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Centralized Decisionmaking in the Administration of Groundwater Rights: The Experience of Arizona, California and New Mexico and Suggestions for the Future

Groundwater law in the western states has evolved during the 20th century¹ from the English or common law rule of absolute ownership² to the American rule of reasonable use³ and correlative right⁴ to the doctrine

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1. For a discussion of the history of the development of western groundwater laws see Clark, *Ground Water Legislation in the Light of Experience in the Western States*, 22 MONT. L. REV. 42 (1960); Hutchins, *Trends in the Statutory Law of Ground Water in the Western States*, 34 TEX. L. REV. 157 (1955).

2. The common law or absolute ownership doctrine holds that the water beneath one's land is the property of the landowner and absent malice may be withdrawn without regard to the effect such withdrawals may have on adjacent landowners. Developed in relatively wet England and transferred to the relatively wet East coast, the absolute ownership doctrine worked reasonably well in those parts of the country. Absent competition for groundwater supplies or shortages in the late nineteenth and early twentieth centuries, and being familiar with water law in other parts of the country, many courts and legislatures adopted the common law rule. (See, e.g., *Vineland Irr. Dist. v. Azusa Irr. Co.*, 126 Cal. 486, 58 P. 1057 (1899); *Hanson v. McCue*, 42 Cal. 303 (1871); *Mosier v. Caldwell*, 7 Nev. 363 (1872); *Vanderwork v. Hewes*, 15 N.M. 439, 110 P. 567 (1910); *Metcalfe v. Nelson*, 8 S.D. 87, 65 N.W. 911 (1895); *Houston & Tex. Cent. R.R. v. East*, 98 Tex. 146, 81 S.W. 279 (1904); *Herriman Irr. Co. v. Keel*, 25 Utah 96, 69 P. 719 (1902); *Hunt v. City of Laramie*, 26 Wyo. 160, 181 P. 137 (1919); *Terr. Okla. Stat. §4162* (1890). It was not long, however, before the drawbacks of the absolute ownership doctrine, particularly in arid states, became apparent and various modifications of the rule were developed.

3. The reasonable use doctrine, or American rule, was the modification made by many courts to the absolute ownership doctrine. (See, e.g., *Maricopa v. Southwest Cotton Co.*, 39 Ariz. 65, 4 P.2d 369 (1931); *Volkman v. Crosby*, 120 N.W.2d 18 (N.D. 1963); *Canada v. City of Shawnee*, 179 Okla. 53, 64 P.2d 694 (1937); *Bull v. Siegrist*, 169 Or. 180, 129 P.2d 832 (1942); *Horne v. Utah Oil refining Co.*, 59 Utah 279, 202 P. 815 (1921); *Evans v. City of Seattle*, 182 Wash., 450, 47 P.2d 984 (1935); *Binning v. Miller*, 55 Wyo. 451, 102 P.2d 54 (1940). Basically, reasonable use doctrine limits a landowner's right to use of water beneath his land to an amount necessary for some reasonable, beneficial purpose on his land. Waste of water or transport to distant lands is not considered a reasonable beneficial use when such use interferes with the right of adjacent landowners to use the water beneath their own lands for the beneficial use of those lands.

4. Similar in application to the reasonable use doctrine, the correlative rights doctrine recognizes the landowner's right to use water beneath his lands, but tempers that right by providing that landowners overlying a common source of groundwater have equal or correlative rights to a reasonable amount of the water when applied to a reasonable beneficial use on the land overlying the groundwater basin. See, e.g., *Katz v. Walkinshaw*, 141 Cal. 116, 74 P. 766 (1903).

of prior appropriation.⁵ Currently most western states have adopted the prior appropriation doctrine and issue permits for the extraction of groundwater⁶ and several states have established permit systems under other doctrines.⁷ Although a number of states have established local boards or districts with varying responsibilities over groundwater matters,⁸ permit systems are usually centrally administered by a state official (often a state engineer), state board or commission.

Two notable exceptions to this trend, however, are California and Texas. Both states are heavy users and overdrafters of groundwater and have resisted attempts to centralize control over groundwater extractions.⁹ This resistance has, in large part, been due to a fear that drilling and extraction decisions, if made by a state or local water agency under some type of a permit system, would prove disadvantageous to groundwater pumpers.¹⁰ Current and future extractors are understandably reluctant to see a water rights system they have relied upon changed—particularly when that reliance may have led them to invest in land and equipment. The fears of groundwater extractors that a change to prior appropriation or some other permit system for determining groundwater rights will result in decreased extraction may not be well founded—at least if the experience of other states can be used as a guide. In a number of states with prior appropriation or other permit systems, overdrafting and the

5. In states that follow the prior appropriation doctrine the first appropriator of water, by putting water to a beneficial use, without waste, has a right to continue that use. *See, e.g.*, ALASKA STAT. § 46.15.010–.270 (1966); COLO. REV. STAT. ANN. §§ 37-90-102 and 37-92-101 (1973 & Supp. 1980); IDAHO CODE ANN. § 42-226; KAN. STAT. § 82a-703 (1977); NEV. REV. STAT. § 534.020 (1973); N. MEX. STAT. ANN. § 75-11-1 (1978); N.D. CENT. CODE, § 61-01-01 (1960 & Supp. 1975); OKLA. STAT. ANN., tit. 82 § 1020.1 (Cum. Supp. 1976); ORE. REV. STAT. § 537.505 (1979); S. DAK. COMP. LAWS § 46-6-3 (Supp. 1979); UTAH CODE ANN. § 73-3-1 (1968); WASH. REV. CODE ANN. § 90.44.010–.250 (1962); WYO. STAT. ANN. § 41-144 (Supp. 1975).

6. ALASKA STAT. § 46.15.040 (1966); COLO. REV. STAT. ANN. § 37-90-137 (1973); ID. CODE ANN. § 42-226 (Comm. Supp. 1976); KAN. STAT. ANN. § 82a-707 (1977); NEV. REV. STAT. § 534.050 (1973); N. MEX. STAT. ANN. § 72-12-3 (1978); N. DAK. CENT. CODE § 61-01-01 (1960 & Supp. 1975); OKLA. STAT. ANN. § 82-1020.7 (Cum. Supp. 1976); ORE. REV. STAT. § 537.535 (1979); UTAH CODE ANN. § 73-3-1 (1968); WASH. REV. CODE ANN. § 90.44.050 (1962); WYO. STAT. ANN. § 41-138 (1959).

7. ARIZ. REV. STAT. ANN., tit. 45, § 513–519 (Supp. 1981–1982); HAWAII REV. STAT. § 177-22 to 29 (1968); MONT. REV. CODES § 89-880 to 888 (Supp. 1975).

8. *See, e.g.*, COLO. REV. STAT. § 37-90-103, 37-90-118 to 37-90-135 (1973); ID. CODE ANN. § 42-237d (Cum. Supp. 1976); KAN. REV. STAT. § 82a-1020 (1977); NEV. REV. STAT. § 46-658 (Cum. Supp. 1976); NEV. REV. STAT. § 534.035 (1973); N. MEX. STAT. ANN. § 72-14-1 (1978); UTAH CODE ANN. § 73-7-1 (1968); WYO. STAT. ANN. § 41-130 (1959).

9. *See* Johnson, *Texas Groundwater Law: A Survey and Some Proposals*, 22 NAT. RES. J. 1017 (1982); California Water Resources Center, *Proceedings of the Thirtieth Biennial Conference on Ground Water*, at 46–52 (1981).

10. *Id.*, and Gardner, Howitt and Nuckton, *The Case for Regional Groundwater Management*, 35 CALIF. AGRIC. 1 and 2 (1981) 9–10.

number of new wells put into production has not declined. New Mexico is an example of such a state.¹¹

This fact raises an interesting question concerning the attitudes of groundwater pumpers toward the centralized administration of groundwater rights on the state level. Specifically, is it centralized administration some groundwater pumpers fear or the possibility of losing present and possibly future rights to pump groundwater? This study is an attempt to answer this question by summarizing the groundwater law and administrative systems in Arizona, California, and New Mexico and by ascertaining the attitudes of groundwater pumpers (as represented by the opinions of interest group leaders active in groundwater matters) toward centralized control and administration of groundwater allocation decisions on the state level.¹²

Arizona, California, and New Mexico are good candidates for this type of comparison because of the differences in their groundwater laws and current level of centralized statewide control over groundwater pumping. New Mexico is an example of a state with a long (in terms of groundwater) history of experience with a prior appropriation and permit system administered in the Office of the State Engineer. California has had even longer experience with the correlative rights doctrine and no centralized control over groundwater use on the state level. Arizona is a reasonable-use doctrine state that only recently passed a groundwater management act vesting significant powers over groundwater use (in the most heavily used groundwater basins) in a department of water resources. As such, the three states represent three different legal and administrative ground-

11. As discussed later in the paper, New Mexico has had a long history of a centralized groundwater rights system controlled via a permit system administered by the New Mexico State Engineer. However, from 1970 to 1975 alone, the use of groundwater in New Mexico increased by 12 percent, and in 1970 statewide overdraft was estimated at approximately 719,000 acre-feet annually. Water Quality Control Commission, New Mexico, *State of New Mexico Water Quality Status Summary* (1980); Bureau of Reclamation, U.S. Dept. of Interior, *New Mexico Water Resources Assessment for Planning Purposes* (1976).

12. Groups and group leaders interviewed for this study were identified on the basis of their reputations. Individuals within state water agencies known to have been active in the past in groundwater management, conflicts or litigation were asked to identify groups and individuals that have also been active in the past in groundwater matters. The attitudes of the following groups are summarized in this study. They represent the major and most important groundwater users in their states. In Arizona the groups were the Agri-Business Council of Arizona; the Arizona Mining Association; and the League of Arizona Cities and Towns. In California, the California Cattlemen's Association; the California Chamber of Commerce; the California Farm Bureau; and the Association of California Water Agencies. In New Mexico, the New Mexico Cattle Grower's Association; the New Mexico Farm Bureau; the New Mexico Mining Association; the New Mexico Oil and Gas Association; and the Public Service Company of New Mexico. The individuals within these organizations are not identified as confidentiality was promised in return, it was hoped, for candor. Interviews were conducted during the month of December 1981 in Arizona and March and May 1982 in California and New Mexico respectively.

water environments. Those administrative environments and the groundwater laws of the three states are summarized below, followed by the opinions of interest groups representing major groundwater pumpers in Arizona, California and New Mexico toward differing types of administrative arrangements.

ARIZONA GROUNDWATER LAW

Arizona recognizes three classes of water supply: surface water, water flowing in definite underground channels, and percolating groundwater. Surface water and water flowing in definite underground channels are considered public property and governed by the doctrine of prior appropriation.¹³ Percolating groundwater is governed by the rule of reasonable use.

This section will summarize the major court decisions that have established the reasonable use doctrine as the groundwater law in Arizona. Several commissions, beginning in 1938, have examined Arizona groundwater law and made recommendations for changes in the Arizona Code. Many of these recommendations would have centralized control over groundwater pumping at the state level.

Groundwater was not mentioned in the Howell Code of 1864, Arizona's Territorial Constitution.¹⁴ The Arizona Supreme Court in 1904 in *Howard v. Perrin*¹⁵ first recognized that percolating groundwater is not public water subject to the doctrine of prior appropriation. With the exception of a brief period between January 1952 and March 1953¹⁶ the Arizona Supreme Court has maintained this position consistent with *Howard*.

In 1926 in *Pima Farms v. Proctor*,¹⁷ the court maintained the distinction between percolating water and water flowing in definite underground channels but found a definite underground channel could include, as in this case, water not within clearly defined banks or channels. Although the court found that the subterranean stream in question "... flows within well-defined and known channels, the course of which can be distinctly traced,"¹⁸ the nature of this underground stream was such that, as one

13. ARIZ. REV. STAT. ANN. § 45-131.

14. D. MANN, THE POLITICS OF WATER IN ARIZONA 44 (1963).

15. 8 Arizona 347, 76 P. 460 (1904).

16. On 12 January 1952, in *Bristor v. Cheatham* (73 Arizona 228, 240 P.2d 185), the court, by a 3-2 margin, found groundwater to be public property subject to prior appropriation. On 14 March 1953, the court reversed itself and, again in a 3-2 decision, reapproved the doctrine of private ownership subject to reasonable use in *Bristor v. Cheatham*, 75 Arizona 227, 255 P.2d 173 (1953).

17. 30 Arizona 96, 245 P. 369 (1926).

18. *Id.*

commentator noted, "[t]he description would fit most of the rivers of the state and would include most of the groundwater supplies."¹⁹

Any confusion that resulted from the *Pima* decision was ameliorated somewhat five years later when the court decided *Maricopa County Municipal Water Conservation District v. Southwest Cotton Co. et al.*²⁰ In *Maricopa*, the court again reaffirmed the distinction between underground streams and percolating groundwater and found there is a presumption that groundwater is not part of an underground stream. The court further found that the burden of rebutting that presumption belonged to the party seeking to establish the existence of such a stream. The court noted:

According to the great weight of authority the essential characteristics of a water course are a channel, consisting of well-defined bed and banks, and a current of water . . . without all these characteristics there can be no water course.²¹

In a series of cases decided after *Maricopa*, the court decided that a spring that did not naturally surface was not subject to appropriation;²² artesian water was not subject to appropriation, absent proof the water had as its origin an underground stream;²³ and upheld the State Water Code's 1921 inclusion of surface springs as subject to appropriation.²⁴

Hence, with the exception of the brief period mentioned above, percolating groundwater has been, and continues to be, considered the property of the owner of the overlying land subject to requirements of reasonable use. This body of law has not resulted in the most efficient management and utilization of groundwater resources in Arizona. Several problems, notably overdrafting, became apparent in the 1930s and resulted in the formation of groundwater study commissions to recommend possible solutions to the legislature.

The first groundwater study commission was appointed by Governor Rawghlie C. Stanford in 1938.²⁵ Although unable to agree on measures to recommend to the legislature, the commission found a need for further study of the state's groundwater resources and recommended the appropriation of funds to aid the United States Geological Survey (USGS) in conducting a study. In 1939, the funds were appropriated, and in 1943,

19. G. Smith, *Groundwater Law in Arizona and Neighboring States*, AAES TECH. BULL. No. 65, 1936 quoted in D. MANN, *supra* note 14, at 46-47.

20. 39 Arizona 65, 4 P. 369 (1931).

21. *Id.*, 39 Arizona 65, 85, 4 P. 369, 376 (1931).

22. *Fourzman v. Curtis*, 43 Arizona 140, 29 P.2d 722 (1934).

23. *Campbell v. Willard*, 45 Arizona 221, 42 P.2d 403 (1935).

24. *Parker et. al. v. McIntyre et. al.*, 47 Arizona 484, 56 P.2d 1337 (1936).

25. Ariz. Groundwater Mgmt. Study Comm'n, *Draft Report of Tentative Recommendations*, July 1979, at I-6 [hereinafter cited as 1979 Draft Recommendations].

the USGS produced a preliminary report that concluded, *inter alia*, there was a significant need for a groundwater code that would protect groundwater basins from overdrafting.²⁶

During the early 1940s, several attempts were made in the legislature to appropriate additional funds for studying the state's groundwater problems and developing a groundwater code. None of these attempts was successful.²⁷ In 1945, the situation changed. The Bureau of Reclamation had found the Central Arizona Project to be feasible economically and technically but warned that approval of the project would not be made unless the state passed a groundwater code that addressed the overdraft problem.²⁸ In a special session called for the purpose, the legislature passed the Ground Water Act of 1945.²⁹

The act required well registration and the reporting to the state land commissioner of various data concerning well extractions, construction and utilization.³⁰ The act was basically a vehicle for providing information and did not have a significant impact on overdrafting.³¹

In 1946, the USGS issued a report finding increased overdraft in central Arizona.³² As agricultural production expanded after the war, conditions of overdraft increased. In 1948, the Secretary of the Interior warned that the Central Arizona Project would not be constructed absent a groundwater management plan that would control overdraft.³³ The same year the legislature passed the Ground Water Act of 1948.³⁴

This act provided for the declaration by the state land commissioner of "critical groundwater areas" in "any groundwater basin . . . not having sufficient groundwater to provide a reasonably safe supply for irrigation of the cultivated lands in the basin at the then current rates of withdrawal."³⁵ Upon declaration of a basin as critical, further expansion of agricultural irrigation by drilling new wells was prohibited. The act did not apply to water used for domestic supply, for industry, for transportation, or for stock watering.³⁶

Hence, within critical basins, overdrafting was not reversed but merely frozen at current levels. The designation of critical areas was slow, the first being in 1949 and the second not until 1951. In the interim, drilling

26. *Id.*

27. D. MANN, *supra* note 14, at 48-49.

28. *Id.*, p. 49. See also P. Higdon and Thompson, *The 1980 Arizona Groundwater Management Code* (1980) ARIZ. ST. L.J. 628.

29. 1945 Ariz. Sess. Laws 1st Spec. Sess. Ch. 12.

30. *Id.*

31. 1979 Draft Recommendations, p. I-7.

32. *Id.*, p. I-8.

33. Higdon and Thompson, *supra* note 28, at 628.

34. *Session Laws*, 1948, 6th Spec. Sess., ch. 5.

35. *Id.*, sec. 2.

36. *Id.*

activity increased dramatically as landowners sought to acquire extraction rights in water-short areas prior to the designation of the area as critical.³⁷

Drawbacks of the 1948 code coupled with rapidly increasing agricultural expansion and resultant overdraft led Governor Howard Pyle, in 1951, to appoint a second groundwater study commission.³⁸ This commission recommended a bill, introduced in the legislature in 1952, that would have divided the state's groundwater basins into three categories: open, restricted, and closed. In closed basins, reductions in groundwater pumping were required. In closed basins, reductions in groundwater pumping were required. In restricted basins, no additional groundwater pumping was allowed, and in open basins, there were to be no restrictions on pumping. In addition, the bill declared groundwater public property and adopted a system of rights based on the prior appropriation and correlative rights doctrines.³⁹

While the second commission's bill was under consideration in the legislature, the Arizona Supreme Court handed down a startling decision that promised to change significantly the nature of groundwater rights in the state. The case of *Bristor v. Cheatham (Bristor I)*⁴⁰ reversed prior court decisions on the subject and found groundwater to be public property subject to prior appropriation. The combination of a lack of legislative enthusiasm and the *Bristor I* decision resulted in the failure of the second commission's bill to pass.⁴¹

The decision, labeled by one commentator as "one of the most controversial ever rendered by the court,"⁴² resulted in widespread predictions of calamity and inequity.⁴³ Over a year later, after the appointment of a new supreme court justice, the court again reversed itself and restored the common law private ownership rule tempered by reasonable use.⁴⁴

In the wake of *Bristor I*, the legislature passed a bill authorizing the governor to appoint a third groundwater commission, the Underground Water Commission. On 1 January 1953, the Underground Water Commission made its recommendations to the legislature. Among other things, its report called for the adoption of the correlative rights doctrine and the closing of overdrafted areas to further irrigation pumping.⁴⁵ These rec-

37. D. MANN, *supra* note 14, at 53.

38. 1979 Draft Recommendations, *supra* note 25, at I-9.

39. *Id.*, see also D. MANN, *supra* note 14, at 55.

40. 73 Arizona 228, 240 P.2d 1, 85 (1952).

41. D. MANN, *supra* note 14, at 58.

42. Higdon and Thompson, *supra* note 28, at 629.

43. D. MANN, *supra* note 14, at 57-58.

44. *Bristor v. Cheatham*, 75 Arizona 227, 255 P.2d 173 (1953).

45. In addition, the recommendations called for provisions allowing municipal and industrial uses to purchase water rights, the creation of local districts to determine the necessity of reductions in pumping and the establishment of an administrative agency with enforcement powers. See D. MANN, *supra* note 14, at 60.

ommendations by the commission led to the drafting of a bill in 1954. Pressure from the affected interests, backed by powerful committee members, prevented the bill's adoption. Instead, a bill was approved that largely extended the provisions of the 1948 code.⁴⁶ In 1955, the 1948 code and subsequent amendments were found to be a constitutional exercise of the state's police power.⁴⁷

From 1954 until 1980, no significant legislation was enacted, although there were several court decisions during this period that had an impact on groundwater law and management. Most of these decisions dealt with the transportation of groundwater. In 1960, the Supreme Court upheld a landowner's right to transport water from land with a history of agricultural use prior to adoption of the 1948 code to land without this history.⁴⁸

A series of cases from 1969 to 1976 involving the City of Tucson dealt with the extent to which "reasonable use" prevented the transportation of water off the land. These cases led to the creation of the fourth groundwater study commission. In 1969 in *Jarvis v. State Land Department (Jarvis I)*,⁴⁹ the court granted landowners in the Avra and Altar Valleys, part of the Morana Critical Groundwater Area, an injunction against the State Land Department and the Land Commissioner, preventing the issuance of a permit to Tucson to transport water *via* pipeline over state lands. The court found that Tucson's extractions would reduce available supply and interfere with existing uses, illegal in a critical groundwater area. In 1970 in *Jarvis v. State Land Department (Jarvis II)*,⁵⁰ the court modified its earlier decision and allowed the city to acquire title to lands being cultivated, retire those lands, and to transport and "withdraw an amount equal to the annual historical maximum use upon the lands so acquired."⁵¹ In 1976 in *Jarvis v. State Land Department (Jarvis III)*,⁵² the court found that the annual historical maximum use was "to be measured by the acreage previously farmed and not by the gross acreage of the land purchased."⁵³ This resulted in a reduction of approximately 50% of the amount of water the city had claimed.⁵⁴ In 1975, following the flexible approach of *Jarvis II*, the court in *Neal v. Hunt*⁵⁵ allowed the transportation of groundwater from a non-critical area. The court limited

46. 1979 Draft Recommendations, *supra* note 25, at I-11; and D. MANN, *supra* note 14, at 62-63.

47. *Southwestern Engineering Company v. Ernst*, 79 Arizona 403, 291 P.2d 764 (1955).

48. *State ex rel. Morrison v. Anway*, 87 Arizona 206, 349 P.2d 774 (1960).

49. 104 Arizona 527, 456 P.2d 385 (1969).

50. 106 Arizona 506, 479 P.2d 169 (1970).

51. *Id.*, 106 Ariz. 506, 511, 479 P.2d 169, 174 (1970).

52. 113 Arizona 230, 550 P.2d 227 (1976).

53. *Id.*

54. Higdon and Thompson, *supra* note 25, at 630.

55. 112 Arizona 307, 541 P.2d 559 (1975).

such extractions to 300 gallons per minute on the basis that this would not harm the water supply of other landowners within the basin.⁵⁶

In 1976, in what has been called the court's most controversial decision on the transportation of groundwater,⁵⁷ the court granted an injunction against the City of Tucson and several copper mining companies to prevent the extraction and transportation of waters from the Sahuarita-Continental Critical Groundwater Area to an area outside the critical groundwater area but within the same groundwater basin. In *Farmers Investment Company v. Bettwy (FICO)*,⁵⁸ the court found that water "may not be pumped from one parcel and transported to another just because both overlie the common source of supply if the plaintiff's lands or wells upon his lands thereby suffer injury or damage."⁵⁹ The court presumed injury from the fact that water was being removed from a critical groundwater area.

FICO caused a great deal of controversy because it threw the future of the mining industry and the rights of numerous extractors, including the City of Tucson, into doubt. In reaction to the *FICO* decision and the uncertainty it created, the legislature in 1977 amended the Critical Groundwater Code to allow transportation of groundwater that had been occurring as of 1 January 1977 to continue if the transporter obtained a permit from the State Land Department. The permit system was to continue pending acceptance by the legislature of a comprehensive groundwater code. This legislation also established the Groundwater Management Study Commission to develop a code.⁶⁰

Creation of the 1980 Groundwater Management Act.

The Groundwater Management Study Commission consisted of 25 members: seven each from the State Senate and the House of Representatives and eleven gubernatorial appointees. The gubernatorial appointees were distributed among the major water users in the state as follows: two representatives for cities and towns; two representatives from mining interests; two representing agricultural interests; one each representing the interests of Indians and electric utilities; and three representatives from the general public.⁶¹

Agricultural interests, the major users of groundwater in the state and presumably those with the most at stake in the development of a groundwater plan, felt their views were underrepresented on the commission and the views of city and mining interests were overrepresented. During

56. *Id.*

57. 1979 Draft Recommendations, *supra* note 25, at I-12.

58. 113 Arizona 520, 558 P.2d 14 (1976).

59. *Id.*, 113 Arizona 520, 527, 558 P.2d 14, 21 (1976).

60. 1977 Arizona Session Laws ch. 29.

61. Higdon and Thompson, *supra* note 28, at 631.

hearings on the commission's 1979 draft report, several speakers testified that agricultural interests were not represented fairly or adequately in the draft report. For example, William Baker, secretary of the Agri-Business Council of Arizona, remarked the commission had "scared the hell out of agriculture" and labeled the work of the commission majority as "not water management, but water confiscation without compensation."⁶² These sentiments also were expressed in the minority report of the 1979 draft recommendations:

The equation is quite clear as we see it:

All entities but agriculture may increase their groundwater pumping. Where the basin must be balanced the cutback will be in agricultural pumping by pro rata reduction without compensation. (Emphasis in original.)⁶³

Division on the commission prevented it from meeting its 31 December 1979 due date for a final report of recommendations. As a result, "a small group of negotiators representing the major water users, cities, copper mines and farms, shut the door and began several hundred hours of negotiations."⁶⁴ From these meetings, on 6 March 1980 there emerged a report entitled "Concepts for Agreement"⁶⁵ and, finally, a "rough draft" Groundwater Management Act on 5 June 1980.⁶⁶ On June 6th, the full commission accepted the draft; on June 11th, the Arizona Groundwater Management Code, introduced as Senate Bill 1001 and consisting of 176 pages, passed both houses of the legislature with more than two-thirds approval in less than eight hours. On June 12th, because of an emergency clause contained in the legislation, the bill became law immediately after being signed by the Governor.⁶⁷ On 30 November 1981, the Arizona Supreme Court upheld the constitutionality of the Act.⁶⁸

This somewhat unusual legislative feat had several causes. As in the past, the commission and the legislature were working under new threats from the Department of the Interior that it would withhold Central Arizona Project water allocations if a groundwater management plan was not adopted quickly by the state.⁶⁹ In addition, the Groundwater Management Study Commission's enabling legislation contained provisions that if the

62. Ariz. Republic, Sept. 6, 1979, at B1, col. 2.

63. 1979 Draft Recommendations, *supra* note 25, at 6.

64. Ariz. Daily Star, June 11, 1980, at A, col. 3.

65. Ariz. Groundwater Mgmt. Comm'n, *Concepts for Agreement—Integrated Package*, March 6, 1980.

66. Ariz. Groundwater Mgmt. Comm'n., *Rough Draft Groundwater Management Act*, June 5, 1980.

67. Higdon and Thompson, *supra* note 28, at 621, 631-632.

68. *Town of Chino Valley v. City of Prescott*, 131 Ariz. 78, 638 P.2d 1324 (1981), *appeal dismissed*, ___ U.S. ___ (1982).

69. Higdon and Thompson, *supra* note 28, at 631.

legislature failed to enact a groundwater management code by 7 September 1981, then the recommendations of the commission would become law automatically on that date.⁷⁰

Major Provisions

The Arizona Groundwater Management Act⁷¹ (hereinafter referred to as the Act) is intended to provide "a framework for the comprehensive management and regulation of the withdrawal, transportation, use, conservation and conveyance of rights to use the groundwater in this state."⁷² Surface water rights are not affected.⁷³

The Act designates four Active Management Areas (AMA). Most provisions of the act affect only active management areas. (Significant exceptions will be noted below.)

The four active management areas are as follows:⁷⁴

1. The Tucson area, which includes the upper Santa Cruz and Avra Valley sub-basins.
2. The Phoenix area, including the east and west Salt River Valleys, Fountain Hills, Carefree, Lake Pleasant, Rainbow Valley and Hassayampa sub-basins.
3. The Prescott area, including the little Chino and upper Agua Fria sub-basins.
4. The Pinal area, including Maricopa-Stanfield, Eloy, Aguirre Valley, Santa Rosa Valley and Vekol Valley sub-basins.

These four areas comprise over 80 percent of the state's population and 69 percent of the state's total overdraft.⁷⁵

After hearings, additional active management areas may be created by the director of the Department of Water Resources if he finds it necessary to preserve the water supply, protect property or storage capacity, or prevent water quality degradation.⁷⁶ The Act also contains procedures for local formation of an AMA. Upon petition by ten percent of the voters in a proposed AMA, all registered voters in the groundwater basin in question vote on the issue.⁷⁷

Administration

The Act created the State Department of Water Resources (DWR). The

70. 1977 Ariz. Sess. Laws, ch. 29.

71. For a more detailed summary see Higdon and Thompson, *supra* note 28; and J. Johnson, *Summary of the 1980 Arizona Groundwater Management Act*, State Bar of Arizona, 1980.

72. ARIZ. REV. STAT. ANN. § 45-401.

73. ARIZ. REV. STAT. ANN. § 45-451 (B), 466.

74. ARIZ. REV. STAT. ANN. § 45-411 (A).

75. J. Johnson, *supra* note 71, at 3.

76. ARIZ. REV. STAT. ANN. § 412 (A), 413.

77. ARIZ. REV. STAT. ANN. § 45-415.

Act vested in DWR all ground and surface water management responsibilities, except water quality control, which remained the responsibility of the Department of Health Services.⁷⁸ The DWR also took over the duties of the Arizona Water Commission, although the commission would continue to serve in an advisory capacity to the director of the DWR, the Governor and the legislature on the effectiveness and adequacy of all ground and surface water law.⁷⁹

Under the Act, the governor appoints the director of the DWR with the advice and consent of the Senate. The qualifications of the director are that he be "experienced and competent in water resources management and conservation, and . . . have proven administrative ability."⁸⁰ The director is given wide discretion in organizing and staffing the DWR, utilizing professionals from other state agencies and hiring outside consultants.⁸¹

This centralization of administrative control at the state level was "one of the thorniest issues faced by the Commission."⁸² In its initial draft report, issued in mid-1979, the commission recommended that "most management activities should take place at the local level, but . . . statutory guidelines should be provided, and the state should retain oversight and enforcement powers."⁸³ The report noted that a minority of the commission members favored state management and "feared that local groundwater management meant no groundwater management."⁸⁴ By the time the Concepts for Agreement report came out in March 1980, the minority had become the majority.

AMA Management Goals and Plans

The Act sets goals for management of the four active management areas. For the Tucson, Phoenix and Prescott areas the goal is to attain safe-yield by 1 January 2025 or sooner, as determined by the director.⁸⁵ Safe-yield is defined as long-term balance between annual withdrawals and natural and artificial groundwater recharge.⁸⁶ The goal for the Pinal AMA is to allow development of non-irrigation uses and to allow current agricultural uses to continue "for as long as feasible, consistent with the necessity to preserve future water supplies for non-irrigation uses."⁸⁷

78. ARIZ. REV. STAT. ANN. § 45-102-103.

79. ARIZ. REV. STAT. ANN. § 45-124.

80. ARIZ. REV. STAT. ANN. § 45-102.

81. ARIZ. REV. STAT. ANN. § 45-104.

82. Higdon and Thompson, *supra* note 28, at 634.

83. 1979 Draft Recommendations, *supra* note 25, at III-10.

84. *Id.*

85. ARIZ. REV. STAT. ANN. § 45-562(A).

86. ARIZ. REV. STAT. ANN. § 45-561(5).

87. ARIZ. REV. STAT. ANN. § 45-562(B).

The Act requires the director to appoint an area director for each AMA but gives the director discretion to appoint an area director for more than one AMA.⁸⁸ Area directors assist in the development of AMA management plans and implement plans under the supervision of the director.⁸⁹ The Director and area directors are assisted in formulating and implementing management plans by groundwater-users advisory councils. The governor appoints the five-member councils for six-year terms to represent the users of groundwater in each AMA.⁹⁰

To attain the goals described above for each AMA, the Act provides for five management periods: 1980 to 1990, 1990 to 2000, 2000 to 2010, 2011 to 2020 and 2020–2025. For each of these periods, the act requires the director to promulgate management plans no later than 1 January 1983, 1 January 1988, 1 January 1998, 1 January 2008 and 1 January 2019, respectively.⁹¹ In general terms, these management plans require the director, after public hearings, to impose increasingly stringent mandatory conservation measures on all groundwater users within the areas to meet the goals of each AMA. In the event the management plans do not prove sufficient to meet the conservation goals in an AMA, the act empowers the director, after 1 January 2006, to purchase and retire water rights for irrigated land.⁹²

These purchases are to be financed by pump taxes on all persons withdrawing water within an AMA. (Domestic well exceptions are discussed below.) The amount of the tax is limited to a maximum of \$5 per acre-foot of which no less than \$.50 nor more than \$1 can be used for DWR administrative and enforcement expenses. No more than \$2 may be used for augmentation of the AMA water supply by importation, storage or artificial recharge and no more than \$2 may be used for the purchase and retirement of irrigated lands.⁹³

Scope of the Act

Domestic wells, defined as those having a maximum pump capacity of not more than 35 gallons a minute used for domestic purposes, including the noncommercial irrigation of not more than one acre of land, are exempt from most provisions of the Act. The exceptions are that the wells are subject to registration requirements, and new wells must be drilled in accordance with construction standards promulgated by the

88. ARIZ. REV. STAT. ANN. § 45-418(A).

89. ARIZ. REV. STAT. ANN. § 45-419.

90. ARIZ. REV. STAT. ANN. § 45-420-421.

91. ARIZ. REV. STAT. ANN. § 45-564-568.

92. ARIZ. REV. STAT. ANN. § 45-566(A)(6).

93. ARIZ. REV. STAT. ANN. § 45-611-613.

director. Registration and construction requirements apply to all wells in the state regardless of location.⁹⁴

Under the 1948 water code, six areas had been designated Critical Groundwater Areas by 1980. Of these six, four became active management areas under the Act. The remaining two areas, the Douglas Critical Groundwater Area and the Joseph City Critical Groundwater Area, were designated by the Act as "Irrigation Non-Expansion Areas."⁹⁵ Additional irrigation non-expansion areas may be created by the director in the event there is insufficient supply at current rates of withdrawal to provide a safe supply for irrigation and an AMA is determined to be unnecessary.⁹⁶ The Act also has provisions for local initiation, by petition, of additional irrigation non-expansion areas.⁹⁷ The director may convert an irrigation non-expansion area to an AMA if all the criteria for the creation of an AMA, as outlined above, are met.⁹⁸

Designation as an irrigation non-expansion area limits acreage that may be cultivated to the highest amount cultivated during any one year of the five years prior to the creation of the non-expansion area.⁹⁹ For lands within the Douglas or Joseph City Critical Groundwater areas, this period is from 1 January 1975 to 1 January 1980.¹⁰⁰ For subsequently designated non-expansion areas, the five-year period ends when the director gives notice of designation or, in the case of locally-initiated designation attempts, when the requisite petition is filed with the registrar of voters.¹⁰¹ In addition, all withdrawals from nonexempt wells in non-expansion areas must be measured by a device approved by the director and a report filed with the director on a calendar year basis no later than March 31st of the following year.¹⁰²

Rights Within AMA's

Within an AMA water may be extracted only under a "grandfather right" or pursuant to a permit. There are three types of grandfather rights designated in the Act: 1) irrigation grandfather rights; 2) type I non-irrigation grandfather rights; and 3) type II non-irrigation grandfather rights.¹⁰³ To claim any of these rights an application must be filed with the DWR within fifteen months of the designation of an AMA.¹⁰⁴

94. ARIZ. REV. STAT. ANN. § 45-402.6, 454, 593; 594.

95. ARIZ. REV. STAT. ANN. § 45-431.

96. ARIZ. REV. STAT. ANN. § 45-432.

97. ARIZ. REV. STAT. ANN. § 45-433.

98. ARIZ. REV. STAT. ANN. § 45-439.

99. ARIZ. REV. STAT. ANN. § 45-434, 437(A)(B).

100. ARIZ. REV. STAT. ANN. § 45-437(A).

101. ARIZ. REV. STAT. ANN. § 45-434.

102. ARIZ. REV. STAT. ANN. § 45-437(C).

103. ARIZ. REV. STAT. ANN. § 45-462(D).

104. ARIZ. REV. STAT. ANN. § 45-476(A).

Irrigation Grandfather Rights. Land in one of the initial active management areas that was irrigated at some time during the five years prior to 1 January 1980 has an irrigation grandfather right. In subsequently designated areas, the land must have been irrigated sometime during the five years prior to the designation of the AMA.¹⁰⁵ Only lands irrigated during these periods have a right to groundwater for irrigation purposes. Irrigation grandfathered rights may be conveyed to others for farming purposes.

Type I Non-Irrigation Grandfathered Right. When an individual purchases and retires from cultivation an irrigation grandfather right, the right becomes a type I non-irrigation right. Once this change is made, it is irreversible.¹⁰⁶ This type of water right is usually three acre-feet a year per acre of land, although if the amount of water actually used for cultivation was less, or if the farm practiced crop rotation wherein some portion of the land was always unirrigated, the amount will be less than three acre feet.¹⁰⁷

A type I right may be used for any purpose other than irrigation, unless the land lies within the service area of a city, town, or private water district. In that situation, the water must be used for electricity generation, unless water is unavailable from the municipal or private distributor.¹⁰⁸ Upon approval of a development plan by the DWR, an individual may retire irrigated land, use no water, and not jeopardize his future type I non-irrigation right.¹⁰⁹

Type II Non-Irrigation Right. These are the rights established by virtue of extractions having been made for non-irrigation purposes prior to designation as an AMA. The right created is to the highest amount of extractions during any one of the five years prior to creation of the AMA, or 1 January 1980 in the case of the four initial active management areas.¹¹⁰

There is no location limitation on the use of type II rights. Type II rights may be conveyed freely and used for any purpose except cultivation.¹¹¹ When a type II right is held by an electric utility or mining company, the right cannot be used or conveyed for any purpose other than power generation or mining, respectively.¹¹²

Irrigation Water Available

The amount of water available under an irrigation grandfathered right

105. ARIZ. REV. STAT. ANN. § 45-465(A).

106. ARIZ. REV. STAT. ANN. § 45-473(A).

107. ARIZ. REV. STAT. ANN. § 45-463(A)(B), 469(F).

108. ARIZ. REV. STAT. ANN. § 45-472(C).

109. ARIZ. REV. STAT. ANN. § 45-469.

110. ARIZ. REV. STAT. ANN. § 45-464.

111. ARIZ. REV. STAT. ANN. § 45-474.

112. ARIZ. REV. STAT. ANN. § 45-471, 474.

is determined by multiplying the "irrigation water duty" by the "water duty acres." The conservation requirements and water duties also apply to irrigation districts. Water duty acres are the number of acres in cultivation in any one of the five years prior to creation of the AMA, or 1 January 1980 in the case of the four initial active management areas. The irrigation water duty is the amount of water the engineer finds reasonable to irrigate an acre of land, given accepted conservation practices and historically grown crops.¹¹³

The conservation aspects of the five management periods discussed above are enforced through manipulation (i.e. steady decrease) of the irrigation water duty.¹¹⁴ To illustrate the function of the water duty acres and the irrigation water acres, assume a farmer owns 600 acres of which no more than 300 are in cultivation during any one year prior to creation of the AMA. The farmer therefore has 300 water duty acres. In this area cotton is the predominant crop and, given crop needs and modern conservation techniques, the director of the DWR determines 3.8 acre-feet per year is a reasonable amount for irrigation. The irrigation water duty is 3.8. The amount of water available, then, is 1,140 acre-feet.

A farmer may withdraw less than the amount of the water determined to be allowed by the director in a given year and withdraw that "saved" water in a subsequent year, effectively establishing a credit for future years. Farmers also can extract more than the allowed amount—up to 50 percent in a given year—and make up the difference in a subsequent year.¹¹⁵

Well Regulations

The Act requires that all wells in the state be registered with the director by 12 June 1982. The director provides forms for this purpose, which include, among other things, a legal description, depth, diameter, and capacity of the well. Upon transfer of ownership, the seller has the responsibility to notify the director of the transfer and of the buyer to keep recorded information accurate.¹¹⁶

The Act further provides for the registration of well contractors with the director and empowers the director to issue licenses and establish minimum qualifications for obtaining a license.¹¹⁷ Well drillers are required to keep a log of each well drilled and, after completion, file with

113. ARIZ. REV. STAT. ANN. § 45-402(18).

114. J. Johnson, *supra* note 71, at 21.

115. ARIZ. REV. STAT. ANN. § 45-467.

116. ARIZ. REV. STAT. ANN. § 45-593.

117. ARIZ. REV. STAT. ANN. § 45-595.

the director a report showing equipment installed, capacity, drawdown, and groundwater level.¹¹⁸

Prior to construction of a well in an AMA, a permit must be obtained from the director.¹¹⁹ If a well needs to be deepened or replaced in an AMA, a notice must be filed with the director.¹²⁰ Prior to the drilling or deepening of a well outside an AMA, a notice of intent must be filed with the director.¹²¹ The content requirements for all the above notices and permits are basically the same, i.e. name, location, capacity, etc.¹²²

Municipal and Private Water Company Pumping in an AMA

In active management areas, cities, towns, and private water companies may increase their pumping within their service areas to meet the needs of landowners and residents within the service area.¹²³ The service area includes those areas receiving water during any one of the five years prior to creation of the AMA. Pumping cannot be increased outside the service area unless additional rights are acquired.¹²⁴ A service area can be extended unless the extension is for the purpose of "(1) including a well field within the service area, (2) furnishing water for irrigation or large amounts of water for industrial uses, or (3) extinguishing the right of an owner of irrigated land to sell that land together with its irrigation Grandfathered Right for conversion to non-irrigation use."¹²⁵

Permits

In addition to rights based on a grandfather clause or extractions made by a municipality or private water company, the Act provides for seven different types of withdrawal permits. Permits are issued by the director of the DWR.

Mine Dewatering Permits. The Act provides for the issuance of dewatering permits for the extraction or processing of minerals. The Act further designates distribution priorities for water that results from dewatering. In descending order, those priorities are as follows:¹²⁶

- a) for use in the mining or processing operation or to meet environmental control requirements;
- b) to a person adversely affected by dewatering;

118. ARIZ. REV. STAT. ANN. § 45-600.

119. ARIZ. REV. STAT. ANN. § 45-598.

120. ARIZ. REV. STAT. ANN. § 45-597.

121. ARIZ. REV. STAT. ANN. § 45-596.

122. ARIZ. REV. STAT. ANN. § 45-596, 599

123. ARIZ. REV. STAT. ANN. § 45-492(A).

124. ARIZ. REV. STAT. ANN. § 45-491.

125. ARIZ. REV. STAT. ANN. § 45-493.

126. ARIZ. REV. STAT. ANN. § 45-513(B).

- c) for communities directly related to the extraction and processing operation;
- d) to irrigate land owned or controlled by the permittee which is entitled to the use of groundwater for irrigation;
- e) to the director for such use as will best achieve the goals of the management plan for the AMA;
- f) and finally, to the permittee for whatever legal use he chooses.

In the event the water is to be disposed of at the discretion of the director (i.e. under "e" above), this does not create an obligation on the part of the permittee to treat, pay withdrawal fees, deliver beyond his property boundaries, or continue deliveries once mining activity has halted.¹²⁷

Mineral Extraction and Processing Permit. Individuals engaged in mineral extraction and processing may be issued a groundwater withdrawal permit if: 1) the water available under a dewatering permit is insufficient; 2) Central Arizona Project water is unavailable at a cost that does not exceed current municipal and industrial project delivery rates; and 3) other surface water is unavailable at a cost that does not exceed by 25 percent the cost of withdrawing groundwater.¹²⁸ Mineral extraction and processing permits may be issued for a period of up to 50 years and may be revoked in the event Central Arizona Project or other surface water becomes available.¹²⁹

General Industrial Use Permits. These permits may be issued to any non-irrigation user except mining companies if water is unavailable or alternate sources are cost prohibitive. The permittee must demonstrate that there is an assured water supply, i.e., sufficient groundwater is available for the intended use over the life of the permit. Industrial use permits also are issued for up to 50 years and may be revoked if surface water becomes available.¹³⁰

Poor Quality Permits. In the event groundwater is too poor in quality that, in the opinion of the director, it has no other beneficial use, he can issue a permit for its extraction, if such extraction is consistent with the goals of the management plan for the AMA. This permit is issued for up to 35 years and may be terminated if water quality improves.¹³¹ Water extracted under a poor quality permit would generally be water that could serve no municipal or irrigation purpose but may be useful for some industrial function.¹³²

Temporary Permits for Generation of Electricity. In an emergency, the

127. ARIZ. REV. STAT. ANN. § 45-513(C).

128. ARIZ. REV. STAT. ANN. § 45-514(A).

129. ARIZ. REV. STAT. ANN. § 45-514(B)(C).

130. ARIZ. REV. STAT. ANN. § 45-515.

131. ARIZ. REV. STAT. ANN. § 45-516.

132. J. Johnson, *supra* note 71, at 13.

director can issue a permit for extractions necessary to produce electricity. Under this section when the emergency commences the extractor can begin the otherwise illegal withdrawals prior to receiving a permit and then, "as soon as reasonably practicable," submit evidence that an emergency exists. The permit terminates at the end of the emergency.¹³³

Temporary Dewatering Permits. If necessary for the beneficial use of a given area and consistent with the management plan for the AMA, the director may issue a temporary dewatering permit for up to one year.¹³⁴ These permits might be issued for such things as dewatering construction sites.¹³⁵

Drainage Permits. This permit allows for drainage of irrigated lands to increase agricultural production as might be necessary, for example, after a flood.¹³⁶

Enforcement and Appeal Provisions

All decisions of the director may be appealed to a special judge chosen by the Chief Justice of the Supreme Court to hear those cases. During appeal, no new evidence may be introduced unless, in the discretion of the court, "justice demands the admission of such evidence."¹³⁷ The decision of the director is not stayed pending appeal, but the cases do have priority over all other civil matters.¹³⁸

The Act empowers the director to cease and desist orders for any violations of the act or of rules and regulations promulgated under the act. In the event the violation continues after issuance of the cease and desist order, the director may seek from the superior court a temporary restraining order or a preliminary injunction.¹³⁹

The Act provides for civil and criminal penalties for violations of the code. Civil fines of up to \$100 a day may be levied against violators engaged in activity not directly related to illegal use, withdrawal, or transportation of groundwater. Fines of up to \$10,000 a day may be levied against violators engaged in activity directly related to illegal use, withdrawal, or transport. When assessing penalties, the Act instructs the court to take into consideration public harm, willfulness, past conduct and actions to mitigate damage among other things.¹⁴⁰

Criminal penalties may be imposed if a person knowingly falsifies or renders inaccurate a measuring device (class six felony) or knowingly

133. ARIZ. REV. STAT. ANN. § 45-517.

134. ARIZ. REV. STAT. ANN. § 45-518.

135. J. Johnson, *supra* note 71, at 13.

136. ARIZ. REV. STAT. ANN. § 45-519.

137. ARIZ. REV. STAT. ANN. § 45-405(E).

138. ARIZ. REV. STAT. ANN. § 45-407(A)(B).

139. ARIZ. REV. STAT. ANN. § 45-634.

140. ARIZ. REV. STAT. ANN. § 45-635.

violates or refuses to comply with any rule or regulation in the act (class two misdemeanor). Knowing and intentional withdrawal or use of groundwater in violation of the act is a class six felony if the amount is 1,000 acre-feet or more, a class one misdemeanor if the amount is between 100 and 1,000 acre-feet, and a class three misdemeanor if the amount is 100 acre-feet or less.¹⁴¹ The Act establishes a "groundwater enforcement fund," initially \$100,000, to cover enforcement costs. Civil fines are deposited in the fund.¹⁴²

Beginning in 1980, the director of the Arizona Department of Water Resources was given substantial powers over the use of groundwater in the state's active management areas. Through the regulation of drilling permits and the manipulation of the "irrigation water duty," among other things, Arizona has the "'most comprehensive' (groundwater management system) of any state in the American West."¹⁴³

What distinguishes Arizona from the other states in this study, aside from their groundwater laws, is that the system of rights administration in Arizona is relatively new. The attitudes of groundwater pumpers toward centralized state administration of groundwater rights at the time they were interviewed may not reflect their true opinions on the water bureaucracy in Arizona (not having had time to see how the DWR will function), but their general attitudes toward the advantages and disadvantages of centralized administration may be accurately reflected.

CALIFORNIA GROUNDWATER LAW

Groundwater is managed on the local level in California. State level involvement is, among other things, limited to the collection of data on pumping in certain areas, the formulation of well construction, and abandonment guidelines. Local management has taken three basic forms. In some parts of the state, notably, the San Joaquin Valley, the cumulative uncoordinated decisions of individual groundwater pumpers have led to overdrafting and a *de facto* policy of groundwater mining. In other parts of the state, notably in large parts of southern California, coordinated management of groundwater basins has taken place either through adjudication or the creation of a water district. What follows is a discussion of forms of water district and adjudicative management.

Water districts in California take on a variety of forms. Some are created by a specific legislative act, others under general acts. Methods of selection of district governing bodies vary from independent election by all

141. ARIZ. REV. STAT. ANN. § 45-636.

142. ARIZ. REV. STAT. ANN. § 45-637.

143. Clark, *Arizona Enacts Groundwater Management Law*, 13 WATER L. NEWSLETTER (Rocky Mtn. Min. L. Foundation) 1 (No. 3, 1980).

district voters, election by property owners, and various methods of appointment. As of 1977, over 900 special districts in California performed some water utility functions. These districts vary significantly in their powers, functions, and methods of creation, but generally they share an authority to "levy taxes, issue both general obligation and revenue bonds, and set rates for services."¹⁴⁴ (As of 1978 and the passage of proposition 13, the property tax limitation initiative, local governmental units in California are prohibited from imposing "special taxes" unless approved by two-thirds of the qualified voters in the governmental unit.)¹⁴⁵

The Orange County Water District (OCWD) "has been the leader in the water district non-adjudication approach to groundwater management."¹⁴⁶ The OCWD has extensive powers to require data from groundwater pumpers, regulate pumping patterns, levy a pump tax and, through a "basin equity assessment," regulate the cost of groundwater in order to influence the amounts of ground versus surface water being used. A major function of the OCWD is to recharge groundwater basins with imported surface water and natural runoff. For this purpose, the district owns 1,000 acres in and adjacent to the Santa Ana River.¹⁴⁷

Management by a court-appointed watermaster occurs after the adjudication of the extraction rights of pumpers in a management area. The powers of a watermaster are similar to those held by water districts. For example, the San Gabriel watermaster,¹⁴⁸ a nine-member court-appointed body, can operate a groundwater replenishment program, control basin storage and levy a "replacement water assessment" on the amount of withdrawal in excess of a pumper's adjudicated share. As reported by the California Governor's Commission to Review the California Water Rights Law, nearly "all groundwater adjudications have ended with a stipulation for judgment. . . . Parties have reached agreements on allocations they believe to be fair and reasonable and have agreed to watermaster managements."¹⁴⁹

Water districts and watermasters with adequate authority to manage groundwater basins are atypical forms of groundwater management in

144. M. Goodall, J. Sullivan and T. De Young, *Water Districts in California: An Analysis by Type of Enabling Act and Political Decision Process*, California, Department of Water Resources (March 1977), p. 2.

145. "Ballot Proposition Analysis, 1978 Cal. J., 153.

146. Governor's Comm'n to Review California Water Rights Law, Final Report 146 (1978) [hereinafter referred to as *Governor's Report*]. For a more detailed summary of the Orange County Water District's management see P. Allen and G. Elser, *They Said it Couldn't Be Done—The Orange County California Experience*, 30 DESALINIZATION 23-38 (1979).

147. Allen and Elser, *supra* note 146, at 27-28.

148. Upper San Gabriel Valley Municipal Water District v. City of Alhambra, Civil No. 924128, Cal. Super. Ct., Los Angeles County, 4 January 1973. For a more detailed summary of the San Gabriel situation see *Governor's Report*, *supra* note 146, at 147.

149. *Governor's Report*, *supra* note 146, at 148.

California. In most parts of the state, groundwater management is nothing more than the cumulative decisions of individual pumpers.

The California State Water Resources Control Board and the Department of Water Resources in June 1981 issued a report entitled "Policies and Goals for California Water Management" wherein a goal for groundwater management stated in part "while planned variation in ground water pumping is essential to the regulation of a variable supply to satisfy the relatively uniform annual demand, ground water overdraft is not consistent with sound water resources management practices."¹⁵⁰ The State of California has articulated a groundwater management goal that is inconsistent with current management practices. This result in groundwater law in California is, for the most part, due to case law.

Correlative Rights Doctrine

Prior to 1903, California courts had followed the English common law rule of absolute ownership. Holding that percolating waters were part of the land and belonged to the owners of the land, the Supreme Court had found that extractions of water on one's land that interfered with extractions on adjacent lands were not actionable.¹⁵¹

In 1903, the California Supreme Court, in the landmark case of *Katz v. Walkinshaw*¹⁵² (*Katz*), rejected the absolute ownership doctrine. The court held that reasonable use should govern the rights of overlying landowners. The court held that reasonable use "limits the right of others to such amount of water as may be necessary for some useful purpose in connection with the land from which it is taken."¹⁵³

In *dicta*, the *Katz* court also outlined what it called the "rule of correlative rights." Taken together, the rule of correlative rights and the requirement of reasonable and beneficial use provide that landowners overlying a common source of percolating groundwater have equal or correlative rights to a reasonable amount of the water when applied to a reasonable beneficial use on the land overlying the groundwater basin.

Subsequent cases have clarified and affirmed the correlative rights doctrine. In 1928, through the initiative process, a reasonable and beneficial requirement was added to the California Constitution.¹⁵⁴ Although initially a response to a Supreme Court decision dealing with surface water rights,¹⁵⁵

150. Dept. of Water Resources, California, *Policies, and Goals for California Water Management*, (1981) at 5.

151. *Vineland Irrigation District v. Azusa Irrigation Co.*, 126 Cal. 486, 58 P. 1057 (1899).

152. *Katz v. Walkinshaw*, 141, Cal. 116, 74 P. 766 (1903).

153. *Id.*, 141 Cal. at 134, 74 P. at 771.

154. CAL. CONST. art. 10, §2 (originally art. 14 §3), see Governor's Comm'n To Review California Water Rights Law, *Appropriative Water Rights in California*, 13 (1977).

155. *Herminghaus v. Southern California Edison Company*, 200 Cal. 81, 252 P. 607 (1926).

the court, in 1935, found the amendment also applied to groundwater.¹⁵⁶ Under the correlative rights doctrine, priority in time does not give priority in right. In *Burr v. Maclay Rancho Water Co.*, the Supreme Court held that overlying landowners had equal rights regardless of the fact that defendant had not exercised his right.¹⁵⁷

In the event the underground supply is inadequate to satisfy the needs of overlying landowners, each owner is entitled to a reasonable share of the supply.¹⁵⁸ The courts may determine the reasonableness of extractions in cases and restrict overlying landowners to their reasonable share.¹⁵⁹

Non-Overlying Use

A surplus of percolating groundwater may be extracted for use on distant lands. Those extractions are subject to the doctrine of prior appropriation, and those rights are inferior to the rights of overlying landowners using the water on overlying lands.¹⁶⁰ In the event an overlying landowner has not exercised his right, he may protect his right against the extractions of a surplus appropriator by seeking a declaratory judgment.¹⁶¹ An overlying use includes use on land within a given groundwater basin or watershed and is not limited to use on the particular parcel where the pumping is occurring.¹⁶²

Prescription

An appropriative taking of water which is not surplus is wrongful and may ripen into a prescriptive right where the use is actual, open and notorious, hostile and adverse to the original owner, continuous and uninterrupted for the statutory period of five years, and under claim of right.¹⁶³

For a prescriptive right to ripen, the appropriation must be during a period of overdraft. Therefore, if during any of the five years of the adverse use there exists a surplus, the appropriation is not wrongful, and the statutory period does not run.¹⁶⁴ In addition, the owner of the original right must be on notice that an overdraft exists. The assertion that the

156. *Peabody v. City of Vallejo*, 2 Cal. 2d 351, 40 P.2d 486 (1935).

157. *Burr v. Maclay Rancho Water Co.*, 160 Cal. 268, 116 P. 715 (1911).

158. *Cohen v. LaCanada Land & Water Co.*, 142 Cal. 437, 76 P. 47 (1904); *Pasadena v. Alhambra*, 33 Cal. 2d 908, 207 P.2d 17 (1949).

159. *San Bernadino v. Riverside*, 186 Cal. 7, 198 P. 784 (1921).

160. *Katz v. Walkinshaw*, 141 Cal. 116, 135, 74 P. 766, 772 (1903); *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 293, 537 P.2d 1250, 1318, 123 Cal. Rptr. 1, 69 (1975).

161. *Burr v. Maclay Rancho Water Co.*, 154 Cal. 428, 436, 98 P. 260, 264 (1908).

162. *Pasadena v. Alhambra*, 33 Cal. 2d 908, 925, 207 P.2d 17, 28 (1949).

163. *Id.*, 33 Cal. 2d 908, 926-927, 207 P.2d 17, 29 (1949).

164. *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 284, 537 P.2d 1250, 1312, 123 Cal. Rptr. 1, 63 (1975).

original owner's rights are being invaded or the mere lowering of the water levels during the period of wrongful appropriation is not, in itself, adequate notice.¹⁶⁵

Rights of overlying owners and surplus appropriators, as well as rights acquired through a prior prescription, may be lost through prescription. During an overdraft, parties can protect themselves from additional rights being acquired by prescription through injunctive relief.¹⁶⁶ By continuing to pump during the prescriptive period, those private parties with prior rights will retain their proportionate share of the safe yield in a basin.¹⁶⁷

Physical Solutions

At times the strict application of water rights in a case will result in waste, for example, when a senior appropriator is entitled to an injunction against a junior appropriator, and the result will be a reduction in the total amount of water available to both parties. In those cases, California courts have fashioned "physical solutions."

In *City of Lodi v. East Bay Municipal Utility District*,¹⁶⁸ the supreme court read article 14, section 3 of the California Constitution¹⁶⁹ (requiring the beneficial use of water and prohibiting waste), as giving the courts an affirmative duty "to ascertain whether there exists a physical solution of the problem presented that will avoid the waste, and that will at the same time not unreasonably and adversely affect the prior appropriator's vested property right."¹⁷⁰

In any dispute involving the water rights of parties, the courts may fashion a physical solution designed to prevent waste while protecting superior rights. From 1903 until 1949, courts applied the correlative rights doctrine and often sought physical solutions that would avoid waste.¹⁷¹ During this period, it became apparent that merely establishing and upholding the rights among parties would not protect groundwater basins from overdrafts. One commentator noted:

The court would enjoin pumping only if and when withdrawals directly interfered with pumping activities of other producers who were prior in right.

By the mid 1930s, it became apparent that steps had to be taken in

165. *Id.*, 14 Cal. 3d at 282, 537 P.2d at 311, 123 Cal. Rptr. at 62 (1975).

166. *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 278, 537 P.2d 1250, 1307, 123 Cal. Rptr. 1, 58 (1975).

167. *Id.*, 14 Cal. 3d 199, 293, 537 P.2d 1250, 1318, 123 Cal. Rptr. 1, 69.

168. 7 Cal. 2d 316, 60 P.2d 439 (1936).

169. The 1928 Constitutional Amendment now Cal. Const. art. 10, § 2.

170. *City of Lodi v. East Bay Municipal Utility District*, 7 Cal. 2d 316, 339, 60 P.2d 439, 450 (1936).

171. Governor's Comm'n to Review California Water Rights Law, Groundwater Rights in California, 19 (1977).

order to control the total amount of water pumped from the groundwater basins of Southern California. The hit and miss tactics of individually oriented adjudications of groundwater rights were not effective in coping with the tremendous disparity between groundwater supplies and demands. To remedy this situation, it was again necessary for the Supreme Court to revise the groundwater laws of this state.¹⁷²

This revision came in the form of the "mutual prescription doctrine" in *City of Pasadena v. City of Alhambra*,¹⁷³ (*Pasadena*).

Pasadena involved pumpers in the Raymond Basin in Southern California. For 22 of the 24 years prior to filing the suit, the Raymond Basin had been in a condition of overdraft. The court found that appropriators causing the overdraft were invading the rights of overlying owners and prior appropriators, but they had acquired prescriptive rights. Although leaving open the question whether or not overlying owners had obtained new prescriptive rights, the court found that, by their continued pumping, overlying owners retained their rights to future extractions.

The original owners by their own acts . . . thus retained or acquired a right to continue to take some water in the future. The wrongdoers also acquired prescriptive rights to continue to take water, but their rights were limited to the extent that the original owners retained or acquired rights by their pumping.¹⁷⁴

Upholding the trial court's decision, the supreme court limited total withdrawals to the safe yield of the basin and found all acquired prescriptive rights were of equal priority. The extractions of all parties were limited to their proportion of the safe-yield based on total extractions during any five-year period from the beginning of the overdraft until the filing of the suit.¹⁷⁵ The decision in the *Pasadena* case was based on a stipulation agreed upon by all the parties to the case except the appellant, California-Michigan Land & Water Company. The court's decision applied to all the parties.

172. R. Reis, *Legal Planning For Ground Water Production*, 36 S. CAL. L. REV. 484, 487 (1965).

173. 33 Cal. 2d 908, 207 P.2d 17 (1949). Most commentators have seen *Pasadena* as adopting the mutual prescription doctrine in California (see e.g. Reis, *supra* note 172, at 488; Governor's Comm'n, *supra* note 171, at 19). For a contrary view, see W. HUTCHINS, II WATER RIGHTS LAW IN THE NINETEEN WESTERN STATES 677-78 (1974). Hutchins notes that the *Pasadena* court did not use the term mutual prescription and argues instead that the court decided the case, ". . . on the basis of the concept of prescriptive rights in the classical sense and on the doctrine of correlative rights as developed in California" (p. 678). Regardless of whether or not the *Pasadena* court intended to adopt the mutual prescription doctrine the practical result (i.e. the remedy) was the same.

174. *City of Pasadena v. City of Alhambra*, 33 Cal. 2d 908, 933, 207 P.2d 17, 32 (1949).

175. *Id.*, at 922, 207 P.2d at 26.

Concerning the mutual prescription doctrine and the stipulated judgment approach after *Pasadena*, one commentator noted:

Many adjudications . . . have followed a pattern of negotiation to find a physical solution, stipulation for judgment, and judgment. The first step of this stipulated judgment approach generally has been to apply the mutual prescription formula to the available pumping data. By agreeing to apply a formula, the parties have avoided adversary proceedings in many situations where determination of complex appropriate priorities might in any event have been impossible because of insufficient and unreliable data.¹⁷⁶ (Footnotes omitted.)

Mutual Prescription After San Fernando

In 1975 the California Supreme Court decided the case of *City of Los Angeles v. City of San Francisco*¹⁷⁷ (*San Fernando*). The *San Fernando* case had a significant impact on several aspects of California groundwater law.

In 1955, the City of Los Angeles brought suit against the cities of San Fernando, Glendale, and Burbank, the Crescenta Valley County Water District, and various private parties. Los Angeles sought to quiet title and obtain a declaration of its superior rights to water underlying the Upper Los Angeles River Area. In addition, Los Angeles sought to enjoin the defendants from making extractions that interfered with the plaintiff's claimed prior rights.¹⁷⁸

The impact of the *San Fernando* decision on the mutual prescription doctrine was primarily threefold. First, the court upheld the City of Los Angeles' argument that Civil Code Section 1007,¹⁷⁹ prohibiting the acquisition of prescriptive rights by any person, firm, or corporation against

176. Governor's Comm'n, *supra* note 171, at 23-24. The author cites several cases that have followed this approach including *California Water Service Co. v. Sidebotham & Son*, 244 Cal. App. 2d 715, 37 Cal. Rptr. 1 (1964) and *Tehachapi-Cummings County Water District v. Armstrong*, 49 Cal. App. 3d 993, 122 Cal. Rptr. 918 (1975).

177. 14 Cal. 3d 199, 537 P.2d 1250, 123 Cal. Rptr. 1 (1975). Only those parts of the case affecting prescription will be discussed here. The balance of the case will be treated later in this section.

178. *Id.*, 14 Cal. 3d 199, 207, 537 P.2d 1250, 1258, 123 Cal. Rptr. 1, 9 (1975).

179. CAL. CIVIL CODE § 1007 was amended in 1935 to read in pertinent part, ". . . no possession by any person, firm, or corporation no matter how long continued of any . . . water, water right . . . owned by any county, city and county, city, irrigation district, public or municipal corporation or any department or agency thereof, shall ever ripen into any title, interest or right against such county, city and county . . ." In 1968 the section was amended to read, ". . . but no possession by any person, firm or corporation no matter how long continued of any . . . water, water right . . . dedicated to a public use by a public utility, or dedicated to or owned by the state or any public entity, shall ever ripen into any title, interest or right against the owner thereof." The *San Fernando* court found "any person, firm or corporation" to include municipal entities. (14 Cal. 3d 199, 278, 537 P.2d 1250, 1307, 123 Cal. Rptr. 1, 58).

a city, county, public utility, or other public entity prevented the courts from imposing a mutual prescription formula on a city absent the city's consent.¹⁸⁰ Private pumpers are at a disadvantage *vis-à-vis* public pumpers. Private pumpers can lose their rights through prescription to public pumpers, but public pumpers cannot lose their rights to either private or public pumpers through prescription.

The second impact the *San Fernando* decision had on prescription and on available management alternatives for groundwater basins concerns the definition of overdraft. In *Pasadena*, the court had defined overdraft as a condition in which extractions exceed safe yield.¹⁸¹ The *San Fernando* court expanded this definition by interpreting safe yield to include additions and withdrawals over an extended period of time.

Ground basin levels tended to vary in accordance with wide fluctuations in precipitation. Thus if a rising level of extractions were halted at the point of the safe yield based on the . . . [long term] . . . average, ensuing heightening of groundwater levels during years of higher-than-average precipitation would cause waste.¹⁸² (Footnotes omitted.)

The court thus concluded that overdraft occurred only when extractions exceeded safe yield plus any temporary surplus.¹⁸³

As discussed above, prescription requires adversity.¹⁸⁴ Overdraft constitutes the necessary adversity. For the prescriptive right to ripen, overdraft must continue for five consecutive years. If during any one of the five years there is a surplus, the prescriptive period ceases to run. Consequently, the definition of overdraft articulated by the *San Fernando* court will make overdraft, hence prescription, more difficult to establish.¹⁸⁵

The third impact *San Fernando* had on prescription concerns the element of notice. For the prescription period to run, the holders of the original rights must be on notice that an overdraft exists. In *Pasadena*, the lowering of the water table was determined to be adequate notice of an overdraft.¹⁸⁶ Consistent with its new definition of overdraft, the *San Fernando* court found that the lowering of the water table alone was not

180. *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 270, 537 P.2d 1250, 1301, 123 Cal. Rptr. 1, 52 (1975).

181. *Pasadena v. Alhambra*, 33 Cal. 2d 908, 929, 207, P.2d 17, 30 (1949).

182. *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 208, 537 P.2d 1250, 1309, 123 Cal. Rptr. 1, 59 (1975).

183. *Id.*, 14 Cal. 3d 199, 280, 537 P.2d 1250, 1309, 123 Cal. Rptr. 1, 60 (1975).

184. *Supra* note 163.

185. *Supra* note 163-165.

186. *Pasadena v. Alhambra*, 33 Cal. 2d 908, 930, 207 P.2d 17, 31 (1949).

adequate notice, and owners of prior rights must be on notice *in fact* that there is an overdraft.¹⁸⁷

In this regard, one commentator noted the following:

It may be that, in order to establish notice after *San Fernando*, a pumper who wants to perfect his prescriptive rights will finance hydrological determinations of overdraft in a basin and, based on that data, actually notify other basin pumpers of the basin's overdraft.¹⁸⁸

In its discussion of mutual prescription, the *San Fernando* court found several drawbacks to the doctrine. The court noted that determination of prescriptive rights on the basis of the highest level of pumping during any five-year period of the overdraft had in the past resulted in a "race to the pumphouse . . . each party endeavoring to increase the volume of continuous use on which his prescriptive right will be based."¹⁸⁹ After the *San Fernando* decision, one of the state's leading hydrologists wrote the following:

More than one industry has gone into agricultural activities on lands adjacent to its plant, and has been granted pumping rights on the basis of both industrial and agricultural use, the latter sometimes of questionable economic justification.¹⁹⁰

The court also questioned the equity of a mutual prescription solution to groundwater disputes. Although avoiding criticism of the *Pasadena* decision and the application of the doctrine given the facts in that case, the court noted use of the doctrine ". . . does not necessarily result in the most equitable apportionment of water according to need. A true equitable apportionment would take into account many more factors."¹⁹¹

Pueblo Rights

The *San Fernando* case also dealt extensively with the pueblo rights doctrine. The pueblo rights doctrine gives a right to any city that can trace its origins to a Spanish or Mexican land grant. All Spanish or Mexican laws that existed prior to the annexation of California are the law of the state, unless expressly amended or repealed.¹⁹² In addition,

187. *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 283, 537 P.2d 1250, 1311, 123 Cal. Rptr. 1, 62 (1975).

188. Governor's Comm'n, *supra* note 171, at 34.

189. *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 265, 537 P.2d 1250, 1298.

190. California Water Resources Center, Proceedings of the Tenth Biennial Conference on Ground Water, 212 (1975).

191. *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 265, 537 P.2d 1250, 1298, 123 Cal. Rptr. 1, 49 (1975).

192. *Ohm v. San Francisco*, 92 Cal. 437, 28 P. 580 (1891).

the U.S. Supreme Court has held that pueblo rights are a question of state and not federal law.¹⁹³

Pueblo rights have been called the “. . . most litigated issue in the history of water rights;”¹⁹⁴ the court first directed its attention to pueblo rights in 1881.¹⁹⁵ In the litigation dealing with pueblo rights prior to 1975, two early cases are most often cited: *Lux v. Haggin (Lux)*¹⁹⁶ decided in 1886, and *Vernon Irrigation Co. v. City of Los Angeles (Vernon)*¹⁹⁷ decided in 1895.

Interestingly, the *Lux* case dealt with the pueblo right *in dicta*,¹⁹⁸ and the *Vernon* case did not articulate any particular Spanish or Mexican law establishing the right, but rather concluded that the right was implied from the role assigned by the Spanish and Mexican governments to that pueblo. These and other cases on pueblo rights led one long-time water rights commentator to observe the following:

Thus this vitally important principle that has enabled great cities to monopolize the entire flows of streams, regardless of water developments thereon by others . . . was added to the jurisprudence of California as the result of a presumption.¹⁹⁹

In the *San Fernando* case, at the trial level, the court spent months establishing a record for the existence of a pueblo right in Spanish and Mexican law.²⁰⁰ The lower court concluded that a pueblo right could not be found in Spanish or Mexican law and ruled against Los Angeles. The supreme court concluded that the “case for the existence of the pueblo right is essentially based on inferences from historical circumstances rather than any express provisions of Spanish or Mexican law.”²⁰¹ The court found that, although the data presented at trial did not conclusively establish a basis in Spanish-Mexican law for the right, it also did not conclusively establish its non-existence. Therefore, in light of the numerous cases that had upheld the right and considering the reliance the City of Los Angeles had made on the right in its water planning, the court chose not to disturb the right.²⁰²

Pueblo rights attach to all surface water serving the original pueblo and to native groundwater that is hydrologically related to the surface

193. *Los Angeles Farming & Mill Co. v. Los Angeles*, 217 U.S. 217, 234 (1910).

194. MANN, *supra* note 14, at 209.

195. *Feliz v. Los Angeles*, 58 Cal. 73 (1881).

196. 69 Cal. 255, 4 P. 919 (1884).

197. 106 Cal. 237, 39 P. 762 (1895).

198. HUTCHINS, *supra* note 173, at 147.

199. *Id.*, at 157.

200. *California Water Resources*, *supra* note 190, at 209.

201. *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 232, 537 P.2d 1250, ___, 123 Cal. Rptr. 1, 26 (1975).

202. *Id.*, 14 Cal. 3d. 199, 251, 537 P.2d 1250, ___, 123 Cal. Rptr. 1, 35 (1975).

water supply. Hence, in *San Fernando*, the City of Los Angeles was found to have no right to groundwater in basins that were hydrologically independent because of natural barriers.²⁰³

The right does not attach to non-native groundwater or water that has been imported from outside and stored within the basin. Of particular importance to the nature of the pueblo water right is its priority over other rights and the amount of water that can be claimed under the right. Pueblo rights are superior to riparian rights²⁰⁴ and the rights of appropriation.²⁰⁵ The right is limited to that amount necessary to satisfy the municipal needs of the city including annexed land outside the original boundaries of the pueblo. Hence, the right expands with the expansion of the city.²⁰⁶ Finally, the right is not subject to loss by nonuse or statutory forfeiture.²⁰⁷

Conjunctive Use

Conjunctive use is the coordinated operation of surface water reservoirs and underground reservoirs so the total yield over a period of years exceeds uncoordinated yield. Independent operation of surface or underground reservoirs designed to produce a long term safe and dependable yield requires extraction rates roughly equal rates of replenishment. Conjunctive operation of surface and underground reservoirs allows for the temporary overdrafting (i.e., extractions beyond safe yield) of surface reservoirs during wet years and overdrafting of underground reservoirs during dry years. The additional yield resulting from conjunctive management is obtained from saving water that might otherwise be wasted during wet years from overflow and a reduced amount of evaporation.

The *San Fernando* decision and an earlier case, *Niles Sand and Gravel Co. v. Alameda County Water District (Niles)*,²⁰⁸ had a significant impact on the ability of water purveyors to conjunctively manage surface and groundwater sources. In the *Niles* case, the Alameda County Water District had been recharging the Niles Basin by percolation for storage purposes and to prevent salt water intrusion. The Niles Sand and Gravel Company dug pits to a depth of 120–125 feet below the surface elevation and 80–85 feet below the water table. To continue operations, the company was pumping and releasing roughly five million gallons of water per day in San Francisco Bay.

The court found that, based on the statutory powers granted to the

203. *Id.*, 14 Cal. 3d 199, 251, 537 P.2d 1250, ___, 123 Cal. Rptr. 1, 39 (1975).

204. *Vernon Irrigation Co. v. Los Angeles*, 106 Cal. 237, 39 P. 762 (1895).

205. *Los Angeles v. Glendale*, 23 Cal. 2d 68, 142 P.2d 289 (1943).

206. *Los Angeles v. Pomeroy*, 124 Cal. 597, 57 P. 585 (1899); *Los Angeles v. Hunter*, 156 Cal. 603, 105 P. 755 (1909); *Los Angeles v. Glendale*, 23 Cal. 2d 68, 142 P.2d 289 (1943); *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 252, 537 P.2d 1250, ___, 123 Cal. Rptr. 1, 40 (1975).

207. *Los Angeles v. Glendale*, 23 Cal. 2d 68, 142 P.2d 289 (1943).

208. 37 Cal. App. 3d 924, 112 Cal. Rptr. 846 (1974), *cert. denied*, 419 U.S. 869 (1975).

water district by the state and the doctrine of correlative rights, landowners in the Niles Basin had a "public servitude" that imposed "such obligations . . . limiting the use of lands lying in a particular geographical area, where an overriding public interest requires it."²⁰⁹ The right to enforce the servitude is held by the district, and it limits overlying landowners' rights to groundwater when such use interferes with a public groundwater storage program. The court found the district had a right to store water and to prevent others from extracting the water. The court further held that the district was not liable for damage caused by flooding from storage when water levels went no higher than their natural levels.²¹⁰

In the *San Fernando* case, the court distinguished between native and imported groundwater. The court found an importer of groundwater had the right to recapture water either spread for storage or percolating back into a basin after distribution.²¹¹ The court based this ruling on an interpretation of Water Code Section 7075:

Water which has been appropriated may be turned into the channel of another stream, mingled with its water, and then reclaimed; but in reclaiming it the water already appropriated by another shall not be diminished.²¹²

Citing *City of Los Angeles v. City of Glendale*,²¹³ the court found the statute to apply to groundwater storage.²¹⁴ In addition, the right to recapture was found to be of equal priority with pueblo rights and superior to rights based on the ownership of overlying land or appropriation.²¹⁵ Concerning the recapture of delivered water, the court stated the following:

[T]he purpose of giving the right to recapture returns from delivered imported water priority over overlying rights and rights based on appropriations of the native ground supply is to credit the importer with the fruits of his expenditures and endeavors in bringing into the basin water that would not otherwise be there.²¹⁶

During periods of basin surplus, importers cannot prevent appropriators

209. *Id.*, 14 Cal. App. 3d. 924, 112 Cal. Rptr. 846, 853 (1974).

210. *Id.*, 14 Cal. App. 3d. 924, 929, 935, 112 Cal. Rptr. 846, 849, 854 (1974). See also Governor's Comm'n, *supra* note 171, at 67-68.

211. *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 286, 537 P.2d 1250, 1313, 123 Cal. Rptr. 1, 64 (1975).

212. *Id.*, 14 Cal. 3d. 199, 260, 537 P.2d 1250, 1295, 123 Cal. Rptr. 1, 46 (1975). See Cal. Water Code § 7075 (West 1971).

213. 23 Cal. 2d 68, 142 P.2d 289 (1943).

214. *Los Angeles v. San Fernando*, 14 Cal. 3d 199, 260, 537 P.2d 1250, 1295, 123 Cal. Rptr. 1, 46 (1975).

215. *Id.*, 14 Cal. 3d 199, 287, 537 P.2d 1250, 1314, 123 Cal. Rptr. 1, 65 (1975).

216. *Id.*, 14 Cal. 3d 199, 260, 537 P.2d 1250, 1314, 123 Cal. Rptr. 1, 46 (1975).

from making extractions if the importer has failed to recapture the imported water.²¹⁷

Statutory Provisions in California Groundwater Law

Article 10, Section 2 of the California Constitution states that:

the right to water or to the use or flow of water in or from any natural stream or water course in this state is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use . . .²¹⁸

Although not specifically mentioned in the foregoing section, the California Supreme Court has found the provision to apply to groundwater.²¹⁹ As we have seen, the reasonable, beneficial use and avoidance of waste requirements provide the broad outlines followed by the courts in adjudicating water rights. Various sections of the Water Code establish a public interest in the use and development of groundwater and declare for the state a right to regulate groundwater for public benefit and protection.²²⁰ Section 12922 of the code states that there is a public interest in protecting groundwater basins from damage or impairment caused by "overdraft, depletion, sea water intrusion or degraded water quality."²²¹ The manifestations of these declarations of public interest in terms of legislation to end overdrafting, regulate pumping and address other groundwater problems has been sparse.

The Water Code provides for the inspection of "improperly constructed, abandoned or defective wells" by the Department of Water Resources (DWR), either independently or in conjunction with other governmental units; authorizes the DWR to make recommendations for well construction standards to the Regional Water Quality Control Boards (see below); and "from time to time" report to the legislature recommendations for the sealing of abandoned wells.²²²

Prior to commencing any digging or deepening of a well or prior to the abandonment or destruction of a well, a permit must be obtained from the DWR.²²³ After completion of the work, it is required that a report of completion be filed with the DWR within 30 days.²²⁴ Failure to obtain the necessary permit or to file the report is a misdemeanor.²²⁵ If the DWR

217. *Id.*, 14 Cal. 3d 199, 293, 537 P.2d 1250, 1318, 123 Cal. Rptr. 1, 69 (1975).

218. CAL. CONST. Art. 10, § 2.

219. *Peabody v. Vallejo*, 2 Cal. 2d 351, 40 P.2d 486 (1935).

220. CAL. WATER CODE § 104, 105 (Derring 1977).

221. CAL. WATER CODE § 12922 (Derring 1977).

222. CAL. WATER CODE § 231 (Derring 1977).

223. CAL. WATER CODE § 13750 (Derring 1977).

224. CAL. WATER CODE § 13751 (Derring 1977).

225. CAL. WATER CODE § 13754 (Derring 1977).

determines that standards are necessary for the construction, maintenance, abandonment, and destruction of wells in a given area, it makes recommendations to the appropriate regional board and to the Department of Health Services.²²⁶ After receiving a recommendation from the DWR, the regional boards are required to hold a hearing on the proposed standards. Absent a recommendation, regional boards may hold hearings when they have information that standards are necessary to protect water quality in a groundwater basin.²²⁷ Upon determination that standards are necessary, the board must report those standards along with any standards recommended by the DWR to the county and cities within the affected area.²²⁸

Upon receipt of the regional boards' recommendations, the county or city involved must promulgate, within 120 days, regulations establishing the recommended standards.²²⁹ These ordinances take effect in 60 days unless the regional board finds the standards inadequate.²³⁰ If the standards are inadequate, the county or city has 90 days to adopt new standards. If the city or county fails to adopt or modify its standards within the periods outlined above, the regional board is authorized to set standards for the area. These standards take effect in 30 days.²³¹

Porter-Dolwig

In 1961, the legislature found that groundwater basins

are subject to critical conditions of overdraft, depletion, sea water intrusion and degraded water quality causing great detriment to the peace, health, safety and welfare of the people of the State.²³²

The legislative response was the Porter-Dolwig Groundwater Basin Protection Law.²³³ Porter-Dolwig authorizes the DWR to study or investigate projects that could protect groundwater and to review and evaluate plans of any local agency that submits its groundwater protection plans to the DWR. Any results from DWR studies are required under the law to be sent to the State Water Resources Control Board (State Board) to be used in formulating water quality standards.²³⁴ In 1967, the law was amended to provide funding for studies "whenever money has been appropriated for the purpose. . . ."²³⁵

226. CAL. WATER CODE § 13800 (Derring 1977).

227. CAL. WATER CODE § 13801 (Derring 1977).

228. CAL. WATER CODE § 13802 (Derring 1977).

229. CAL. WATER CODE § 13803 (Derring 1977).

230. CAL. WATER CODE § 13804 (Derring 1977).

231. CAL. WATER CODE § 13805 (Derring 1977).

232. CAL. WATER CODE § 12922.1 (Derring 1977).

233. CAL. WATER CODE § 12920 *et seq* (Deering 1977).

234. CAL. WATER CODE § 12923 (Derring 1977).

235. *Id.*

If the DWR recommends to the state board that action needs to be taken to protect the quality of groundwater basins, the legislature has granted the state board the right to bring suit in superior court to restrict pumping or impose physical solutions.²³⁶ In those cases, all groundwater pumpers, except those extracting less than 10 acre-feet a year,²³⁷ are named as defendants.²³⁸

Porter-Cologne

In 1969, the legislature passed the Porter-Cologne Water Quality Control Act to establish a statewide water quality control program administered on a regional basis.²³⁹ The act applies to both surface and groundwater.²⁴⁰ Under the act the state board has the responsibility, in consultation with other governmental units,²⁴¹ of adopting state policy for water quality control.²⁴² Additional responsibilities include adopting procedures for regional boards to follow when formulating water quality control plans,²⁴³ distributing appropriated funds to regional boards for their administrative costs,²⁴⁴ doing annual evaluations of the need for water quality research,²⁴⁵ and conducting research or coordinating research with other units of government or private organizations.²⁴⁶

The nine regional water quality control boards are responsible, subject to state board approval, for formulating and implementing water quality control plans.²⁴⁷ These plans must, among other things, “. . . insure the reasonable protection of beneficial uses and the prevention of nuisance. . . .”²⁴⁸ The attorney general is authorized to enforce regional plans. At the request of the regional board, the attorney general will seek a restraining order or injunction from the superior court.²⁴⁹

Recordation Act

In 1955, the legislature found that, because of a “combination of light rainfall, concentrated population, the transition of considerable areas of land from agricultural use to urban use, and a similar dependence on

236. CAL. WATER CODE § 2100 (Derring 1977).

237. CAL. WATER CODE § 2102 (Derring 1977).

238. CAL. WATER CODE § 2100 (Derring 1977).

239. CAL. WATER CODE § 13000 *et seq* (Deering 1977).

240. CAL. WATER CODE § 13050(e) (Derring 1977).

241. CAL. WATER CODE § 13144 (Derring 1977).

242. CAL. WATER CODE § 13140 (Derring 1977).

243. CAL. WATER CODE § 13164 (Derring 1977).

244. CAL. WATER CODE § 13168 (Derring 1977).

245. CAL. WATER CODE § 13161 (Derring 1977).

246. CAL. WATER CODE § 13162 (Derring 1977).

247. CAL. WATER CODE § 13200, 13201, 13225 (Derring 1977).

248. CAL. WATER CODE § 13244 (Derring 1977).

249. CAL. WATER CODE § 13262 (Derring 1977).

ground water supplies . . . ,”²⁵⁰ the counties of Riverside, San Bernardino, Los Angeles, and Ventura would be subject to recordation requirements for groundwater extractions and diversions.²⁵¹ Individuals extracting groundwater in excess of 25 acre-feet a year are required to file a “Notice of Extraction and Diversion of Water” with the State Water Resources Control Board.²⁵² The notice must contain the name of pumpers, location and description of pump site, quantity of water pumped, and any additional facts the state board may deem appropriate.²⁵³ Prescriptive rights cannot be acquired unless a notice has been filed²⁵⁴ and, for legal purposes, pumping without having filed notice is considered non-use.²⁵⁵ The willful misstatement of facts in a notice is a misdemeanor.²⁵⁶

The Recordation Act has allowed for a much more precise monitoring of extractions in the four southern counties than had been possible in the past. The act also makes it more difficult to acquire rights by prescription, because prior right holders are in a better position to know when they need to act to protect their rights.

From this summary of California statutory and case groundwater law several things are clear. In parts of California where groundwater rights have been adjudicated or water districts formed, the existing system of water rights has allowed for the management of groundwater basins on the local level to prevent overdrafting. Although the California Department of Water Resources has rather extensive powers to control groundwater pollution and can monitor extractions and new wells being put into production, the state is powerless to control the rate of extraction. Hence, California is a good example of a state with no experience with centralized state administration of groundwater rights. New Mexico, in contrast, was one of the first states to adopt a permit system for the extraction of groundwater and, like Arizona, authority over groundwater pumping in New Mexico is concentrated at the state level in the Office of the State Engineer.

NEW MEXICO GROUNDWATER LAW

The New Mexico constitution establishes guidelines for the state’s prior appropriation doctrine. The constitution provides that beneficial use, “. . . shall be the basis, the measure and the limit of the right to use

250. CAL. WATER CODE § 4999 (Derring 1977).

251. *Id.*, Santa Barbara County was excluded in 1959.

252. CAL. WATER CODE § 5001 (Derring 1977).

253. CAL. WATER CODE § 5002 (Derring 1977).

254. CAL. WATER CODE § 5003 (Derring 1977).

255. CAL. WATER CODE § 5004 (Derring 1977).

256. CAL. WATER CODE § 5008 (Derring 1977).

water;"²⁵⁷ water belongs to the public; anyone has a right to use unappropriated water subject to beneficial use; "priority of appropriation shall give the better right."²⁵⁸ Although not specifically mentioned in the constitution, subsequent statutory law²⁵⁹ and litigation²⁶⁰ have extended the principles of prior appropriation and beneficial use to groundwater law.

New Mexico's first groundwater appropriation statute, enacted in 1927, gave the State Engineer supervision and control of groundwater and declared groundwater to "... belong to the public, and subject to appropriation to beneficial uses. . . ."²⁶¹ In 1930, the New Mexico Supreme Court found the 1927 act unconstitutional because of a technical error, but upheld the principles and intent of the act.²⁶²

To correct these technical defects, the New Mexico legislature passed a similar law in 1931.²⁶³ In 1950, the constitutionality of the 1931 act was upheld.²⁶⁴ Although there have been various amendments and additions to the 1931 act, it provides the basis for current groundwater law in New Mexico.

Permit Procedure

Section 72-12-1 of the New Mexico statutes is similar to parts of the 1927 and 1931 acts.

The waters of underground streams, channels, artesian basins, reservoirs, or lakes, having reasonably ascertainable boundaries, are hereby declared to be public waters and to belong to the public and to be subject to appropriation for beneficial use.²⁶⁵

Any individual or corporation (including municipal corporations) seeking to appropriate such waters must make an application to the State Engineer. The application must include

. . . (1) the particular underground stream, channel, artesian basin, reservoir, or lake from which water will be appropriated; (2) the beneficial use to which the water will be applied; (3) the location of the proposed well; (4) the name of the owner of the land on which the well will be located; (5) the amount of water applied for; (6) the use for which the water is desired; and (7) if the use is for irrigation,

257. N.M. CONST. art. 16, § 3.

258. *Id.* § 2.

259. N.M. STAT. ANN. § 72-12-1 (1978).

260. State ex rel. Bliss v. Dority, 55 N.M. 12, 225 P.3d 1007 (1950). See also Flint, Groundwater Law and Administration: A New Mexico View-point, 14 ROCKY MTN. MIN. L. INST. 545 (1968).

261. N.M. Laws 1927, Ch. 182, § 1.

262. Yeo v. Tweedy, 34 N.M. 611, 286 P. 970 (1930).

263. N.M. Laws 1931, Ch. 131.

264. State ex. rel. Bliss v. Dority, 55 N.M. 12, 225 P.2d 1007 (1950).

265. N.M. STAT. ANN. § 72-12-1 (1978).

the description of the land to be irrigated and the name of the owner of the land.²⁶⁶

If the application is for an appropriation on land not belonging to the applicant, it must also include an acknowledged statement from the landowner granting access to the owner's land for purposes of drilling and operating the well.²⁶⁷

Only waters within declared basins are subject to the application procedure. No permit or license is required to appropriate waters in non-declared basins.²⁶⁸ Where there is no declared basin, the state engineer has no jurisdiction over groundwater use. In these areas, individuals claiming an infringement on their water rights must sue in district court. In those suits, the burden of proof is on the senior appropriator to establish a prior right and an infringement on his water right.²⁶⁹ To date, 31 basins had been declared by the state engineer, encompassing approximately 84,433 square miles of the state.²⁷⁰

Section 72-12-25 prohibits the state engineer from declaring a basin unless it has reasonably ascertainable boundaries, or if the top of an aquifer is at a depth of 2,500 feet or more below the ground surface at any well location and the aquifer contains nonpotable water. Nonpotable is defined as water containing not less than one thousand parts per million of dissolved solids.²⁷¹ Parties drilling wells are required to file an intention to drill with the state engineer and publish notice of their intention. These wells may not be drilled until ten days after the last date of notice publication.²⁷² Once an application has been filed for an appropriation in a declared basin, the state engineer is required to publish notice in a newspaper of general circulation in the county of the proposed appropriation for not less than once a week for three consecutive weeks. The notice must indicate that objections to the application may be filed with the state engineer within ten days after the last date of publication.²⁷³

If no objections are filed and the state engineer finds there is unappropriated water in the basin or the proposed appropriation would not infringe upon the water rights of prior appropriators, the application is approved and a permit issued.²⁷⁴ The burden of proof is on the person seeking the

266. N.M. STAT. ANN. § 72-12-3 (1978).

267. N.M. STAT. ANN. § 72-12-3 (1978). The constitutionality of this provision was upheld in *City of Hobbs v. State ex. rel. Reynolds*, 82 N.M. 102, 476 P.2d 500 (1970).

268. N.M. STAT. ANN. § 72-12-25 (1978).

269. *Pecos Valley Artesian Conservancy District v. Peters*, 52 N.M. 148, 193 P.2d 418 (1948).

270. New Mexico, State Engineer's Office.

271. N.M. STAT. ANN. § 72-12-25 (1978).

272. N.M. STAT. ANN. § 72-12-26 (1978).

273. N.M. STAT. ANN. § 72-12-3(D) (1978).

274. N.M. STAT. ANN. § 72-12-3(E) (1978).

appropriation to show that the appropriation will not interfere with existing water rights.²⁷⁵

If objections have been filed to an application or if the state engineer is of the opinion that the permit should be denied, the application may be denied with or without a hearing.²⁷⁶ On occasion, the state engineer will hold administrative conferences prior to hearings to determine the issues between the parties.²⁷⁷ All decisions of the state engineer may be appealed to the district court.²⁷⁸ The appeal is by trial *de novo*,²⁷⁹ and the district court is limited in its review to the evidence that was before the state engineer.²⁸⁰

Minor Appropriations

Section 72-12-1 of the New Mexico statutes directs the state engineer to grant routinely permits for all applications for watering livestock, irrigation of one acre or less of noncommercial trees, lawn or garden, or for other household or domestic uses. The engineer is also directed to issue permits for the extraction of up to three acre-feet per year for a period of one year or less for prospecting, mining, constructing public works and roads, or drilling to discover or develop mineral resources. Those applications need not follow the ordinary permit procedure (outlined above) if they do not permanently impair any existing rights.²⁸¹

Loss of Right

Section 72-18-8 of the New Mexico statutes provides for the revocation of a permit issued by the state engineer and the loss of the appropriator's water right. The section stipulates that, when for a period of four years the owner of a permit does not put the water to the use for which the permit was granted, after receiving notice from the state engineer, the permit will be revoked. In such cases, the right to the water will revert to the public and be subject to further appropriation.

Artesian Wells

Artesian waters in New Mexico water law are governed independently from groundwater in general. A well that "derives its water supply from any artesian stratum or basin,"²⁸² is under the supervision and control of

275. *McBee v. Reynolds*, 74 N.M. 783, 399 P.2d 110 (1965); *Heine v. Reynolds*, 69 N.M. 398, 367 P.2d 708 (1962).

276. N.M. STAT. ANN. § 72-12-3(F) (1978).

277. 1978-1980 N.M. ST. ENG. ANN. REPT. at 10.

278. 1976-1978 N.M. ST. ENG., THIRTY-THIRD BIENNIAL REPT. at 4.

279. N.M. CONST. art. 16, § 5.

280. *C. M. Kelley v. Carlsbad Irrigation Dist.*, 71 N.m. 464, 394 P.2d 139 (1964).

281. N.M. STAT. ANN. § 72-12-1 (1978).

282. N.M. STAT. ANN. § 72-12-1 (1978).

the state engineer, unless an artesian conservancy district has been formed in which case the district has authority concurrent with that of the state engineer. The owner of land on which an artesian well is located must obtain a permit from the state engineer prior to any drilling, repairing, abandoning, or plugging of the well.²⁸³ Contractors drilling within an artesian basin or through an artesian stratum are required to keep records of the work and file the records with the state engineer upon completion of the drilling.²⁸⁴

The waste of artesian water is considered a misdemeanor and a public nuisance. Either the state engineer or artesian conservancy district, ten days after giving notice to the well owner of the nuisance, may correct the nuisance and recoup the costs of the correction by attaching a lien on the property.²⁸⁵ In addition, any transport of artesian water by ditch or conduit which results in a loss of more than 20 percent of the water prior to delivery is unlawful.²⁸⁶

Mine Dewatering

New Mexico contains fifty-two percent of the nation's known uranium reserves.²⁸⁷ To tap those reserves, water must be pumped out of the uranium-bearing rock and a shaft constructed through the aquifer. During construction and after completion of the shaft, water is continually pumped from the mine. The state engineer has estimated that mine dewatering in New Mexico results in the discharge of between 40,000 and 50,000 acre-feet of water per year.²⁸⁸

Until 1980, the state engineer was powerless to regulate mine dewatering. In order to acquire a right to water and have that right subject to the control of the state engineer, the water use must be beneficial and located within a basin declared by the state engineer to have reasonably ascertainable boundaries. Neither the courts nor the engineer considered dewatering a beneficial use; consequently none of the aforementioned groundwater statutes dealing with the appropriation permit process have been applied to dewatering²⁸⁹ and persons claiming an infringement of a water right from dewatering have had to sue for an injunction in district court.

283. N.M. STAT. ANN. § 72-13-4 (1978).

284. N.M. STAT. ANN. § 72-13-5 (1978).

285. N.M. STAT. ANN. § 72-13-8 (1978).

286. N.M. STAT. ANN. § 72-13-9 (1978).

287. U.S. Dept. of Interior, Bureau of Mines, 1 MINERALS YEARBOOK 1976, 1375 (1978).

288. S. E. Reynolds, Statement on Mine Dewatering to the Interim Legislative Committee on Energy and Environment of the New Mexico Legislature (29 November 1979) as reported in *New Mexico's Mine Dewatering Act: The Search For Rehoboth*, 20 NAT. RES. J. 653, 655 (1980).

289. B. Stephenson and A. Utton, *The Challenge of Mine Dewatering to Western Water Laws and the New Mexico Response*, 15 LAND AND WATER L. REV., 445, 453 (1980).

Uranium companies have, in the past, found it in their interests not have dewatering considered a beneficial use, because this declaration would have given them the burden of proving the dewatering did not infringe on the rights of prior appropriators. Mining companies frequently need water for associated activities that constitute beneficial uses. Examples of these uses include sanitation and water for milling. When those uses are involved, the state engineer has jurisdiction and the company must apply for a permit. This type of application was filed by the Phillips Uranium Company in September 1976. Phillips sought to withdraw an average of 20,106 acre-feet per year for 32.5 years from the San Juan Underground Water Basin.²⁹⁰

After initially disapproving the permit on grounds the extraction would infringe on existing rights in the basin, the state engineer held a hearing and subsequently approved the application conditioned upon an allowable decline of the basin's water level. The engineer's order stipulated that extractions would have to stop within 365 days if the basin water level declined by more than 400 feet. Estimates by Phillips found that, as a result of Phillips extractions alone, a 400 foot drawdown would be reached in seven years.²⁹¹

The Phillips decision rendered the future of mining in New Mexico uncertain. Absent assurance that dewatering sufficient to allow mining would be allowed, the mining industry understandably would be reluctant to invest large sums of capital in new mining operations. Because of this uncertainty and the importance of the mining industry to the economy of the state, the New Mexico legislature passed the "Mine Dewatering Act."²⁹² This act gives the state engineer jurisdiction over mine dewatering in a declared groundwater basin. Anyone wishing to dewater must submit an application to and receive a permit from the state engineer.²⁹³ If the dewatering does not impair existing water rights, the permit will be granted. If existing rights are impaired the permit will be denied, at which time the applicant can appeal the engineer's decision or file a plan of replacement.

The plan of replacement is perhaps the most significant innovation of the act. Basically the plan of replacement is designed to protect the rights of prior appropriators from any adverse effects of dewatering. Replacement may consist of

. . . the furnishings of a substitute water supply, the modification of existing water supply facilities, the drilling of replacement wells, the assumption of additional operating costs, the procurement of docu-

290. *Id.*, at 471-472.

291. *Id.*, at 472-473.

292. Senate Bill 114, 34th Legislature, State of New Mexico, Second Session (1980).

293. *Id.*, at § 6.

mentation establishing a waiver of protection by owners of affected water rights, artificial recharge or any other reasonable means to avoid impairment.²⁹⁴

The act requires the applicant to pay all replacement costs.²⁹⁵ Upon approval of the plan of replacement, the state engineer may issue a dewatering permit contingent upon implementation of the plan. In the event the owner of a prior water right feels the plan of replacement is not being followed, he can file a notice with the state engineer detailing the method or manner in which the permit holder has failed to implement the plan of replacement. Upon the filing of a notice, the engineer may hold a hearing and require the permit holder to show cause why the permit should not be suspended or revoked.²⁹⁶

Critics have pointed to several potential flaws in the act,²⁹⁷ notably, Section 5(B) of the act is a "grandfather clause" in that it exempts from the act's provisions any mine dewatering initiated prior to the 5 March 1980 effective date of the act or any dewatering from a mine shaft under construction prior to the effective date.²⁹⁸ In practical terms, this provision means that the legal relationships between senior appropriators and firms engaged in dewatering prior to the effective date remain unchanged. As we have seen, these relationships have several disadvantages for senior appropriators; notably, their only legal redress when their water rights are being infringed is to seek an injunction in district court. They then have the burden of proving infringement. Given what in most cases would be the superior resources of defendant mining companies, plaintiffs in those cases might find themselves at a serious disadvantage. The existence of this grandfather clause and the resulting failure of the Act to address conflicts from dewatering that began prior to the effective date of the act played a large part in the decision of New Mexico environmental groups, long advocates of dewatering regulations, not to support the act.²⁹⁹

Groundwater Mining

In many western states, groundwater mining, or the extraction from an aquifer at rates that exceed natural recharge, is prohibited.³⁰⁰ Numerous western states have reasonable pumping level statutes designed to regulate

294. *Id.*, at § 2(D).

295. *Id.*, at § 4.

296. *Id.*, at § 9(B).

297. See Stephenson and Utton, *supra* note 289, at 476 and New Mexico's *Mine Dewatering Act*, *supra* note 288, at 665.

298. Senate Bill 114, *supra* note 292, at § 5(B).

299. Stephenson and Utton, *supra* note 289, at 476.

300. See e.g., COLO. REV. STAT. § 37-90-111(1)(b) (1973); IDAHO CODE § 42-237a(g) (Supp. 1980); MONT. CODE ANN. § 85-2-506(2)(a), -507(4)(b) (1979); NEV. REV. STAT. § 534.110(6) (1979).

the rate of withdrawal in a given aquifer.³⁰¹ New Mexico has no reasonable pumping level statute.³⁰²

In *Mathers v. Texaco, Inc.*,³⁰³ the New Mexico Supreme Court approved a management plan for the Lea County Underground Water Basin that entailed controlled groundwater mining. The Lea County basin, for all practical purposes, is non-rechargeable. In 1952, the state engineer calculated the amount of water that could be withdrawn from the basin over a 40-year period to leave approximately one third of the basin's water remaining. On the basis of this calculation, the engineer granted to Texaco a permit to appropriate 350 acre-feet a year from the basin. The court accepted a number of facts including the non-rechargeability of the basin, and it accepted the fact that the

appropriation of the water by Texaco will unquestionably lower the water table . . . will result in an increase in pumping costs and in shortening the time during which the protestants can economically pump water from their wells.³⁰⁴

The court rejected arguments that any lowering of the basin amounted to an impairment of existing rights and found the engineer's management plan an adequate method to insure for the public that the maximum beneficial use would be made for waters in the basin.³⁰⁵

Relationship Between Ground and Surface Water Rights

The basic principles of New Mexico water law, i.e. prior appropriation and beneficial use, apply to both ground and surface water. In both instances, only a beneficial use of water can create a water right and any unappropriated water belongs to the public and is subject to appropriation for beneficial use.³⁰⁶

Frequently, surface water rights and groundwater rights are in conflict as, for example, when groundwater extraction decreases available yield from adjacent surface water. The priority in right principle works in those cases to protect the senior appropriator, whether he is an appropriator of surface or of groundwater, against subsequent appropriations that infringe upon his right, whether they are surface or groundwater appropriations.³⁰⁷

In New Mexico, the leading case that illustrates this relationship and the power of the state engineer to protect the rights of senior appropriators

301. See D. Grant, *Reasonable Groundwater Pumping Levels Under the Appropriation Doctrine: The Law and Underlying Economic Goals*, 21 NAT. RES. J., 1-36 (1981).

302. *Id.*, at p. 8. No dewatering plans have been approved to date.

303. 77 N.M. 239, 421 P.2d 771 (1966).

304. 77 N.M. 239 at 243, 421 P.2d at 774 (1966).

305. *Id.*

306. N.M. CONST. art. 16 § 2.

307. *Templeton v. Pecos Valley Artesian Conservancy District*, 65 N.M. 59, 332 P.2d 465 (1959).

is *City of Albuquerque v. Reynolds*.³⁰⁸ In *Albuquerque*, the city applied to the state engineer for a permit to appropriate groundwater from the Rio Grande basin. Finding the basin fully appropriated and finding that further extractions would result in an infringement on Rio Grande surface rights, the engineer issued the permit contingent upon the city purchasing and retiring existing surface rights to the Rio Grande in an amount necessary to offset the effects of the groundwater appropriation. The court upheld the authority of the state engineer to make the contingency stating the “. . . engineer adopted the only known plan to avoid impairment to existing rights. . . .”³⁰⁹

Pueblo Water Rights in New Mexico

Although first recognized in California in 1881, the pueblo rights doctrine was not recognized in New Mexico until 1958 in *Cartwright v. Public Service Company of New Mexico*.³¹⁰ Prior to *Cartwright*, two New Mexico Supreme Court cases found that Tularosa and Santa Fe did not have pueblo rights.³¹¹ In neither case, as the court stated in *Cartwright*, “. . . was any position taken by the Court on the doctrine.”³¹²

The *Cartwright* decision did not rest on an interpretation of Mexican or Spanish law, but rather the court concluded that the rationale for adoption of the doctrine articulated in the major California cases applied with equal force to New Mexico. The decision cites the major California cases and found that it was “unable to avoid the conclusion that the reasons which brought the Supreme Court of California to uphold and enforce the Pueblo Rights doctrine apply with as much force in New Mexico as they do in California.”³¹³

The pueblo right in question was that of the city of Las Vegas, New Mexico, to the waters of the Gallinas River. Although *Cartwright* was concerned with surface appropriations, the court did not distinguish between surface and groundwater, and the California cases the court followed apply to both sources.

As the preceding summary of the groundwater laws and administrative procedures in Arizona, California, and New Mexico illustrates, there are significant differences among the states in their groundwater laws, and

308. 71 N.M. 428, 379 P.2d 73 (1962).

309. *City of Albuquerque v. Reynolds*, 71 N.M. at 439-440, 379 P.2d at 81.

310. 66 N.M. 64, 343 P.2d 654 (1958).

311. *State ex rel. Community Ditches v. Tularosa Community Ditch*, 19 N.M. 352, 143 P. 207 (1914) and *New Mexico Products Co. v. New Mexico Power Co.*, 42 N.M. 311, 77 P.2d 634 (1937), the cities involved were Tularosa and Santa Fe respectively.

312. 66 N.M. 64, 80-81, 343 P.2d 654 (1958).

313. *Cartwright v. Public Service Company of New Mexico*, 66 N.M. 64, 80, 343 P.2d 654 (1958).

type of groundwater regulation and level of centralized statewide control over groundwater pumping.

New Mexico is a state with a long history of experience with a prior appropriation and permit system administered in the Office of the State Engineer. In most parts of the state (i.e. within declared basins), the power of the New Mexico state engineer is extensive and includes determining beneficial uses, the extent of appropriation within a groundwater basin, issuing permits for mine dewatering, determining rights between surface and groundwater appropriators when these rights are in conflict, and issuing permits for the mining of a groundwater basin.

California has had a long history of experience with the correlative rights doctrine and no centralized control over groundwater use on the state level. In those parts of California where groundwater rights have been adjudicated or where water districts have been formed, the existing system of water rights has allowed for the management of groundwater basins on the local level to prevent overdrafting. State level authority over groundwater pumping, vested in the California Department of Water Resources, is limited to monitoring extractions and new wells being put into production. The DWR is powerless to control rates of groundwater extraction.

Arizona, a reasonable-use doctrine state, has vested significant powers to control groundwater extractions in the state's most heavily-used groundwater basins in a department of water resources. These powers include the regulation of drilling permits and the manipulation of the amount of groundwater that may be withdrawn for irrigation to bring the state's most heavily overdrafted areas to a "steady state" or safe-yield basis by the year 2025.

Interviews were conducted by the author with the leadership of interest groups most active in groundwater matters in each state in an effort to determine the attitudes of groundwater pumpers toward centralized administration of groundwater rights in general and their attitudes toward the type of groundwater rights administrative system within their states. Interest group leaders were identified on the basis of interviews with employees of the Arizona and California Departments of Water Resources and the New Mexico State Engineer's Office. In addition, during the interviews with the interest group leaders so identified, the leaders themselves were asked to identify other groups active in groundwater matters on the state level. From this procedure the following groups were identified as being the principal actors on groundwater matters on the state level and their leadership interviewed.³¹⁴

314. Interviews conducted in New Mexico during May 1982, *supra* note 12.

Arizona: the Agri-Business Council of Arizona; the Arizona Mining Association; and the League of Arizona Cities and Towns.

California: the California Cattlemen's Association; the California Chamber of Commerce; the California Farm Bureau; and the Association of California Water Agencies.

New Mexico: the New Mexico Cattle Grower's Association; the New Mexico Farm Bureau; the New Mexico Mining Association; the New Mexico Oil and Gas Association; and the Public Service Company of New Mexico.

Interviews were conducted during the month of December 1981 in Arizona and March and May 1982 in California and New Mexico, respectively.

Group leaders were asked two series of open-ended questions. First, group leaders were asked to evaluate the current system of groundwater control and rights administration within their states. Then group leaders were asked if they prefer that groundwater rights decisions be made on the state or local level by a statewide agency or local entity, or if they prefer water rights decisions be made by some other governmental entity (e.g. the courts or the legislature) and why they held these opinions.

It was anticipated that given the dissimilar experience of the three states in the study with types of groundwater laws and administrative systems, the groundwater users, as represented by interest group leaders, would have dissimilar attitudes toward types of administrative systems. The interview findings are summarized below.

Interest Group Leaders' Attitudes

Arizona: Group leaders representing municipal and mining interests in Arizona expressed satisfaction with the existing system of groundwater rights. The agricultural representatives interviewed expressed dissatisfaction based primarily on a feeling that agriculture was forced to make too many concessions to municipal and mining interests during the negotiations that led to the passage of the Groundwater Management Act. All parties interviewed, however, felt it was too soon to determine how effective the act would be and that their opinions could change depending on how the act is implemented.

When asked about preferences for centralized statewide administration of groundwater rights, no group reported a preference for statewide decisionmaking. The municipal and agricultural leaders interviewed indicated they would rather have disputes over groundwater rights settled by the courts. The mining company representatives preferred that disputes be handled by the state legislature. This lack of enthusiasm for administrative determination of groundwater rights had little to do with the Arizona Groundwater Management Act but was, rather, based upon un-

certainty as to how the Arizona Department of Water Resources would implement the act.

California: Interestingly, in California all the groups surveyed expressed satisfaction and support for current groundwater law, and all also said the status quo was ineffective in preventing overdrafting. None of the interviewees in California expressed preference for statewide administration of groundwater rights. Only the group representing California agricultural interests expressed a clear preference for using the courts. The remaining interviewees indicated a preference for either the courts or the state legislature depending on the issue involved. Without exception, the California groups surveyed tied their dislike of centralized administrative water rights decision-making to the administration of then California governor Edmund G. Brown, Jr. All respondents felt the Brown administration was unsympathetic to their needs and that under a different governor (and different gubernatorial appointees) they might prefer the groundwater rights decisions be made by the California Department of Water Resources.

New Mexico: The New Mexico groups interviewed were unanimous in their support for the existing system of groundwater rights determination and in their support for centralized decision-making in the office of the state engineer. Most respondents said they favored centralized administration in New Mexico because of the uniformity and consistency such administration provided. These comments were most strongly expressed by organizations whose operations are widely distributed throughout the state (i.e. the Farm Bureau, Cattle Growers, and the Public Service Company). Several such respondents remarked that local control of groundwater rights decisions would necessitate burdensome administrative costs and duplication of effort.

Without exception, however, approval of centralized administration in New Mexico was tied to the New Mexico State Engineer, Steve Reynolds. Laudatory comments about Reynolds included that he "has everybody's respect," is "experienced and competent," "is very well qualified," and "is fair."³¹⁵ Furthermore, most respondents qualified their preference for centralized administration by indicating their preference could change quickly when Reynolds leaves office.

In summary, it was clear from the interviews that groups representing groundwater pumpers are likely to be hostile to centralized administration. These attitudes were evident from the interviews and, in the case of California, from the opposition of the groups studied to Proposition 13 on the November 1982 California ballot—a measure that would have significantly increased the authority of the Water Resources Control Board

315. *Id.*

over groundwater regulation.³¹⁶ It was also clear that these attitudes had less to do with any dislike for centralized administration *per se*, but were closely associated with who would be administering those rights. Finally, these attitudes were consistent regardless of the state's system of groundwater rights or history with centralized administration.

What significance can be attach to the attitudes of interest group leaders in the three states in this study toward the centralized administration of groundwater rights? Any state desiring to establish centralized coordination and/or administration of groundwater rights on the state level may need to address concerns of groundwater pumpers about the consequences of centralized administration prior to having any such plan meet with success in the state legislature.³¹⁷ From the experience of California, it is clear that groundwater users will often have the political power necessary to thwart any unwanted attempt to rewrite the state's groundwater laws.

In California, various attempts in the legislature to rewrite the state's groundwater laws in a manner that would have significantly increased the power of the Water Resources Control Board over groundwater management have been defeated, due largely to the opposition of the state's major groundwater users to centralized control.³¹⁸ Furthermore, in Arizona, California, and New Mexico, the primary proponents of changes in groundwater management practices have been environmental organizations.³¹⁹ These groups are at a serious disadvantage *vis-à-vis* groundwater users in terms of the resources necessary to have influence in the legislative process. These resources include financial backing, membership (both size and distribution), and access to technical information and in-house expertise.³²⁰ In the face of opposition of groundwater users to

316. Smith, Z., *Rewriting California Groundwater Law: Past Attempts and Prerequisites to Reform*, 20 CAL. WEST. L. REV. 2 (1984).

317. *Supra* note 10 and accompanying text.

318. See Z. Smith, *supra* note 316. From 1978 to 1981 numerous bills were introduced in the California legislature to implement the recommendations of the Governor's Commission to Review California Water Rights Law. The recommendations would have empowered the State Water Resources Control Board to approve local management programs designed to curtail overdrafting. Three of these bills, SB1505, AB442 and AB835, incorporated most of the major Commission recommendations. SB1505 was gutted to only require the Department of Water Resources to identify groundwater basins in the state and identify those subject to critical conditions of overdraft. AB442 and AB835, after being heavily amended and having portions relating to groundwater management deleted, nevertheless died in committee.

319. *Id.* Primarily the Sierra Club and also the Planning and Conservation League in California.

320. The resources of the groups in this study were determined through interviews and examination of the campaign spending reports of each group on file in their respective state capitols. Without exception the groups representing agricultural users were resource strong both in terms of membership (the Arizona Agri-Business Council representing 800 individuals and 500 agricultural associations; the New Mexico Farm Bureau and Cattle Growers having approximately 11,000 and 2,500 members respectively; and the California Farm Bureau, Cattlemen's Association and Chamber of Commerce having approximately 96,000 members, 11,000 members and 4,000 members respectively with the

centralized administration of groundwater rights both in California and elsewhere,³²¹ policymakers attempting to implement such a system may want to take into consideration the attitudes of groundwater users toward centralized administration. As we have seen in three states with widely divergent experience with types of groundwater rights systems, groundwater users, as represented by interest groups concerned with the matter, fear not centralized administration of groundwater rights but rather the form that administration will take.

Chamber of Commerce having 385 local chapters and 150 trade association members) and in their ability to make campaign contributions (all the agricultural groups or their members were found to be frequent campaign contributors—amounts ran in the \$100–\$200 range in Arizona and New Mexico, to the \$1,000–\$5,000 range in California). The extractive industry groups studied (i.e. mineral and oil and gas producers) were also active campaign contributors. In addition, given the importance of mining to the economies of Arizona and New Mexico and of agriculture to all three states, we would expect their respective state legislatures to be responsive to the needs of these industries. In contrast to the groundwater users, the environmental groups were found to be weak both in terms of membership (ranging from a low of 1,500 members for the Planning and Conservation League in California and 3,000 Sierra Club members in New Mexico to a high of 150,000 members in the Sierra Club in California) and in the ability to make campaign contributions (only the California Sierra Club reported making any campaign contribution—one \$1,000 contribution in 1982). For a discussion of the relationship of membership, campaign contributions, and other interest group resources to legislative influence, see K. Beatty, H. Doerksen and J. Pierce, *Water Resources Politics and Interest Group Tactics*, 14 WATER RES. BULL. 2, 399 (1978) and T. MOE, *THE ORGANIZATION OF INTERESTS* 52 (1980).

321. See *supra* note 10.