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indulge in illusory distinctions. The trial judge's abuse of his office, whether willful or incompetent, is inexcusable misconduct, and a retrial should be barred.

Michael R. Flicker

Colorado Encourages Rapid Depletion of Its Ground-Water Resources

NATURAL RESOURCES—WATER AND WATER COURSES.—Plaintiffs sought to enforce a 1948 decree which recognized their rights to waters appropriated from an artesian aquifer.¹ The trial court enjoined the defendant users from taking water or allowing it to flow to an extent preventing plaintiffs from obtaining their decreed amounts. Further, the court ordered the State Engineer to administer the waters and to prevent waste. On appeal by the State Engineer the Colorado Supreme Court reversed and remanded with instructions to dismiss for lack of subject matter jurisdiction. The doctrine of prior appropriation and the Adjudication Act of 1943² are applicable to ground water only if it is tributary to a natural stream. Nontributary ground waters are private property; therefore, the State Engineer has no duty to administer them,³ and the 1948 decree is void. *Whitten v. Coit*, — Colo. —, 385 P.2d 131 (1963).⁴

1. An artesian aquifer is a porous formation containing a large mass of water. The overlying rock places great pressure on the water-bearing formations so that, when they are tapped, the pressure forces water to the surface without the aid of pumps.

2. 6 COLO. REV. STAT. ANN. §§ 147-9-1 to -24 (1953).

3. Holding the waters private property precluded a discussion of the Engineer's duties. However, if the decree had been upheld, Colorado statutes apparently would not have precluded the State Engineer from administering the decree. The Engineer relied on *Cox v. Olson*, 96 Colo. 233, 41 P.2d 296 (1940), for the rule that "water officials are limited to their statutory duties." Brief for Appellant, p. 6, *Whitten v. Coit*, — Colo. —, 385 P.2d 131 (1963). However, this case involved a water commissioner, who is limited to specified statutory duties. See COLO. REV. STAT. ANN. § 147-15-3 (1953). Conversely, the State Engineer is invested with broad duties to "have general supervising control over the public waters of the state," COLO. REV. STAT. ANN. § 147-11-3 (1953), and to perform "all duties imposed upon him by law," COLO. REV. STAT. ANN. § 147-11-6 (1953). Thus, if the court had held the waters public, the State Engineer could have been compelled to administer the decree.

4. This case had previously been before the court in a petition for a writ of prohibition. *Prinster v. District Court*, 137 Colo. 393, 325 P.2d 938 (1958). The court said the district court had jurisdiction but declined to rule on the merits because all interested parties were not before the court. *Prinster's* apparent approval of the lower court's jurisdiction may

The early miners and ranchers of the Far West's arid regions found the doctrine of riparian rights unsuited to large-scale economic development. Riparian law restricted the right to use water to lands adjacent to the watercourse.⁵ Appropriation, which grants a usufructory right to apply water beneficially regardless of the locus of its use,⁶ was developed by the miners and sanctioned by the Colorado constitution in 1876.⁷ In 1882 the Colorado Supreme Court held that the common law of Colorado had always allowed prior appropriation because of the necessity for artificial irrigation of the soil.⁸ Later it was decided that, to protect the appropriator effectively, priorities to both surface and ground waters should be recognized.⁹ In 1898 the court raised a rebuttable presumption that all ground water is tributary to a natural stream.¹⁰ In *Safranek v.*

have been a principal reason why only the State Engineer appealed and only one plaintiff appeared to urge affirmance. Undoubtedly, neither plaintiffs nor defendants expected the court to disturb the decree, and both considered it valid. It would have been proper for the court to protect the reasonable expectations of the nonappealing parties and decide only the limited question of the Engineer's duties. See 385 P.2d at 147 (dissenting opinion).

5. "Under riparian doctrine in its strict sense, the owner of land contiguous to a watercourse is entitled to have the stream flow by or through his land, undiminished in quantity [except that used] . . . for domestic and household purposes . . ." HUTCHINS, *SELECTED PROBLEMS IN THE LAW OF WATER RIGHTS IN THE WEST* 39 (1942). However, the Western States applying the doctrine do so in a modified sense which "allows each proprietor to make such use . . . as is reasonable in relation to the similar requirements of other proprietors of land riparian to the same stream . . ." *Ibid.* Both forms of the doctrine hampered development of Colorado's two major industries.

6. *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443, 446-49 (1882).

7. See text accompanying note 16 *infra*. Appropriation was first developed in the mining camps of California where each camp had its own law but all were based on the fundamental principle, "first come, first served." 1 WIEL, *WATER RIGHTS IN THE WESTERN STATES* § 71 (3d ed. 1911). Colorado miners followed the California system. See *id.* § 84.

8. See *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443, 446 (1882), involving waters appropriated before the adoption of the constitution. The court held that the constitution did not create the right to appropriate but merely recognized prevailing customs.

9. The common law distinguished between surface and subsurface waters. Waters flowing in a subterranean stream were subject to the same law as applied to surface waters while all other ground water was classified as percolating which was the private property of the overlying owner. Clark, *New Water Law Problems and Old Public Law Principles*, 32 *Rocky Mt. L. Rev.* 437, 439 (1960). This distinction is scientifically unsound because surface and ground waters are often physically interrelated. See Kirkwood, *Appropriation of Percolating Waters*, 1 *STAN. L. REV.* 1 (1948).

10. *Platte Valley Irr. Co. v. Buckers Irr., Mining & Improvement Co.*, 25 Colo. 77, 53 Pac. 334, 336 (1898). Early in the development of Colorado ground-water law, the courts took the position that surface streams and their underground support should be adjudicated together, leading to the presumption that all ground water is tributary to a natural stream. Colorado's presumption places the burden of proof on the party asserting the stream is nontributary. De Hass v. Benesch, 116 Colo. 344, 181 P.2d 453 (1947). Most other Western States presume all water is percolating in the absence of definite proof of a subterranean stream. See, e.g., *Campbell v. Willard*, 45 Ariz. 221, 42 P.2d 403 (1935); *Ryan v. Quinlan*, 45 Mont. 521, 124 Pac. 512 (1912). Colorado's presumption has a sounder basis in science, see Wiel, *Need for Unification of Surface and Underground Waters*, 2 *So. CAL. L. REV.* 358 (1929), and conservation policy since its practical effect is to subject most ground water to appropriation, see, e.g., *Karl F. Hehl Eng'r Co. v. Hubbell*, 132 Colo. 96, 285 P.2d 593 (1955) (spring water held tributary because contrary facts not proven); *Nevius v. Smith*, 86 Colo. 178, 279 Pac. 44 (1929); *Trowell Land & Irr. Co. v. Bijou Irr. Co.*, 65 Colo. 202, 176 Pac. 292 (1918) (tributary ground water may be appropriated before it reaches

Town of Limon the town was allowed to condemn plaintiff's land and its underlying water without paying compensation for the value of the water because it was tributary to a natural stream and therefore public property.¹¹ Before the instant decision, Colorado courts and commentators disagreed on whether nontributary ground water was subject to appropriation.¹² By holding that nontributary ground water is private property the *Whitten* court encouraged rapid depletion of this resource in disregard of Colorado's policy of water conservation and without consideration of the alternative of allocation according to optimum time distribution.¹³

The court rested its decision on the premise that Colorado's "entire plan of water adjudication act is based on the concept of 'rivers and natural streams.'" ¹⁴ The Colorado constitution and the Adjudication Act of 1943 were read as prohibiting adjudication of priorities in a nontributary aquifer. The court found support for its holding in the legislative history of the 1957 Ground Water Act; the legislature had rejected a provision allowing appropriation of all ground water with a procedure for adjudication of rights. The

stream); *In re German Ditch & Reservoir Co.*, 56 Colo. 252, 139 Pac. 2 (1914) (water tributary to intermittent stream subject to appropriation).

11. 123 Colo. 330, 228 P.2d 975 (1951). Prior to this case, in which both claimants were well owners, the presumption had been applied only in suits between two surface appropriators.

12. The trial court concluded that "all the water in the state of Colorado is subject to appropriation." *Humphries v. Schrader*, Civil No. 10599, Dist. Ct. Colo., May 25, 1957, in Brief for Plaintiff, Exhibit E, p. 7, *Prinster v. District Court*, 137 Colo. 393, 325 P.2d 938 (1958). The court relied on *Safraneck* in deciding that the common law gave a court the power to extend appropriation whenever consistent with public needs. Another district court had refused to follow the lead of *Safraneck* and held the waters public in that the user was subject to the restriction of reasonable use. *Thomas v. Brady*, Dist. Ct. Colo., June 17, 1953, in Brief for Plaintiff, Exhibit H, pp. 5-8, *Prinster v. District Court*, *supra*.

The status of nontributary ground water was recognized as unsettled in Colorado. See HUTCHEM, *op. cit. supra* note 5, at 212. One commentator conjectured that all ground water might be subject to the same law as natural streams. McHendrie, *The Law of Underground Water*, 13 ROCKY MT. L. REV. 1, 13 (1940). Another argued that the Colorado Supreme Court had the authority to extend appropriation because it was in the best interests of the arid regions of the state. Martz, *Who Has the Better Right to Non-Tributary Ground Waters in Colorado—Landowner or Appropriator?*, 31 DISTA 20, 27-28 (1954). A third argued for recognition of private property rights subject only to the restriction of reasonable use. Kelly, *Colorado Ground Water Act of 1957—Is Ground Water Private Property?*, 31 ROCKY MT. L. REV. 165, 171 (1959).

13. Optimum time distribution is a yearly distribution of a fixed supply of water which is proportionate to its estimated life and the needs of its users.

In the basins affected "uncontrolled pumping will eventually exhaust the supply and the proprietors will be left with . . . extinct or . . . high production cost aquifers." Martz, *supra* note 12, at 26.

Other arid Western States have given an administrative agency the right to prolong the life of a basin and thus achieve optimum time distribution. See 11 N.M. STAT. ANN. §§ 75-11-1 to -3 (1953); WYO. STAT. ANN. § 41-126 (1957); Note, "Water Mining" and Wyoming Law, 17 WYO. L.J. 258 (1963). For the problems raised by the failure of a state to regulate the development of its ground water see *Bristor v. Cheatham*, 75 Ariz. 227, 238, 255 P.2d 173, 183 (1953) (dissenting opinion).

14. 385 P.2d at 135.

State Engineer could not enforce the decree because his statutory duties covered only surface waters and underground waters tributary to them. The court also found practical problems in the enforcement of the decree against the defendant users.

The constitution was adopted over twenty years after the settlement of Colorado and merely formalized the prevailing customs of appropriation.¹⁵ The constitution provides: "The water of every natural stream . . . is hereby declared to be the property of the public . . . subject to appropriation as hereinafter provided."¹⁶ In 1876 only water flowing in natural streams had commercial value; therefore, omission of "ground water" from section 5 of article XVI cannot reasonably be interpreted to exclude ground water from appropriation,¹⁷ and in fact both the legislature and the courts have been active in extending the doctrine of prior appropriation to ground water.¹⁸ Thus, the Colorado constitution did not prevent the *Whitten* court from declaring ground water subject to public regulation, and the court incorrectly implied a negative pregnant.

The Adjudication Act of 1943 should not have been read as prohibitive of adjudicating rights to nontributary ground water but

15. Appropriation was first developed in the gold mining camps of California, see note 7 *supra*, and carried to Colorado after 1853 when the discovery of gold caused the state's first large-scale permanent settlement. Cf. 25 BANCROFT, WORKS 363 (1890). Appropriation was probably first enforced by the miners' courts, the decisions of which were confirmed in one of the state legislature's first acts. See Trelease, *Land, Water, and People*, 18 Wyo. L.J. 3, 5 (1963). Coffin v. Left Hand Ditch Co., 6 Colo. 443 (1882), supported the court's right to declare appropriation the law of Colorado because of the customs of the early miners and ranchers. For a brief discussion of custom as a basis of appropriation see Kelly, *supra* note 12, at 169.

16. COLO. CONST. art. XVI, § 5. The Colorado constitutional convention rejected a draft which gave the state the power "to secure a just and equitable distribution of the water . . . to . . . promote the greatest good to the greatest number of the citizens of the state . . ." The draft as enacted "asserted state control over the waters . . . but limited the state in its control by prohibiting forever the denial of use by the people." Lasky, *From Prior Appropriation to Economic Distribution of Water by the State—Via Irrigation Administration*, 1 ROCKY MT. L. REV. 161, 176 (1929).

17. Testimony at the trial established that there was little conflict over the use of ground water "until the expansion era following World War II." Brief for Plaintiff in Error, p. 21.

18. The legislature has declared the following waters subject to appropriation: waste, seepage, and spring water, COLO. REV. STAT. ANN. § 147-2-2 (1953); water raised from mines, COLO. REV. STAT. ANN. § 92-27-6 (1953); natural springs, COLO. REV. STAT. ANN. § 147-2-3 (1953).

The Colorado courts never gave article XVI, § 5, a restrictive meaning before this case. See cases cited note 10 *supra*. Colorado was a pioneer in the development of adjudication by district court rather than by administrative agency. See Johnson, *Adjudication of Water Rights*, 42 TEXAS L. REV. 121, 132 (1963). Safranek v. Town of Limon, 123 Colo. 330, 228 P.2d 975 (1951), which expanded the doctrine of appropriation to allow a town to secure an adequate water supply without bearing the high costs of condemnation damages, is consistent with the conclusion that the Colorado Supreme Court "need only consider the customs and best interests of the arid regions of the state." Martz, *supra* note 12, at 27.

should have been construed according to its general purpose.¹⁹ The history of the Act clearly reveals that it was intended only as a system of procedure for determining the priority of rights to the use of water for irrigation.²⁰ Thus, it did not create but merely recognized substantive rights previously gained when the water was properly diverted and applied to a beneficial use. The first adjudication statute was passed in 1879, long before the widespread exploitation of ground water, when Colorado's population was concentrated in areas close to natural streams.²¹ Thus, to insure the successful development of irrigation the legislature had to be concerned with the successful preservation of prior rights to surface streams only. The legislature was not pressed to consider ground water until after 1943.²² Since there is no evidence of a legislative intent to preclude adjudication of ground water, the court should have extended public regulation to aquifers.

Political disputes over the regulation of Colorado's ground water have prevented the legislature from enacting a comprehensive statute.²³ Those familiar with the 1957 Ground Water Act

19. The court examined § 147-9-1, which gives a district court jurisdiction to adjudicate "questions concerning priority of appropriation from the same source within the same district." They held that "water district" included only water from natural streams, relying on COLO. REV. STAT. ANN. § 147-13-1 (1953). The court should have recognized that the statute was enacted to further Colorado's two water policies of maximum use and conservation. The first session of the Colorado Legislature gave "free use of the water of any stream on the margin of a land claim; or if not situated upon any stream, for the right of way of a ditch through the land lying between it and the nearest water." At the same time, the legislature provided that ditches could not be larger than necessary and that a justice of the peace could make an equitable apportionment in times of scarcity. 25 BANCROFT, WORKS 536 (1890).

20. The present adjudication statute takes its form from the first adjudication acts. Colo. Sess. Laws 1881, at 142; Colo. Sess. Laws 1879, at 94. The purpose of the 1881 act was to protect by adjudication the lawful rights of water users. The Colorado Supreme Court has interpreted an adjudication to be purely procedural. In *Cresson Consol. Gold Mining & Milling Co. v. Whitten*, 139 Colo. 273, 283, 338 P.2d 278, 283 (1959), the court said, "A decree in a water adjudication is only confirmatory of pre-existing rights; the decree does not create or grant any new rights; it serves as evidence of rights previously acquired."

21. Colo. Sess. Laws 1879, at 94. This conclusion is suggested by an 1863 map of Colorado in 25 BANCROFT, WORKS 409 (1890). The first tests to determine the practicability of artesian wells were made in 1879, 25 *id.* at 537, but conflicts over the allocation of ground water did not develop until the late 1940's. Brief for Plaintiff in Error, p. 21.

22. A Colorado State Bar Committee did not start to work on an underground water statute until 1946-1947. McHendrie, *Underground Water Legislation*, 23 Rocky Mt. L. Rev. 439 (1950).

23. In 1946 a committee of the Water Section of the Colorado Bar Association split into two irreconcilable groups in drafting ground-water legislation. One desired to depart from the theory of prior appropriation and regulate all water on a theory of highest beneficial use. The other desired to follow a strict interpretation of the constitution and allow appropriation of only tributary ground water. A compromise was drafted which provided for greater economic use while still preserving existing rights. Many lawyers and pumpers, content with the status quo, opposed it. In 1948 the State Bar Committee backed no legislation. McHendrie, *supra* note 22. After 1948 other advisory groups undertook to recommend legislation, but the legislature refused to pass a broad statute. See Brief of Dist. Ten Water Users Ass'n as Amicus Curiae, p. 6, *Prinster v. District Court*, 137 Colo. 393, 325 P.2d 938 (1958).

viewed its enactment as only a stopgap measure to prevent depletion in drought areas during resolution of these disputes.²⁴ Since the 1957 act applies only to wells drilled after its passage and since section 9 preserves the right to appropriate under existing law,²⁵ it is not a bar to adjudication of previously drilled wells. Thus, the 1957 act did not preclude the court from a declaration that the aquifer was public property.

The court correctly observed that enforcement of the 1948 decree on the traditional theory of appropriation would present serious problems.²⁶ However, if the court had recognized that an appropriator should have a right to a certain quantity of water rather than to the maintenance of the original level of static pressure,²⁷ the theory of appropriation could have been adapted to conserve the supply of an aquifer.²⁸ If subsequent appropriators cause the pressure to fall and the senior's pressure is not protected, the senior must bear the expense of installing a pump to lift his decreed amount. Although the court seems to have assumed a right to pressure, the existence of such a right in Colorado is not clear,²⁹ and the difficulty in proving a causal relationship between

24. See *id.* at 6-7.

25. COLO. REV. STAT. ANN. §§ 147-19-2, -9 (Supp. 1960). Section 9 has been interpreted as binding the appropriator of tributary ground water to the stream adjudication. Kelly, *supra* note 12, at 166.

26. The court found it would be very difficult to protect the first appropriator's (senior's) pressure if many wells drew from the same aquifer having a low coefficient of transmissibility, which is defined as "the rate at which water moves or can be made to move through an aquifer under a given hydraulic gradient." Testimony of Stanley W. Lomon, Branch Area Chief, U.S. Geological Survey, Ground Water Branch, p. 6 (published separately), in *Humphries v. Schrader*, Civil No. 10599, Dist. Ct. Colo., May 25, 1957. Eliminating or decreasing the subsequent appropriator's (junior's) flow does not greatly increase the senior's pressure because the low coefficient of transmissibility makes recharge of the senior well a process of several years. A discussion of the problems of protecting the senior's pressure assumes there is a right to pressure. This right was not suggested to the court, and there is no basis in Colorado law or general conservation policy to make the assumption.

27. Cf. *Schodde v. Twin Falls Land & Water Co.*, 224 U.S. 107 (1912), where plaintiff raised water from a river flowing in a deep canyon by means of current-driven water wheels which were stopped when defendant built a dam downstream. The Court held plaintiff had a right to the quantity originally diverted but not to the original current flow. The Court said, "[I]n such a case the policy of the state to reserve the waters of the flow for the benefit of the public would be defeated." *Id.* at 120.

28. Utah has recognized the right of the senior to compel the junior to pay for the senior's pumps if the static pressure falls below its original level. *Current Creek Irr. Co. v. Andrews*, 9 Utah 2d 324, 344 P.2d 528 (1959). The case was criticized because "the modern approach to ground-water development clearly rejects the notion of allowing a prior appropriator an absolute right to be protected in the static head at the point of his diversion"; it may be desirable to allow the static head to be lowered to allow the water's full utilization by the greatest number of people. 6 UTAH L. REV. 575, 577 (1959). *But see* Martz, *supra* note 12, at 27.

29. Colorado has never decided whether a well owner has a right to a minimum level of pressure. For cases establishing a minimum level in other states see *Pima Farms Co. v. Proctor*, 30 Ariz. 96, 245 Pac. 369 (1926); *Current Creek Irr. Co. v. Andrews*, 9 Utah 2d

the junior's well and the decline of the senior's pressure makes it unfair to restrict the junior's rights to water. The decreasing marginal utility of a well due to the high cost of installing a pump seems a risk properly borne by the well owner unless interference is established by a clear causal relationship between two wells.³⁰

Ground water in an aquifer is a stock resource and should be subject to public regulation.³¹ The court's holding that nontributary ground water is private property assumes a valid distinction between tributary and nontributary ground water.³² For purposes of public regulation, the only valid distinction lies between water underlying only a small surface area and water underlying a large area, as an aquifer does.³³ To allow the property owner the right to the exclusive use of a spring on his land is sound social policy, but there is a community interest in a large body of water underlying the land of several persons.³⁴ The *Whitten* case neglects the community interest because it stimulates a race to mine: the well owner can only be assured of an adequate supply by pumping while

324, 344 P.2d 528 (1959). In *Karl F. Hehl Eng'r Co. v. Hubbell*, 132 Colo. 96, 285 P.2d 593 (1955), damages and an injunction were awarded when defendant's pumping operation for his gravel pit stopped the gravity flow of plaintiff's spring, forcing plaintiff to install a pump to feed his hogs. This case seems to be the only authority for the established proposition that a person is liable for extinguishing the appropriator's supply. See 2 WIEL, WATER RIGHTS OF THE WESTERN STATES 1078 (3d ed. 1911). The case does not seem sufficiently explicit for the sweeping interpretation given by a Colorado commentator that "the case is a square holding that in Colorado an appropriator of ground water acquires a right to the level of the source as part of his appropriative right." 28 ROCKY MOUNTAIN L. REV. 145, 147 (1955).

30. See Bagley, *Water Rights Law and Public Policies Relating to Ground Water "Mining" in the Southwestern States*, 4 J.L. & ECON. 144, 154 (1961). See generally 17 WYO. L.J. 232 (1963).

31. Water is classified as either a flow or a stock resource. In a flow resource different units become available at different times while the quantity remains relatively constant, but in a stock resource, since the total quantity does not increase materially over time, each rate of use diminishes a future rate. These concepts are discussed in Bagley, *supra* note 30, at 146-48; 17 WYO. L.J. 232 (1963).

32. A more scientific classification recognizes three types of ground water: (1) Subterranean streams; (2) percolating waters which if not intercepted will move into a stream; (3) isolated lakes and artesian basins. However, there should be no legal distinction between the three. McHendrie, *supra* note 12, at 2-4.

33. This conclusion has been reached in Utah, which allows appropriation of both tributary and nontributary ground water. In *Riordan v. Westwood*, 115 Utah 215, 229, 203 P.2d 922, 929 (1949), appropriation of a small spring solely on the defendant's land was not permitted. The court distinguished between a subterranean basin and a spring and said, "Where its course cannot be traced onto the lands of any person other than the owner of the land where it is found . . . they are not public . . ."

34. That a large body of water is the property of the community rather than of overlying landowners originated in the Roman law. "Things common are such because while by nature being things everyone has use for, they have not yet come into the ownership or control of anyone." 1 WIEL, WATER RIGHTS IN THE WESTERN STATES § 2 (3d ed. 1911). This idea of the "negative community" was written into the Colorado constitution; the state holds the water in trust for the community, but the individual has the right to reduce a certain quantity to private property by a diversion. See Lasky, *supra* note 16, at 175-76; note 16 *supra* and accompanying text.

the water lasts.³⁵ A stock resource requires a conservation approach which balances present needs against those of future years³⁶ and thus achieves an optimum time distribution.³⁷

The appropriator gains a usufructory right to a certain quantity of water, but the state may regulate the period of use³⁸ according to whether the state's welfare would be served by encouraging maximum or gradual use.³⁹ If aquifers were declared public property, appropriation could be adapted to conservation goals.⁴⁰ The appropriable supply would be regarded as a common stock, with shares allocable on a first-come first-served basis. An adjudication

35. The court should have taken notice of the serious economic problems facing Arizona as a result of the Arizona Supreme Court's failure to apply appropriation to nontributary ground water. See Mann, *Law and Politics of Ground Water in Arizona*, 2 ARIZ. L. REV. 241 (1960): This failure spurred efforts to enact a comprehensive ground-water code. Bitter and shortsighted opposition prevented its enactment, and the legislature was forced to enact a stopgap statute similar to Colorado's 1957 Ground Water Act. The act proved unenforceable and the state's water table continued to decline with resultant lower yields at higher pumping costs. In 1952 the Arizona Supreme Court, in a remarkable decision considered to be the first step toward state regulation of all ground water, held nontributary ground water subject to appropriation since, by protecting the senior user, excess pumping could be curtailed. *Bristor v. Cheatham*, 73 Ariz. 228, 240 P.2d 185 (1952). The case generated a violent reaction against the court. In 1953 the court granted a rehearing and reversed itself, holding ground water private property qualified by the restriction of reasonable use. *Bristor v. Cheatham*, 75 Ariz. 227, 255 P.2d 173 (1953). A dissenting opinion argued that the race to mine would continue until the waters were declared public and regulated. The reversal demoralized the conservation forces, and the 1953 legislature rejected a comprehensive ground-water code which had been thought to be assured of passage after the first *Bristor* decision. Later the court weakened the state's ability to regulate even critical drought areas. *State ex rel. Morrison v. Anway*, 87 Ariz. 206, 349 P.2d 774 (1960) (code does not forbid expansion of acreage developed by ground water).

36. There was no finding that the aquifers would continue as the basin's chief source of supply. The importance of prolonging their useful life is decreased if alternative sources of supply will become available. Cf. Krieger & Banks, *Ground Water Basin Management*, 50 CALIF. L. REV. 56, 62 (1962). However, even though alternative sources of supply are available, conserving a limited ground water supply for many years is still required. Although Arizona recently obtained a favorable decision from the Supreme Court as to its share of the Colorado River, *Arizona v. California*, 373 U.S. 546 (1963), the high cost of the diversion project will force Arizona to rely on her rapidly diminishing ground water supply for a number of years. See Mann, *supra* note 35, at 266.

37. See Bagley, *supra* note 30, at 154-57. But see Kelly, *supra* note 12, at 171.

38. Some writers think the application of prior appropriation to nontributary ground water may constitute a taking without due process. However, the Desert Land Act of 1877, 19 Stat. 377 (1877), as amended, 43 U.S.C. §§ 321-39 (1958), was applied to Colorado in 1891. Under the act "all non-navigable waters then a part of the public domain became *publici juris* subject to the plenary control of the designated states . . . with the right in each to determine for itself to what extent the rule of appropriation or . . . riparian rights should obtain." *California Ore. Power Co. v. Beaver Portland Cement Co.*, 295 U.S. 142, 163-64 (1935). Thus, the Colorado Supreme Court "has no obligation to recognize that proprietary rights have vested with the patents to overlying lands, but need only consider the customs and best interests of the arid regions of the state." *Martz, supra* note 12, at 27. For a discussion of the Desert Land Act of 1877 as a justification for applying appropriation to ground water see *State ex rel. Bliss v. Dority*, 55 N.M. 12, 225 P.2d 1007 (1950).

39. "It is in the province of administrators to make authorized determinations [as to safe yield and overdraft]." *Hutchins, Ground Water Legislation*, 30 ROCKY MOUNT. L. REV. 416, 436 (1958).

40. For a defense of appropriation as the system best achieving maximum benefits from limited supplies see generally Trelease, *supra* note 15, at 9-11.