
SOMACH SIMMONS & DUNN, PC  
500 Capitol Mall, Suite 1000  
Sacramento, CA 95814  
Telephone: 916-446-7979  
[ssomach@somachlaw.com](mailto:ssomach@somachlaw.com)

*\*Counsel of Record*

December 22, 2020

I, Robert J. Brandes, declare as follows:

**BACKGROUND AND EXPERIENCE**

1. My name is Robert J. Brandes, P.E., Ph.D. I am over the age of 18, have personal knowledge of the facts set forth in this declaration, and if called as a witness could and would testify competently under oath to such facts.

2. I have been engaged in consulting engineering practice since the late 1960s specializing in water resources and related engineering and environmental disciplines. Today, I own and operate my consulting business Robert J. Brandes Consulting in Austin, Texas. My street address is 6000 Maurys Trail, Austin, Texas 78730.

3. I have been retained by the State of Texas (Texas) to provide consulting services on hydrologic and water resources issues presented in this case.

4. Details of my education and professional background can be found in paragraphs 1 - 10 of the November 5, 2020, Declaration of Robert J. Brandes, P.E., Ph.D. in Support of the State of Texas's Motion for Partial Summary Judgment; Memorandum of Points and Authorities in Support Thereof Federal Rule of Procedure 56 (Brandes First Declaration).

TX\_MSJ\_000001 - 000016.

5. My resume was also appended to the Brandes First Declaration.

TX\_MSJ\_000017 - 000021.

6. I have reviewed the State of New Mexico's (New Mexico) Motion for Partial Summary Judgment to Exclude Texas's Claim for Damages in Certain Years. New Mexico claims that because the years 1985-2002, 2005 and 2007-2010 were years in which the Rio Grande Project (Project) made available a full supply to the Districts, Texas's damages claims for those years should be excluded.

7. I have also reviewed the report of Margaret (Peggy) Barroll Ph.D. (October 31, 2019) (“Barroll Report”) and the Spronk Water Engineers, Inc. Report dated October 31, 2019 (“Spronk Report”). I have also reviewed the subsequent reports filed by Barroll and Spronk in July and September of 2020; however, the results and underlying data reported in the later reports do not change the conclusions I’ve drawn from review of the October 31, 2019 reports of Barroll and Spronk.

8. I have reviewed Project allocations for the years 1985-2002, 2005 and 2007-2010 (Subject Years) identified by New Mexico as “full supply” years for the Rio Grande Project. I generally agree; however, based on annual allocations presented in the Barroll Report, the allocation for the year 2007 was less (by about 23,000 acre-feet) than the full supply allocation for the El Paso County Water Improvement District No. 1 (EP#1) as determined from the Bureau of Reclamation’s D2 Curve. *See* Figure 1.

9. Although the Subject Years may represent “full supply” for the Project, I disagree with New Mexico’s assertion that Texas did not suffer damages from failure to receive its entire Compact apportionment during those years.

**A. New Mexico’s modeling demonstrates that Texas would have been allocated more water during “full Project supply” years without New Mexico’s groundwater pumping.**

10. Figure 2 presents a bar graph showing annual allocations to EP#1 from 1980 through 2017 as simulated with New Mexico’s ILRG model under historical conditions with groundwater pumping (Run 1, green bars). The orange bars above the green bars represent the additional allocation EP#1 would have received as simulated with the New Mexico model for a hypothetical condition without groundwater pumping by New Mexico (referred to as Run 3). The blue dots at the top of the graph signify full supply years as identified by New Mexico. As

shown, additional allocations were simulated for 2007, 2009, and 2010 without New Mexico groundwater pumping, all designated as full supply years by New Mexico. The same is also true with respect to 2017, also a full supply year according to the Barroll Report. With more water allocated during these full supply years, EP#1 very likely would have benefitted, suggesting that EP#1 very likely suffered damages historically due to New Mexico's groundwater pumping.

11. The diversions of Project water simulated with the New Mexico model for these same Run 1 and Run 3 conditions further demonstrate that EP#1 could have experienced increased Project water supplies during the full supply years but for New Mexico's groundwater pumping. Figure 3 presents a graph using the same format as that in Figure 2, but here annual diversions are plotted instead of allocations, with these results extending from 1980 to 2017. Again, the extended orange bars for some of the years, as simulated with New Mexico's Run 3 model, indicate additional diversions by EP#1 without New Mexico groundwater pumping, and many of these years are full supply years as they coincide with the blue dots at the top of the graph. This is further evidence based on New Mexico's own modeling that damages to EP#1 could have occurred due to limited Project water supplies during full supply years.

**B. The “full supply” condition New Mexico relies on is the D2 Curve, which Incorporates Ground Water Pumping Depletions from 1951-1978**

12. In the Subject Years, the “full Project supply” that the Bureau of Reclamation made available was based on the D2 Curve.

13. The D2 Curve was developed by Reclamation in the early 1980s to reflect the relationship between releases from Caballo Reservoir and deliveries to the Elephant Butte Irrigation District (EBID) and EP#1 (collectively “Districts”) between 1951-1978 assuming that EBID received 57 percent of available Project water and EP#1 received 43 percent of available Project water.



14. I have plotted the D2 Curve in attached Figure 4 as the red line and data points.

15. The D2 curve incorporates the effects of groundwater pumping during the years 1951 - 1978.

16. During the years 1951 - 1978, New Mexico groundwater pumping was continuous from year to year, ranging from about 50,000 acre-feet/year up to 250,000 acre-feet per year and averaging about 140,000 acre-feet per year, as shown in Figure 5. Significant pumping occurred even in the full-supply years identified by New Mexico.

17. By contrast, the blue line and “x” data points plotted on attached Figure 4 reflect the same delivery relationship as the D2 Curve but are based on depletion conditions in 1938 when there was very little groundwater pumping in the Rincon and Mesilla Valleys of New Mexico. The data corresponding to the blue “x” data points shown on Figure 4 are from Run 2 of New Mexico’s model with all groundwater pumping in New Mexico and Texas turned off, which is essentially the 1938 condition. And as illustrated, the 1938 Condition representation of the D2 Curve lies considerably above the 1951 - 1978 D2 Curve, obviously indicating that groundwater pumping that began in the early 1950s reduced annual diversions (deliveries) of Project water relative to Caballo releases.

18. Figures 6 and 7 show overall change in the number of wells in the Lower Rio Grande below Caballo between 1938 and 2020. Based on Figure 6 there were very few wells and very little groundwater pumping in 1938, in contrast to the numerous wells in place along the Rio Grande in 2020 shown in Figure 7.

**C. Effect of New Mexico Groundwater Pumping has been to disconnect drain flows to the Rio Grande, reducing Project supplies and Texas’s apportionment**

19. Based on work by William Hutchison using his Texas model and Shane Coors’ assessment of New Mexico’s model, groundwater pumping withdrawals beginning in the early

1950s in the Rincon and Mesilla basins caused groundwater levels to fall from conditions in 1938 at the time of the Compact. Expert Report of William Hutchison, Ph.D., P.E., P.G. (May 31, 2019) (Hutchison 2019 Report) and Expert Report (Supplemental Rebuttal Report) of Adolph (Shane) Coors V, M.E., P.E. (May 6, 2020) (Coors 2020 Report).

20. When Texas entered into the Compact it anticipated adequate drain flows to satisfy part of its apportionment. As shown in the 1938 report of the National Resources Committee, Regional Planning: Part VI-The Rio Grande Joint Investigation in the Upper Rio Grande Basin in Colorado, New Mexico and Texas 1936-7, the reliance on drain flows by Project water users increased relative to the distance downstream from Elephant Butte Reservoir. *See Figure 8.*

21. Based on the long-term volumes of groundwater pumping in the Rincon and Mesilla Valleys and the resulting lowered groundwater levels, the Lower Rio Grande basin experiences significantly reduced drain inflows to the Rio Grande due to:

- a. infiltration of excess irrigation water from the fields directly to the subsurface rather to the drains;
- b. increased seepage losses from the drains to the subsurface due to the lowered groundwater levels; and
- c. increased seepage losses from the Rio Grande to the subsurface due to the lowered groundwater levels.

An illustration of how drain flows have been reduced since significant groundwater pumping began in the early 1950s is shown on the graph in Figure 9.

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**D. Long Term Effects of New Mexico Groundwater Pumping**

22. Texas' claims for damages arises primarily from the long-term effects of groundwater pumping by New Mexico, not effects that can be broken into an annual timestep.

23. These changes in the hydrologic system are not readily apparent when viewed from year to year, but when examined over long periods of time, they become quite evident. The effects of sustained groundwater pumping translate to long-term changes in hydrologic conditions that can extend the adverse effects of groundwater pumping over many years. Coors 2020 Report.

24. The prolonged effects of groundwater pumping in terms of reduced drain flows, increased seepage losses from the Rio Grande, and lower Rio Grande flows at El Paso continued from year to year with or without full Project water supplies. These prolonged effects have been demonstrated by plotting historical cumulative flows in the Rio Grande at El Paso versus historical cumulative releases from Caballo Reservoir. Expert Report of Robert J. Brandes, May 31, 2019; *see* Figure 10. On this plot, the distinct break in slope of the historical data around the early 1950s supports the conclusion that groundwater pumping in the Rincon and Mesilla basins, which significantly increased about that time in response to drought conditions, was the cause of the reduced river flows. These conclusions are confirmed by the simulated model results with (historical) and without (hypothetical) groundwater pumping as produced by Hutchison 2019 Report based on his Texas model and by Coors 2020 Report based on his analysis of results from New Mexico's model.

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**E. New Mexico's Undisputed Facts Asserted in the NM MSJ on Apportionment Are in Dispute**

25. I have reviewed the State of New Mexico's (New Mexico) Motion for Partial Summary Judgment on Compact Apportionment and Brief in Support (NM MSJ on Apportionment).

26. Based on review and evaluation of the Barroll and Spronk Reports and underlying data, I dispute certain of the assertions in the "Statement of Undisputed Material Facts" section.

27. New Mexico's reference in paragraphs 60, 63 and 64 of NM MSJ on Apportionment regarding how Project supply was historically allocated based on an equal acre-foot per acre basis is not relevant to apportionment of Rio Grande water under the Compact. This allocation applies solely to Project water already stored in Elephant Butte Reservoir and inflows to the Rio Grande downstream of the reservoir, whereas the Compact applies to Rio Grande deliveries to Elephant Butte Reservoir. Project allocations made to respond to orders by the District water users do not form the basis of Texas's Compact apportionment. The Compact requires New Mexico to deliver prescribed and indexed quantities of Rio Grande water to Texas in Elephant Butte Reservoir. The 1906 treaty with Mexico and the contracts between the federal government and the Districts then allocate the stored water in Elephant Butte Reservoir, along with downstream inflows to the Rio Grande, to Mexico, EBID, and EP#1.

28. New Mexico's own data as reported in the underlying files of the Spronk Report are inconsistent with the diversion percentages reported in paragraph 65 of NM MSJ on Apportionment and attributed in paragraph 65 to the work of New Mexico's other expert, Peggy Barroll. In paragraph 65, New Mexico states that from 1931 to 1979, diversions by EP#1 totaled 45.5 percent of total diversions, but the Spronk data show only 41.7 percent, slightly less than the 43 percent allocation. Similarly, for 1951 to 1979, in paragraph 65 New Mexico reports that

EP#1 diverted 43.8 percent of the total diversions, whereas the Spronk data show that EP#1 diverted only 38.5 percent. Methods used by Peggy Barroll and those described in the underlying data of the Spronk Report also differ in how the distributions of diversions by EP#1 in Mesilla Valley were made, with Barroll assuming 20 percent and Spronk an average of 14 percent.

29. The D1/D2 method referenced in paragraphs 68 through 70 and paragraphs 72 through 76 of NM MSJ Motion on Apportionment has nothing to do with Compact apportionment; rather, it relates to how the Project was operated during 1951 through 1978. The Compact requires Rio Grande water deliveries from New Mexico to Elephant Butte Reservoir for Texas, and the 1906 treaty with Mexico and the contracts between the federal government and the Districts allocate the stored water in Elephant Butte Reservoir, along with downstream inflows to the Rio Grande, to Mexico, EBID, and EP#1. Furthermore, the D1/D2 method does not reflect Project water supply conditions as they existed at the time of Compact adoption in 1938. The D1/D2 method understates the supply of Project water available under the Compact because it is based on Project delivery conditions that occurred during 1951 and 1978 when substantial groundwater pumping had already developed in the Rincon and Mesilla basins of New Mexico (*See* Figure 5) causing flows in the drains and in the Rio Grande at El Paso relative to releases from Caballo Reservoir and the deliveries to EP#1 to be reduced. (*See* Figures 9 and 10).

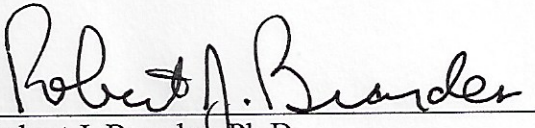
30. In paragraph 79 of NM MSJ on Apportionment, New Mexico asserts that the 2008 Operating Agreement “changed the way that water was allocated between the two Districts, and therefore the amount of water that was available for lands in New Mexico and Texas.” In paragraph 80, New Mexico asserts its “primary concern” with the 2008 Operating Agreement is

that it is not consistent with the Compact and does not allocate 57 percent of Project supply to New Mexico lands.

31. In fact, under the Operating Agreement New Mexico has received more water than it otherwise should have based solely on the D2 Curve prior to implementation of the Operating Agreement. This is demonstrated by the graph in Figure 11. The blue x's show total Project surface water diversions between 2008 and 2016; the black x's show the total amount of diversions, including groundwater pumping by New Mexico, for the same period.

32. As stated in paragraph 83, the use of the D1/D2 method produces 376,000 acre-feet for EP1. However, as I have said elsewhere in my declaration, the D1/D2 method does not reflect 1938 conditions and does not represent Texas's Compact apportionment.

I declare under penalty of perjury that the foregoing is true and correct. Executed this <sup>st</sup>  
21 day of December 2020 at Austin, Texas.

  
Robert J. Brandes, Ph.D.

*Figures follow on the next page.*



Figure 1 - Analysis of New Mexico Full Supply Years

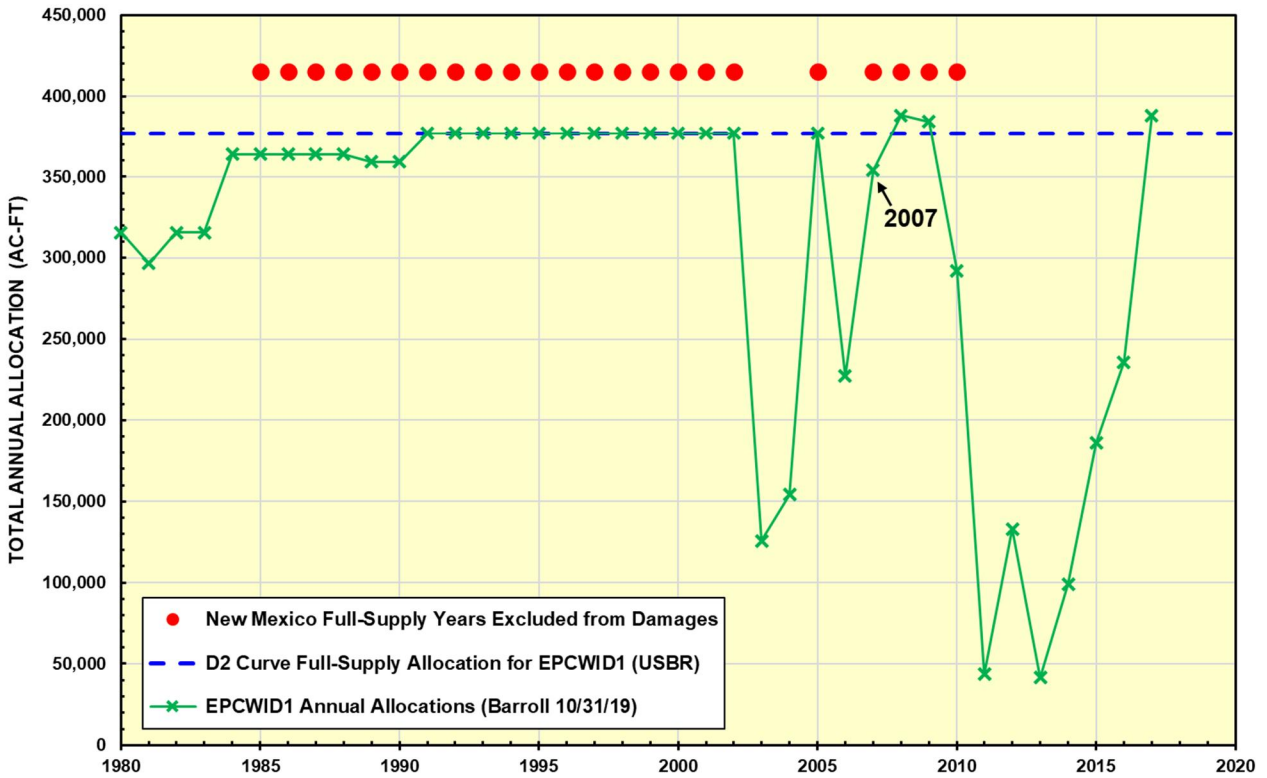


Figure 2 - Allocations to EP1 Based on New Mexico Model Run 1 (Historical) and Model Run 3 Without New Mexico Groundwater Pumping

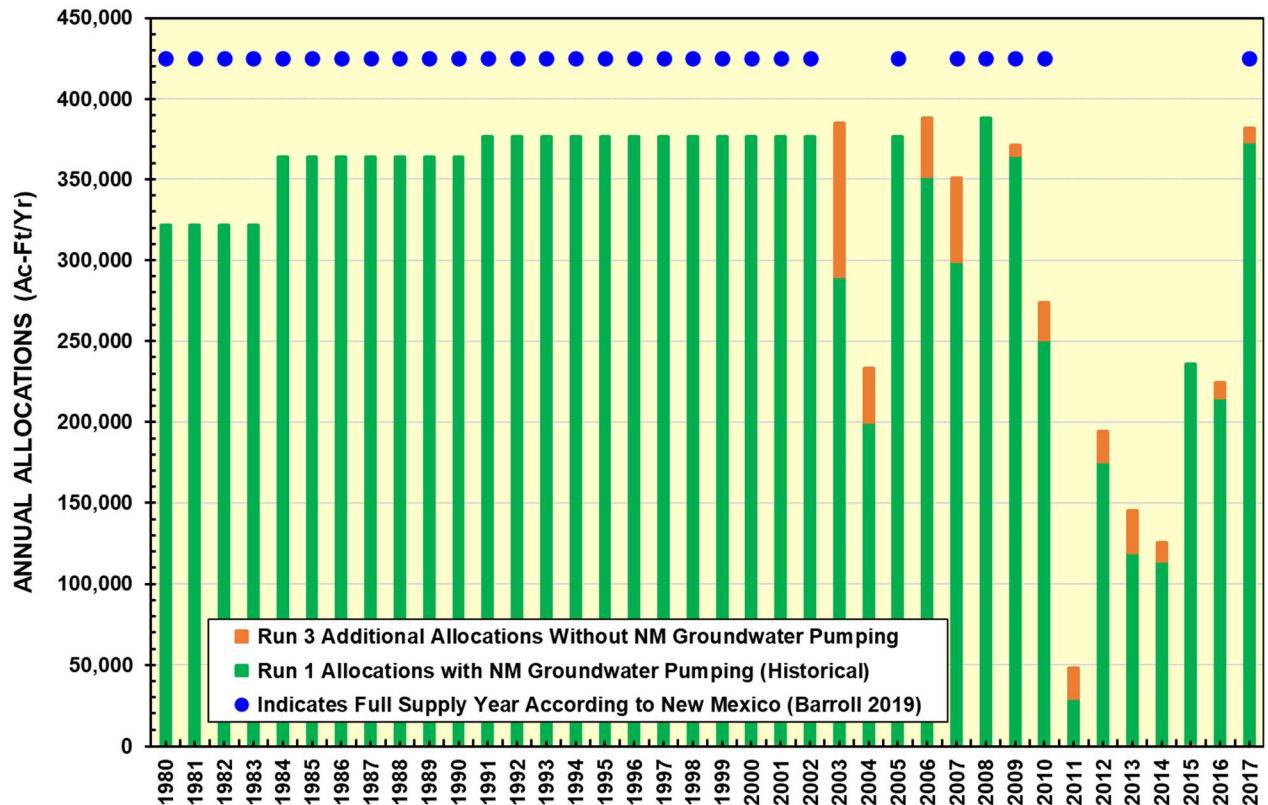


Figure 3 - EP1 Diversions Based on New Mexico Model Run 1 (Historical) and Model Run 3 Without New Mexico Groundwater Pumping

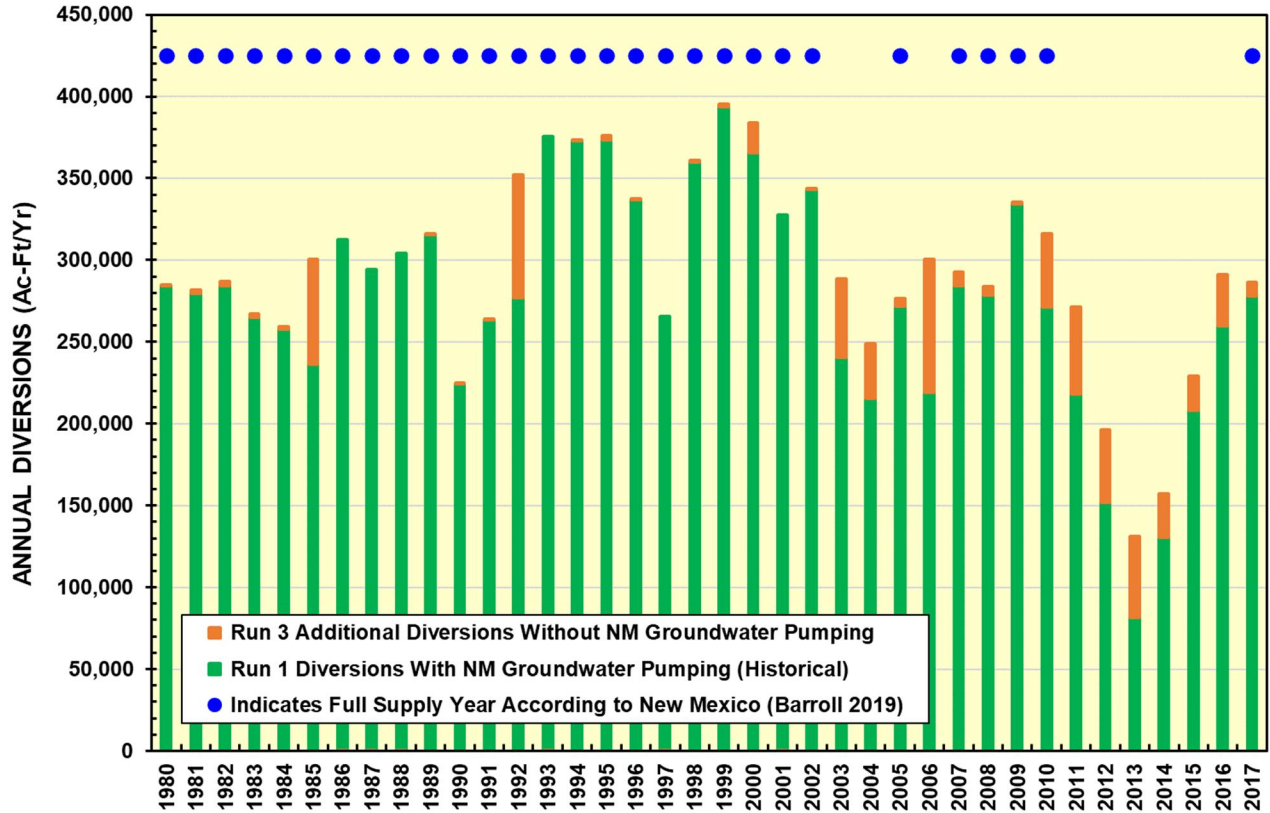


Figure 4 - D2 Curve and Similar 1938 Condition Curve Based on Results from New Mexico's Model Without Groundwater Pumping

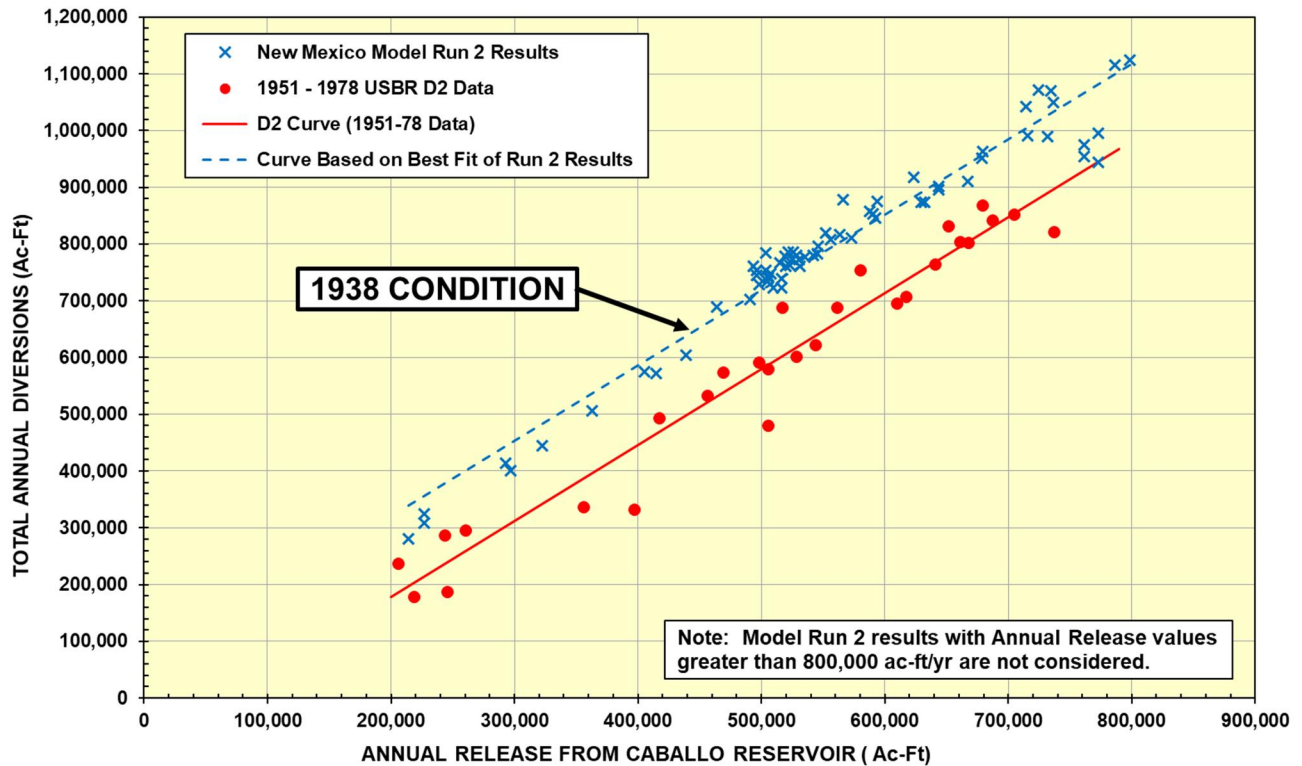
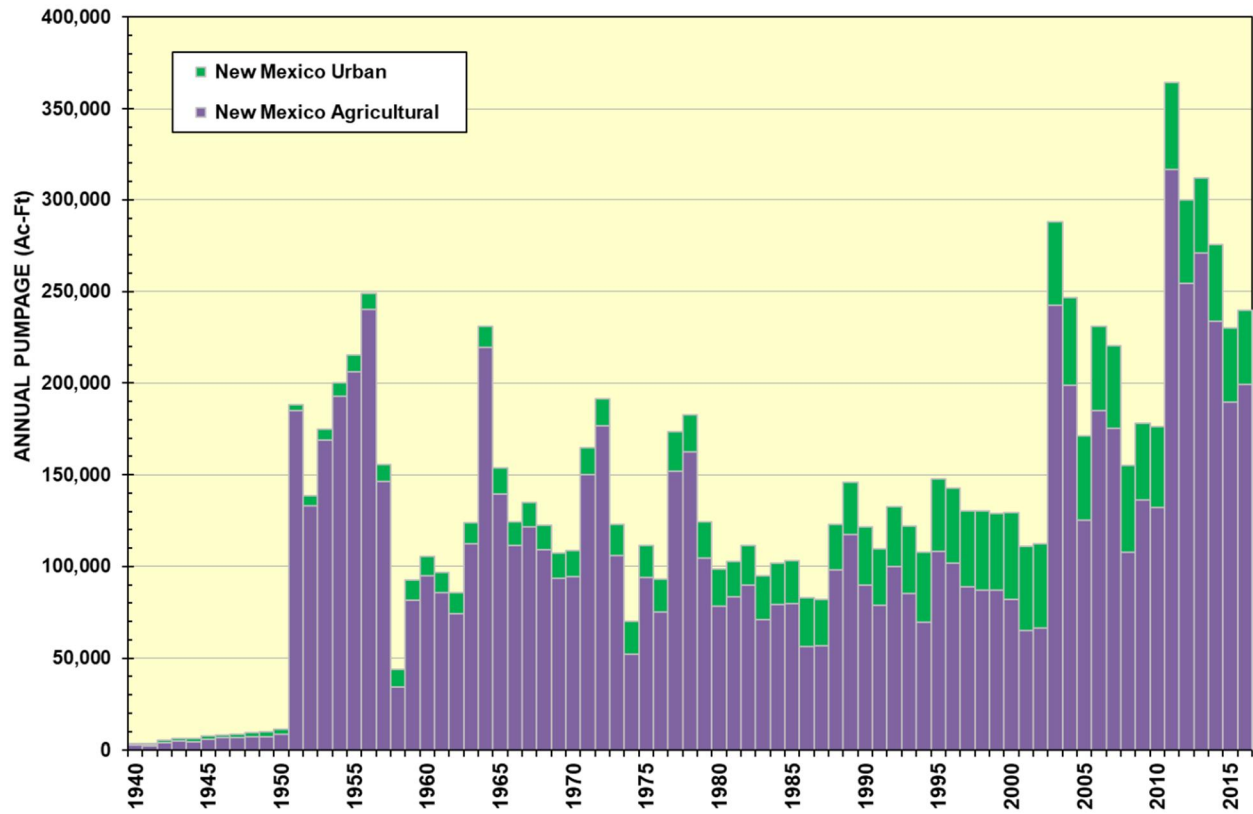




Figure 5 - Annual Groundwater Pumpage in Rincon and Mesilla Basins



Data from files of Expert Report by Staffan W. Schorr and Collin P. Kikuchi, "Water Budget Estimates in Support of Groundwater Model Development: Rincon and Mesilla Basins, New Mexico, Texas, and Northern Mexico, 1938 through 2016", prepared for State of Texas, in the matter of No. 141, Original, State of Texas v. State of New Mexico and State of Colorado, May 31, 2019.

Figure 6 - Groundwater Wells Along Lower Rio Grande in 1938

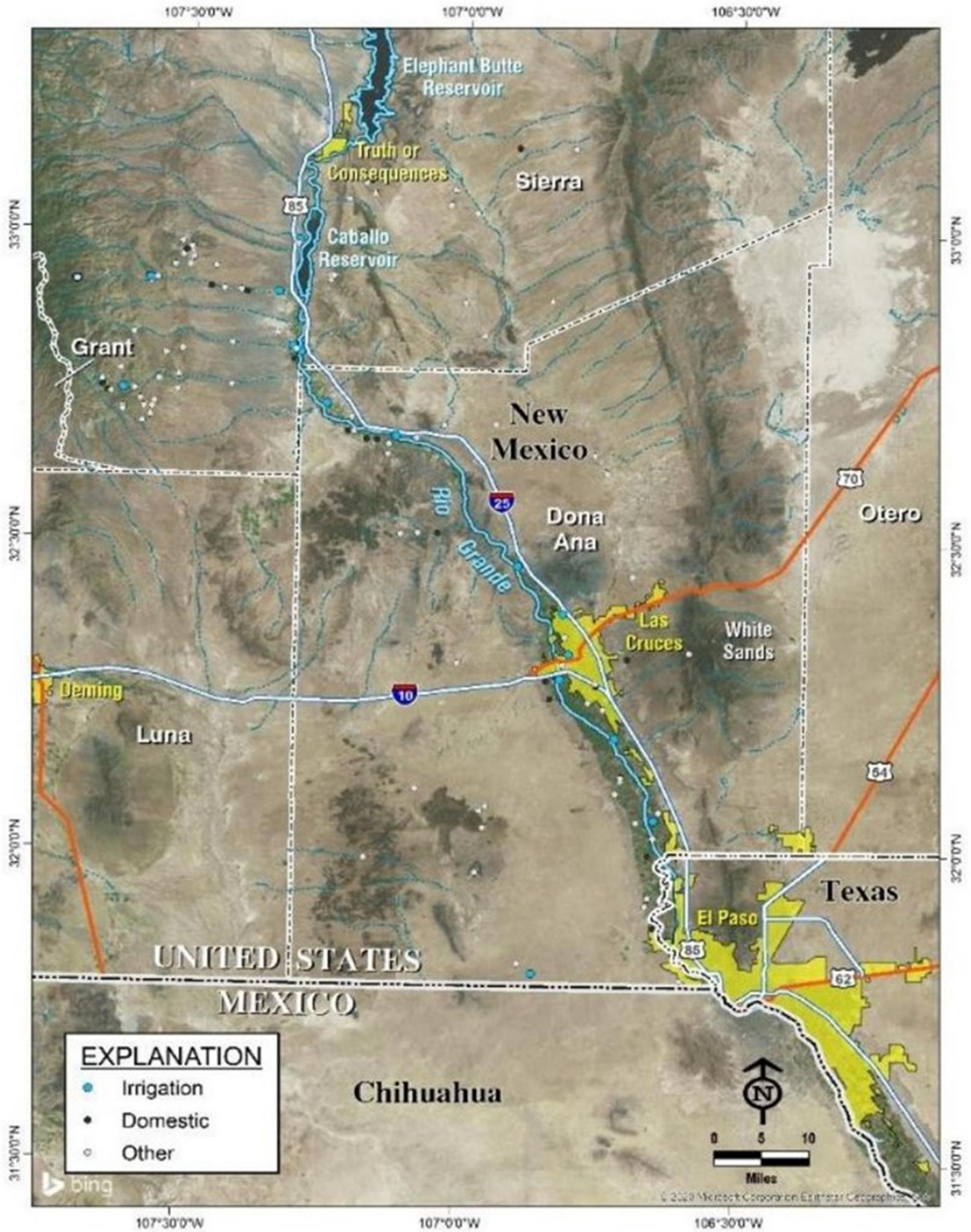




Figure 7 - Groundwater Wells Along Lower Rio Grande in 2020

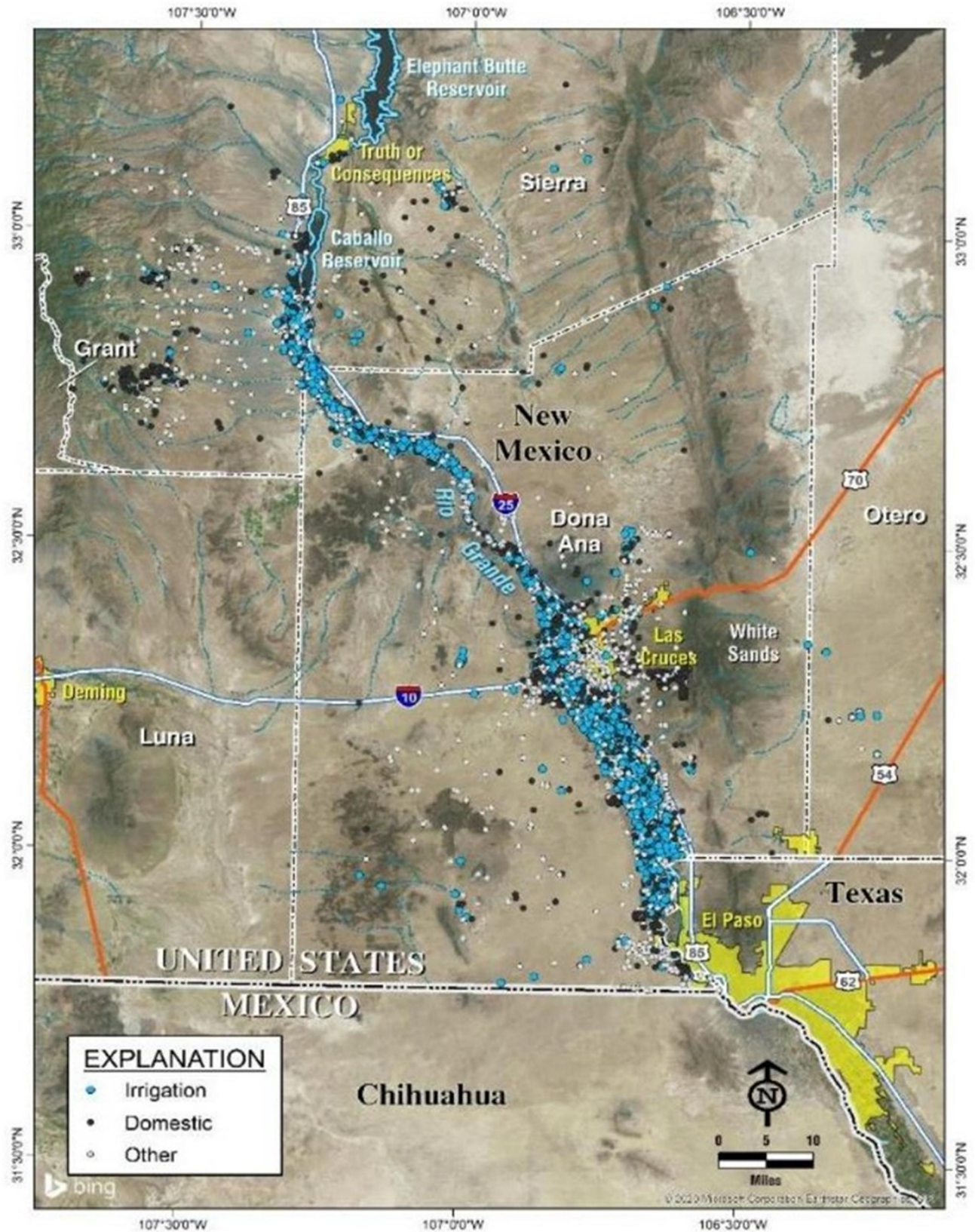
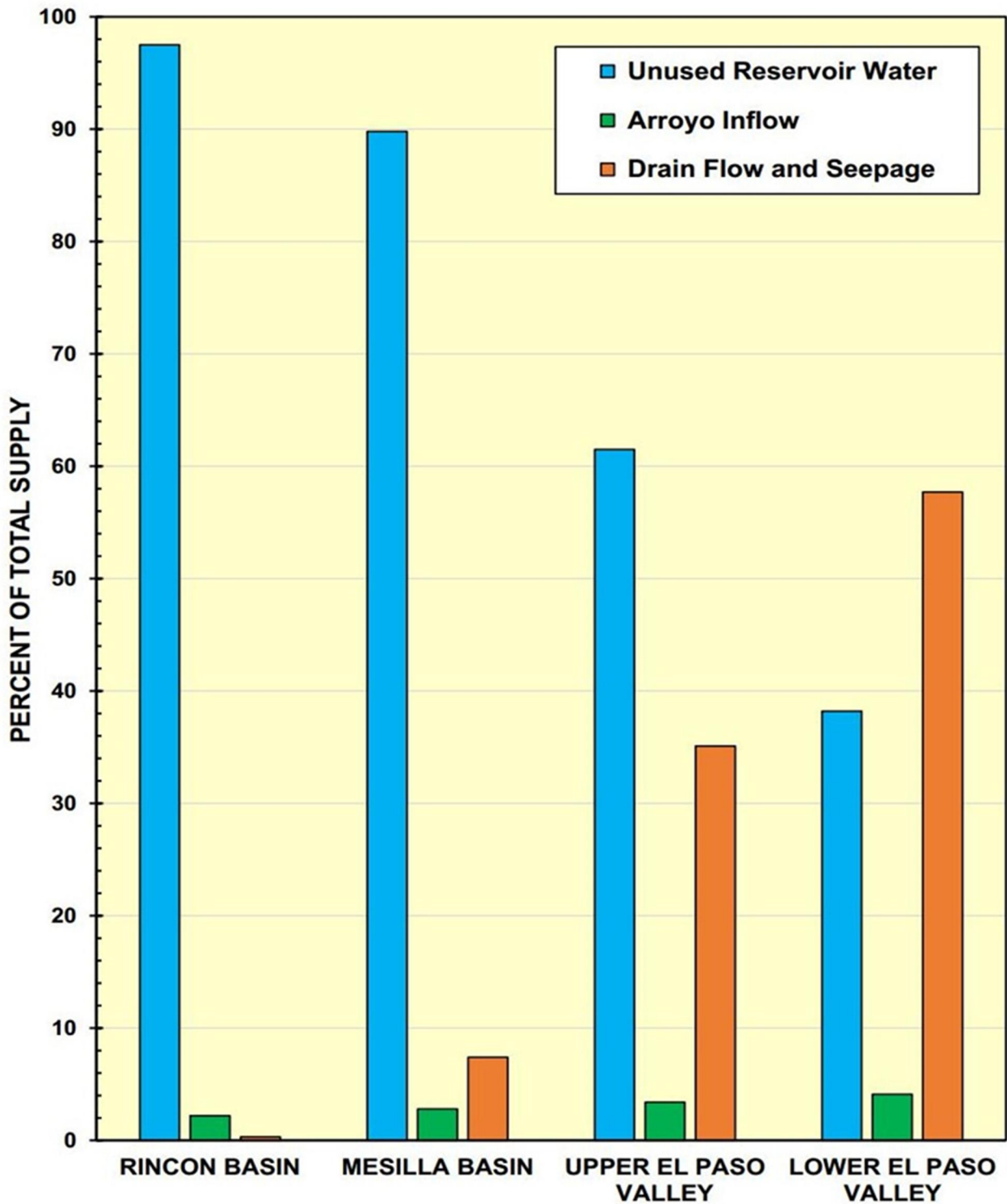


Figure 8 - Significance of Drain Flows to Downstream Project Water Users



Data from Table 90, National Resources Committee; *Regional Planning, Part VI – The Rio Grande Joint Investigation in the Upper Rio Grande Basin in Colorado, New Mexico, and Texas, Volume I*; Washington D. C.; February 1938.

Figure 9 - 1938-1995 Cumulative Discharges from the Montoya Drain to the Rio Grande

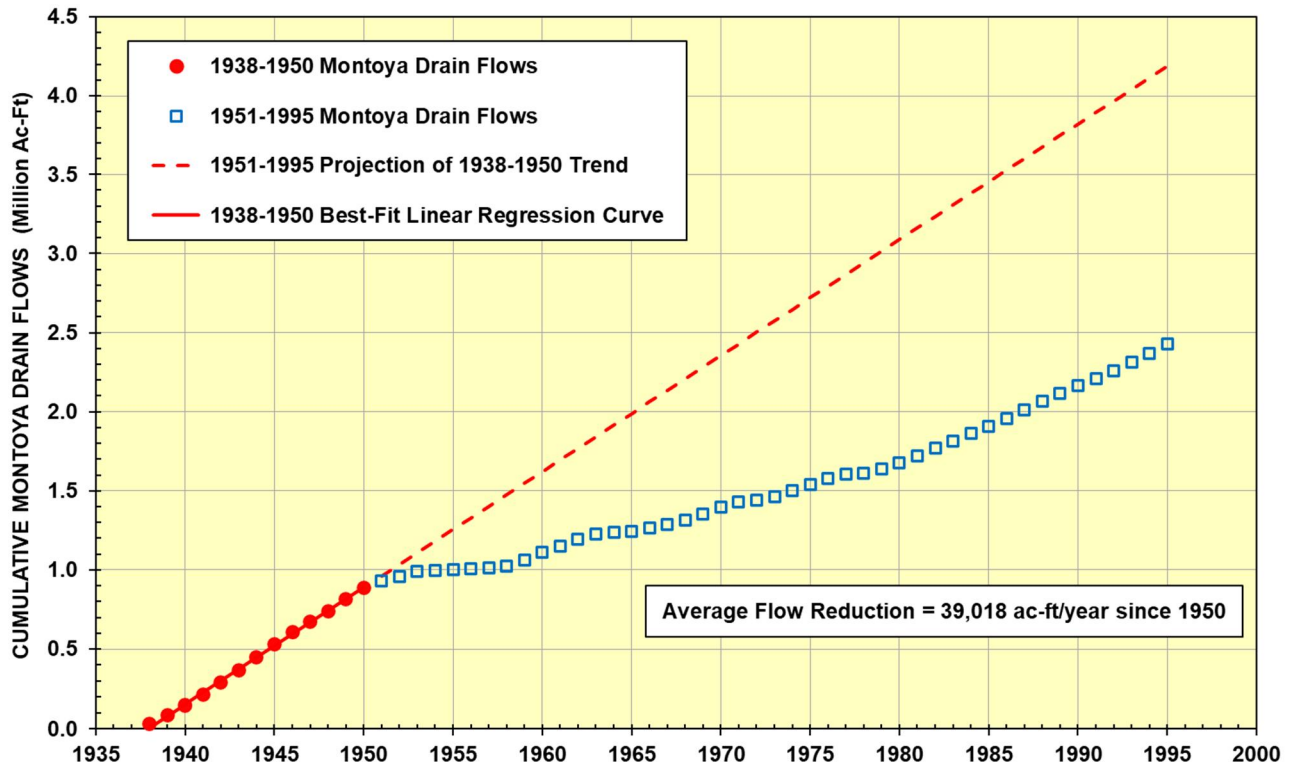
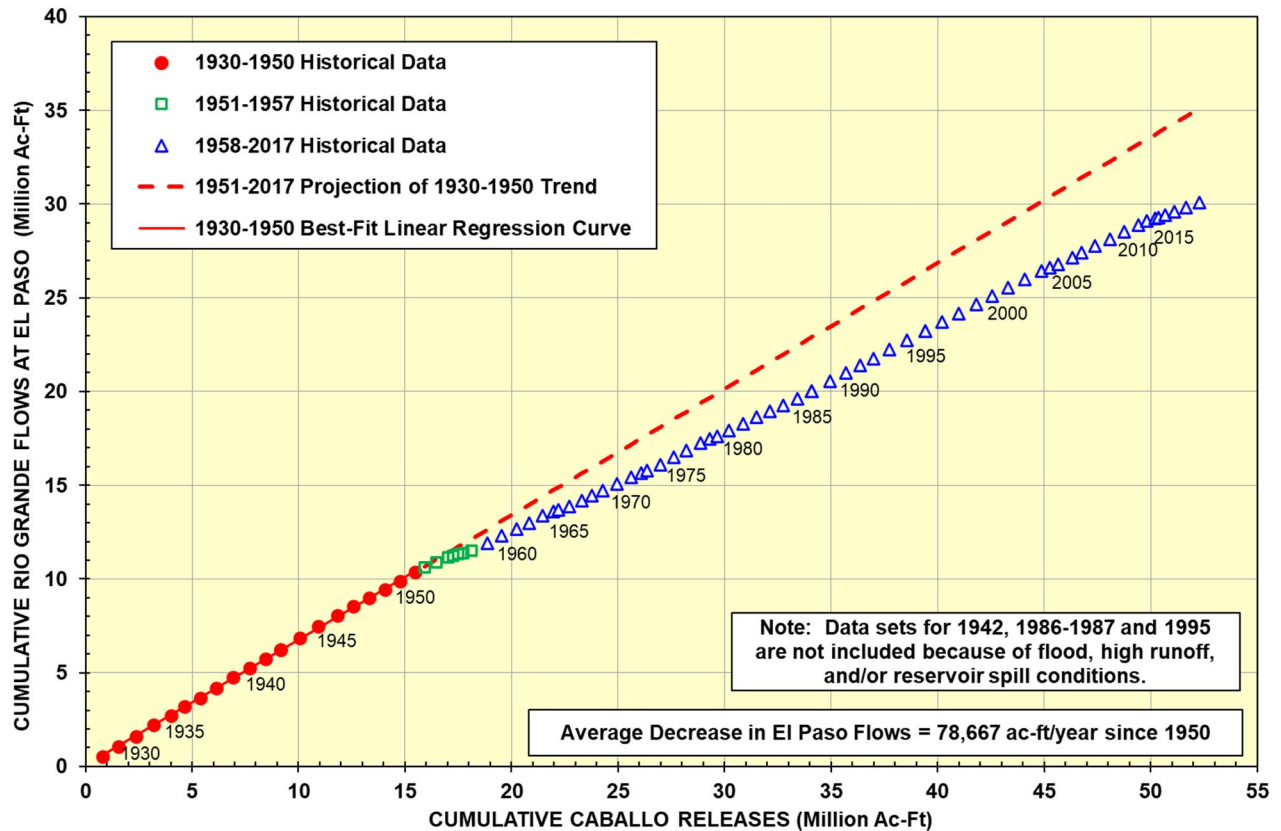
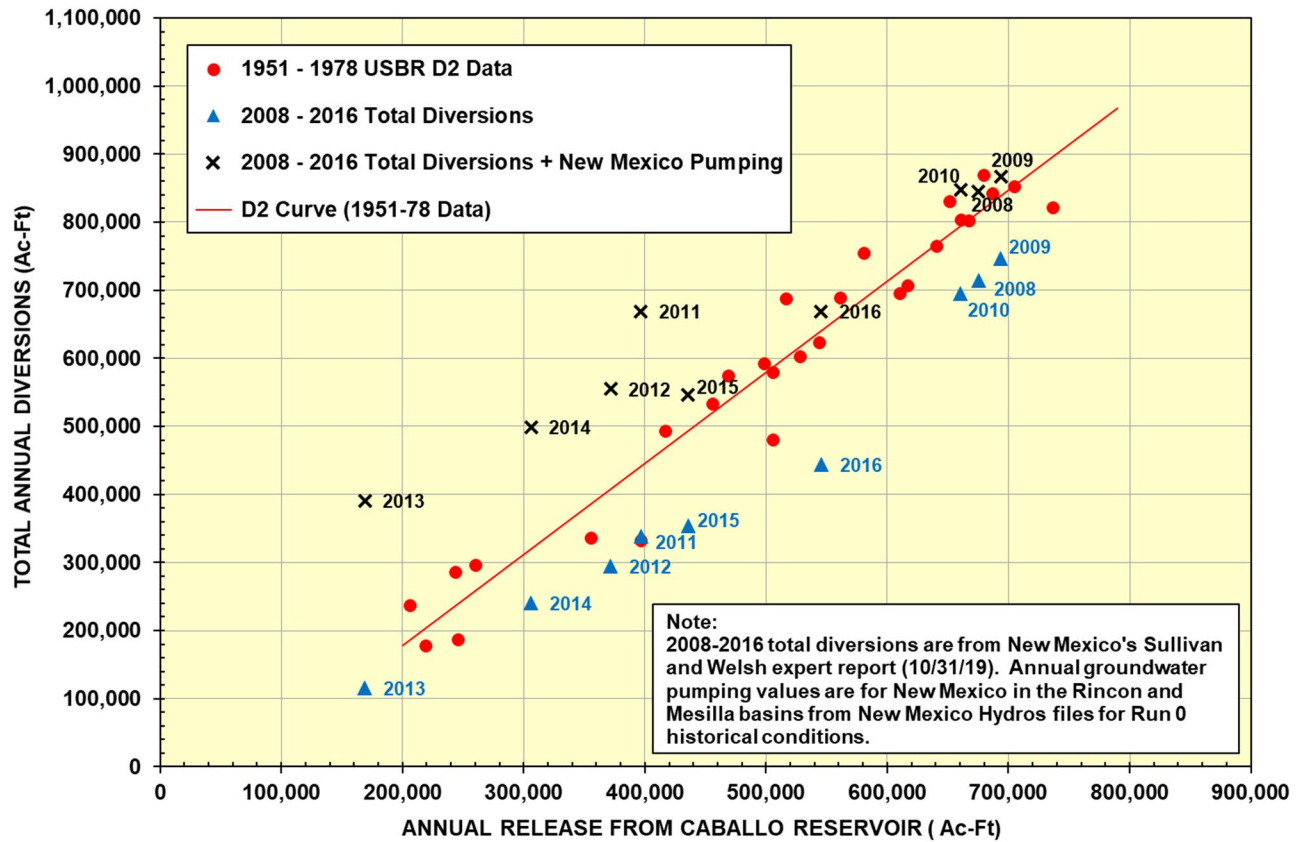


Figure 10 - Long-Term Relationship of Historical Rio Grande Flows at El Paso and Reservoir Releases





**Figure 11 - Total Project Diversions for 2008-2016 Increased by New Mexico 2008-2016 Groundwater Pumping Compared to Total Diversions Allocated by D2 Curve**





May 31, 2019

## EXPERT REPORT OF ROBERT J. BRANDES

In the matter of:

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In the Supreme Court of the United States

*State of Texas v. State of New Mexico and State of Colorado*

Prepared for:

Somach Simmons & Dunn

500 Capitol Mall, Suite 1000

Sacramento, CA 95814

Prepared by:

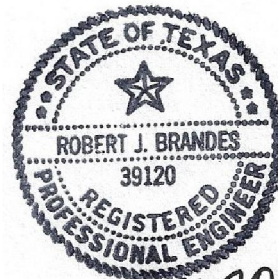
A handwritten signature in black ink, reading 'Robert J. Brandes', written over a horizontal line.

Robert J. Brandes, P.E., Ph.D.

Robert J. Brandes Consulting

6000 Maurys Trail

Austin, Texas 78730



MAY 31, 2019

## TABLE OF CONTENTS

	<u>Page</u>
LIST OF FIGURES	iii
LIST OF TABLES	iv
1.0 INTRODUCTION	1
2.0 ASSIGNMENT AND SUMMARY OF OBSERVATIONS AND OPINIONS	1
3.0 RIO GRANDE BACKGROUND	4
4.0 THE GROUNDWATER PROBLEM	8
4.1 Rio Grande Project Water Budgets	8
4.2 Historical Groundwater Development	10
4.3 Previous Groundwater Concerns	12
5.0 HISTORICAL TRENDS IN CHANGING FLOWS	17
5.1 Time Series Observations	18
5.2 Rio Grande Flows at El Paso	21
5.3 Summary	24
6.0 RIO GRANDE PROJECT OPERATIONS	25
6.1 1938 Pre-Compact Rio Grande Joint Investigation	25
6.2 Overview of Historical Project Operations	30
6.3 USBR D1/D2 Allocation Curves	32
6.4 2008 Operating Agreement Allocation Procedures	35
6.5 Effect of Groundwater Pumping on Reservoir Releases	38
7.0 PROJECT WATER DELIVERIES	39
7.1 Historical Deliveries to Farms in New Mexico	41
7.2 Deliveries to Farms in New Mexico Without Groundwater Pumping	41
7.3 Historical Deliveries to Texas	43
7.4 Deliveries of Project Water to Texas Without Groundwater Pumping	44
7.5 Deliveries to Mexico	46
8.0 LIST OF REFERENCES	47
APPENDIX – PROFESSIONAL RESUME OF ROBERT J. BRANDES AND SUMMARY OF PRIOR TESTIMONY DURING PRECEDING FOUR YEARS	50