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The Federal Reserved Water Doctrine - Application to the Problem of Water for Oil Shale Development

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COMMENTS

THE FEDERAL RESERVED WATER DOCTRINE--APPLICATION TO THE PROBLEM OF WATER FOR OIL SHALE DEVELOPMENT*

Much public interest has recently been focused on the vast quantities of oil shale located in Colorado, Utah and Wyoming. Extracting oil from the shale will require large amounts of water. Yet the shale beds are located in one of the most arid regions of America. Consequently, acquisition of the water rights that will be needed to produce the oil is one of the major problems that must be solved before the oil shale industry can become a reality.

Most of the water in the area has been appropriated for private use but because much of the oil shale is located on land that has been withdrawn[1] from the public domain, it has been suggested[2] that the answer to the water problem can be found by applying the federal reserved water doctrine.[3] An application of the reservation doctrine would result in a finding that the reservation of public domain operated to reserve the water needed to develop the oil shale located within the land. The federal government would have rights to the waters of the Upper Colorado River Basin that would

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1. The terms "withdrawal" and "reservation" will be used interchangeably in this discussion. The distinction between a reservation and a withdrawal is:
   > somewhat uncertain, but seems to consist in the assumption that a withdrawal is of a temporary character and for a public purpose . . . . A reservation contemplates a relatively permanent segregation from the public domain of lands for a special public use. A withdrawal, like a reservation, if made under valid authority, effectively separates the lands involved from the public domain, so that they no longer are subject to disposal under the public land laws unless otherwise provided in the withdrawal act or order.

   1 AMERICAN LAW OF MINING 143 (1966).
2. In 1959 Under Secretary of the Interior Bennett indicated that the Government might attempt to urge the reservation doctrine as a solution to the water problems of oil shale development. In responding to a question regarding the ramifications of the reservation doctrine, Bennett in noting that nearly all streams in the West would be affected stated: "I think that is certainly true because the watersheds in the Western States generally are reserved areas, national forests, *oil shale withdrawals* and all kinds of withdrawals and reservations. *Hearings Before the Subcommittee on Irrigation and Reclamation of the House Comm. on Interior and Insular Affairs*, 86th Cong., 1st Sess. 327 (1959) (Emphasis supplied).
3. The federal reserved water doctrine is alternately referred to as the "reservation doctrine" or the "Pelton doctrine."

be superior to private appropriations made subsequent to the oil shale withdrawals.

There are significant reasons for the present interest in oil shale development. In 1946 the United States consumed 1.9 billion barrels of oil and gas or 8% of the proven United States reserves.[4] In 1964 consumption of oil and gas had increased to 4 billion barrels or 10% of the proven United States reserves (approximately 38 billion barrels). Demand had increased 108% while the supply had only increased 61%.[5] According to expert forecasts:

> the mathematical facts of the normal growth in our consumption, coupled with a declining rate of new discoveries of conventional oil and gas deposits, will bring us within two decades or less to the *inexorable need for new sources of energy.*[6]

Unquestionably, the oil now residing in the marls underlying Colorado, Utah and Wyoming is a potential source of the fuel energy that will be needed in the near future.[7] It is estimated, perhaps optimistically, that the shale in those states contains 1.5 trillion barrels of oil having a total value of 2.5 trillion dollars.[8] Approximately 75% of these deposits are in the Piceance Creek Basin of Colorado which contains the largest quantity of oil recoverable by demonstrated mining and retorting methods—estimated at 280 billion barrels.[9]

Although title to some of the oil shale land is presently clouded by unpatented mining claims dating prior to 1920, of the land that has no title problems, 72% is owned by the Government. The federally owned acreage contains 79% of the oil in place[10] As a result, the future of the oil shale industry is dependent largely upon the policy formulated by

4. *Hearings on Oil Shale Before the Senate Comm. on Interior and Insular Affairs*, 89th Cong., 1st Sess. 15 (1965) (Statement of the Honorable Gordon Allott, U.S. Senator from Colorado).
5. *Id.*
6. *Hearings on Oil Shale, supra* note 4, at 2 (Statement of the Honorable Henry M. Jackson, U.S. Senator from Washington) (Emphasis supplied).
7. Although the states of Colorado, Utah and Wyoming do not contain all of the oil shale in the United States, the remaining deposits are so marginal that they are rarely discussed. *Hearings on Oil Shale, supra* note 4, at 3 (Statement of the Honorable Frank E. Moss, U.S. Senator from Utah).
8. Dominick, *Oil Shale—The Need For A National Policy*, 2 LAND & WATER L. REV. 61 (1967).
9. INTERIM REPORT OF THE OIL SHALE ADVISORY BOARD TO THE SECRETARY OF INTERIOR (transmitted by letter of the Chairman, Joseph L. Fisher, February 15, 1965).
10. *Id.* at 3.

the Government in disposing of the rights to develop federally controlled lands. In 1872 federal oil shale lands were open to homesteading with patents conveying mineral rights, until in 1914, when minerals were reserved from patent.[11] In 1920 the lands were made subject to the Mineral Leasing Act[12] which eliminated claim location as a means of acquiring rights in oil shale and substitued the leasing provisions applicable to other non-metalliferous minerals. In 1930 President Hoover, by executive order,[13] "temporarily" withdrew from lease or other disposal all deposits of oil shale in the United States and reserved them for purposes of investigation, examination, and classification. The order provided that no further applications were to be accepted. Entries, filings or selections already allowed were to be cancelled prior to patent if found to be valuable for oil shale. Aside from some minor modifications the order still stands. With the exception of naval oil shale reserves,[14] federally owned oil shale is completely within the purview of the Department of the Interior. Secretary of the Interior Udall has recently announced a plan providing for federal leases obtainable for purposes of research and development.[15]

Before the Government can materially assist the industry, it and all others involved in the development of oil shale, must establish a dependable supply of water. Depending upon the process being considered, estimates of the quantity of water that will be needed for industrial and municipal uses range as high as 455,000 acre feet per year for a two million barrel per day operation.[16] It has been stated so often as to require no documentation that water is a scarce resource in the western oil shale states. Water in the Colorado River

11. 30 U.S.C. § 122 (1964).
12. 30 U.S.C. §§ 181-287 (1964).
13. Text of the order withdrawing oil shale lands is available in 53 Interior Dec. 127 (1933).
14. In 1916 and 1924 three large tracts of oil shale land in Colorado and Utah were withdrawn to guaranty oil for future Navy fuel needs. The executive orders creating the naval petroleum reserves provided that the public lands embraced therein should be held for the exclusive use and benefit of the United States.
15. The proposed regulations issued pursuant to the Mineral Leasing Act of 1920 are designed to improve technology, encourage competition in development and use of oil shale, establish a basis for subsequent competitive leasing of federal oil shale lands and to encourage participation by companies not favorably situated with respect to oil shale reserves. Applicants for leases would be required to supply a statement of proposed water needs and sources of water supply. 32 Fed. Reg. 7086 (1967).
16. Delaney, *Water for Oil Shale Development*, 43 DENVER L.J. 72, 73 (1966).

and its tributaries (those of primary utility in developing oil shale are the Green and White Rivers) is subject to ever increasing demands in all the states of the Colorado River Basin, from Wyoming to California. As stated by Governor Love of Colorado:

> The water needed for the development of an oil shale industry is now available in the area. Ten years hence, however, this same water may not be available to fill domestic and industrial needs in the Piceance Basin. Oil shale is not "energy in the bank" as some have said, if the water required for its development will not be available.[17]

The reservation doctrine is one of the potential avenues of water acquisition for oil shale development. Because 79 per cent of the oil shale deposits are held by the Government and because this land has been withdrawn from the public domain, it might be invoked as a means of circumventing state created appropriations that present an obstacle to the appropriation of water for oil shale production.

Of course the usual means of acquiring water rights is by appropriation or purchase. This article is merely an attempt to anticipate the unexpected by deliniating the legal aspects of, and economic effects related to, the possible application of the reservation doctrine to the problem of acquiring water for oil shale development. An attempt will be made to demonstrate that while water should be made available to facilitate the extraction of oil from shale it should not become available unless those who have invested in reliance upon state appropriations are compensated for their losses.

In order to determine whether the principles of the reservation doctrine are applicable to the oil shale withdrawal and the naval oil shale reserves therein, it is first necessary to trace the evolution of the doctrine to the present time. Once that is accomplished, oil shale withdrawals will be compared with federal land reservations that have operated to reserve water appurtenant to the reservation. Finally, the economic justification of the result of the comparison and the conclusion arrived at will be discussed.

17. *Hearings on Oil Shale Before the Senate Comm. on Interior and Insular Affairs*, 89th Cong., 1st Sess. 22 (1965).

I. THE RESERVATION DOCTRINE

The reservation doctrine is based on the premise that the United States originally owned all of the land, and all of the water appurtenant to the land it owned, in sixteen western states.[18] The mere act of admitting the states to statehood did not grant title to the nonnavigable waters to the states any more than they acquired title to the public land on which those waters are located. Thus, unless the United States has relinquished control or ownership of such lands and waters, they remain under the plenary power of the federal government.

A. The Colorado Doctrine

Advocates of the Colorado doctrine[19] contend that the control of the United States over nonnavigable water was relinquished by the Desert Land Act[20] and its counterparts.[21] *California Oregon Power Co. v. Beaver Portland Cement Co.*[22] is relied upon to sustain the contention that federal control was granted to the states. In that case the controversy involved private appropriators asserting contradictory rights to water. The issue was whether a homestead patent to

18. The sixteen states include: Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, and Wyoming. These states are located on territory acquired by the United States by way of the Louisiana Purchase, Treaty with French Republic, April 30, 1803, 8 Stat. 200; the Oregon Country Treaty, Treaty with Great Britain, June 15, 1846, 9 Stat. 869; the Treaty of Guadalupe Hidalgo, Treaty with Republic of Mexico, February 2, 1848, 9 Stat. 922; or the Gadsden Purchase, Treaty with Mexico, Dec. 30, 1853, 10 Stat. 1031.

19. For a discussion of the Colorado doctrine *see*, Note, *Federal-State Conflicts Over the Control of Western Waters*, 60 COLUM. L. REV. 967, 974 (1960). Under the Colorado doctrine it is contended that the United States when it originally acquired the lands which now comprise the western states, acquired "only sovereign rights and with transfer of sovereignty the exclusive power of [water] disposition was lodged in the newly formed states." 2 R. CLARK, WATERS AND WATER RIGHTS § 102.4, at 57 (1967). A further justification for the doctrine is found in the fact that state constitutions declare water to be the property of the state (or something of similar import). From this it is contended that Congress by admitting the states entered into a binding compact giving the state constitution all the authority conferred by an act of Congress. Farm. Invest. Co. v. Carpenter, 9 Wyo. 110, 61 P. 258 (1900). This theory is refuted in Trelease, *Powers and Rights of Various Levels of Government—States Rights v. National Powers*, 19 WYO. L.J. 189, 199 (1965); thoroughly denounced in Goldberg, *Interposition—Wild West Water Style*, 17 STAN. L. REV. 1, 11 (1964); and demolished in Morreale, *Federal-State Conflicts Over Western Waters—A Decade of Attempted "Clarifying Legislation"*, 20 RUTGERS L. REV. 423, 446 (1966).

20. 43 U.S.C. § 321 *et. seq.* (1964).

21. Act of July 26, 1866, 14 Stat. 253, 43 U.S.C. § 661 (1964). Act of July 9, 1870, 16 Stat. 218, 43 U.S.C. § 661 (1964).

22. 295 U.S. 142 (1935).

riparian lands on a nonnavigable stream "carried with it as part of the granted estate the common law rights which attach to riparian proprietorship."[23] The Court in deciding against the party asserting riparian rights stated: "what we hold is that following the act of 1877, if not before, all nonnavigable waters then a part of the public domain became *publici juris,* subject to the plenary control of the designated states . . . ."[24] The Court thus held that the Desert Land Act operated to sever the land from the water on the public domain. It was made clear that a federal patentee derived no rights to the use of water unless and until he complied with applicable state law.

Proponents of the Colorado doctrine assert that this severing of land and water constituted an irrevocable grant of federal powers. However, it does not follow that "severance" of the water from the public domain also means "transfer" or "grant" of federal control. To destroy the power of the federal government to control nonnavigable water would have required such a grant or conveyance inasmuch as the Court reasoned in terms of the original "control" or "ownership" of the Government.[25]

There is nothing in *Beaver Portland* that is inconsistent with federal proprietary claims to nonnavigable waters in public land states following a priority system (as do the oil shale states of Colorado, Utah and Wyoming). *Beaver Portland* merely stated that water on the public domain, originally owned and controlled by the central government, had been severed subject to divestiture into private hands through compliance with state procedure. The Court nowhere indicated that the federal government could not subsequently choose to establish federal procedures to allocate water rights. Thus, the case most favorable to the position of those advocating the Colorado doctrine refutes the contention that federal power over nonnavigable waters is nonexistent. Further, in view of the many instances of federal recall of its power over water as exemplified in the cases to be discussed below,

23. *Id.* at 154.
24. *Id.* at 163-64.
25. *See,* Morreale, *supra* note 19, at 439.

the question of federal power over nonnavigable water appears to be settled.

B. Nature and Scope of Reservation Doctrine

1. The Winters Doctrine

Because Congress had created the power of control in the states it followed that Congress could dismember its creature by reclaiming previously relinquished power.[26] This was accomplished in *Winters v. United States*[27] the leading case establishing the right of the Government to reserve water for public land reservations. *Winters* and subsequent cases dealing with Indian reservations[28] established that although not mentioned in the treaties, executive orders, or other means used to create land reservations, there is an implied intent to reserve water in streams which rise upon, traverse, or border Indian lands. The Court concluded that Congress must have intended to deal fairly with the Indians by reserving for them the water without which their land would have been useless.[29]

The Court in deciding *Winters* referred to dictum in *United States v. Rio Grande Dam and Irr. Co.*[30] which stated:

> First, . . . in the absence of specific authority from Congress a State cannot by its legislation destroy the right of the United States, as the owner of lands bordering on a stream, to the continued flow of its waters; so far at least as may be necessary for the beneficial uses of the government property.[31]

26. The right of a state to receive compensation for the taking of "property" which like unappropriated nonnavigable water is held open to appropriation and use by the public is, at best, doubtful. *See* Goldberg, *supra* note 19, at 22.
27. 207 U.S. 564 (1908).
28. United States v. Conrad Inv. Co., 156 Fed. 123 (C.C.D. Mont. 1907), *aff'd* 161 Fed. 829 (9th Cir. 1908); United States v. Walker River Irr. Dist., 104 F.2d 334 (9th Cir. 1939); United States v. Athanum Irr. Dist., 236 F.2d 321 (9th Cir. 1959), *cert. denied*, 325 U.S. 988 (1957). *See*, Note, *Indians, Water, and the Arid Western States—A Prelude to the Pelton Decision*, 5 UTAH L. REV. 495 (1957).
29. Although no mention was made of water in the legislative or executive action establishing the Indian reservations in question, an implied reservation of the water necessary to beneficially use the property was found because of the rule of interpretation of agreements with Indians which resolves "ambiguities" from the standpoint of the Indians. This rule of construction reflects the national "guilty conscience" associated with prior dealings with the Indians.
30. 174 U.S. 690 (1899).
31. *Id.* at 703.

From this language it is evident that the reserved water rights of the federal government have riparian right characteristics and stem from the original ownership of western lands.

Winters rights might be explained as a unique result of the unusual circumstances of the American Indian. However, *Arizona v. California*[32] regarded the principle underlying *Winters* as being applicable to other types of reservations even though no explanation for the reason for so holding was offered. The Court in affirming the Winters doctrine also decided that the implied reservation of water "was intended to satisfy the future as well as the present needs of the Indian reservation."[33] The end result is that all appropriations occurring subsequent to the date of the reservation remain subordinate to the paramount, though dormant, right of the United States to take water sufficient to meet the future needs of the reservation. This exercise of the power over nonnavigable water would appear to occur anytime public land is reserved for a purpose that cannot be fulfilled without a commensurate reservation of water.[34] The withdrawal has the effect of recapturing the ownership[35] of the water.

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32. 373 U.S. 546 (1963). There is no mention in the creating instruments of water nor, it is to be supposed, did any of the parties involved ever contemplate the question. One of the Indian reservations discussed in Arizona v. California, the Colorado River Reservation located in Arizona and California, was originally created by the Act of 1865 (13 Stat. 541, 559) which provided merely that:

> all that part of the public domain in the Territory of Arizona, lying west of a direct line from Half-Way bend to . . . the Colorado River, containing about seventy-five thousand acres of land, shall be set apart for an Indian reservation for the Indians of said river and its tributaries.

This reservation was supplemented by executive orders issued Nov. 22, 1873; Nov. 16, 1874; May 15, 1876 and Exec. Order No. 2273 issued Nov. 22, 1915. None of the orders refer to the Indians right to, or need for, water.

33. *Id.* at 600.

34. The decree in Arizona v. California quantified the water rights of some reservations, but as to others, merely reserved water sufficient to effectuate the purpose of the withdrawal, i.e., Havasu National Wildlife Refuge was given a right to water "reasonably necessary to fulfill the purpose of the Refuge . . . ." 376 U.S. 340, 346 (1964) (Emphasis supplied). *See*, Goldberg, *Interposition Wild West Water Style*, 17 STAN. L. REV. 1, 2 (1964) where the author agrees that by reserving land the United States also reserves the water necessary for its beneficial use.

35. For the difficulties inherent in using "ownership" and "title" concepts to describe federal rights to water, *see* Trelease, *Government Ownership and Trusteeship of Water*, 45 CALIF. L. REV. 638 (1957). If ownership is thought of in terms of the right to use or control water, rather than the right of possession, the conceptual ambiguities are diminished.

2. The Pelton Dam Case

The next appearance of the exercise of federal power over nonnavigable water occurred in the *Pelton Dam* case.[36] This case which did not involve a consumptive use—it concerned federal power to license a power site located on land withdrawn for power purposes—upheld the authority of the FPC to license projects based upon "the ownership or control by the U.S. of the reserved lands on which the licensed project is to be located."[37] The holding that the FPC has exclusive jurisdiction to license a power project to be erected on fast lands reserved from the public domain for power purposes is not an unwarranted encroachment into traditional state control. The Court merely decided that a state should not be allowed to prohibit power projects upon federal land withdrawn for such purposes when no consumptive use was involved.[38] The significance of *Pelton* lies in the ramifications delineated by the interraction of the three propositions set forth: (1) the United States has complete control over its property under the property clause;[39] (2) the Desert Land Act under which the states established their own systems of water rights has no bearing on reservations;[40] and (3) as to reserved lands the federal power to license the building of dams is exclusive. From these propositions it would appear that all federally owned land which is reserved, *i.e.,* not unqualifiedly subject to sale and disposition, being property of the United States, is subject to plenary federal control. This control extends to waters on reserved land since such waters are also property of the federal government. As the original owner of western land and water, the Government has not relinquished ownership of land or water on reserved land because the Desert Land Act applied only to public land, *i.e.,* land unqualifiedly subject to sale or disposition.

36. Federal Power Comm'n v. Oregon, 349 U.S. 435 (1955).
37. *Id.* at 442.
38. The Court in *Pelton* discussed the re-regulating dam that was to be employed and noted that water flow should be unaffected downstream. 349 U.S. 435, 439 (1955).
39. Because the stream was nonnavigable, the authority of the FPC was based on the property clause rather than the commerce clause (the constitutional basis of government control over navigable waters). *See* First Iowa Hydro-Elec. Cooperative v. Federal Power Comm'n, 328 U.S. 152 (1946).
40. Federal Power Comm'n v. Oregon, *supra* note 36. The Court regarded Oregons assertion that *Beaver Portland* had established state control of nonnavigable waters as untenable because "the Desert Land Act covers 'sources of water supply upon the public lands * * *. The lands before us in this case are not 'public lands' but 'reservations.' " *Id.* at 448.

Having control or ownership of water on reserved lands and having retained the power to divest itself of the right to such water, the United States has rights superior to all who "appropriate" water that in fact is not susceptible of appropriation under state law because the United States has not given states the power to create an appropriation.[41] The foregoing was not expressly set forth in *Pelton.* It is merely the logical result of the proposition advanced therein.[42]

The courts have not articulated the precise scope of the federal water right resulting from a reservation of public land. In conjunction with *Winters* and *Pelton* there are, however, later cases that appear to answer two significant questions regarding the reservation doctrine. First, is it necessary that the Government, in addition to the mere reservation of the land, indicate in some manner an intent to reserve appurtenant water? Second, the related question of whether the Government reserves all water connected with the reserved land or whether the water right is limited to that amount needed to accomplish the purpose of the reservation?

3. The Fallbrook Public Utility District

The first of these cases, *United States v. Fallbrook Public Utility Dist.*[43] contains a lengthy discussion of the origin and scope of federal rights in nonnavigable waters. This discussion, enlightened though it may be, was not necessary to a decision in the case because the Government had stipulated

41. Although the state created "appropriation" is subordinate to the retained control of the federal government, the appropriator will have a right superior to later appropriators claiming under state law.

42. Morreale, *supra* note 19, at 440 contends that the application of the 1866, 1870, and 1877 legislation to public lands only, did not necessarily answer the question whether reservation of land in and of itself is sufficient to subject private appropriative rights to latent rights of the reservation—a question not of constitutional power but of congressional intent. The author indicates that it would be strange if the reservation of the land itself did not also reserve the water. In Note, *Federal State Conflicts Over the Control of Western Waters,* 60 COLUM. L. REV. 967, 989 (1960) the author advances two possible theories for the authority recognized in *Pelton.* The first is essentially in line with the text material which this note supplements. The second advocates control as distinct from ownership, indicating that withdrawal of federal land would revoke the control delegated to the state by the Desert Land Act and return the control over water passing through the reservation to the Government. The power might be limited to water that actually reaches the enclave. The author concludes the theory, finding that it would be strange if the Government lacked authority to prevent the frustration of its projects by upstream users.

43. 165 F. Supp. 806 (S.D. Cal. 1958)

that it would litigate only its riparian rights as determined to have belonged to its predecessor in title under California law.[44] The court analyzed the reservation doctrine stating that the analogy of *Pelton* and *Winters* could not be extended to hold that every time the Government acquires land or sets it aside from the public domain it thereby acquires the right to utilize water in disregard of state law.[45] The court indicated that although the power of the federal government to take unappropriated nonnavigable water for use on a military reservation could not be gainsaid, it was necessary that Congress expressly indicate exercise of the power.

"Where Congress has intended that the federal government or its agencies take or use water rights, it has spoken expressly—*e.g.* the power and reclamation projects [*Pelton*], the matters of reserving Indian lands, etc."[46] Thus, Congress can control unappropriated water and take it for use in connection with military reservations but reserving or withdrawing or acquiring land is not ipso facto an indication of congressional exercise of that power. This conceptualization of federal reserved water rights has much to commend it. The uncertainty of ascertaining when nonnavigable waters have been reserved—the main criticism of the reservation doctrine—would be lessened considerably by requiring a definite unequivocal indication of congressional intent to utilize its power over water.[47]

It is to be remembered that *Fallbrook* accepted federal rights to water that actually reached the reservation but demanded an express exercise of governmental power to subordinate other stream users to federal rights.[48] The court indicated that the power projects, reclamation projects, and Indian reservations were examples of the necessary additional indication of an intention to reserve water. In the power project situation (*Pelton*) Congress had in the Federal

44. *Id.* at 832.

45. *Id.* at 838.

46. *Id.* at 846.

47. The significance of the *Fallbrook* decision is diminished because the statement regarding the reservation doctrine was dictum.

48. United States v. Fallbrook Public Utility Dist., 165 F. Supp. 806 (S.D. Cal. 1958).

Power Act[49] and other public land laws[50] empowered an executive agency to exercise the general power of the Government. Similarly, Indian reservations were created by acts of Congress, treaties, or by statutes authorizing the Secretary of the Interior to set aside the lands as reservations.[51] The court's objection in *Fallbrook* was that nowhere could a delegation of power be found in regard to Camp Pendleton. The Government had merely condemned the property and made additional appropriations from time to time. There had occurred no delegation of general federal power to the Navy or any other agency that allowed it to take unappropriated water to the extent of affecting other stream users. In essence, the court in seeking congressional authorization was acknowledging the distinction between "acquired" and "reserved" lands.[52] Reservations of public domain will normally occur under circumstances that comply with the additional indication of congressional intent the court required, while Government acquisition of private land would not.

4. The Hawthorne Case

The next case involving the reservation doctrine, the *Hawthorne*[53] case, was decided in the federal district of Nevada nineteen days after *Fallbrook*. There Nevada demanded that the United States secure a state permit before withdrawing underground percolating water by means of

49. 16 U.S.C. §§ 791-825 (1964).

50. 43 U.S.C. § 141 (1964) authorizes the President to withdraw lands for water power, irrigation and other purposes. 43 U.S.C. § 148 (1964) allows the Secretary of the Interior to withdraw lands in Indian reservations for power and other purposes.

51. United States v. Fallbrook Public Utility District, 165 F. Supp 806, 845 (S.D. Cal. 1958).

52. The court recognized the distinction in spite of language to the contrary, *Id.* at 833.

> [T]o illustrate the fine line of distinction between obtaining a proprietary right under state law on unreserved lands, i.e., previously private lands, and claiming a sovereign right on reserved lands as in the Hawthorne case [see *infra* note 53 and accompanying text] let me point out that in late 1961 the 12th Naval District filed an application to appropriate ground water for military purposes on their large naval air base near Fallon, Nev., about 60 miles from Hawthorne. This base was established during World War II and the land purchased from private owners. The reservation doctrine did not apply here.

Hearings on S. 1275 Before a Subcomm. of the Senate Comm. on Interior and Insular Affairs, 88th Cong., 2d Sess. 190 (1964) (Testimony of Hugh Shamberger, President of the National Reclamation Assoc.)

53. Nevada *ex. rel.* Shamberger v. United States, 165 F. Supp. 600 (D. Nev. 1958).

wells drilled on land that had been reserved for military use from the public domain. The court held that *Pelton* was determinative, thus obviating the necessity for naval compliance with state law. It should be noted that the use in *Hawthorne* was consumptive[54] and involved using water relied upon by the citizens of an adjoining town. Under the court's holding the Navy cannot be required to share the water supply.

Unlike *Fallbrook,* the court in *Hawthorne* did not discuss the need for congressional action that would indicate an intent to reserve water. The court apparently regarded the act of reserving the land for military purposes as sufficient evidence of an intent to exercise federal power. The court reasoned that the Government owned the land, thereby subjecting the water to federal control that had not been delegated to the state by the Desert Land Act which is inapplicable to reserved land. Again, the decision suffered from the same affliction as did *Fallbrook,* the federal reserved water discussion was dictum.[55]

5. Arizona v. California

Arizona v. California.[56] although dealing with navigable water, has further clarified the nature and scope of the water rights established upon the creation of a federal reservation. The Court was faced *inter alia* with the question of Government rights to water for Indian, national forest, national recreation areas, and wildlife refuge reservations. In holding that the Government did have prior perfected rights which were effective as of the time the reservations were created, the basis for finding congressional exercise of its power to reserve water was analyzed in connection with the Indian reservations but as to other types of reservations the Court was content merely to uphold the Master's finding that:

> the principle underlying the reservation of water rights for Indian Reservations was equally applicable to other federal establishments such as National

54. In the course of the opinion it is apparent that the extension of *Pelton* to encompass consumptive uses was made without the slightest difficulty.
55. On appeal the court stated that it was unnecessary to decide which sovereign entity had control since the United States had not consented to suit. Nevada *ex. rel.* Shamberger v. United States, 279 F.2d 699 (9th Cir. 1960).
56. 373 U.S. 546 (1963).

> Recreation Areas and National Forests. We agree . . . that the United States *intended* to reserve water sufficient for the future requirements of the Lake Mead National Recreation Area, the Havasu National Wildlife Refuge, the Imperial National Wildlife Refuge and the Gila National Forest.[57]

In formulating the final decree establishing the amount and priority dates of the various reservations, the Court provided that each reservation was to have rights to enough water to accomplish the purpose of the reservation—no more, no less.[58]

The reasoning underlying federal power to reserve nonnavigable streams is inapplicable to navigable waters because of the historical distinction between dominium over nonnavigable and imperium over navigable waters.[59] However, what is relevant here is that the Court upheld the constitutionality of water reservations and in doing so clarified the type of water right—whether navigable or nonnavigable water is involved—that adheres to federal withdrawals. The federal right as set forth in *Arizona v. California* is for a quantity of water sufficient to accomplish the purpose of the land reservation. The water right resembles a riparian right in that it does not require actual beneficial use; but, like an appropriation, it has a priority date[60] and has been (in many instances) reduced to a specific quantity.

6. Ashley National Forest

The present status of federal reserved water rights is aptly illustrated in *Glenn v. United States.*[61] The facts as stipulated were that the United States diverted water to the

57. *Id.* at 601 (Emphasis supplied).
58. Each federal claim for water was given water sufficient to maintain the reservation. Some rights were qualified on the basis of forecast prospective need while others were given a right to water "reasonably necessary to fulfill the purpose" of the reservation. *See*, note 34 *supra* and accompanying text.
59. *See* 2 R. Clark, WATERS AND WATER RIGHTS § 102.4, at 67-71 (1967) for a discussion of the distinction between navigable and nonnavigable water.
60. Both *Winters* and *Arizona* v. *California* established the priority as of the land reservation. *Pelton* was careful to note that there was no interference with vested rights thereby implying that private rights acquired prior to a federal withdrawal will be protected. *Accord*: R. CLARK, *supra* note 59 at 82; Meyer, *The Colorado River*, 19 STAN. L. REV. 1, 66 (1966); Goldberg, *Interposition—Wild West Water Style*, 17 STAN. L. REV. 1, 19 (1964); and Note, *Federal Water Rights Legislation and the Reserved Lands Controversy*, 53 GEO. L.J. 750, 768 (1965).
61. Civil No. C-153-61, D. Utah, March 16, 1963.

Ashley National Forest—an 1897 reservation—in derogation of an appropriation with a state assigned priority date of 1933. The United States' right of diversion was not based upon state law. The court dismissed the complaint subject to the right to reinstitute the action "based upon rights, if any, acquired by diversion and use, if any occurred, prior to February 22, 1897, the date when the Ashley National Forest was created."[62]

7. Summary of the Reservation Doctrine

As the foregoing cases indicate, the mere creation of a reservation on the public domain is sufficient to reserve at least the water thereon that is needed to effectuate the purpose of the land reservation. *Winters* in holding that the Government must have intended to reserve water so as to facilitate irrigation among the Indians relied on the statement in *Rio Grande*[63] that the Government has a right to water bordering its land at least to the extent necessary for the beneficial use of the land. This is clearly indicative of the fact that the United States has a right to use waters flowing on reserved land merely because the land is reserved and the water is necessary to accomplish the purpose for which the reservation was created.

Hawthorne, and to a lesser extent *Fallbrook,* support *Winters* by indicating that when public land is withdrawn to establish a military reservation, the Government has a right to the unabridged use of all waters traversing the reservation in order to supply the needs of the military for whom the reservation was created. *Pelton* especially as interpreted by *Hawthorne,* also impliedly stands for the proposition that water appurtenant to land reserved for power sites, is reserved to the extent necessary to generate the power for which the reservation was created.

Arizona v. California in affirming *Winters,* found that Congress had manifest an intent to reserve water for Indian use. The Court indicated that the creation of a reservation

62. *Id.* The court determined that the appropriation was necessary to supply a recreation area within the reservation rendering use of the water necessary to effectuate the purpose of the withdrawal. *See* Note, *supra* note 60, at 767.

63. *See* text accompanying note 31 *supra.*

is indicative of an intent to reserve the water needed to effectuate the purpose of the reservation.[64] Thus an intent to reserve water was required and found to be satisfied by the very nature of the withdrawal itself. *Arizona v. California* further supports the contention that the federal right is determined by the inherent nature of the reservation. The Court summarily stated that the principle underlying *Winters* applies to all federal reservations of land in the public domain.

There are broad statements and logical inferences in *Pelton* and *Hawthorne* that could be interpreted to support a finding that the water reserved includes all the water appurtenant to the withdrawn land whether or not necessary to accomplish the purpose for which the reservation was created. *Hawthorne* noted that the Desert Land Act having been interpreted in *Pelton* as being inapplicable to water on reserved lands, necessarily meant that the control over such water had been reclaimed by the Government from the states. Since the Government has complete control it follows that all the water can be reserved. However, having power over all nonnavigable water does not compel utilization of all such power. *Fallbrook* very pointedly distinguished between power and congressional exercise of that power. It is axiomatic that by reserving land for a military reservation, power site, or an Indian reservation, Congress intends to accomplish the purpose for which the land reservation is made and *not any other purpose.* Congress in considering legislation or an executive agency contemplating action, does not consider all possible future uses that may be made of land that is to be withdrawn. Consequently, the withdrawal should not be taken as an indication that Congress or an executive agency is omnipotent and has reserved all the water on such land that may be used at anytime in the future for any of numerous unforeseen purposes. By withdrawing public lands for use as a bombing range, Congress should certainly not be taken as having indicated an intention to reserve all the water appurtenant to the land to be bombarded. No water would be needed to effectuate the purpose

64. The Indian reservation cases, *supra* note 28, all have sought and found congressional intent to reserve water as manifest by the purpose for which the withdrawal was made.

of the withdrawal. Congress most assuredly would not have considered that its act of withdrawing the land would be construed as creating a reservation of water. Thus, Congress should be taken to have exercised its power over water only to the extent necessary to fulfill the purpose of the land withdrawal.[65]

In *Winters* the Court found a reservation of water because Congress must have intended to accomplish the purpose of the reservation which required that the Indians be allowed the use of water. In *Pelton* the only use of water considered was that necessary to accomplish the purpose of the power site reservation.[66] Similarly, in *Hawthorne* and *Fallbrook* no mention was made of the right to water apart from that needed to fulfill the military's needs. Finally, in *Arizona v. California* the Court in considering the water rights of Indians, recreation areas, and other reservations, unequivocally limited the water right to that amount needed to effectuate the purpose of the withdrawals. In short, the foregoing cases establish that the federal government has the power to reserve all nonnavigable water contiguous with the public land but by creating a reservation it withdraws only that amount of water consistent with the purpose sought to be accomplished by the withdrawals of the land. *Glenn v. United States* specifically indicates that the federal water right has a priority date with subsequent state appropriations being subordinate to the federal right to take water reasonably necessary for reservation purposes. This is in accord with *Arizona v. California* where the Court decree[67] granted each reservation water rights having a priority as of the date of the creation of the reservation. The Court granted sufficient water to meet not only the present but the future needs of the reservation as well.[68]

65. *Accord*: Note, *Federal State Conflicts Over the Control of Western Waters*, 60 COLUM. L. REV. 967, 995-96 (1960) and 2 R. CLARK, WATERS AND WATER RIGHTS § 107.2 at 102 (1967). The position in CLARK is not clearly delineated but in stating that appropriations subsequent to the date of the reservation are subject to the amount of water reserved, the implication is that all nonnavigable water contiguous with the reserved land has not been withdrawn, but rather, only that amount needed to effectuate the reservation purpose.

66. The right to water for the power site was not expressly set forth in *Pelton* because the use was non-consumptive and a re-regulating dam was to be installed. *See, supra* note 38.

67. Arizona v. California, 376 U.S. 340 (1964).

68. *See* text accompanying note 33 *supra*.

Thus the evolution of the reservation doctrine has established the following propositions:

(1) the federal reserved water right extends to both consumptive and non-consumptive uses.

(2) the reserved water right does not depend upon application to a beneficial use, but rather arises when the reservation is established and remains available as long as the land reservation is in existence.

(3) State created water rights vested prior to creation of the federal reservation have a superior priority date making such rights compensable if subsequently taken for the reservation. Rights acquired after the reservation are subordinate and there need be no compensation for their taking.

(4) The quantity of water available is that amount reasonably necessary to effectuate the purpose for which the reservation was created. This requires a consideration of both the present and future needs of the reservation.

II. FEDERAL OIL SHALE LANDS

As previously noted, federally owned oil shale land contains 79 percent of the oil shale located in Colorado, Utah and Wyoming.[69] This land was withdrawn from the public domain by executive orders issued in 1916, 1924, and 1930.[70] As a result, the question arises as to whether the reservation doctrine can be applied to justify a finding that the withdrawal of the land operated to reserve the water thereon. To answer this question, this study will apply the doctrine to the oil shale withdrawal orders in an attempt to ascertain the doctrine's applicability.

69. *See supra* note 10 and accompanying text.

70. Exec. Order No. 5327 (April 15, 1930). *See supra* note 14 and accompanying text as to naval reserves. Executive orders of December 6, 1916 created the Colorado and Utah Naval Oil Shale Reserves and executive order of September 27, 1924 created Colorado Naval Oil Shale Reserve No. 2. The latter order read as follows:

> It is hereby ordered that, subject to any valid existing claim and in so far as title thereto remains in the United States, the land hereinafter described be, and the same are hereby, withdrawn from settlement, location, sale or entry, and held for the exclusive use and benefit of the United States Navy, for the development of Naval Oil Shale Reserve No. 1, Colorado No. 1, until the order is revoked by the President or by Congress . . . .

A. Federal Water Rights

The courts have applied the reservation doctrine in numerous situations involving various types of land withdrawals. Under the *Winters* doctrine the creation of Indian reservations operated to reserve water because of the implied intent to deal fairly with the Indians. The fact that the acts, treaties, or orders creating the reservations made no mention of water rights was of little significance.[71] The *Winters* doctrine compels an analysis of the purpose of the land withdrawal as the only means of ascertaining whether federal water rights have been reserved. Similarly, in the *Pelton Dam* case the recognition of federal water rights did not result from the language in the orders creating the reservation,[72] but rather was the result of congressional and executive intent inferred from the purpose of the reservation. Accordingly, *Pelton* like *Winters* requires that the purpose of the land withdrawal be studied in order to determine whether governmental power has been exercised to create federal water rights.

The reservation in *Hawthorne* also was created by an executive order that made no mention of water rights.[73] The order merely provided that the land was withdrawn for the exclusive use and benefit of the Navy for the development of an ammunition depot.[74] The court turned, perhaps unknowingly, to the purpose of the land withdrawal and found that in order to effectuate that purpose it was necessary that water have been reserved. Although it did not involve the creation of a reservation through the usual means of setting aside land from the public domain, the dicta in *Fallbrook* also confirms the need to find an intent to reserve water

71. *See supra* note 29 and accompanying text.

72. Power Site Reserve No. 66 involved in *Pelton* was created pursuant to Exec. Order No. 1223.17 (July 2, 1910). The order in its entirety was as follows: "Power Site Reserves Nos. 43-74 created, in Montana and Oregon." Obviously, no mention of water rights occurred.

73. *See supra* note 53 and accompanying text.

74. The order creating the depot stated:

> [I]t is hereby ordered that, subject to any valid existing claims and in so far as title thereto remains in the United States, the lands hereinafter described be, and the same are hereby withdrawn from settlement, location, sale, entry, and all forms of appropriation and held for the exclusive use and benefit of the United States Navy for the development of and use as an ammunition depot, until this order is revoked by the President or Congress.

Exec. Order No. 4351 (October 27, 1926).

before an exercise of federal power may be inferred.[75] However, the most unequivocal statement of the scope of the reservation doctrine occurs in *Arizona v. California*[76] where water was held to be reserved for wildlife refuges, national forests, recreation areas, and Indian reservations because the purpose of reserving the land could only be accomplished through the use of water. As did *Winters, Pelton, Hawthorne* and *Fallbrook, Arizona v. California* indicates that the answer to the question of whether the reservation of public domain operates to reserve water must be sought in an analysis of the purpose for which the reservation was created.

Glenn v. United States[77] in vindicating a diversion by the Government found that the use of the water was consistent with the purpose sought to be accomplished by the creation of the national forest. In so doing, the court implicitly summarized the reasoning of the foregoing cases and indicated the procedure that will be followed in deciding future questions of federal water rights. The court will first determine whether the reservation occurred prior to the acquisition of the water right by the private appropriator. If so, it then becomes necessary to analyze the action creating the reservation. If no mention were made of federal water rights, the court will then inquire into the purpose sought to be accomplished in creating the reservation. Should the purpose involved be one that cannot be effectuated without the use of water, then as the preceding cases indicate, an intention to reserve water will have been manifested.

B. Application of the Reservation Doctrine

1. Oil Shale Withdrawal

Utilizing the aforementioned process of deciding the applicability of the reservation doctrine to a federal land withdrawal, it becomes apparent that the withdrawal of oil shale bearing land from the public domain did not result in the reservation of water for its development.

First, the executive order withdrawing oil shale from the public domain did not refer in any way to water rights.

75. *See* text accompanying note 43 *supra*.
76. *See* text accompanying note 56 *supra*.
77. Civil No. C-153-61, D. Utah, March 16, 1963.

The order merely stated that all federally owned oil shale lands were temporarily withdrawn from lease or other disposal.[78] Obviously, if federal water rights are to be asserted in regard to the withdrawn shale land, it cannot be done on the basis of the language in the withdrawal order.

Because of the absence of reference to water in the withdrawal order, it becomes necessary to ascertain the purpose sought to be accomplished by reserving oil shale land. The order stated that the land was temporarily withdrawn for *purposes* of investigation, examination and classification. As one author has stated:

> Now, whether the 1930 order [Exec. Order No. 5327] was in furtherance of a farseeing conservation policy, or a retreat from a vexing administrative problem is open to some question in my mind as I have looked in the record.
>
> Certain it is that in the years prior to 1930, the Department had a belly full of the problems of oil shale, and a general withdrawal order seems, in retrospect, to have been amply justified on that basis alone.[79]

Whether the motivation behind the oil shale withdrawals was to avoid perplexing administrative problems or to effectuate conservation measure, it is clear that the land was not reserved in order to allow the Government to develop oil shale in commercial quantities. By withdrawing land in order to examine and classify it, the Government stated its objective in terms not susceptible of enlargement. Classification of oil shale lands involves geological determination of the character of the shale located within the withdrawn land. Once the Government has examined and classified the land the manifest purpose of Exec. Order No. 5327 has been accomplished.

78. The order stated:
> Under authority and pursuant to the provisions of the act of Congress approved June 25, 1910 (36 Stat. 847), as amended by the act of August 24, 1912 (37 Stat. 497), it is hereby ordered that subject to valid existing rights the deposits of oil shale, and lands containing such deposits owned by the United States, be, and the same are hereby, temporarily withdrawn from lease or other disposal and reserved for the purposes of investigation, examination, and classification.
>
> This order shall continue until revoked by the President or by act of Congress.

Exec. Order No. 5327 (April 15, 1930).

79. *Hearings on Oil Shale Before the Senate Comm. on Interior and Insular Affairs*, 89th Cong., 1st Sess. 31-32 (1965) (Statement of John A. Carver, Under Secretary of the Interior).

Thereafter any further federal activity involving oil shale land will require an additional indication of the exercise of governmental power.

Having in mind the purpose of the oil shale withdrawal, the next step in ascertaining whether water was reserved by the withdrawal order involves the determination of whether water was needed to effectuate that purpose.

Without describing the technical aspects of geological classification of minerals, suffice it to say that vast quantities of water are not required.[80] A national forest requires water to nourish the vegetation. A recreation area requires water for human sustenance and enjoyment. A water power site inherently involves water as an energy source. A military reservation normally requires water to maintain equipment and personnel. A wildlife refuge by its very nature needs water to sustain the object to be protected. However, the classification of minerals requires only that limited quantity of water needed for geological procedure. There is not implied in the objective of classifying land as to mineral content, a further objective or purpose to develop the land once it has been classified. Accordingly, the reservation doctrine cannot be invoked to provide water for the development of oil shale until there has been an additional indication of federal intent to exercise control over water.

In brief, the order withdrawing oil shale to facilitate classification, also operated to reserve water needed to effectuate that purpose. Because classification does not include development, the reservation doctrine cannot be invoked as a basis for holding that Exec. Order No. 5327 operated to reserve the water necessary for the development of oil shale. In this regard, the oil shale withdrawal is analogous to a reservation of public domain to create a bombing range. Establishment of the bombing range is sufficient to reserve only the water needed to facilitate bombardment of the land. If water were desired to satisfy the needs of a proposed ammunition depot on the same land, water would not be reserved until an executive order or other federal action

80. Minerals classification involves core drilling, surface examination, and surface mapping. U.S. DEPT. OF INTERIOR, BULL. No. 537, *The Classification of Public Lands* 50 (1913).

were undertaken to indicate that the Government intended to exercise its power over adjacent streams by withdrawing the land for depot purposes. Consequently, if the Government needs water to develop the oil shale land presently withdrawn for purposes of classification, it will be necessary to manifest such intent by means of an executive order or similar action. After issuance of the new federal mandate, subsequent appropriators will take water subject to the paramount right of the Government. At the present time, however, all state created appropriations in oil shale areas have a right to water that must be compensated if taken to meet the needs of oil shale development.

2. Naval Oil Shale Reserves

Applying the reservation doctrine to the lands reserved for the Navy results in the opposite conclusion that sufficient water has been reserved to develop oil shale. The executive orders creating the naval oil shale reserves in Colorado and Utah provided that the public lands embraced therein should be held for the exclusive use or benefit of the United States Navy.[81] It should be noted that the language used in creating the naval oil shale reserves is nearly identical to the wording employed to establish the ammunition depot involved in the *Hawthorne* case.[82]

Although the orders creating the oil shale reserves did not refer to water, the purpose of the reserve is clearly to provide for the future fuel needs of the Navy. The Secretary of the Navy is authorized to explore, prospect, conserve, develop, use and operate naval petroleum reserves in his discretion.[83] At the present time, however, no authority exists for the development of the oil shale by the Navy.[84] The

81. Oil Shale Reserve No. 1 (Colorado No. 1) was reserved December 6, 1916 and designated 44,560 acres of public land as a naval petroleum reserve. A subsequent executive order dated June 12, 1919 restored to the public domain some 3,880 acres originally withdrawn. Accordingly, Reserve No. 1 now comprises 41,353 acres. Oil Shales Reserve No. 2 (Utah No. 1) was reserved by an executive order of December 6, 1916 and now comprises 91,464 acres. Oil Shale Reserve No. 3 (Colorado No. 2) was established by an executive order of September 27, 1924 to facilitate development of Oil Shale Reserve No. 1. The order read as follows:
> The lands hereinafter described be, and the same are hereby, withdrawn from settlement, location, sale, or entry, and held for the exclusive use and benefit of the United States Navy . . . .

82. See *supra* note 74.
83. 10 U.S.C. § 7422 (1964).
84. 10 U.S.C. § 7438 (1964).

Secretary of the Interior has been granted authority over the experimental demonstration facility near Rifle, Colorado and is authorized to proceed with the development of oil shale.[85] However, it is provided that the delegation to the Department of the Interior shall not be construed "in dimunition of the responsibility of the Secretary of the Navy in providing oil shale and products therefrom for needs of national defense."[86] This last statement is indicative of the overall purpose of the oil shale reserves which is to provide fuel for national defense. Accordingly, the purpose of providing fuel for national defense requires that the shale be developed.

Because a reservation of land from the public domain operates to reserve the water needed to effectuate the purpose of the reservation it is clear that the creation of the naval oil shale reserves had the effect of reserving the water needed to develop fuel for the Navy from the reserved shale. Hence, appropriations on the Colorado, Green and White Rivers—all of which traverse naval oil shale reserves—which have a priority dated subsequent to December 6, 1916 are subordinate to the right of the Government to take the water needed to develop the naval reserves.[87] Consequently, any state appropriation after 1916 can be taken by the federal government without necessitating the payment of compensation.

III. PUBLIC POLICY CONSIDERATIONS

Having proceeded through an analysis of the reservation doctrine and having applied it to oil shale withdrawals and reserves, it is appropriate to examine the conclusions reached. This study has concluded that the oil shale withdrawal of 1930 did not operate to reserve water while the naval oil shale reserves of 1916 through 1924, did result in the setting aside of sufficient water to produce oil from shale. The

85. 10 U.S.C. § 7438 (1964).

86. *Id.*

87. The fact that the Government has not yet empowered the Secretary of the Navy to develop the oil shale can have no effect upon the question of water rights reservation. The relevant inquiry is to ascertain the effect of the executive orders creating the reserves and the purpose sought to be accomplished. Although the Government may not take advantage of its rights to water, one of the characteristics of the federal reserved water doctrine is the lack of a need for the appropriation of the water to a beneficial use in order to preserve the right.

question remains as to whether the conclusions reached can be justified from a public policy standpoint.

The ultimate goal of water law is to maximize the net benefits derived from the utilization of a scarce resource—water.[88] Public policy is best served if the law encourages the utilization of water to accomplish maximum benefits with minimum costs. Only then can law be said to fulfill its function of ordering society so that the greatest number of people can enjoy the greatest benefits. The maximization principle has attained such wide acceptance that the Government has adopted it as the policy to be followed in evaluating federal water projects.[89] In developing resources the Government seeks to provide the maximum net benefits. This requires a computation of social benefits to be weighed against costs to ascertain the net result. In considering costs, the Government includes losses and induced adverse effects (opportunity costs) irrespective of ultimate compensation for such losses.

Under the Government's adopted theory of maximization, the conclusion that water was not reserved for oil shale is a desirable result. The conclusion that water rights were reserved for the development of naval oil shale reserves is not. According to the maximum benefits theory, if the Government needs water for development of federally owned oil shale and the only water available is being used for the irrigation of farms, then the loss of the irrigation use is a cost of developing oil shale. It is a loss or induced adverse effect or an opportunity cost[90] whether it is borne by the Government or not.[91] It should be noted that as a practical matter it will not be the Government that will bear the significant costs of water acquisition. Utilizing normal procedure for oil development, the Government as landowner

88. *See generally*, Trelease, *Policies for Water Law: Property Rights, Economic Forces, and Public Regulations*, 5 NATURAL RESOURCES J. 1 (1965).

89. Trelease, *Powers and Rights of Various Levels of Government—States Rights vs. National Powers*, 19 WYO. L.J. 189, 201 (1955) *citing, Policies, Standards, and Procedures in the Formulation, Evaluation, and Review of Plans for the Use and Development of Water and Land Resources*, prepared under the direction of the President's Water Resources Council in 1962.

90. An opportunity cost is "the loss of values that could be produced and added to national wealth, but that are forgone because the insecurity of the water rights has frightened away the potential water user." *Id.* at 201.

91. For an enlightened discussion of this problem see, *supra* note 89, at 200-202.

will lease the land to a lessee who will absorb all operating costs while paying a royalty to the lessor. The amount or percentage of the royalty should be only slightly effected by the fact that water is, or is not, an expense. It is the bargaining power of the Government that will determine the size of the landowner's royalty which is not a cost-bearing interest. Thus, in reality, it will be the oil company, as lessee, that will benefit from an application of the reservation doctrine to the acquisition of water for oil shale development.

Because the cost is there, the only question is who should pay it. Should it be the Government, representing the taxpayers of the United States who benefit from the federal project, or one farmer who is made to sacrifice all in the name of the public welfare.

It has been said, that to require the United States to purchase water that it has previously given away, would render many projects economically infeasible.[92] This would result, it is maintained in a net loss to the general public because the cost of necessary government projects would be prohibitive. The same applies to western land that was originally "given away" to those complying with homesteading procedures. Yet the land, like the water used to make it productive, has increased the gross national product and enhanced the general welfare for decades. If either the land or the water is taken for use in the development of oil shale, the gross national product will be diminished. If the cost of purchasing the land or water is prohibitive it can only be so because its use in growing crops is more valuable than its use in producing oil shale. If that is the case, the policy of maximization requires that oil shale not be developed. The project would not increase benefits but would lessen them, a result desirable to no one.

A leading authority on water law offers an example[93] from the private sector of the economy that aptly illustrates the crux of the problem *i.e.,* compensation for private invest-

92. *Hearings on S. 1275 Before the Subcomm. of the Senate Comm. on Interior and Insular Affairs,* 88th Cong., 2nd Sess., 57 (1964) (Testimony of Ramsay Clark, then Assistant Attorney General of the United States for public lands).

93. Trelease, *Powers and Rights of Various Levels of Government—States Rights vs. National Powers,* 19 WYO. L.J. 189, 201 (1965).

ments made in reliance on water rights. The situation involves an irrigator and a manufacturer competing for the same limited supply of water. Both seek to increase their use of the water. Assuming the manufactured goods are worth more than the irrigated crops, the manufacturer can purchase the irrigator's water by paying him more than the crops are worth. However, if there were a social policy favoring agriculture that would enable the farmer to appropriate all the water without paying for it, the additional crops produced would be less valuable than the forgone manufactured goods. "Welfare would be decreased, the country would be less rich."[94]

IV. CONCLUSION

In concluding that the Government reserved water for the development of naval oil shale reserves and not for oil shale withdrawn from the public domain in 1930, the results of this study present a situation that is only partially beneficial to the general welfare. If appropriated water is to be taken from its present users, the oil shale producer, who will probably be an oil company lessee, should include its cost in determining the desirability of his project. The cost exists, like any other cost of doing business, and will not vanish merely because it is ignored. The need to compensate those who have invested in reliance upon state created water rights,[95] arises not because of a sentimental attachment to states rights, "but because it *is* in accord with the very policy officially adopted by the agencies of the United States and approved by the President."[96]

The appropriators on the rivers and streams traversing naval oil shale reserves are subject, perhaps unknowingly, to a "floating mortgage in the sky"[97] which when finally foreclosed by the United States will deprive them of their water and investments based on water rights, without even the slightest compensation. The reservation doctrine is a selfish doctrine much too rigid and wasteful to tolerate. Be-

94. *Id.*

95. Mr. Glenn in Glenn v. United States, *supra*, note 77, is an example of one who was required to lay his costly sacrifice on the altar of the public good.

96. *See supra* note 93, at 202.

97. Northcutt Ely, *1964 Senate Hearings, supra* note 92, at 246.

cause the federal government has reserved an unspecified amount of water for naval oil shale development which may be initiated at some unforseeable time in the future, there is no security in "vested" water rights obtained subsequent to the creation of the naval reserve. It is impossible for state planners and individual appropriators to ascertain how much water remains for non-federal projects. Must this vitally scarce resource be wasted pending the time that claimed federal water rights be ultimately utilized. If there is to continue to be growth in the areas affected the answer must be a resounding—NO!

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