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### Allocating Groundwater Among Nations, States and Tribes

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ALLOCATING GROUNDWATER AMONG NATIONS, STATES AND TRIBES

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BOUNDARIES AND WATER:  
ALLOCATION AND USE OF A SHARED RESOURCE

Natural Resources Law Center  
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**ALLOCATING GROUNDWATER AMONG NATIONS, STATES AND TRIBES**

by

Ann Berkley Rodgers\* and Carolyn J. Abeita\*\*

"Hydrologically we operate largely in a sphere of ignorance, not because we lack understanding of the laws of nature as they relate to groundwater flow and quality, but because we lack the practical means to assess the extent of the resource...(we) are not able to map fresh groundwater supplies in the same way as we quantify surface waters...(we) have to learn to operate within the range of uncertainties which exist of a given data base."

anonymous member of the  
Ixtapa Working Group on  
International Groundwater  
Allocation.

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## I. INTRODUCTION

Water resources in the subsoil of the earth have not been the subject of much attention by the law as a separate and distinct resource. This is reflected in our description of these resources as groundwater: is it land, terra firma, or is it water? Few would argue with the notion that outside the artificial constraints of the law, water and land cannot be truly thought of as distinct, but it is the nature of the legal beast that such distinctions are to be drawn and redrawn. The focus of this presentation is that even in the law it may be absurd to allocate this resource without reference to both, and absurdities are effectively preventing rational management of these resources.

The legal principles used to determine a government's rights over groundwater reflect the artificiality of the distinction. The law first considered water to be an integral component of the land. Control of land gave control of the waters flowing through it and found under the soil. Thereafter a distinct body of law developed in relation to rivers and other surface waters. As more was learned concerning the hydrologic cycle and the connection between surface water resources and groundwater, legal principles governing surface water were applied to interrelated, or tributary groundwater.

Today we know that groundwater allocation cannot be adequately addressed within either of these distinct regimes. Groundwater is a fugitive resource that mocks political boundaries that define control over land. On the other hand, it cannot be separated from the land and surface waters, even in theory. The way in which an aquifer is recharged and the quality of the water stored in an aquifer are intimately related to how we use the land and surface waters. These realities make it impossible to allocate the resource among jurisdictions in the same manner that land and river systems are allocated. Just drawing a line or setting a quantitative allocation will not resolve disputes. Rather, allocating control over this resource requires an on-going cooperative process. This can only be accomplished by taking on the challenge, to cooperate in designing allocation schemes that recognize and accommodate the dual nature of groundwater resources and the needs of governmental entities.

## **II. INTERNATIONAL LAW**

No distinct body of international law is clearly applicable to groundwater allocation. International legal principles pertaining to a nation's territorial prerogative over land and water are equally relevant. In addition to general legal principles discussed below, there is a growing body of conventional international law

concerning groundwater contamination. Any process for allocating jurisdiction over groundwater would have to be consistent with that body of law. [See, generally, O.E.C.D., **LEGAL ASPECTS OF TRANSFRONTIER POLLUTION** (1977)].

**A. Principles Applicable to Land.**

**1. Relationship to Groundwater:** Groundwater can be considered to be an element of the subsoil, which, in turn, is considered part of the soil. Frownfelter "The International Component of Texas Water Law", Vol. 18 St. M. L. J.481, 501 (1986). [citing to M. Sahovic & W. Bishop, "The Authority of the State: Its Range with Respect to Persons and Places", **MANUAL OF PUBLIC INTERNATIONAL LAW**, 311, 313 (M. Sorenson, ed. 1968) and Sepulveda, **DERECHO INTERNACIONAL**, 171 (1983)]. Rates of recharge and water quality are directly related to how land is used in areas of recharge. This interrelationship has been recognized for centuries in Moslem countries, and it is now accepted in U.S. water quality law through the sole source aquifer designation. [Teclaff, "Transboundary Groundwater Pollution Control", 22 Nat. Res. J. 1065 at 1071 (1982). To the extent that land use determines well placement, this can also affect the amount available to another jurisdiction. A well field can be analogized to a dam across a river. These principles are pertinent even where an aquifer is treated



as part of a surface water resource because of the intimate relationship between land use, groundwater quality and quantity, and surface water quality and quantity.

**2. The Traditional View:** Jurisdiction of a nation over its territory is traditionally referred to as exclusive and opposing the rights of all other nations. There is no more basic component to a nation's territory than the land resources of the nation. (Frownfelter at 501 and authorities cited therein). This is the view expressed by many scholars. "For many -- even if they inevitably accept the natural unity of a given deposit of resources -- the sovereignty of a given state over its territory and the natural wealth it contains cannot be fragmented, much less shared. That part of a transboundary resource, whether solid or fluid, on its own side of the border belongs to and is the property of that State." [Szekely, "Transboundary Resources: A View From Mexico", Vol 26. Nat. Res. J. 669, 674-675 (1986)].

**3. Another View:** That jurisdiction over territory is merely prima facie exclusive is prevailing customary law. The following doctrines may limit a state's exclusive territorial sovereignty. [Brownlie, **PRINCIPLES OF PUBLIC INTERNATIONAL LAW** 287 (1979)].

**(a). The Doctrine of State Responsibility:** Each State has a duty not to allow actions in its territory that

cause injury to another State or the people of another State. [Brownlie, **"A Survey of International Customary Law"**, INTERNATIONAL ENVIRONMENTAL LAW (Teclaff & Utton, eds. 1974)]. This doctrine only applies to redress acts of past damage or to prohibit continuing conduct which is causing or threatens to cause substantial injury to another state. [Tarlock, **"Land Use Choice: National Prerogative vs. International Policy"** in Teclaff and Utton, supra]. This is very similar to strict liability in tort. The extent to which the nation has control should not arise because that is the hallmark of sovereignty. A national government is assumed to be in control of actions inside its boundaries. [**Corfu Channel Case, (Merits)** [1949] I.C.J.Rep. 22].

The standard of care that each nation owes to all other nations is a very tolerant ordinary user standard (see discussion of due diligence). The reasonableness of the nation's justification is what is in question. The United Nations has issued a publication compiling state practice relevant to this principle with an unwieldy title, **"Survey of State Practice Relevant to International Liability for Injurious Consequences Arising Out of Acts Not Prohibited by International Law"** (U.N. Doc. ST/LEG/15, 1984). This doctrine has been applied in the area of natural resources law.

The Trail Smelter Arbitration was an international

air pollution dispute between the United States and Canada over emissions from a smelter in Canada. The case is most famous for interpreting the state responsibility doctrine to require clear and convincing evidence of actual, pecuniary injury. Scholars who have investigated the Arbitration discount the importance of it in setting out a broad principle of international law. The Compromis reached to guide the arbitration removed the issue of causation from the tribunal, and in determining the extent of liability, the two nations agreed to apply the law and practice followed in the United States. [Rubin., "Pollution by Analogy: The Trail Smelter Arbitration", 50 Or. L. Rev. 259 (1971); Tarlock, supra].

The doctrine has little value as a limit on a nation's use of groundwater because it cannot be invoked until quantifiable injury as occurred or is imminent. The damage to groundwater is usually irreversible if this standard is met. It is most valuable as a bargaining chip if there is a great likelihood of potential injury, and consequently potential liability.

The International Law Commission (hereinafter the I.L.C.) has been working on a concise statement of the state responsibility doctrine since 1978. Debates over the meaning of "territory and control" suggest that the doctrine is narrower than previously supposed.

[McCaffrey, "An Update of the Contributions of the International Law Commission to International Environmental Law" 15 Env. L. 667, 676 (1985)]. The 1984 Draft Report acknowledges a duty on the part of nations to provide information concerning potentially harmful activities, and suggests a negotiation procedure to establish mechanisms to manage the problem and to address the issue of reparation for any actual injury. (McCaffrey, *supra* at 678).

(b) The Doctrine Of Due Diligence: Where a dispute concerns a nation's failure to act, the operative principle is that of due diligence. It has its origins in the domestic laws of most European nations and is considered an integral counterpart to exclusive territorial jurisdiction. [Island of Palmas Case (R.I.A.A. Vol. II, p. 839)]. The duty has a somewhat objective standard: "such diligence as, having regard to the circumstances and...the victim, could be expected from a civilized State." [Ago: Fourth Report on State Responsibility, U.N. doc. (A/CN/4/264)]. A nation is expected to possess and maintain a legal and administrative infrastructure necessary to fulfill its obligations to other nations, and a nation is expected to use this infrastructure with a degree of vigilance adapted to the circumstances. Developing nations argue that the doctrine should be qualified so as to take into

consideration the legal and administrative structure that a nation can afford to maintain.

[Dupuy, "Due Diligence in the International Law of Liability" in O.E.C.D., supra].

(c) The Duty To Cooperate: The Draft Report of the I. L. C. suggests that the duty to cooperate is part of the doctrine of state responsibility. It has been recognized in the past as a distinct limit on governmental action. Nations have a duty to cooperate when necessary to serve the mutual interests of their respective peoples. Scholars argue over whether this duty exists outside the framework of an existing agreement between two nations [Compare Camponera, "Patterns of Cooperation in International Water Law: Principles and Institutions", 23 Nat. Res. J. 563 (1985) to Caldwell, "Concepts in Development of International Environmental Policies" in Teclaff and Utton, at p. 13.) and Teclaff & Teclaff "Transboundary toxic Pollution and the Drainage Basin Concept" 25 Nat. Res. J. 589 (1985)].

Recent developments at the United Nations may tip the scales in favor of an independent duty in the context of shared borders. In 1979 the General Assembly of the United Nations adopted Resolution 34/99 on the development and strengthening of good neighborliness between States. [U.N. Doc. A/CN.4/367; See also General Assembly Resolution 38/126 of December, 1983 (U.N. Doc.

A/RES/38/659 (1983)]. No formal statement of the principle has been announced, but it is based upon a pre-existing duty to cooperate. At least some nations seek to expand it to economic cooperation at the border zone on the basis of equality of rights, equity and mutual benefit in the exploitation of "common resources". [Szekely, supra]. "Common Resources" are defined as those which constitute a physical unity, and should be subject to common exploration and exploitation when common actions prove to serve the mutual interests of the parties.

This duty is expressly recognized in various conventions and other agreements concerning res communis, resources that cannot be claimed by any one nation [See Caldwell, supra]. Even where a resource cannot be considered res communis, a duty to cooperate can arise from the past conduct of two nations. If two nations have cooperated in the past by giving notice and consulting with each other where actions may affect the other, this duty can be found to exist. (Caponera, supra and authorities cited therein.)

(d) Equity: It is universally accepted that rigorous application of positive law can lead to unjust results. Numerous statements have been made on the place of equity in international law [ L.E.F. Goldie, "Equity and the International Management of Transboundary Resources", 25

Nat. Res. J. 665 (1985); Caponera, supra]. Where there is some positive law to apply, equity acts to prevent unjust results. Where no positive law exists, equity can go outside the constraints of customary law to bring about just results. In the second instance, consent of the parties to a dispute is required. (Goldie, supra.)

The problem is deciding what is meant by equity. Goldie defines it "as the compendium of concepts supporting, promoting, and implementing those entitlements, benefits and satisfactions which are validated by society's contemporary sense of justice and fairness" [at 673]. It encompasses principles involving abuse of rights, unjust enrichment, reliance, conscience, reciprocity, the fulfillment of expectations and obligation and communication [at 674]. Another writer points out that there are so many components to the principle that it is of little use on the operational level. With the reliance principle, Williams points out that "it is a nice judgment as to what is the 'legitimate' expectation." The notion of equal treatment of equals sounds nice, too, but equal in what respect? [Williams, "Legal, Administrative and Economic Tools for Conflict Resolution", STRATEGIES FOR RIVER BASIN MANAGEMENT, 201, 202 (Lundqvist, Lohm & Falkenmark, eds. 1985)].

**4. Contemporary Statements:** The modern view sets up a

tension between a nation's responsibility to other nations and each nation's duty to exercise authority over its natural wealth in its self interest. This tension is reflected in the U.N. Declaration on the Human Environment, particularly Principles 21 and 22. It is also evident in Article 2 of the United Nation's Charter of Economic Rights and Duties of States; the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights. Both Covenants contain the following language: All peoples may, for their own ends, freely dispose of their natural wealth and resources without prejudice to any obligations arising out of international economic cooperation, based upon the principle of mutual benefit and international law. In no case may a people be deprived of its own means of subsistence.

**5. Conclusions in relation to sovereign authority over land:** The enduring hallmark of sovereignty is authority over territory and people. It is unrealistic and unnecessary to suggest that nations should willingly yield this power to some supra-national agency. [Tarlock, supra; Rodgers & Utton, "The Ixtapa Draft Agreement Relating to Transboundary Groundwater", 25 Nat. Res. J. 713 (1985)]. It is incumbent on nations to adhere to the general principles of international law, however. These principles suggest that in allocating groundwater



resources, whether presently used by a nation or not, mechanisms allowing for bi-lateral cooperation in regulating land uses are necessary, not merely to avoid injury to other nations, but, due to the nature of groundwater, to effectively allocate control of the use of the resource among governments.

## **B. PERTINENT PRINCIPLES OF INTERNATIONAL WATER LAW**

**1. Introduction:** Where surface water resources are at issue, international law is more developed. Although surface water is considered a part of territory, international law has moved away from strict notions of territorial sovereignty. The general principles have been refined through international practice (conventional law) and this has led to statements of recommended rules for determining a nation's right to water resources that traverse its boundaries. The International Law Association (hereinafter the I.L.A.) created the Helsinki Rules in 1966, and the I. L. C. has considered numerous draft reports in an effort to create a draft convention on non-navigational uses of such waters. The definitions of the waters of concern includes some groundwater resources in both statements.

**2. Historical Development: (a) A Shared Resource:** With the notable exception of the Harmon Doctrine (see below) western legal theory has always treated surface water resources as more or less shared resources. This

principle can be found in the writings of Grotius [2 Grotius, *De Jure Belli et Pacis*, ch. 2, sec. 12 (1646)] Victoria [*De Indis et De Jure Belli Relectiones*, Sec. 2, titles 6 & 7, (1557)] Locke [*Second Treatise on Government*, Chapt. 5] and Hobbes [*Leviathan, Part Two*, Chpt. 24].

The duty to cooperate lead to early agreements among nations over navigation. The Central Commission on the Navigation of the Rhine was first discussed in 1785 and created in 1831. It is still in existence today, and as to matters of navigation it has expremely broad powers, including the enforcement of regulations. [Brown, "The Conventional Law of the Environment" Teclaff & Utton, supra; Kiss, "The Protection of the Rhine Against Pollution" 25 Nat. Res. J. 613 (1985)]. The Danube has been the subject of joint activity since 1856. Until 1948 the Danube Commission included non-riparian states. After World War II a new commission was formed consisting of only the riparian nations. (Caponera, supra). Caponera describes the expansion of the Danube Commission's powers beyond regulation of only navigation.

(b) The Rejection of the Concept of a Shared Resource, Upstream and Downstream: At the turn of the century, the United States enunciated a concept based upon the principle of absolute sovereignty in a dispute with Mexico over the Rio Grande. Attorney General Harmon

declared that an upstream nation owes no duty to downstream riparian nations and can claim the full flow of an international river. [21 Op. Att'y. Gen. 274, (1895). Harmon reached this conclusion based upon statements of Chief Justice John Marshall on the doctrine of sovereign immunity from suit in the courts of another nation in **The Schooner Exchange v. McFaddon**, 11 U.S. (7 Cranch) 116 (1812)]. It is questionable whether the Harmon doctrine was ever a correct statement of international law, and it is not considered to be a valid statement at this time. [Frownfelter at 502, nt.113]. The doctrine still rears its head in modern disputes over water resources. Within the recent past, India took this position in disputes with Pakistan over the Indus and with Bangladesh over the Ganges. [ Kril (Advocate-General Punjab), **I.L.A. Comm. 1st Rpt.** (1956); Bains, "**The Diversion of International Rivers**," 1 Indian J. Int'l. Law 39 (1960); Crow, "**The Making and the Breaking of Agreement on the Ganges**" 255 in Lundqvist, et al. supra].

The opposite position from the Harmon Doctrine is that a lower riparian may demand the full flow of a river from an upstream riparian in an unaltered state as to quantity and quality. Pakistan took this position in the dispute with India over the Indus. (Bains, supra). It was also the position of Spain in its dispute with France

that culminated in the Lake Lanoux Arbitration [**Affaire du Lac Lanoux, Sentence du Tribunal Arbitral (1957)**]. An agreement between France and Spain required the consent of the downstream nation for the upstream nation to alter the river. The existence of the agreement did not preclude France from going forward because the Tribunal found that prior consent could only be required under international law where there is clear and convincing evidence of actual or imminent injury to the downstream state.

**2. The Modern Approach:** With the rejection of the absolutist doctrines, two theories have emerged to address shared resources, a theory of limited territorial sovereignty and the community theory. The difference between the two is that limited territorial sovereignty emphasizes cooperative regulation by co-riparians and the community theory contemplates a giving-up of authority to a supranational entity, with nations jointly managing, developing, and sharing the benefits of international water resources. The theory of limited territorial sovereignty is considered to be prevailing customary law. [Griffin, "**The Use of Waters of International Drainage Basins Under Customary International Law**," 53 Am. J. Int'l. L. 50 (1959); Teclaff, **THE RIVER BASIN IN HISTORY AND LAW** (1967); Collard, "**Legal Aspects of Transfrontier Pollution of Fresh Water**", O.E.C.D., supra ].

Both of these theories can be criticized as inadequate to resolve allocation issues because the theories are resource specific, dealing only with water, and anthropocentric, only in relation to painfully obvious human needs. [Teclaff, supra.] In general, most international law is subject to the same criticism because it is the product of western culture and thought. Although there is ample precedent outside western philosophy for recognizing the interdependency of all life forms, it is slowly being considered in international law, and only as "environmental" as opposed to "allocational" concerns. (Caldwell, supra). (a) The Community Theory: Proponents of the community theory argue that sovereign prerogative leads to inefficiencies that preclude optimal use of a water resource with minimal injury [Utton, "International Water Quality Law", Teclaff & Utton, supra.]. The community theory has not been employed to comprehensively regulate a truly international water resource. It has been employed to regulate specific aspects of water use such as navigation and hydroelectric power production.

Much of the impetus behind this can be attributed to analogies to federated nations and colonial situations. These situations are not analogous to a truly international situation in one crucial respect. In federated nations and colonial situations there is a

superior entity with authority over the entire resource, and policy can be set unilaterally as the superior authority sees fit. In the absence of unilateral policy, there is a great likelihood that the governmental entities have congruous, or symmetrical systems of allocating power. Many of the hard issues of territoriality are blunted by the superior law. If nothing else, the superior law disposes of some procedural issues. [ See, Bernier **INTERNATIONAL LEGAL ASPECTS OF FEDERALISM**, 249-63 (1973). This point is illustrated by Mageed's description of cooperative activity on the Nile during and after the colonial period. Mageed, **"The Integrated River Basin Development; The Challenges to the Nile Basin Countries"** in Lundqvist, et al., supra at 151.] Some proponents of the community theory acknowledge it is unworkable in the face of political realities. [Utton, supra; but compare with Teclaff & Teclaff, supra].

(b) Limited Territorial Sovereignty: The basic theory: A State may make use of the waters flowing through its territory in so far as it does not interfere with their reasonable use by co-riparians. It has been refined to reflect a "benefits" approach by Griffin: A riparian has the sovereign right to make maximum use of international waters within its borders, limited by the corresponding right of each co-riparian. Each riparian is entitled to

share in the use and benefits of a system of international waters on a just and reasonable basis. (Griffin, supra.) This has been described as the equitable utilization theory, not unlike the U.S. theory of equitable apportionment. Indeed, many commentators who have attempted to define the substance of the doctrine have relied on U.S. precedents interpreting the doctrine of equitable apportionment. [Lipper, "Equitable Utilization" THE LAW OF INTERNATIONAL DRAINAGE BASINS, 15 (Garretson, Hayton & Olmstead, eds. 1967); Utton, "Sporhase, El Paso, and the Unilateral Allocation of Water Resources: Some Reflections on International and Interstate Groundwater Law", 57 U.Colo. L. Rev. 549 (1986)].

The I. L. A.'s Helsinki Rules attempt to give substance to the doctrine of equitable utilization: each state in an drainage basin is entitled to a reasonable share of the beneficial uses of the waters of the basin. The following factors should be taken into consideration in determining a nation's equitable share:

- the geography of the basin, including the extent of the drainage area in the basin;
- the hydrology of the basin, including, in particular, the contribution of water by each basin State;
- the climate affecting the basin;

- past utilization, including, in particular, existing utilization;
- the economic and social needs of each basin State;
- the population dependent on the waters of the basin in each basin State;
- the comparative costs of alternative means of satisfying the social and economic needs of each basin State;
- the availability of other resources;
- the avoidance of unnecessary waste in the use of waters;
- the practicability of compensation as a means of adjusting conflicts among users;
- the degree to which the needs of a State may be satisfied, without causing substantial injury to a co-basin State.

The major criticisms of the Helsinki Rules have to do with (1) identification of the drainage basin as the area of concern, (2) preference to protect past and present use at the expense of another nation's future use, and (3) the suggestion that monetary compensation is an adequate means of allocating water resources. F o r some nations, there is too much emphasis on land areas within the drainage basin concept. (Szekely, supra). The drainage basin concept is also criticized because it does



not take into consideration interbasin transfers and the fact that surface and groundwater sources do not always coincide. [Cano, "Legal and Administrative Tools for River Basin Development" in Lundqvist, et al., supra at 189].

The I. L. C. began to work on a statement of the law of non-navigational uses of international waters in 1974. In 1980, the Commission adopted six general articles. The waters of concern were described as an international watercourse system, a shared resource. Rather than define waters by a geographical perspective, the system perspective ignores geography, looking only at inputs and outputs of the system. The concept of relativity limits the extent to which a specific input or output is part of the system. Uses are only a component of the system if there is an effect on uses located in another state. Any allocation is to be determined by the principle of equitable utilization. (McCaffrey, supra).

Subsequent drafts expanding upon the general principles have been produced, but as of this date no final set has been adopted by the commission. In the 1984 Report of the Special Rapporteur, the international watercourse system was eliminated. The proposed replacement language is "international watercourse". The term "shared natural resource" was also eliminated from

the 1984 draft. The theory of equitable participation which had appeared in the 1983 draft report was also removed. For a discussion of this theory see, Hayton, **"The Law of International Water Resource Systems"**, RIVER BASIN DEVELOPMENT, 209 (Zaman, ed. 1983). This theory attempted to set forth the right of each riparian to participate in the use of the water resource and the duty to participate in the protection and conservation of the system.

### **C. APPLYING INTERNATIONAL LEGAL PRINCIPLES TO GROUNDWATER**

**1. Defining the Resource of Concern:** Numerous definitions of what would constitute an international groundwater resource have been proposed by writers. Caponera and Alheritiere define it in terms of use (groundwater resources which, in view of their physical characteristics, cannot be utilized unilaterally in an unrestricted way) or state policy (water resources of common interest to two or more states in terms of an hydrological management unit). [Caponera & Alheritiere, **"Principles for International Groundwater Law"** 18 Nat. Res. J. 589 (1978). Given the physical uncertainties inherent in predicting the timing and effect of one groundwater use on other uses, others suggest that a policy approach that recognizes the unity of land and water use and which includes a mechanism for mutual

technical support is a more workable approach. [Rodgers & Utton, supra].

2. **Suggested Principles for Allocation:** In international practice, groundwater is rarely mentioned unless it is tributary to a surface water resource. [ A list of agreements relating, at least indirectly, to groundwater can be found in Rodgers & Utton, supra; See, also, Teclaff and Utton, **INTERNATIONAL GROUNDWATER LAW** (1981). Many documents only consider groundwater in relation to contamination of surface water. Utton suggests that the following principles should be followed in allocating groundwater: (1) the use of waters normally should be shared; (2) no one party should be able to determine its share of the aquifer unilaterally, whether based upon superior geographic position, economic position or political assertiveness; (3) each state's share should be determined by mutual agreement or by judicial decision based upon equitable principles; and (4) stability of expectations should be assured so as to provide a secure climate for the long-term management and preservation of the resource [Utton, 57 U. Colo. L. Rev. at 550].

Although these principles were designed to be applied in interstate situations, with the exception of the fourth element, the same principles may be pertinent to international groundwater allocation. At the

international level, the principle of reliance is not universally accepted, especially where one nation has developed at a different pace. Reliance is hard to justify in that situation. Rather, it allows for a de facto unilateral allocation without any consideration of the equality of right as among nations.

I would consider another principle to be imperative: nations must agree to exercise their respective authority over land use and their peoples in a manner that will prevent adverse effects on the groundwater resource. If not, there is no certainty that a groundwater resource will remain usable by anyone. A groundwater resource cannot be separated from the land anymore than a groundwater resource can be separated from an interrelated surface water resource. This is supported by the doctrines of state responsibility, due diligence and the duty to cooperate.

**3. Allocation as a Process Rather than a Quantification:**  
In respect to allocating groundwater, the notable achievements of the Helsinki Rules and the Draft Articles of the I.L.C. are still inadequate. Neither addresses the great uncertainties that exist as to how to determine the physical characteristics of an aquifer. Groundwater supplies cannot be mapped in the same manner as surface water resources. Any allocation will require a great amount of technical expertise, perhaps through the use

of technical advisory commissions.

The experience of the United States and the Republic of Mexico supports this proposition. The International Boundary and Water Commission is such a bi-lateral technical body. It recommended limits on groundwater pumping levels from a shared aquifer as an interim measure which was subsequently adopted by both nations to be effective until a comprehensive agreement is reached in relation to groundwater. [Minute 242 to the 1944 United States-Mexico Treaty Relating to the Utilization of Waters, 12 Int'l Legal Materials 1105 (1973)]. Even if a comprehensive agreement is entered into, the concept of interim measures, rather than a set allocation, may be necessary due to the level of scientific uncertainty.

**4. Reconsidering the General Principles:** Finally, the concept of actual or imminent injury which triggers any duty under customary international law must be rethought. Groundwater use or contamination that will adversely impact on another nation's uses may not be apparent for many years, but the impact will be usually irreversible. When all of the principles discussed above are combined into one system of law, the mandate for preventative action is apparent. If a nation is responsible for the acts that take place on its territory, must not it exercise its authority over people and territory so as

to prevent eventual actual injury? Where eventual actual injury can only be prevented through cooperative efforts, are not nations obligated to cooperate? The allocation of groundwater cannot be achieved through easy solutions, but in the absence of cooperation, there cannot be any true allocation.

### III. INTERSTATE ALLOCATION

A. INTRODUCTION: The United States' Constitution is the framework for allocating power between the federal government and a state and among the states. With some extremely important exceptions, a state government has authority to regulate land and water in the state as an exercise of its police powers. There are three "de jure" means of allocating authority among states (1) unilateral federal action, (2) the creation of compacts by states, sometimes requiring the approval of Congress, and (3) judicial decision by the United States' Supreme Court. All three of these mechanisms have been used in the context of land and water resources, sometimes as to the same resource (See presentations on Colorado River).

In addition to the "de jure" means of allocating jurisdiction, in the area of water resources it is not unusual to find "de facto" allocations that are subsequently transformed into "de jure" allocations because the equitable principle of reliance is quite strong in American law. [See, *Colorado v. New Mexico* (II), 467 U.S. 310 (1984); Hundley, *WATER AND THE WEST: THE COLORADO RIVER COMPACT AND THE POLITICS OF WATER IN THE AMERICAN WEST* (1975); Ingram, *PATTERNS OF POLITICS IN WATER RESOURCE DEVELOPMENT: A CASE STUDY OF NEW MEXICO'S ROLE IN THE COLORADO RIVER BASIN BILL* (1970)].

The first two "de jure" mechanisms concentrate on

interpretation of federal legislation or a compact in light of the constitutional framework. By virtue of the supremacy clause and the necessary and proper clause, pertinent provisions that limit how and what a state can regulate are broadly interpreted. These included, but are not limited to the interstate commerce clause and the property clause. The political or civil rights of individuals found in the document serve to limit both state and federal action. The rights of indian tribes which are derived from the political rights of tribal members and protected by federal obligation also limit both state and federal actions. Tribal authority will be addressed separately in Section III.

**B. THE NATURE OF STATE JURISDICTION OVER NATURAL RESOURCES - TWO VIEWS**

**1. The Public Trust Doctrine as a Source of Proprietary Rights:** (a) Federal Law: During the Nineteenth Century, a state was considered to be the owner of natural resources located within a state. The state was also perceived to be the trustee for the collective rights of its citizens to the resources within the states. As to such resources, the state was both proprietor and regulator *Geer v. Connecticut*, 161 U.S. 519 (1896); *Georgia v. Tennessee Copper*, 206 U.S. 230, at 237 (1907).

This view fell out of favor shortly after the decision in *Geer*, supra. [See, *Pennsylvania v. West Virginia*, 262



U.S. 553 (1923) and below].

There have been several recent attempts by states to reassert proprietary-type rights to natural resources based upon the Public Trust Doctrine. This has been soundly rejected by the United States' Supreme Court in relation to both land and water resources. [See, **Sporhase v, Nebraska**, 458 U.S. 941 (1982) (no proprietary right to groundwater based upon state constitutional provision that resource owned by the state for the people of the state; **Summa Corporation v. California ex rel State Lands Commission** 466 U.S. 198, (1984) (no proprietary right in state to coastal area based upon public trust doctrine under Spanish and Mexican Law)].

(b) State Law: State Court decisions have vacillated on this. [Compare **United Plainsmen Assn v. North Dakota State Water Conservation Comm'n** 247 N.W.2d 457 (N.D. 1976) (Public trust doctrine creates an affirmative state duty to regulate for common good) to **In re Adjudication of the Big Horn** 753 P.2d.76 (1988) (state has proprietary interest in the groundwater underlying the state); See also **National Audubon Society v. Superior Court**, 658 P.2d 709 (Cal.), cert. denied, 104 S.Ct. 413 (1983)].

2. **The Public Trust Doctrine as the Source of a Heightened Regulatory Interest:** Cases decided at the same time as **Geer** and **Tennessee Copper** acknowledged the state to be the "guardian of the public welfare" [**Hudson County**

**Water Co. v. McCarter**, 209 U.S. 349 (1908). The classic statement of this theory can be found in the writings of Pound: "[T]he so-called ownership of [natural resources] is only a sort of guardianship for social purposes. It is imperium, not dominium. ...Our modern way of putting it is only an incident of the nineteenth century dogma that everything must be owned." [R. Pound, **AN INTRODUCTION TO THE PHILOSOPHY OF LAW**, 199 (1922)]. This view has been consistently applied by the U.S. Supreme Court since 1923. Pound's theory was expressly adopted in **Toomer v. Witsell**, 334 U.S. 385 (1948). **Geer v. Connecticut** was expressly overruled in 1979 [**Hughes v. Oklahoma** 441 U.S. 322 (1979)]. **Sporhase**, supra, acknowledges that the state, as trustee for the public, has a heightened regulatory interest; the concept recognizes the importance of a resource to the welfare of the inhabitants of a state. [458 U.S. at 954].

**3. State Proprietary Rights Outside the Context of the Public Trust Doctrine:**

(a) A State can create proprietary rights in natural resources by acquiring property in the same manner that private individuals do under applicable law. This is referred to as the "market participant" rule. [ **Hughes v. Alexandria Scrap Corp.** 426 U.S. 794 (1976) and **Reeves v. Stake**, 447 U.S. 429 (1980) ]

(b) When a state acts as a proprietor, it cannot act as a regulator. It can not use its position in the market

as a means of regulatory subterfuge. The line between valid market participation and action which constitutes regulatory subterfuge is very blurred. [**South Central Timber v. Wunnicke**, 104 S. Ct. 2237 (1984); **Cory v. Western Oil & Gas Assoc.**, 726 F.2d 1340 (9th Cir.) **affirmed without opinion** 105 S.Ct. 2349 (1985).] Some argue that the distinction is artificial and serves no purpose [Varat, **State "Citizenship" and Interstate Equality**, 48 U. Chi. L. Rev. 487 (1981). The regulatory/proprietary test has been rejected in other areas of the law. [as to the area of inter-governmental tax immunities see discussion in **Garcia v. San Antonio Metropolitan Transit Auth.** 105 S.Ct. 1005 (1985)]]

(c) A state is not free from most constitutional restraints when it acts as a proprietor. The Fourteenth Amendment and the Privileges and Immunities Clause of Article 4, Sec. 2, limit any state action, not just state regulatory action. **United Building & Construction Trades Council v. Mayor of Camden**, 104 S. Ct. 1020 (1984). The fact that a state has spent its own revenues to create a benefit is only one factor to be taken into consideration in determining the legitimacy of a challenged state action [Id.].

## **C. THE ALLOCATION OF POWER OVER NATURAL RESOURCES**

### **1. Limits Inherent in the Constitutional Scheme**

(a) **The Tenth Amendment:** The federal government's powers

are enumerated in the Constitution. The powers of states, often referred to as the states' police powers, are acknowledged in the Tenth Amendment, a catch-all provision. All powers " not delegated to the United States, nor prohibited to the States, are reserved to the states or to the people."

(b) Effect of the Tenth Amendment: Throughout the last 200 years the U.S. Supreme Court has vacillated on the effect of the Tenth Amendment. The Court now takes the view that the guarantees that states will be free to function in the federal system are to be found within the power of states as recognized in the composition of Congress as set out in the Constitution, particularly Article 1, §3 and Article V. [**San Antonio Metropolitan Authority**, supra]. If the Senate adopts a measure, the states have consented to it. Essentially, the Tenth Amendment protects everything within a state's competence to act that is not contrary to federal law. Examples of federal legislation that expressly recognizes state authority to act include the Clean Water Act, (33 U.S.C. §§1251, 1253) and the Natural Gas Act (15 U.S.C. §717(b)).

## **2. Some Limits Based upon Enumerated Federal Powers**

(a) The Property Clause: The Property Clause of the Constitution gives Congress both regulatory and proprietary authority over federal property. **Kleppe v. New Mexico**, 426 U.S. 529 (1976). In particular instances

Congress can consent to state regulatory authority over certain federal property to the extent that to do so would be consistent with other "clear congressional directives. [**California v. United States**, 438 U.S. 645 (1978); **Andrus v. Charlestone Stone Products Co., Inc.**, 436 U.S. 604 (1978); See also, **Seattle Master Builders Association v. Pacific Northwest Electric and Conservation Planning Council**, 786 F.2d 1359 (9th Cir. 1986) cert. denied, 107 S.Ct. 939 (1987)]. This is the flip-side of the **San Antonio** case. The test to determine whether state law is applicable to federal property is whether federal law evidences a clear and unambiguous intent for state law to control [786 F.2d 1364].

The reserved rights doctrine determines the characteristics of the federal property interest in water resources shared with a state. **Cappaert v. United States**, 426 U.S. 128 (1976). Where land is held only as public domain there is no reserved federal water right because Congress has acquiesced to state control of some aspects of water on the public domain in the Desert Lands Act. [**California Oregon Power Co. v. Beaver Portland Cement**, 295 U.S. 142 (1935)]. When Congress acts to change the nature of its interest in the land, however, a water right is created. **Sierra Club v. Block**, 615 F. Supp. 44 (D.C. Colo. 1985). When Congress acts, it reserves or appropriates sufficient water to fulfill the

primary purposes of the change in the land's status.  
**Id.**; **United States v. New Mexico**, 438 U.S. 696 (1978).

Even on the public domain the federal government does regulate access to water by regulating access to and use of the land itself. **United States v. Allen**, 578 F.2d 236 (9th Cir. 1978).

(b) The Commerce Clause: Article I, §8, cl. 3 gives Congress the power "to regulate commerce...among the several states". This power, even when unexercised, limits state regulation of any resource that can be reduced to possession by individuals. **Pennsylvania v. West Virginia**, supra; **Sporhase**, supra. If Congress has not acted, or has acted in only general terms, the clause prohibits state regulation that discriminates against or unduly burdens the free flow of commerce among the states. [**Sporhase**, supra (in the absence of Congressional action); and **Northwest Central Pipeline Corporation v. State Corporation Comm'n of Kansas**, 57 U.S.L.W. 4302 (March 7, 1989) (where congress has acted in a general manner)]. If state regulation expressly discriminates against interstate commerce it is "per se invalid" **Philadelphia v. New Jersey**, 437 U.S. 617 (1978). Where there is no express discrimination, and a state regulates evenhandedly to effectuate a legitimate local public interest, a state can still violate the commerce

clause if it "unduly burdens interstate commerce in relation to the putative local benefits." **Pike v, Bruce Church, Inc.**, 397 U.S. 137 (1970). Where there is a general recognition of a state's authority or where the state has a heightened regulatory interest, the challenger must show actual undue burdens and not merely the potential for such burdens. **Northwest Central Pipeline Corporation, supra**. When Congress has acted, the state authority is compared to the federal legislation to determine if Congress intended to allow a state to impede commerce in the specific manner being challenged. **Parker v. Brown**, 317 U.S. 341 (1948).

With water resources, specifically groundwater, the heightened regulatory interest inherent in the public trust is taken into consideration when analyzing state actions under the commerce clause. **Sporhase, supra**. A state can prefer in-state uses to a limited extent, to conserve the resource and protect the public welfare. This has been interpreted by lower federal courts to allow states to prefer primarily non-economic in-state uses over out-of-state uses. **City of El Paso v. Reynolds (II)**, 597 F. Supp. 694 (1984).

The commerce clause does not have force when the state is only acting as a proprietor. If Congress has acted, the state is regulated just as any other proprietor.

**D. SUMMARY AS TO THE NATURE AND LIMITS OF THE AUTHORITY OF STATES:** All of these concepts come into play when allocating power over resources. In the remaining portion of this section, each of the "de jure" methods will be discussed. "De jure" allocations do not get around any of the limitations set out above, unless specifically provided for in the federal legislation or the compact.

**E. ALLOCATION OF AUTHORITY BY CONGRESS**

Pursuant to its powers in the Constitution, the Federal Government can act to allocate resources among the states. The Boulder Canyon Project Act is an example of this in the context of water resources. [43 U.S.C. §§617 et. seq.; See *Arizona v. California*, 373 U.S. 546, 564-565 (1963). If the language is sufficiently specific, legislation may recognize exclusive rights in a state or group of states over certain waters. This does not immunize the legislated allocation from claims based upon important federal interests that are was not addressed in the legislation. [In *Arizona v. California*, the Supreme Court found that the legislatively mandated allocation between the states of the lower Colorado River Basin did not set aside waters for these Indian Reservations that share the river with the states. This did not prevent the Court from setting aside waters for these tribes out of the waters allocated to the state in



which a tribe's reservation was located, 373 U.S. at 595 et seq.] Furthermore, Congress can alter the legislated allocation directly or indirectly at any time by enacting new legislation. Where Congress has given the Secretary of Interior the authority to allocate through contracts for reservoir water, he can reallocate when the contracts are renegotiated to the extent allowed under the federal legislation. [373 U.S. at 580].

#### **F. ALLOCATIONS THROUGH COMPACTS**

1. **What is a compact?** States can enter into compacts to allocate jurisdiction among themselves as to a variety of subjects. The Constitution requires a compact to be approved by Congress if it tends to increase the political power in the states, which may encroach or interfere with the just supremacy of the United States. **Cuyler v. Adams**, 449 U.S. 433 (1981) The relevant inquiry is the extent that the compact impacts on the federal structure. **United States Steel Corporation v. Multistate Tax Commission**, 434 U.S. 454 (1978). Interstate compacts concerning water resources will almost always require congressional approval because of the great likelihood that some federal interest is involved.

(a) Because a compact is created by the states, the only authority that it can allocate is state authority. **West Virginia ex rel Dyer v. Sims**, 341 U.S. 22 (1981). Where

Congress approves a compact, it has attributes of both state action and federal action. It cannot be characterized as one or the other exclusively. **Lake Country Estates, Inc. v. Tahoe Regional Planning Agency**, 440 U.S. 391 (1979). [Plaintiff can state a claim under §1983 against compact commissioners (state action element met)]. According to the Supreme Court in **Texas v. New Mexico (1982)**, congressional consent to a compact transforms it into federal law and as a result, no court can order any form of relief that would be inconsistent with the terms of the compact, unless the compact is unconstitutional. This should not be considered a broad general statement of the law because the issue before the Court was only procedural in nature; there was no important federal interest at stake. Federal consent is, if nothing else, acquiescence to the allocation of authority in the compact, for the time being. Federal consent does make compact interpretation a matter of federal law, thereby insuring uniform interpretation by federal courts. **Cuyler v. Adams**, supra.

In short, a compact can address situations that are not truly national in scope, but involve some national interest. Its purpose in the constitutional scheme is to provide a mechanism whereby a solution to a problem is fashioned by those most affected by the outcome. Federal approval can be seen as acquiescence of the

majority to a regional solution to a regional problem in the interest of self-governance. [See, generally, **Texas v. New Mexico**, 462 U.S. 554 (1982); Goble, "The Compact Clause and Transboundary Problems", 17 **Envtl L.** 785 (1987); Frankfurter & Landis, "The Compact Clause of the Constitution - A Study in Interstate Adjustments" 34 **Yale L.J.** 685 (1925)].

(b) Even if no substantive interpretation is given to the compacts clause, there is the argument that Congress acquiesces when it approves compacts. However, as with a unilateral federal action, in the absence of clear and unequivocal language showing an intent to affect a specific federal interest, a compact will not be an affirmative barrier to Courts in recognizing and providing for that interest. **Arizona v. California**, 373 U.S. 546 (1963).

## **2. Activities Amenable to Treatment Under Compacts:**

States enter into compacts in a number of areas including taxation, banking, land-use planning and water allocation. Whether a compact specifically allocates groundwater may depend on the language used in allocating land or water resources. [A comprehensive treatment of interstate water compacts can be found in Muys, **Interstate Water Compacts** (1971)]. In many compacts the drainage basin concept is used, thereby expressly incorporating tributary groundwater. (Pecos Compact,

Upper Colorado River Basin Compact). Even where only the surface flows are allocated, Courts have found tributary groundwater to be included within the allocation. [El Paso v. Reynolds (I)563 F.Supp. 379 (D.N.M. 1982); Rifkind, Report of the Special Master, Arizona v. Colorado (1960) (as to the equitable apportionment of the Gila between Arizona and New Mexico)]

In many cases the specificity of a compact may not be an issue, particularly where there is a challenge to in-state or region preferences in the compact based upon the commerce clause. For example, the Upper Colorado River Basin Compact provides that each state has the exclusive beneficial consumptive use of a portion of water in perpetuity. The Klamath River Compact prohibits transportation of water outside the upper Klamath River Basin. The Snake River Compact, the Yellowstone River Compact and the Kansas-Nebraska Big Blue River Compact condition out-of-basin use of the water on the approval of the signatory states or the compact commissions. The express language of the Yellowstone River Compact has been upheld by the Ninth Circuit Court of Appeals in the face of a challenge on commerce clause grounds. **Intake Water Co. v. Yellowstone Compact Comm'n.** 726 F.2d 568 (9th Cir. 1985). Such decisions however, do not indicate what would happen in the case of a compact that is vague or makes no reference to the potential place of

use of the water.

#### **G. ALLOCATION BY THE COURT**

**1. Equitable Apportionment Actions:** States can bring a dispute with another state to the United States Supreme Court. [U.S. Const. Art. III, §2; 28 U.S.C. §1251(a)(1982)]. When the dispute concerns water or analogous resources, such as anadromous fish, the Court applies the doctrine of equitable apportionment. **Kansas v. Colorado**, 206 U.S. 46 (1907); **Idaho ex rel. Evans v. Oregon**, 462 U.S. 1017 (1983). Given the fluid nature of groundwater the Court would likely apply this doctrine to disputes over groundwater.

Unlike international law, the fact that a resource is within a state does not give a state an inchoate right to the use of it. **Colorado v. New Mexico (I)** 459 U.S.176 (1982); **Evans v. Oregon**, supra. Any right to a water resource as between states is dependent on use.

**2. Prerequisites:** The Court will not apportion a resource just because a state requests it to do so. Until recently, the general rule was that the complaining state had to show an actual controversy over existing uses. **Kansas v. Colorado**, supra; **Arizona v. California**, supra. [In Rpt of the Special Master, **Arizona v. California**, the Special Master declined to apportion the Little Colorado between New Mexico and Arizona because he found the existing supply was ample to meet then

existing needs; no controversy existed]. The only exception to this rule was where one state clearly showed an imminent need for future domestic water supplies. **Connecticut v. Massachusetts**, 282 U.S. 660 (1931); **New Jersey v. New York**, 283 U.S. 336 (1931).

One reason for this requirement is the doctrine of judicial restraint. In **Hinderlider v. LaPlata River & Cherry Creek Ditch Co.**, 304 U.S. 92 (1938) the Court acknowledged that it much preferred these disputes being addressed through the political process. [See, also **Colorado v. Kansas**, 320 U.S. 383 (1943)]. The fact that the political process exists, and that an action before the Supreme Court is available to resolve these disputes, are two cogent reasons why equitable apportionment decisions of the United States are not clearly analogous to international situations. [Tarlock, supra].

3. **Benefits v. Harms:** When the Court decides to exercise its jurisdiction, it still may decline to grant the relief requested if it finds that the benefits that would result would not clearly exceed the harms to the status quo. **Washington v. Oregon**, 297 U.S. 517 (1936); **Nebraska v. Wyoming**, 325 U.S. 589 (1945). At this point in the analysis the Court will look to see if one state could make better use of the water, in other words, whether the state is living up to its duty owed to other states to take reasonable steps to conserve and even

augment the natural resources within its borders. **Evans v. Oregon**, supra at 1017. In some instances this has led the Court to find that granting equitable relief will not cause substantial injury to the responding state or that the complaining state cannot show actual injury to its uses. **Wyoming v. Colorado**, 259 U.S. 419 (1922).

**4. Future Uses, Future Injury?** The Supreme Court found that proposed future uses could be the basis for an equitable apportionment in **Colorado v. New Mexico (I)** 459 U.S. 176 (1982). [See, Note, "IS THERE A FUTURE FOR PROPOSED WATER USES IN EQUITABLE APPORTIONMENT SUITS", 25 Nat. Res. J. 791 (1985)].

(a) **Altered Burden of Proof:** A state would have to show by clear and convincing evidence that the benefits of its proposed use substantially outweighed the injury to existing uses in the other state. **Colorado v. New Mexico (II)**. This reasons given for stringent burden of proof are (1) the state proposing a future diversion should bear most of the risks of an erroneous decision - potential benefits are speculative, but harm to actual uses is not; (2) the unique interests involved in water rights disputes between sovereigns; and (3) society's interest in preserving the stability of property rights and in allocating resources to the most efficient uses **Id.** In the end Colorado failed to meet its burden of proof because it did not establish the existence of a

commitment to any long term use for the water that would allow for predictions of the future benefits. With groundwater aquifers the balancing will have to be between future uses in both states, for the purpose of preserving existing uses. This does not fit into the Court's calculus.

(b) The role of efficiency: An issue that was left unanswered is whether the economic efficiency of a use in one state should be compared to the economic efficiency of a proposed use in another state. The two opinions do suggest that this will be a pertinent factor in comparing harms and benefits in the future . Justice O'Connor, expressed the view that this inquiry should be irrelevant under the principle of the state equality. [See, also, *Wyoming v. Colorado*, 259 U.S. at 469]. However, if two states come into the Court with equally specific plans for equally compelling needs, economic efficiency could be the deciding factor.

5. **Reasons Not to Apportion:** There are other reasons why the Court will decline to equitably apportion a resource. These include whether a practical remedy can be fashioned [*Vermont v. New York*, 417 U.S. 270 (1974)], and the ethical or moral position of the parties. These last two are comparable to the equitable doctrines of unclean hands and laches. If one state does not assert its rights, but allows another to go forward with



development of the resource, it can be found to have acquiesced in the other state's use. **Kansas v. Colorado**, 320 U.S. 383 (1943). Similarly, where two states were allowing actions which abused a river, the Court has declined to grant any relief **Missouri v. Illinois** 200 U.S. 496 (1906).

**6. Factors Pertinent to Determining Relief to be Granted:** In fashioning equitable relief, the Court will consider almost any factor that can be argued to be relevant except past injury. **Evans v. Oregon**, supra. There is no one set formula, almost a totality of the circumstances test. When two states apply the same legal theory to determine property interests in the resource, that law is also pertinent. This brings up another problem when trying to place groundwater within the construct. With surface water, most western states apply some version of the prior appropriation doctrine. On the other hand, groundwater rights are determined by four competing regimes: the rule of capture, reasonable use, correlative rights and prior appropriation. This legal assymetry may be very difficult to address under existing methods of equitable apportionment.

**7. Flexibility:** Unlike international law where equitable utilization or apportionment usually results in a permanent right to a set quantity of water, the "linchpin" of interstate equitable apportionment is

flexibility. The parties can always return to Court for a revised allocation based upon changes circumstances. **Colorado v. New Mexico (II).**

**8. Can this Theory be Applied to Groundwater?** There are serious questions as to how effective a traditional equitable apportionment decree would be in relation to groundwater. In the west, it is rarely a truly renewable supply, even where associated with a surface stream [**City of Albuquerque v. Reynolds**, 71 N.M. 428, 379 P.2d 73 (1962)]. Any use, over time, by one state does more than merely create a reliance interest. It also limits the extent of any future use of the resource by another state. If pumping levels are great in one state, some uses in the other state will be foreclosed. A state cannot seek to enjoin pumping in one state so that it could make up for past injury. The existing "de facto" allocation is the baseline. Furthermore, as pointed out in the section on international law, unless the decree also provides a mechanism for cooperative land use decisions, it is not effectively apportioning the resource. There is little precedent for this in the equitable apportionment decrees of the U.S. Supreme Court.

#### IV. TRIBAL JURISDICTION OVER GROUNDWATER RESOURCES

A. INTRODUCTION: As with any other resource, it can be said that tribal authority over groundwater has two distinct sources: (a) tribal rights based upon ownership of the resource, and (b) each tribe's retained inherent powers of self-government. Tribes have expressly exercised this authority with the creation of tribal water codes and other land and water management programs. In exercising its plenary power over tribes, Congress has addressed this topic in the context of special legislation to settle specific tribal water rights claims and in the federal laws pertaining to the environment. The Supreme Court has yet to expressly address the issue of tribal authority over groundwater. Lower federal courts and state courts, with one notable exception, have generally recognized this authority, particularly in the context land and aquifers tributary to surface water streams.

The primary question concerning tribal rights over groundwater is whether regulatory jurisdiction can extend beyond the tribe's property and its members. Federal environmental laws extend tribal jurisdiction to all lands and people within the boundaries of the reservation. On the other hand, Court decisions addressing tribal civil authority are not consistent. Some courts limit authority over non-Indians and fee

lands within the reservation to two instances: (1) where non-Indians enter into a consensual relationship with a tribe or its members, through commercial transactions or arrangements; and (2) where non-Indian conduct threatens or has some direct effect on the political integrity, the economic security or the health and welfare of the tribe. The result is a jurisdictional quagmire that can defeat any rational resource use planning by either state or tribal governments.

#### **B. TRIBAL PROPERTY RIGHTS IN GROUNDWATER RESOURCES**

1. **Retained Right:** In *United States v. Winans*, 198 U.S. 371 (1905) the Supreme Court held that unless a tribe specifically surrenders ownership of particular resources associated with its land, the tribe retains ownership and may exploit the resource, subject to limitations imposed by Congress. Tribal rights to groundwater have been expressly addressed in actions to quantify tribal rights where the groundwater is tributary to a surface water stream, and the rules applicable to surface waters have been applied.

2. **Location of the Resource:** The extent of tribal property rights in groundwater may depend on where the resource is located. Where located wholly within the reservation, the entire resource can be considered to be tribal property. [*Colville Confederated Tribes v. Walton*, 647 F.2d 42 (9th Cir.) cert. denied 454 U.S. 1092

(1981)]. Another view is that it can be considered to be tribal property only if needed to satisfy a tribe's reserved water right (see below). [**United States v. Alexander**, 131 F.2d 359 (9th Cir. 1942)].

3. **Extent of Right:** Where a water resource is shared with other jurisdictions, the tribe's property interest in the resource is determined the federal reserved right doctrine. When the federal government reserves lands for a tribe, rights to sufficient water for the purposes of the reservation are also reserved. **Winters v. United States**, 207 U.S. 564 (1908). The purpose of an Indian reservation is to preserve a tribe's territorial base as part of its retained rights of self-government. The standard most often used to quantify the scope of this right in the practicably irrigable acreage (PIA) standard developed in **Arizona v. California**, supra.

(a) The PIA standard is that amount of water necessary to irrigate the practicably irrigable acreage within a reservation. It is a perpetual right to a set quantity of water per year, thereby recognizing the permanent status of indian reservations [See, **United States v. Ahtanum Irrigation District**, 236 F.2d 321, 326 (9th Cir. 1956)]. In formulating this standard, Special Master Rifkind determined that this was the most objective means to measure a tribal right. He took into consideration that lack of economic resources and inconsistent federal

action had precluded development of water resources on tribal lands. He also took into consideration the other negative effects of former federal policies.[Rifkind Report (1960)].

As late as 1983, practicable meant feasible, in other words, if possible. The most limiting factor was the nature of the soils; was the land such that if water were applied, plants could be grown. *Arizona v. California* (1963). In a supplemental proceeding to the original *Arizona v. California* action to determine tribal water rights to additional lands, the new Special Master, Tuttle, applied a costs/benefits analysis to measure the efficiency of a water use in determining the quantity of the tribal rights to water. The Supreme Court did not reach the issue of the applicability of this analysis to tribal rights before it remanded the action to the Special Master, but it characterized the PIA standard as a soils test. *Arizona v. California*, 460 U.S. 605 (1983). At this writing the U.S. Supreme Court is considering a decision of the North Dakota Supreme Court that has interpreted practicable to mean economically efficient. *In re Adjudication of the Big Horn River*, supra. In fact, a higher efficiency standard was applied to determine whether certain lands are practicably irrigable than is applied to determine the feasibility of non-tribal water projects.

In **United States v. New Mexico**, 438 U.S. 696 (1978) reserved rights for a solely federal use was defined by the primary purposes of the reservation. When courts have attempted to extend this requirement to tribal rights, normally the courts will not recognize uses for other than agricultural and domestic uses. [Shrago, **"Emerging Indian Water Rights: An Analysis of Recent Judicial & Legislative Developments"**, 26 Rocky Mtn. Min. L. Inst. 1105; **In re Adjudication of the Big Horn**, supra.] Do we still believe Indians must be farmers? The Supreme Court has rejected this ethnocentric concept in the past, **Arizona v. California** 439 U.S. 419, 422 (1979). Application of the primary purposes requirement to tribal water rights has been the subject of great criticism. [Mayerson & Goodman, **"Indian Water Rights: Old Promises, New Opportunities"**, Paper No. 7, P.7-8 (Rocky Mt. Min. L. Fdn. 1989); Burton, **"The American Indian Water Rights Dilemma: Historical Perspective and Dispute-Settling Policy Recommendations"**, 7 Jour. Env'tl. L. 1 (1987)]. (b) For tribes whose lands are suited for agricultural use topographically, a reserved right quantified under the PIA standard is fairly generous because agricultural uses require large amounts of water. The standard is not fair or generous to those tribes whose lands are not receptive to agricultural uses. Most courts have been unwilling to fashion some other

standard, but precedent does exist for going outside the strict PIA standard. In the **Washington Fishing Cases** the reserved rights doctrine was applied to anadromous fish. The court found that the amount reserved for tribal uses was that amount necessary to provide a reasonable livelihood for present and future tribal members. In **Montana v. United States**, 450 U.S. 544 (1981) the Supreme Court noted, in passing, that the reasonable livelihood standard was consistent with the 1963 decision in **Arizona v. California**.

(c) The federal reserved rights doctrine has been applied to groundwater that is hydrologically related to surface water in **Cappaert v. United States**, supra. Lower federal and state courts have expressly recognized tribal reserved rights to this type of groundwater in most instances where the issue has been raised. **Colville Confederated Tribes v. Walton**, 647 F.2d 42 (9th Cir) cert denied 454 U.S. 1092 (1981); **Reynolds v. Aamodt**, 618 F. Supp. 993, 1010 (D.N.M. 1985). [Per conversation with H. Becker, Assistant U.S. Attorney in Albuquerque, New Mexico, tribal rights to groundwater have been recognized in all on-going state and federal court adjudications in New Mexico.] These Courts have recognized the necessity of tribal control over hydrologically related groundwater so that the entire resource can be managed in an efficient, conjunctive manner. **Reynolds v. Aamodt**, supra;



Colville, supra.

The one notable exception is the **Big Horn Adjudication**. The North Dakota Supreme Court denied the existence of any tribal right to groundwater on the basis of state ownership. This ruling effectively precludes conjunctive management of the surface and ground water resources, and the relationship to land uses. Conjunctive management by the tribe is problematic, and may not be politically feasible.

The validity of this holding is highly specious for many reasons. The state does not have authority over tribal land, and under U.S. Supreme Court precedent in the area of equitable apportionment and the commerce clause, a state's right to water is based only upon use. Furthermore, this state ownership was based on the public trust doctrine which does not give rise to a proprietary right in the state. **Sporhase, supra**. Second, when acting in its capacity as trustee for the public, the state is acting as *parens patriae* for all its citizens. Tribal members are state citizens as well as tribal citizens. A state cannot act in this capacity to establish rights for the benefit of one group of citizens as against another group of citizens. **Reynolds v. Aamodt** 537 F.2d 1102 (10th Cir. 1976).

(d) One open question is whether tribes have property rights in groundwater resources that are not

hydrologically related to surface water systems. If treated as an incident of ownership of overlying land, then the existence of tribal property rights would depend on whether the tribe held the overlying lands.

If an aquifer was under tribal lands and lands of another jurisdiction it is likely that in an adjudication of the aquifer some form of the reserved rights doctrine would be applied.

In some situations aquifers that are not related to an existing surface stream are the only water available. Congress has recognized that in this situation a reserved right existed at one time to the waters, but in each instance the water had been already taken for primarily non-indian uses off the reservation. Recognizing the unfulfilled reserved right was the basis for establishing a violation of the trust responsibility that had to be redressed through costly "rescue" legislation. [See **Southern Arizona Water Rights Settlement Act**, Pub. L. 97-293, 96 Stat. 1274; **Act of July 28, 1978 Concerning the Water Rights of the Ak-Chin Reservation**, Pub. L. No. 95-328, 92 Stat. 409]. These reserved rights are then met through substitute water supplies, such as the Central Arizona Project. How many more projects can this nation afford? These acts are evidence of the fact that just setting out a quantity allocation does not, without more, allocate groundwater resources.

Some writers suggest that the nature of these resources argues in favor of treating them in the same manner as mineral interests. [Mayerson & Goodman, *supra* at 7-10]. There is some sense to this suggestion. In water law, groundwater resources can be characterized as flow or stock resources. **Rodgers & Utton, *supra* at 749-754.** These types of aquifers are considered to be stock resources and as such, it is not unusual for them to be "mined": the amount extracted from the aquifer is greater than the recharge to the aquifer. In that case, the resource cannot represent a permanent water source, it is nonrenewable. These resources can be used as emergency supplies in times of drought, or can be used for relatively short-term development; they cannot be the basis for maintenance of a permanent economic base. [This limitation is expressly addressed in **Mathers v. Texaco, Inc., 77 N.M. 239, 421 P.2d 771 (1966)** (the Court upheld state regulation of a non-tributary aquifer that contemplated a useful aquifer life of 40 years) and in **Fundingsland v. Colorado Groundwater Commission, 171 Colo. 487, 468 P.2d 835 (1970)** (the Court upheld state regulation that contemplated a useful aquifer life of 25 years)]. Another consideration is that these water resources generally require the investment of relatively large amounts of capital to bring the water to the surface, much less distribute it to where it can be used,

and these costs increase as more waters are extracted. [See, Burke, Cummings & Muys, "Interstate Allocation and Management of Non-tributary Groundwater" (1984) (Paper prepared for Western Governor's Association); and Bagley, "Water Rights Law and Public Policies relating to Groundwater 'Mining' in the Southwestern States", 4 J.L. and Econ. 144 (1961)]. When these characteristics of groundwater are considered, it can be argued that although a tribe can be the owner of such resources by virtue of land ownership, these resources should not be considered in quantifying a tribe's reserved rights. The federal policy of tribal self-determination includes the development of permanent, diverse reservation economies. To force a tribe to rely on these types of resources to fully use their reserved water rights would, in many cases be equivalent to a denial of the right in economic terms. Furthermore, even if the necessary capital was available, these water resources are not self-renewing, as in the case of surface water. They cannot be thought of as a permanent water supply for any long term development or maintenance of a reservation economy.

#### **C. TRIBAL REGULATION OF GROUNDWATER**

**1. Federal Reservation Public Welfare:** "The concept of public welfare is broad and inclusive. (citation omitted). The values it represents are spiritual as well

as physical, aesthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well balanced as well as carefully patrolled. **Berman v. Parker**, 348 U.S. 26, 33 (1954). Although states rely on the broad language of this case as a description of state police powers, the U.S. Supreme Court was defining the police powers of a federal reservation in that case. The District of Columbia is the quintessential federal reservation, and in 1954 there was no legislature elected by the residents of the city.

(a) **Tribal Retained Inherent Power:** For indian tribes, what we call the police power is an integral part of a tribe's inherent powers that were retained when a tribe entered into relations with the United States. This power extends, at a minimum, to tribal members and/or tribal territory. **Merrion v. Jicarilla Apache Tribe**, 455 U.S. 130 (1982); **U.S. v. Mazurie**, 419 U.S. 544 (1975); **Santa Clara Pueblo v. Martinez**, 436 U.S. 49, 56 (1978); **United States v. Kagama**, 118 U.S. 375 (1886).

(b) Tribes have affirmatively exercised this power over uses of their lands and waters from time immemorial. For some tribes this power is exercised as part of a tribe's unwritten traditions that are integral to the social and religious practices of the tribe. [Ortiz, **The Tewa**

World]. Some tribes have enacted written land and water codes that are similar to those adopted by states. The Navajo Tribe, the Confederated Tribes of the Umatilla Indian Reservation and the Confederated Tribes of the Colville Reservation are just a few of the tribes that have adopted tribal water codes. These codes assert jurisdiction over all uses of water within reservation boundaries, and all users, regardless of tribal membership. The Colville Code allows the state primary jurisdiction on lands owned by non-members pursuant to a cooperative agreement with the state of Washington. This agreement contemplates joint management and control of the water resources in a manner that is consistent with both state and tribal laws. [For an excellent discussion of present tribal water planning and regulation see Shupe, "Water In Indian Country: From Paper Rights to a Managed Resource" 57 U.Colo. L. Rev. 561 (1986)].

(c) This inherent authority has been recognized by the federal government not only in treaties, but in federal environmental laws where tribal jurisdiction is expressly recognized as extending to the boundaries of the reservation. [In particular, see §1377(e) of the Clean Water Act: "The Administrator is authorized to treat an Indian tribe as a state...(2) the functions to be exercised by the Indian tribe pertain to the management

and protection of water resources which are held by an Indian tribe, held by the United States in trust for Indians...or otherwise within the borders of an Indian reservation." For a general discussion of the pertinent provisions of federal environmental regulation see Walker & Gover, "Tribal Civil Regulatory Jurisdiction to Enforce Environmental Laws", **Mineral Development on Indian Lands**, Paper No. 14 (Rocky Mt. Min. L. Fdn 1989)].

**3. LIMITS ON TRIBAL REGULATORY AUTHORITY:** Challenges to tribal regulation come about in two different circumstances. First, a nonmember who owns property in fee located inside reservation boundaries may challenge a tribe's regulation. In these cases there is no explicit issue of state regulation, merely whether the tribe can regulate the individual's activities. In the second instance, another jurisdiction, usually a state entity, may attempt to exercise its regulatory authority over such lands within a reservation. In **Montana v. United States** these two situations were blurred. The tribe's jurisdiction was limited because the Court held that the United States never recognized a tribal right to the land, it was not on the reservation. Therefore the tribe could not regulate the activities of non-members there. In both circumstances courts apply an interests analysis to determine the extent of tribal jurisdiction. In the first instance a court looks to

determine if the exercise of tribal authority over the individual comports with notions of due process through a modified minimum contacts analysis as set forth in **Montana v. United States**, supra. When a state is asserting jurisdiction a court employs an analysis similar to that used to determine the validity of state regulation of interstate commerce, or federal property: (1) Does federal law preempt the assertion of state authority; and if not, (2) does the assertion of state authority unlawfully infringe on the right of Indians to make their own rules and be governed by them. **Williams v. Lee**, 358 U.S. 217 (1959). Under the first step the federal interest is defined. Under the second step, state and tribal interests are defined and all three are considered.

The analysis can not look to merely the governmental interests of a state and those of the federal government. A third governmental interest, that of the tribe's is taken into consideration by virtue of the definition of the federal interest: the federal trust responsibility to protect tribal rights of self-government. This is the "backdrop of tribal sovereignty" that must be taken into consideration. (cite).

For example, in the absence of any federal preemptive action, a state cannot merely rely on the heightened regulatory authority over water resources



based on the public trust doctrine to triumph over tribal authority because the tribe has the same heightened regulatory interest. In such a situation, it would appear that the federal interest in protecting tribal authority would be the determinative factor that would require a court to uphold the authority of the tribe under a preemption theory.

**4. The Montana Decision:** In Montana the Supreme Court set out two situations where tribal regulations may be applied to those who are not members of the tribe: (1) when a person or entity enters into a consensual relationship with the tribe or its members, through commercial dealings, contracts, leases or other arrangements, or (2) when a person or entity engages in conduct that threatens or has some direct effect on the political integrity, the economic security or the health or welfare of the tribe. 450 U.S. at 565. In Montana, after determining that the situs was not on the reservation, the Supreme Court essentially found that the state had authority to regulate in that instance because the tribe had not alleged any detrimental effect from non-indian conduct on tribal political integrity, economic security or health and welfare.

**5. Tribal Land Use Regulation:** Decisions concerning tribal land use regulation have generally upheld tribal authority to regulate the land uses of non-members based

upon the second situation set forth in **Montana**. See, **Knight v. Shoshone and Arapaho Indian Tribes**, 670 F.2d 900 (10th Cir. 1982). **Confederated Tribes and Bands of the Yakima Indian Nation v. Whiteside** 828 F.2d 529 (9th Cir. 1987) cert granted 56 U.S.LW. 3864 (June 20, 1988). In **Confederated Salish and Kootenai Tribes v. Namen**, 665 F.2d 951 (9th Cir. 1982), cert. denied 459 U.S. 977 (1982) the tribe's right to regulate a non-member landowner's riparian rights to a lake located wholly within the reservation was also upheld.

Where a state is attempting to regulate the use of lands within the boundaries of a reservation, the Court first addresses whether existing legislation is such so as to preempt the state from asserting any basis for regulating tribal lands. In **Whiteside**, supra, in addition to the individual's challenge to tribal regulation, the county attempted to assert jurisdiction over the non-member fee lands inside the reservation. The Court noted the numerous federal statutes which, while not preempting the particular activity the county was attempting to engage in, "embody and advance a broad federal policy of recognizing Indian sovereignty and encouraging tribal self-government. (It did not list the numerous federal environmental statutes).

Finding no preemption merely by virtue of creation of the reservation, the Court applied an interests

analysis and held that the tribe did have authority to regulate certain fee land owned by non-Indians in one area of the reservation, based on the second situation in Montana. This is an area zoned as a "closed" area by the tribe, with severe land use restrictions. In balancing the interests of the tribe with that of the county, the Court found that the county might have authority to regulate an open area and remanded the case for further findings by the District Court concerning whether off-reservation impacts justified the assertion of county authority. The Ninth Circuit relied on **New Mexico v. Mescalero Apache Tribe**, 462 U.S. 324 (1983) for the requirement of off-reservation impacts to support county regulation. Thus, another layer of complexity is added to the jurisdictional inquiry. It should be noted that the Court did not address the fact that this land was not on the reservation as was the case in Montana.

**6. Tribal Water Use Regulation:** Prior to the decision in Montana, the Ninth Circuit addressed the authority of tribes to regulate water use by non-members on lands held in fee in **Colville Confederated Tribes v. Walton**, 647 F.2d 42 (9th Cir. 1980) cert. denied 454 U.S. 1092 (1981). At issue was the tribe's right to regulate use of a hydrological basin located wholly within the reservation. The Court of Appeals found in favor of the tribe for four reasons: (1) a water system in a unitary

resource; (2) the need to avoid jurisdictional confusion; (3) regulation of water on a reservation is critical to the lifestyle of its residents and development of the tribe's resources; and (4) unregulated use by Walton would have had a direct impact on the tribe's downstream uses which included a fishery. [647 F.2d at 51-52].

The Ninth Circuit has also addressed state attempts to regulate non-member water uses after **Montana**. In **United States v. Anderson**, 736 f.2d 1358 (9th Cir. 1984). Applying a modified version of the **Colville** decision to a very different factual situation led the Court to hold that the state should have authority to regulate the use of "surplus" waters by non-indians on fee lands within the reservation. In **Anderson**, the subject waters were those of Chamokane Creek, a tributary to the Columbia River. The creek forms the eastern boundary of the Spokane Indian Reservation, it is not wholly within the reservation.

In **Anderson**, after **Montana**, the Court distinguished **Colville** also on the basis of how non-members obtained their interests in fee lands, distinguishing between the allotments on the Spokane Reservation and on the Colville Reservation lands were opened for entry and settlement, suggesting an initial nonconsensual entry on to the reservation. This distinction is also based on the fact that when lands were opened for entry and settlement,

under the federal homestead acts, non-indian homesteaders had to obtain water rights under applicable state law. Finally, the Court found there would be little impact on tribal uses because a federal water master would be appointed. Two more layers of complexity were added to the jurisdictional inquiry.

**Anderson** represents a fundamental misconception of **Montana** and two hundred years' worth of american jurisprudence. The result is that reservation boundaries are meaningless. Mere presence of non-members because a reservation is open to entry and settlement does not support the diminishment of reservation boundaries under existing law. [See, **Solem v. Bartlett**, 465 U.S. 463 (1984); also see Laurence, "Governmental Power In and Around Indian Country", Paper No. 3 (Rocky Mtn Min. L. Fdn. 1989)]. **Montana** is consistent with the diminishment cases because it did not concern activities on land recognized as part of the reservation. Just as any other political boundary, be it national or state, a reservation boundary has substantial meaning in and of itself. One who crosses it is charged with full knowledge that it has meaning. Just because a citizen of New Mexico comes into Colorado, does not mean that actions are to be governed by the laws of New Mexico. Colorado cannot deny the New Mexico citizen her rights under federal law because it is bound to the respect

individual rights found in the Constitution. Tribes are not bound by the same constraints.

#### **D. FINAL COMMENTS**

When all of these conflicting decisions are mixed together, the result is a three dimensional labyrinth that defies rational planning and resource use by any one entity. First we separate the groundwater from the land, and then we use different systems for allocating authority over each resource, and then we go further and separate water quality concerns from water quantity concerns. Descartes would appreciate the theory.

In theory, the obvious answer is recognizing the duty of governments to respect the rights of each other and to cooperate for the mutual benefit for all their inhabitants. The grim reality is that we are living in the Malthusian nightmare; there is not enough to meet all needs and competition is growing fierce over the most vital of resources. Tribes are generally mistrustful of federal action or settlements because they have lost so much in the past. This is so similar to the allotment process where tribes were denied lands that were not "needed" so that non-members could have more. Tribes were not allowed to define their need. Why should states bother to negotiate if reservations can be destroyed by migration of non-indians across reservation borders? Also, federal action and negotiations are both

expensive and time consuming, with no certainty of success.

Numerous proposals have been made as to alternative methods to resolve these disputes. Burton suggests a federal water claims commission as a substitute to the numerous adjudications now in progress. Williams suggests international arbitration because he argues that the federal government cannot act in the best interests of the tribes. [Williams, "Emergence of a National Indian Policy: *Parens Patriae* and Indian Tribal Sovereignty" Paper No. 1 (Rocky Mtn. Min. L. Fdn. (1989))].

Both Burton and Collins seek to escape the negotiation or litigation dilemma. The International solution is very problematic. Even if an international tribunal would hear a tribal claim, international law is not an escape from the principles of U.S. law, nor does it guarantee a neutral decisionmaker. Rather, it would make tribes into pawns in international power plays where the influence of the United States cannot be underestimated. The United States has refused to recognize the jurisdiction of the International Court of Justice in the past, why would it recognize any other international tribunal. Finally, the tribe must maintain its unique relationship with the federal government after any such arbitration. Burton's suggestion sounds quite reasonable, but it has the handicap of requiring Congress

to pay-off some entity. This is never popular with the constituency back home. From a tribal standpoint, there is the legacy of the Indian Claims Commission which must be overcome: Tribes get some money, others get water. Both of these hurdles are awesome. This alternative may be the best solution, but it is not available now.

Despite the major obstacles present in negotiating cooperative agreements, tribes and the communities around them are pursuing this option. These mechanisms do allow the tribe to control the trade-offs that it will have to make. The cooperative effort of the Colville Reservation and the State of Washington is but one example. The Fort Peck Agreement with the State of Montana and the Agreement reached between the Utes and the State of Colorado are others. The progress of these relationships will be monitored by many tribes. If successful, more may consider this as an alternative to the courtroom.