



Fall 1982

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Recommended Citation

Robert E. Clark, *Overview of Groundwater Law and Institutions in United States Border States*, 22 Nat. Resources J. 1007 (1982).

Available at: <https://digitalrepository.unm.edu/nrj/vol22/iss4/22>

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Robert Emmet Clark*

Overview of Groundwater Law and Institutions in United States Border States

I. INTRODUCTION

Our Padre Island meeting in April 1981 emphasized demographic, economic, environmental and other resource conditions far beyond the limited topic of groundwater law assigned to me for this program. That meeting, in addition to inspiring productive and spontaneous exchanges, revealed the urgent need for border water resource management including attention to water *quality*. Professor Utton's Summary Report of September 1981 covers the subject, and his management assessment paper contains several proposals.¹

Since that meeting it has been discovered that the border city of Tucson, which is supplied entirely from groundwater, has several wells that have been contaminated by seeping chemical and other wastes.² The condition is being corrected, but it calls attention to the difficulty of tracing the sources of pollution when an aquifer has been slowly polluted for a generation or more. Other cities on the border have water quality problems.

The joint communique of Presidents Lopez Portillo and Carter in February, 1979, recognized the problem in this declaration:³

Both leaders reaffirmed the importance of good quality and abundant water for the health and well being of citizens on both sides of the border. They instructed the International Boundary and Water Commission in the context of existing agreements to make immediate recommendations for further progress toward a permanent solution to the sanitation of waters along the border.

In a joint press statement⁴ made after their meeting in Washington in September 1979 they again emphasized what had been said in the joint

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1. See Utton, Summary Report, Working Group On U.S.-Mexican Transboundary Resource Needs and Issues In the Year 2000, 7-14 (Sept. 9, 1981); Utton, An Assessment of the Management of U.S.-Mexican Water Resources: Anticipating the Year 2000.

2. *Solvent in Wells Sparks Inquiry, Health Meeting*, The Tucson Ariz. Daily Star, May 15, 1981 at 1B; *Governor Babbitt Warns of Pollution*, Tucson Citizen, May 21, 1981 at 4C; *Arizona's Groundwater Imperiled*, Arizona Summer Wildcat (U. of Ariz.), June 30, 1981.

3. Communique of Feb. 16, 1979. Quoted in letter to writer from International Boundary and Water Commission, and signed by M. R. Ybarra, Secretary (June 10, 1981).

4. *Id.*

communicate, reviewed the recommendations submitted by the Commission, which they found satisfactory, and asked the Commission to proceed as soon as possible to conclude supplementary recommendations.

All of us know that Minute No. 261 produced by this exchange became effective October 2, 1979.

This formal recognition by the two governments of a continuing problem, which goes far beyond the old question of surface water salinity, put responsibility on an existing international agency acting within the framework of the 1944 Treaty. This important development, coming after our 1977 meeting in Oaxtepec, cannot be overemphasized. Some of you will recall our discussion of the Boundary Commission's unique opportunity; and all of us know that many inhabitants on both sides of the border depend on groundwater for domestic and municipal supplies.

Since my overview assignment permits (or requires) an introduction to a technical subject viz., the confused patchwork of groundwater law along the border, I want to refer to some other evidence of concern for the problem we are going to discuss. The Global 2000 Report to President Carter appeared in three volumes at the end of 1980. Whether you accept or discount its gloomy conclusions, it is difficult to fault this statement from the volume 1 *Summary on Impacts of Water Resources*.⁵

The quality of the world's water resources is virtually certain to suffer from changes taking place between now and the year 2000. Water pollution from heavy application of pesticides will cause increasing difficulties . . .

This conclusion is supported by the published statements of the Governors of Sonora and California in the proceedings of the first (and last) meeting of the Southwest Border Regional Commission in Ciudad Juarez in June, 1980.⁶ Governors Ocaña and Brown spoke on Ecology and Pollution. It is regrettable that the joint effort at public discussion of common border problems has been abandoned.

My overview responsibility also encourages me to refer to a book by two economists which examines resource conditions in our region, including water supply. Although the book deals essentially with U.S. resource matters, it has international importance because of attention given to the Rio Bravo (Rio Grande) and the Colorado River. In Chapter 4, on *Equity and Management Issues*, we find this statement about interstate friction:⁷

5. COUNCIL ON ENVIRONMENTAL QUALITY AND THE DEPT. OF STATE THE GLOBAL 2000 REPORT TO THE PRESIDENT (Entering the Twenty-First Century), 35 (U.S. Government Printing Office, 1980).

6. A Summation of the Proceedings and Position Papers of the U.S., Mexico Border Governors, Southwest Border Regional Commission.

7. A. KNEESE & L. BROWN, *THE SOUTHWEST UNDER STRESS* (Resources for the Future, Johns Hopkins Press, 1981).

There are, of course, many possible ways in which the political, legal, and economic conditions surrounding water in the region may ultimately lead to an apportioning of the region's water resources among the competing claimants. Whatever the resolution of the equity issue, it is clear that it must come relatively soon in most areas. For most basins, (in the U.S.) a condition of fully appropriated surface waters either is at hand or is a not-too-distant future prospect. The groundwater situation resembles that of the surface supplies in some areas except that hydrological information on groundwater is much less accurate and complete. Some of the region's groundwater aquifers are being steadily drawn down, particularly in association with irrigation. The most notable examples occur in southeastern Arizona around Tucson and in eastern New Mexico and Colorado in the Ogallala formation that lies under those states (and west Texas) and extends into the Midwest.

Something could be added about the interstate friction between the City of El Paso and the State of New Mexico over groundwater withdrawals and transportation across state lines, which we will come back to later. It is clear, however, that the pending lawsuit involves the very different groundwater law of New Mexico and Texas as well as the U.S. constitutional law and international law.

We can now ask again why there is so much difficulty in approaching groundwater law questions in the border area. Part of the answer is found in the variety of state law.

II. U.S. BORDER GROUNDWATER LAW

It is customary to refer to four groundwater doctrines. Actually, there are only two conceptual paths: common law property rules and appropriation law. Texas follows the first most closely with Arizona and California going in the same direction; New Mexico takes the prior appropriation path with some changes along the route.

My intention is to outline the basic differences. The other panelists have provided detailed coverage of the law in California, New Mexico and Texas which leaves me Arizona, mainly because of the 1980 legislation which I will outline.

In Oaxtepec, four years ago, my suggestions for management of groundwater emphasized that the four U.S. border states were among the heaviest users of groundwater, and the largest single use is for agriculture. For example, Arizona uses almost 90 per cent of all water for agriculture. In 1977, I also said:⁸

The shortage of groundwater in the boundary region intensifies

8. Clark, *Institutional Alternatives for Managing Groundwater Resources: Notes for a Proposal*, 18 NAT. RES. J. 153, 155-6 (1978).

the water supply problem. Each of the states has a different system of groundwater law; none has adequate legislation or regulations for the protection and management of diminishing supplies within the state and along the border area. New Mexico has the only public control system, but regulations under it do not contemplate joint controls in the area of the border. Arizona and Texas have virtually no controls except voluntary ones, and the California law is beholden to similar rules of capture which do little to discourage excessive pumping and waste.

An optimistic picture does not emerge from the examination of these conditions in the border states and in the adjoining areas of the Republic of Mexico. . . .

With some qualification, that statement still stands, although the panelists may show you that I have not been sufficiently critical. In any case, Arizona did pass groundwater legislation in 1980⁹ and the statute represents some progress. However, it is more a charter of hope than a document of change, and it is already under a constitutional cloud.¹⁰

What are the differences in groundwater law in the four border states:

1. We begin with Texas for the reason that its groundwater law is the least changed from the common law of England and the humid regions of the country, even though the western part of Texas has only ten inches of rainfall or less.

The common law permits unlimited withdrawals; this is the so-called "absolute ownership" concept. This is the law of Texas, as Professor Johnson shows in his paper.¹¹ He has covered the entire subject including the malice limitation, the land subsidence problem and the 1949 Groundwater District Act which is an important vehicle for voluntary conservation and management. As he shows, the reliance on voluntary action has limits in a competitive society where technology and the deep well pump encourage the drilling of more and deeper wells.

A publication by one of the most active of the voluntary districts which reports regularly on groundwater conditions states that:¹² "Groundwater mining is one of the major problems facing Texas. Mining occurs across the state, and is not limited to one geographic area." The report reviews overdrafts in several other areas and states:

The Winter Garden area of South Texas has experienced water-level declines in excess of 240 feet in the past 40 years, and water

9. ARIZ. REV. STAT. ANN. §§ 45-401 to 45-637 (Supp. 1981-82).

10. *Town of Chino Valley v. City of Prescott*, 131 Ariz. 78, 638 P.2d 1324 (1981), *reh'g denied* (Jan. 15, 1982).

11. Johnson, *Texas Ground Water Law: A Survey and Some Proposals*, in this volume.

12. *The Cross Section, High Plains Underground Water Conservation Dist. No. 1*, at 3 (May 1981).

levels in the Trinity Group aquifer in the Dallas–Fort Worth area have declined more than 400 feet during the past 25 years.

Around El Paso, water levels have shown a marked decline as the Cities of El Paso and Ciudad Juarez, Mexico, have pumped more water than is recharged to the Hueco Bolson. It is simply a matter of time until the aquifer is either depleted or is invaded by the underlying salt water. . . .

There is pending litigation over El Paso's proposed future water supply from New Mexico.

2. California applies a second groundwater doctrine called "correlative rights," because it purports to relate proportionately the volume of groundwater withdrawn to overlying surface ownership or use. In practice, as Mr. Weatherford has demonstrated in his paper,¹³ this rule is hard to distinguish from the "reasonable use" rule which has produced so much difficulty in Arizona.¹⁴ The rule contains complications peculiar to California law, such as prescriptive rights that are recognized by way of analogy to prior appropriation. Mr. Weatherford has explained the recent limitations the court has placed on the unique "mutual prescription" rule and the various local and district rules. Salt water intrusion and the increasing salinity of groundwater from irrigation return flows and the lack of state-wide controls over groundwater have consequences on both sides of the border.

The papers on Texas and California emphasize the real property rules in groundwater law, the extreme difficulty in changing them, and point out the absence of state-wide management systems.

3. New Mexico exemplifies a third and major difference in groundwater law. Appropriation law is applied to groundwaters as well as surface supplies, although in modified form in particular areas of the state. Professor DuMars explains¹⁵ the state-wide permit system that was initiated over fifty years ago. The permit system, first applied to streams, emerged as a rational response to abuses in the pioneer rule of capture under early prior appropriation doctrine. This primitive rule still pertains in Texas as to groundwater. In California, this common law rule is modified by "correlative rights" and California rules on prescription.

The basic difference between common law groundwater rules and prior appropriation law is over the origin and nature of the property rights. In appropriation law the resource is public until acquired by actual beneficial use; there is no nebulous right connected with overlying ownership of

13. Weatherford, Malcolm & Andrews, *California Groundwater Management: The Sacred and the Profane*, in this volume.

14. See Clark, *Arizona Groundwater Law: The Need for Legislation*, 16 *Ariz. L. Rev.* 799 (1974).

15. DuMars, *New Mexico Water Law, an Overview and Discussion of Current Issues*, in this volume.

land. Water rights are conditioned upon actual use; unused rights revert to the public. New rights are acquired under a statutory system which requires application, notice, hearing and record keeping.

New Mexico was one of the first to establish a groundwater management system; groundwater has always been a public resource subject to actual use. Here lies the difference between New Mexico and the law of the other three states. The essentials of the appropriation-permit system have been adopted in the great majority of Western states.

Professor Johnson's paper explains that Texas and the Republic of Mexico share aquifers where pumping on both sides of the border is uncontrolled. Professor DuMars shows you that an important aquifer is shared by New Mexico, Texas and the Republic of Mexico. Pumping can and will have international implications. The City of El Paso covets this source and is proceeding in the courts to raise the constitutional question of interstate control and transport of groundwater.¹⁶ New Mexico regulates withdrawals; Texas has no controls. Mexico has an interest in this dispute not only with respect to withdrawals but as to water *quality* consequences because of the effluent that is returned to the alluvial fill and pumped on both sides of the border.

4. Arizona has followed a fourth doctrine of groundwater law called "reasonable use" since 1953. The 1980 statute¹⁷ has modified Arizona groundwater law and provides for an administrative system.

But before we outline Arizona law, let me emphasize that groundwater law has been changed by legislation in a number of states. We could include Arizona, since 1980, in a fifth category of statutory or utilitarian doctrine because certain common law property rights have been limited by the new legislation in the interest of conservation, economic planning and to avoid disaster. In several other states the pioneer appropriation doctrine of "first in time, first in right" has been modified by legislation so that "first in right" may not be a right to the same *quantity* of groundwater, e.g., in a non-rechargeable basin that has been designated for 25 per cent, or 50 percent, or total depletion over fifty years. These changes in the law have been made under maximum economic benefit policies and "safe yield" goals included in legislation.¹⁸

Arizona's 1980 statute has been called "the most comprehensive of any state in the American West" and "a wide ranging sweeping reform."¹⁹

16. *City of El Paso v. S. E. Reynolds, Jeff Bingaman and Lalo Garza* Civ. No. 80-730 (U.S. Dist. Ct. for the D. N.M.) (Sept. 1, 1980); See, *The Great El Paso Water Grab*, *Albuquerque Journal*, Impact, Nov. 3, 1981.

17. ARIZ. REV. STAT. ANN. §§ 45-401 to 45-637 (Supp. 1981-82).

18. See Clark, *The Role of State Legislation in Groundwater Management*, 10 *Creighton L. Rev.* 469 (1977).

19. The following summary is taken from the *Newsletter* where sources are cited. *Arizona Enacts Groundwater Management Law*, 13 *Water Law Newsletter*, Rocky Mountain Min. L. Found., 1 (1980).

These are exaggerations, although the law does cover many pages in the books. It makes changes which in effect validate in positive law the conditions that brought about the need for the statute. Whether the law can bring about the goals specified will remain an open question for a generation.

The legislation was adopted in a heated atmosphere. It became necessary as a result of a series of court decisions that exposed what the "reasonable use" rule had encouraged for years, viz., *unreasonable* uses including withdrawals from beneath Indian and federal and state public lands producing an enormous overdraft.²⁰ Only fragmentary relief could be expected from the federal Central Arizona Project and was made contingent upon some corrective state legislation.

The purpose of the statute is conservation; the primary goal is a "safe yield" balance by the year 2025 (which means a recharge rate equal to withdrawals). Groundwater makes up 60 per cent of the total water uses in Arizona, and the overdraft is now above 2.5 million acre feet annually.

The plan is to reduce withdrawals through five successive calendar periods until the year 2045.

One main feature is the establishment of a state administered system and a number of Active Management Areas—four to begin with, and others to be established later. Areas outside of these AMAs, called non-expansion areas, are under some state rather than local control.

There are controls over specific types of uses. Other provisions cover well drilling, registration, regulation and the exemption of small wells. Minimum attention is given to water quality.

The legislation classified certain rights; the most important are those uses for commercial irrigation during the period 1975 to 1980. These "grandfathered rights" are measured by the volume of water actually used. They may be transferred to others for irrigation, or sold for non-irrigation purposes. The distinguishing feature is their attachment to the land. Nonirrigation rights are also protected. Permits are required, and they are measured by the actual use or a fixed quantity (three acre feet per acre of retired farm land). Other rights do not depend on the retirement of farm land and are extremely important for industry and especially for municipalities.

This new permit system has adopted a feature of appropriation doctrine, viz., measurement of the volume of water or actual beneficial use, and is a major feature of the law that overcomes the vague "reasonable use"

20. The litigation filed in 1976 on behalf of the Papago Tribe is expected to be settled through passage of legislation soon after the first of the year. *House Interior Panel OKs Act to Settle Water Claims*, Tucson Ariz. Daily Star, Dec. 17, 1981, at 2B; The Southern Arizona Water Rights Settlement Act of 1981, which provides for the legislative settlement of water rights claimed by the Papago Tribe, received the unanimous approval of the House Interior Committee.

standard that has resulted in uses being enlarged until adjoining landowners, or the federal government on behalf of Indians, complained.

The administrative system provides for notice, objection, hearing and appeal to the courts.

Litigation may reach the U.S. Supreme Court on the question of whether there was an unconstitutional taking of water rights from a small rural community, which is the site of a municipal well field and is transported some distance to the service area. The Arizona Supreme Court on November 30, 1981, held that the statute permits a lawful exercise of the police power.²¹

The nonseverability clause in the 1980 legislation heightens interest in its future.

III. FUTURE PROSPECTS AND NEEDS

The demand for groundwater is increasing in Mexico and the U.S. More knowledge of its occurrence and quality is essential. This is especially true in the border region. The International Boundary and Water Commission's recommendations on sanitation problems cover an important dimension of the problem. But continuous study of border conditions is necessary and, as I suggested in 1977, formal international cooperation should be encouraged through enlargement of an existing institution, the Boundary and Water Commission, and by providing trained personnel and an adequate budget.

The City of El Paso's effort to obtain groundwater in New Mexico, whatever its outcome, plus the discovery of chemical pollutants in Tucson wells, may improve prospects for more cooperation and understanding and demonstrate the need for an institutional mechanism that will identify, study and mitigate, when it cannot resolve, resource problems common to both Mexico and the United States.

PERSPECTIVA DE LEYES E INSTITUCIONES SOBRE AGUAS DEL SUBSUELO EN LOS ESTADOS FRONTERIZOS DE LOS ESTADOS UNIDOS

Debido a la diferencia del derecho en los diferentes estados, es difícil enfocar los asuntos relativos a la ley de aguas del subsuelo en la zona fronteriza. Su escasez en dicha zona, lo dificulta aún más. Nuevo México, es el único estado que cuenta con reglamentos adecuados para la protección y administración del decremento de los suministros de agua. Sin embargo, ningún estado cuenta con controles conjuntos en la zona fronteriza.

21. *Town of Chino Valley v. City of Prescott*, 131 Ariz. 78, 638 P.2d 1324 (1981), *reh'g denied* (Jan. 15, 1982).

Perspectiva

El derecho de los estados de Tejas y California, considera que el agua es una propiedad real. El concepto de "propiedad absoluta," que contempla el estado de Tejas, permite su explotación ilimitada, siempre y cuando el sujeto que la bombeé no pretenda hacer mal uso de ella. Puesto que la administración y la conservación dependen de los esfuerzos voluntarios, el sistema tejano hace poco por evitar la perforación de más pozos y de otros más profundos.

La explotación de aguas del subsuelo ha originado bajas excesivas de 240 pies, en el nivel de agua, en los últimos 40 años. El estado de California, adoptó una segunda doctrina para aguas del subsuelo, llamada "derechos correlativos," que intenta relacionar proporcionalmente, el volumen de aguas extraído del subsuelo, con el uso o propiedad del suelo. Esta medida encierra complicaciones peculiares para el derecho del estado de California, tales como los derechos de prescripción. Tejas y California, carecen de controles estatales adecuados sobre el agua del subsuelo.

El caso de Nuevo México es un ejemplo de la tercera y más importante diferencia que existe en la ley de aguas del subsuelo. En la ley de apropiación de este estado, este recurso se considera público, hasta que es adquirido para un uso provechoso. De ahí que, el derecho de propiedad del suelo es muy claro. Los derechos de agua están condicionados al uso real de las mismas, y de no ser ejercidos, estos volverán a ser propiedad pública. Los nuevos derechos se adquieren en base a un sistema de estatutos que requiere: aplicación, notificación, audiencias y expedientes.

Arizona ha seguido una cuarta doctrina de derecho de aguas, una de "uso razonable" que recientemente se modificó mediante el estatuto de 1980. El objetivo principal de este, es lograr una tasa de recarga, proporcional a la explotación del agua. Este plan contempla reducir la explotación a lo largo de un período de cinco años calendario consecutivos, hasta el año 2025.

Dicho estatuto estableció un sistema de administración estatal, y cuatro áreas activas de administración, con miras a crear otras más en el futuro. La legislación clasifica ciertos derechos; los más importantes son los usos del agua para la irrigación comercial durante el período de 1975 a 1980. Estos derechos pueden transferirse a terceros para la irrigación, o pueden ser vendidos para otros propósitos. La característica que los diferencia, es su apego a la tierra. También están protegidos por un permiso los derechos de no-irrigación.

Este nuevo sistema de permisos regular los derechos mediante el uso provechoso del agua, siendo esta, una de las características de la doctrina de apropiación. El sistema administrativo, previene la notificación, audiencias, objeciones y apelaciones a las cortes.

Recomendaciones

Se requiere un mayor conocimiento de la calidad y abundancia de aguas del subsuelo en la zona fronteriza. La Comisión de Límites y Aguas, debe agrandarse para estudiar continuamente las condiciones fronterizas para beneficiar a los Estados Unidos y a México. El esfuerzo realizado por la ciudad de El Paso, para obtener agua del subsuelo en Nuevo México, y el descubrimiento de contaminantes químicos en pozos de Tucson, demuestran la necesidad de crear un mecanismo institucional que identifique, estudie y mitigue, los problemas de recursos comunes a los dos países.